



Fair Trade Minimum Price: A Comparative Analysis for the Arabica Coffee Market

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Authors' contributions

This work was carried out in collaboration between all authors. Author SP designed the study, performed the statistical analysis, managed the literature searches and wrote the first draft of the manuscript. Author FMS wrote the protocol and managed the analyses of the study. Author ALS collected the data, manipulated tables and graphs and formatted the document. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/BJEMT/2017/32662

Editor(s):

(1) O. Felix Ayadi, Interim Associate Dean and JP Morgan Chase Professor of Finance Jesse H. Jones School of Business, Texas Southern University, TX, USA.

Reviewers:

(1) Larisa Nicoleta Pop, Babes-Bolyai University, Cluj-Napoca, Romania.
(2) Armando Garcia Chiang, Universidad Autónoma Metropolitana, Iztapalapa, México.
Complete Peer review History: <http://www.sciencedomain.org/review-history/18630>

Original Research Article

Received 8th March 2017
Accepted 7th April 2017
Published 13th April 2017

ABSTRACT

Aims: This paper analyses the validity of the fixed Minimum Price approach used by Fair Trade Movement (FTM). It focuses on coffee, from the Brazilian state of Minas Gerais, where the majority of FTM Arabica coffee is produced. Two main organizations operate worldwide: Fairtrade Labeling Organizations (FLO) and World Fair Trade Organization (WFTO), but only the first one has a worldwide recognized certification process.

Preamble: The most important conditions are: i) a worldwide Minimum Price, fixed since 2011 at US\$ 1.35/pound (Arabica natural and non-organic); ii) a premium of at least US\$ 0.20/pound for the organization (1/5 for productivity and quality improvement, and 4/5 for community projects). Episodes of side selling have been reported and the validity of the Minimum Price approach is at risk.

Methodology and Duration of Study: This paper uses four sets of data: the local production costs in Reais (January 2012 to October 2016), the international price in US\$, the FTM international price and the local price (April 2011 to October 2016). All data were converted into Reais, for one 60 kg bag.

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Results: In April 2011 – October 2012 and August - October 2014, the FTM price was lower than the price paid by other buyers. The production cost was higher than the FTM price from February 2012 to October 2015. These two results partially justify the behavior of some farmers, who in these periods side sold their coffee, unless their organization used some reserves to cover the difference.

Conclusion: Two approaches are suggested: a) to educate better all FTM producers about the long term purposes of the system, b) to abandon the worldwide fixed price in US\$ and apply a flexible formula incorporating the production cost in local currency. Further research, for the coffee in other areas and for other commodities is also suggested.

Keywords: Fair trade movement; coffee; small farmers; minimum prices.

1. INTRODUCTION

In the neo-classical economy, the relative utility and the prices were considered to be the only determining factors which guided the consumers' choices [1,2]. Selfishness and the search for own benefits are the only drivers who motivate the consumers, whenever they have to decide how to distribute their income between savings and consumption first, and between several goods and services. Fortunately, other drivers are also present to influence the consumers' decisions, that have increased their impact on the consumers' choices in the recent years: we refer to social, ecological and religious/philosophical motivations [3,4,5], which also contribute to shape the decision models of many consumers, especially in developed economies. Since the 1960s, initiatives linked to solidarity and environment have been emerging as consumers make their decisions also based on social and environmental criteria, that are not always directly related to the lowest product price, core of neo-classical economy.

The choices linked with social motivations and goals shape the so called Fair Trade Movement – FTM. According to [6] and [7], FTM has emerged as one of the real possibilities of change, promoted by international organizations, that strive to change the paradigms of the international global market, especially in the food sector. The most referenced concept of FTM is the one developed by FINE¹ which establishes that fair trade is a partnership based on dialogue, transparency and respect, that seeks greater equity in international trade. It contributes to sustainable development by offering better trading conditions and by securing the rights of

marginalized farmers and workers – especially in developing countries. Furthermore, FTM, backed by consumers, is also actively engaged in supporting the small farmers' awareness and self organization, through cooperatives, associations and other forms of aggregation. Other concepts were elaborated and are used, but the FINE concept was chosen because it involves certified companies in the FTM, whose statistical data are published by the certifying organizations.

Nowadays coffee is the most commercialized product in the FTM and to fulfill the goal proposed in the FINE concept, FLO - Fairtrade International (largest organization of this Movement) proposes a series of principles to be followed by certified organizations. In this article, the minimum price established by FLO is considered the main principle, since it can guarantee a fairer commercial relationship and, consequently, a more dignified life for small coffee producers.

The fundamental question to be answered is related to FTM's potential of changing the small farmers' conditions within the global coffee business, considering essentially the minimum price defined by the certifier. In order to promote the discussion about the FTM coffee and to know how much it improves the small farmers' participation in this market, this study has been designed to answer the following questions: what is minimum price and how is it set? Is the coffee minimum price set by FLO really fair? In this article a comparative analysis has been elaborated between the minimum coffee price paid by the FTM, as established by FLO and the NYSE and local market prices. The production cost of a 60 kg coffee bag was also considered. A reference was made to the Brazilian Arabica coffee certified at the FTM by FLO-Cert (linked to FLO).

¹ FINE is an informal organization established in 1998. It brings together the Fairtrade International (FLO), World Fair Trade Organization (WFTO), the Network of European Worldshops (NEWS!) And European Fair Trade Association (EFTA).

This article is divided first into two paragraphs dealing about the FTM state of the art and its numbers (statistics), followed by the coffee in general and its numbers, and concluding with numbers about the coffee in the FTM. The methodology used was an analysis of the available data about the minimum FTM price, the producing cost of a coffee bag, the coffee prices on the NYSE and the local market and the exchange rate of the Brazilian currency (Real) comparing the US\$. Then follow the results and conclusions.

2. FAIR TRADE MARKET STATE OF THE ART

FTM has two origins, one European and the second American, both appeared after the World War II period. In Europe, the movement was born through initiatives linked to the Christian churches that were concerned about the necessity of better trade relations between the "North" and the "South": buyers from rich countries and suppliers from poor countries. Information coming from producing countries revealed exploitation, extreme poverty, forced and even slave labor. From these initiatives were established several Alternative Trade Organizations (ATO). In the USA, the movement was originated by groups of volunteers involved in humanitarian aid which began to buy handcrafts from artisan groups countries to be then sold in USA in small shops managed by churches and Non-Governmental Organizations (NGOs). According to [8] perhaps the most likely motivation for the FTM growth is the income inequalities due to the very low prices paid to the small farmers who produce the raw commodities, as coffee.

According to [6], another fact that marked the FTM history was the second UNCTAD Conference in 1968 which defended the thesis "trade not aid" and claimed that it should have been the new base for third world development.

The history of fair trade coffee begins in 1981, when Frans van der Hoff (a Dutch missionary operating in Mexico) found that Oaxaca coffee small farmers were selling their products to intermediaries at "unfair" prices; he found support from the Dutch NGO Solidaridad and developed a plan to organize the small farmers, so that they could bypass the middlemen and sell their coffee directly to consumers. In 1988, the Max Havelaar Foundation was established as a

fair trade organization, a quality certification was created and the first fair trade label was set [7].

The FTM is presently fragmented, since it shows two main global organizations, with two different certification systems (FLO with FLO-Cert, and WFTO with GS - Guarantee System), and several other experiences and organizations, as the Network of European Worldshops (NEWS!), the European Fair Trade Association (EFTA), and many more.

According to [7] FLO was established in Germany in 1997 by several European groups and movements which had decided to have a better coordination and an homogeneous approach and nowadays it represents several national initiatives in Europe, America and in the Pacific region. FLO was the first organization to develop and implement a certification of the organizations involved, with standards and procedures based on existing traditional systems, mainly those related to organic agriculture. In 2004 FLO-Cert was created, linked to FLO, to be responsible for the worldwide certification recognition process. FLO-Cert has been accredited to the ISO 17065 standard since 2007 and also works with voluntary verification systems as Coffee Assurance Services' (CAS).

WFTO – World Fair Trade Organization was generated in 2008 as a transformation of IFAT – International Federation of Alternative Trade established in 1990, to "improve living conditions for the poor through promoting fair trade internally/externally with the anticipated result of a higher level of trust and cooperation among members" [9]. WFTO is a global network and advocate for Fair Trade, ensuring that the producers' voices are heard. "The interests of producers, especially small farmers and artisans, should be the main focus in all the policies, governance, structures and decision-making within the World Fair Trade" [9]. In 2013 WFTO created the WFTO Guarantee System (GS), that is not a product certification system. It is a mechanism to assure that FTM is implemented in the supply chain and in the organization management structure. Members that pass the GS process attain the 'Guaranteed Fair Trade Organization' status and may use the WFTO label on their products [9].

In this article the FLO system was chosen, because it incorporates both production and processing certification and it is the system with the greater number of certified actors. FLO is

also the only one that establishes a minimum price to be respected by the FTM buyers. Another factor is that FLO monitors the fair trade market and most of the fair trade consumption estimates are based on their official data and reports [10].

The general standards established by FLO in 2004 are as follows [11]:

- Management of Production Practices (internal structures and traceability);
- Environmental Development (Environmental and pest management, soil and water, waste, Genetically Modified Organisms, biodiversity, energy and greenhouse gas emissions);
- Labour Conditions (Freedom from discrimination, forced or compulsory labour, child labour and child protection, freedom of association and collective bargaining, conditions of employment, occupational health and safety);
- Business and Development (Development potential, democracy, participation and transparency, non-discrimination)

There are standards for many products (coffee, tea, sugar cane and others) and standards for farmers, manufactures, exporters and importers. FLO sets out the following conditions for importers, that must:

- Work with transparency;
- Buy only from certified organizations;
- Pay a minimum price for coffee, that since 2011 has been fixed at US\$1.35 per pound (Arabica natural and non-organic);
- Recognize at least US\$0.20 per pound as premium for the producing organization; 1/5 of the total amount must be invested for the improvement of productivity and quality, while the other 4/5 must be invested on for social projects (sanitation, schools, local roads, etc.);
- Anticipate a certain amount of the money payment;
- Invest on long terms contracts.

According to [12], the certification plays a central role to empower the small farmers' organizations operating in the FTM. FLO determines specifically who enters and who does not enter into FTM through the certification system. The certification rules are the guarantee that the FTM principles are implemented by all actors of the

value chain and that criteria such as transparency and solidarity are respected. However, the minimum price makes the certifier stronger as an active key chain player.

According to [13], "Fair Trade market has grown and built an increasingly complex commodities array (farmer/consumer relations and local and global policies)". This has made the movement gain visibility and importance in the global food chain. The growth and consolidation of certified FTM as a market alternative for organized smallholders has aroused the interest of the society. [14] treated FTM as a labeling initiative aimed at improving the livelihood of the poor in developing countries by offering better terms to small farmers and helping them organize themselves. The authors provided a critical overview of the economic theory behind FTM describing the potential benefits and potential pitfalls. "The largest potential benefit of market-based systems like Fair Trade is that they do not distort incentives in a deleterious way as foreign aid. Instead, they work within the marketplace and reward productive activities and production processes that are valued by consumers and that are good for the local environment and economy [14].

Its differentiation in relation to the other social and environmental certification processes, such as the minimum price paid for the small farmers' organizations has ignited debates widely discussed in the literature [15,16,17]. [15] presents a particular analysis of ethical trade based on its "embeddedness" and argues that corporate approaches to ethical trade vary markedly and that these variations have the capacity to shape the labor regulation conditions at export production sites. On the other hand, [16] says that some of these experiences have been positive but many only served to create entrenched interests that captured the benefits for a small élite. [17] says that these strategies are possible but that such outcomes will crucially depend upon considerable dialogue, trust building and cooperation.

2.1 FTM Numbers

FTM has been growing in recent years and in 2014 it was globally near 5.9 billion Euros, 10% more than in 2013 [11]. In 2014 FLO certified 1,226 small farmers' organizations, 1% more than in 2013 when they were 1,220. Regarding the number of small farmers, there was an increase of 11% from 2013 to 2014, from

1,305,000 to 1,447,900 units. The number of countries with certified organizations remained at 74 [11]. Specifically in the coffee market, there was an increase in the number of workers of 21%, totalizing 812,500 in 2014.

Coffee is one of the most sold products in the international market, considering the amount commercialized, sharing this position with the petrol. According to [18] the 2015/2016 harvest produced 144,752 million 60 kg coffee bags worldwide. Coffee has its price set by the commodity markets, especially the New York Stock Exchange - NYSE (ICE Futures US\$). At the same time, coffee is also the best-selling product in the FTM. The price paid locally to small farmers is influenced by the international price but other factors must be considered in its formulation such as the exchange rate and the current coffee production cost.

The FTM has grown specifically with coffee on every continent (both consumers and small farmers), causing new coffee small farmers' organizations to join the certification processes and a new customers' interest towards this product. This growth has attracted large roaster companies and food products distributors. According to [10] a growing number of small coffee farmers, coffee companies, and NGOs are pushing the coffee industry to move towards more sustainable practices as FTM coffee.

When it comes to FTM coffee, the most recent available data are those of 2013-14, which recorded a 6% growth in sales, to 150,800 MT (Metric Tons), reaching a global value of EUR 469 million [11].

In that same year the total world production had been 144.5 million 60 kg coffee bags sold at an average price of 182.7 EUR/bag [18] with a financial turnover of approximately 26.4 billion Euros. The FTM coffee consequently represented 1.8% of total volume world traded coffee. According to FLO, 40% of certified organizations sold more than 50% of the total production with the FTM certificate. Coffee is responsible for the largest percentage of premiums received by the certified organizations, reaching 49.4 million Euro in 2013-14 (54.5% of total).

2.2 Coffee: Cost of Production, Prices and Exchange Rate

The *coffee production cost* is elaborated in Brazil by the CNA - Confederação Nacional da

Agricultura, in partnership with UFPA - Universidade Federal de Lavras. The reference city is Guaxupé (Minas Gerais State), because it is within the central Arabica coffee production region.

The CNA uses as methodology the calculation of Total Cost (TC) per hectare, which is the sum of the Total Operating Cost (TOC) plus land cost opportunity and capital goods, indicating the economic situation of the enterprise considering all implicit costs. The procedure refers to the values that these factors could generate in alternative uses. The TOC is the result of the sum of Effective Operational Cost (EOC), depreciation and pro-labor. It indicates the possibility of restoring the productive capacity of the business, besides the remuneration of the person in charge of managing the activity, who may be the farmers themselves. On the other hand, the EOC corresponds to all the cost components generated by the relation between the quantity used and its prices, including all the disbursements practiced in the activity during the productive cycle.

The *international prices* for the different qualities of coffee are determined by the commodity markets, especially at the New York Stock Exchange - NYSE (ICE Futures US\$). One of the qualities treated in New York, "the C Contract" (washed Colombia), refers to natural coffee (not washed). Adaptations are made to coffee types from other producing countries like Mexico, Kenya and Tanzania. In New York, there is no specific Brazil contract, and consequently the price in Brazil is determined by referring to "The C contract" - 12 to 15%, because the price of Colombian coffee is artificially kept high to push farmers to move from coca to coffee production [19].

The *local market price* is the one received by most Brazilian farmers, both small and large, when they sell their output to wholesalers who then sell to local processors or to exporting firms. The local market price is an important reference that pays a value for the 60 kg coffee bag, regardless of whether the farmer is certified or not. There are several factors that determine the amount paid by the local market, such as the price practiced by NYSE (Arabica case) and the currency exchange rate.

The *minimum price* paid to the small farmers is one of the principles that guide the FTM. It is the one that effectively causes the certified FTM to

move in a different direction, other than quality assurance processes. The minimum price is also an important differential when we compare FTM with the conventional commodity coffee market. In this article, this principle is treated with emphasis regarding the other FTM principles. FLO [11] defines Fairtrade Minimum Price - FMP as "the minimum price that must be paid by buyers to producers for a product to become certified against the Fairtrade Standards. The FMP represents a minimum-based price which covers the producers' average production costs and allows them to access their markets. The FMP represents a formal safety net that protects producers from being forced to sell at a very low price when the market price is below the FMP. It is therefore the lowest possible price that the Fairtrade payer may pay to the producer. When the relevant market price for a product is higher than the Fairtrade minimum price, then the market price must be at least paid".

Many authors have analyzed the role of the minimum price in the success and failure of the FTM in the life of the small farmers and their organizations like [20,21] and [22]. [23] argues that the central component of the Fair Trade coffee system is the guaranteed minimum price to small farmers. This minimum price has generally remained above the price of the world coffee market, leading to a classic case of a minimum-based price above the market price clearance, in which quantity supplied exceeds quantity demanded. The author says that the supply of Fair Trade coffee has consistently exceeded the quantity which Fair Trade Coffee buyers have demanded, requiring additional rationing mechanisms as quality. The Fairtrade Premium also has this function, since a part of the value received must be invested in projects to improve productivity and quality. [24] argues that inequalities exist within the FTM. The author demonstrates that some small farmers are poorer than others, and the poorer ones typically produce less coffee. If FTM succeeds in its aim of raising the prices received by small farmers, this will benefit more those small farmers producing greater volumes of coffee and who are typically less vulnerable.

Dragusanu [14] showed in their study that small farmers on average receive higher prices when they participate in the FTM, and they have greater access to credit, allowing their economic environment to be more stable and they are more likely to engage in environmentally friendly

farming practices. Some authors are more pessimistic, such as [25] who conclude that FTM initiatives, when compared to other marketing systems, simply are not worth the opportunity cost. The problem with all these analyses is that they require more complete comparisons that include local market prices, exchange rates and production costs.

Another feature to be observed in the FTM is the premium paid to farmers' organizations presented in Table 1. According to FLO [11] the "Fairtrade Premium is an amount paid to producers in addition to the payment for their products. The use of the Fairtrade Premium is restricted to investment in the producers' business, livelihood and community (for a small producer organization or contract production set-up) or restricted to the socio-economic development of the workers and their community (for a hired labor situation). Its specific use is democratically decided by the producers."

3. MATERIALS AND METHODS

Pricing is the process by which sellers set the price at which they will sell their products or services. When the sellers define the price, they will take into account the price at which they could acquire the inputs, the other production costs, the market reference, the competition, and the quality of the product. Commodities, on the other hand, have prices established by the market, usually by operators working in reference places, such as the stock exchanges. In this article we use as methodology the conceptual definition of minimum price for coffee established by the certifier FLO.

When referring to *production costs*, the analyzed period has been from January 2012 to October 2016, with figures calculated by CNA with annual observations. Since the cost of production is calculated per one hectare (2.5 acres), these figures were transformed into cost per 60 kg coffee bag, by using the average productivity calculated by CONAB - Companhia Nacional de Abastecimento, in the southern part of Minas Gerais State that includes Guaxupé city.

For the *international market*, where the prices are expressed in cents per pound (1 pound = 0,453592 Kg), all data were converted into US\$ per 60 kg coffee bag. In this article, the values registered in the period from April 2011 (the

beginning of the validity of the current minimum price for coffee set by FLO) through October 2016 have been used. It was the month in which the most recent data on the NYSE local market and production cost of a 60 kg coffee bag were available;

When referring to *local markets* where the values are expressed in Reais per 60 kg coffee bag, the market prices are registered by the surveys conducted by ESALQ - Escola Superior de Agricultura Luiz de Queiroz, linked to USP - Universidade de São Paulo. The daily observations by ESALQ have been transformed into monthly averages. The prices were collected in the southern region of Minas Gerais state, where most of the Brazilian Arabica coffee is produced. The buyers are distributed throughout the region and they traditionally purchase the coffee production from small farmers who are not organized in cooperatives, nor certified.

The *minimum price* established by FLO for the certified fair trade coffee is established in US\$ cents per pound and varies (Table 1) according to the coffee species (Arabica or Robusta), the processing procedure (natural or washed) and

the “quality”, that actually is the production method (conventional or organic). If the NYSE price is higher than the FLO minimum price, the small farmers then receive the NYSE price.

To homogenize the values of the international markets (conventional and FLO) expressed in US\$, with the prices in Reais (Brazilian currency) perceived by the Brazilian farmers, the exchange rates between Reais and US\$ (US dollar) were used with monthly averages of the daily figures provided by the Central Bank of Brazil (Fig. 1).

There is an almost continuous depreciation of the Brazilian currency, which has reached its lowest level in February 2016, when the Real/US\$ exchange rate was 4 to 1. This meant a 32,92% depreciation of the currency from April 2011 to October 2016. On the last years the Brazilian currency (Real) was one of that most devalued one among the countries called the "five fragile" countries (Turkey, South Africa, Russia, India, Indonesia and Brazil) that were more vulnerable to increasing interest rates in the United States economy [26].

Table 1. Worldwide FLO coffee fairtrade adjusted minimum price (US\$/pound) since 01/04/2011

Specific product standard	Product	Quality	Product characteristics	Fairtrade minimum price	Fairtrade premium
Coffee	Arabica	Conventional	Natural	1.35	0.20 (of which at least 0.05 for productivity and/or quality)
Coffee	Arabica	Conventional	Washed	1.4	0.20 (of which at least 0.05 for productivity and/or quality)
Coffee	Arabica	Organic	Natural	Organic differential: +0,30	
Coffee	Arabica	Organic	Washed	Organic differential: +0,30	
Coffee	Robusta	Conventional	Natural	1.01	0.20 (of which at least 0.05 for productivity and/or quality)
Coffee	Robusta	Conventional	Washed	1.05	0.20 (of which at least 0.05 for productivity and/or quality)
Coffee	Robusta	Organic	Natural	Organic differential: +0,30	
Coffee	Robusta	Organic	Washed	Organic differential: +0,30	

Source: FLO [11]

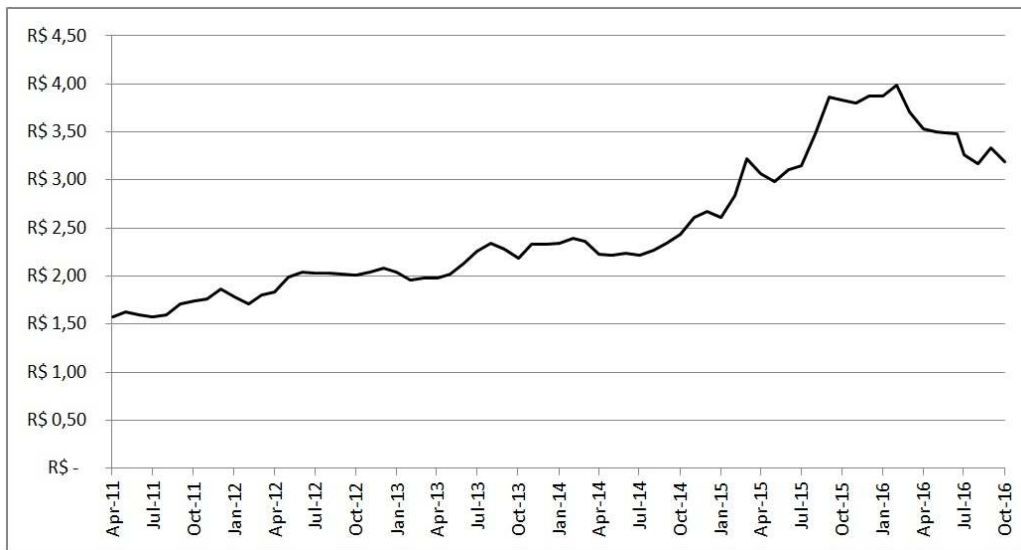


Fig. 1. Exchange rate reais per US\$ (April 2011 to October 2016)

Source: Banco Central do Brasil

4. RESULTS AND DISCUSSION

4.1 Production Costs

CNA calculates the Total Cost (TC) of production per hectare which includes the Total Operating Cost (TOC) and the opportunity costs for land and capital goods, as described in the Fig. 2. The TOC is the result of the sum of Effective Operational Cost (EOC), depreciation and pro-

labor. It indicates the possibility of restoring the productive capacity of the business besides the remuneration of the person in charge of the activity, who may be the farmers themselves. On the other hand the EOC corresponds to all the cost components generated by the relation between the quantity used and its prices including all the disbursements practiced in the activity during the productive cycle. In all cases, the productivity in 60 kg coffee bag per hectare

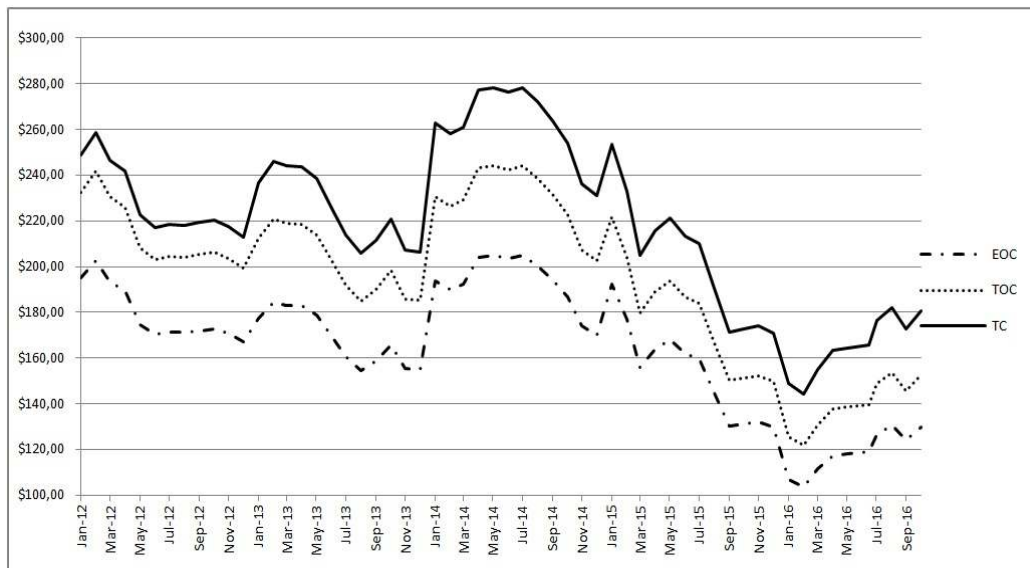


Fig. 2. Effective Operational cost (EOC), Total Operating Cost (TOC) and Total Cost (TC) in Southern Minas Gerais (US\$ per 60 kg Arabica coffee bag)

Source: CNA and CONAB organized by the authors

calculated by CONAB - Companhia Nacional de Abastecimento was used as reference regarding the southern of Minas Gerais State, which includes Guaxupé city. The results of EOC, TOC and TC are showed on the Fig. 2, considering US\$ per 60 kg Arabica coffee bag.

Fig. 2 also shows an oscillation during the analyzed period, that has a relation with the exchange rate, because the majority of the inputs used in coffee production are imported, both in large and small farms.

In the comparative analysis between production costs in Reais and US\$, it can be observed (Fig. 3) that the TC in Reais for the 60 kg Arabica coffee bag rose during the study period from 443.88 Reais (January 2012) to 576.01 Reais (October 2016) representing a 29.8% increase. The US\$ amount, however, fell from US\$248.63 to US\$180.77 in the same period. From January 2012 to October 2016 the exchange rate rose from 178.53 Reais per 100.00 US\$ to 318.64 Reais, meaning +78.5%. This increase in the US\$ directly impacts on the production costs in Reais, since most inputs (fertilizers and pesticides, for example) are imported, according to CNA. This depreciation of the Brazilian currency creates the illusion that the production cost has fallen in US\$, which is not the case for

the Brazilian farmers who sell their production in the local market in Reais. Another aspect to consider is the likelihood that the production costs per hectare have been over valued by CNA or that the coffee productivity calculated by CONAB has been too low.

4.2 NYSE Price

Fig. 4 shows the evolution of NYSE prices from April 2011 (beginning of new FLO coffee minimum prices) to October 2016, considering the average monthly value. NYSE prices are published in US\$ cents per pound, but in this article the amounts were converted into US\$ per 60 kg Arabica coffee bag, to have comparable figures.

The price for this category of coffee has experienced a continuous decline from April 2011 to November 2013, from US\$283.44 to US\$105.69 per 60 kg coffee bag, representing -62,7% over this period. After this minimum, the price has climbed again with two peaks in April 2014 and September 2014, but it was firmly below the initial value. After this short recovery, there were almost 14 months of low prices, which only after the second half of 2016 have begun to rise again in a quite slow way.

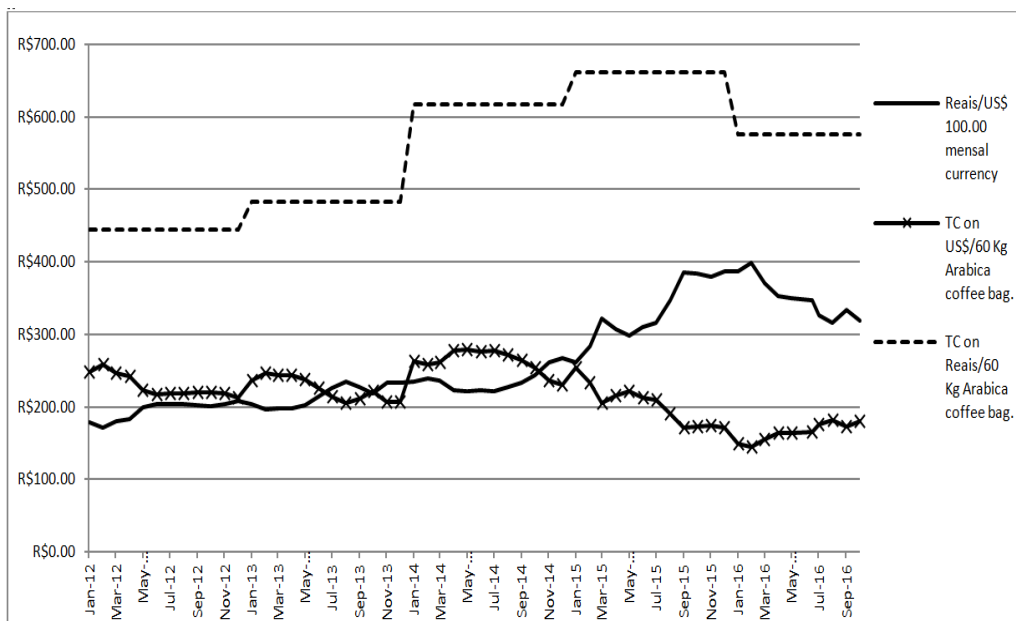


Fig. 3. Total Cost (TC) in reais and TCin US\$ for a 60 kg coffee bag, and exchange rate reais/US\$100.00 (January 2012 to October 2016)

Source: CNA and NYSE organized by the authors

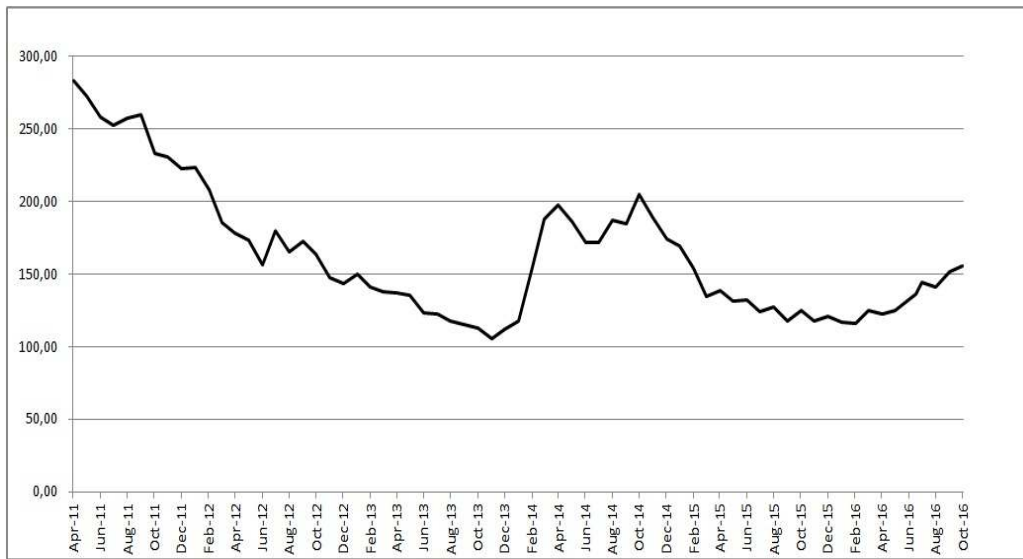


Fig. 4. NYSE prices (US\$ per 60 Kg Arabica coffee bag)

Source: NYSE

4.3 Local Market Prices

The evolution of local prices in Brazil has been similar to international markets (Fig. 5). The first observation (US\$332.41) has been followed by 31 months of descent, as the lowest value of the period (US\$106.37) was observed. This negative record opened the path to a very short recovery and then again a prolonged period of decline until September 2015. After this, we can observe

some weak signs of expansion, but with local prices remaining very depressed.

For the same local market, if the prices are observed in Reais (Fig. 6) the curve adopts a different trend after the minimum price registered in November 2013. Due to the depreciation of the Reais, the domestic prices increase and this rise is totally explained by the modification in the exchange rate as observed in Fig. 1.

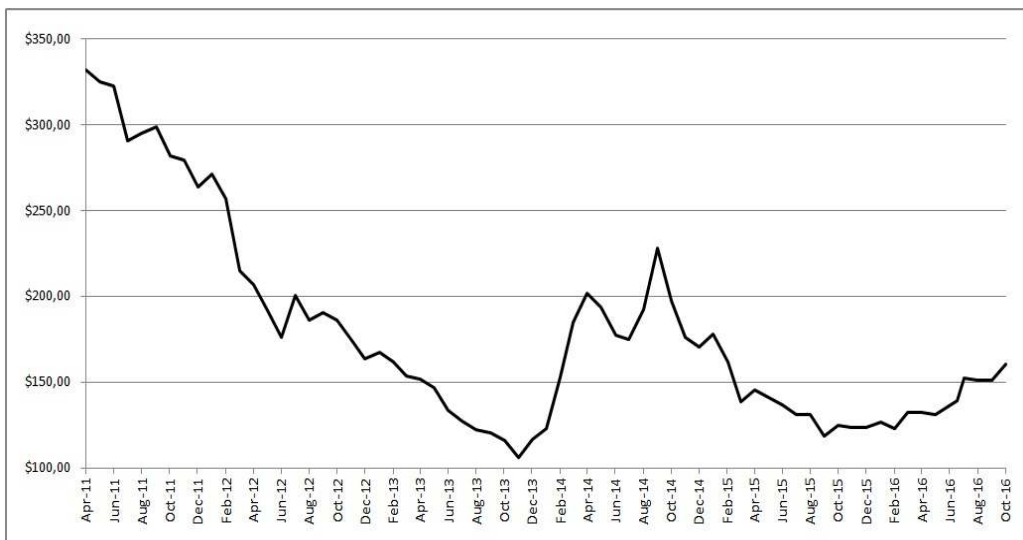


Fig. 5. Local market prices (US\$ per 60 kg Arabica coffee bag)

Source: ESALQ-USP organized by the authors



Fig. 6. Local market prices (Reais per 60 kg Arabica coffee bag)

Source: ESALQ-USP organized by the authors

4.4 Comparative Analysis

Fig. 7 presents the first comparative study with all values expressed in Reais: the FLO minimum price, the NYSE price, the local market price and the total cost of production for a 60 kg Arabica coffee bag produced in the southern state of Minas Gerais.

Due to the FLO Standards, when the NYSE price is higher than the FLO minimum price, the

buyers must pay the NYSE price, whereas when the NYSE is lower, buyers must pay the FLO minimum price. This process has happened from April 2011 to April 2012 and from April to October 2014.

The same does not happen with the prices practiced in the local market. In Fig. 7 it can be observed that in the periods from April 2011 to October 2012 and from August to October 2014 the FLO *minimum price* was lower than the



Fig. 7. Comparative analysis of coffee prices (Reais per 60 kg Arabica coffee bag)

Source: authors' elaboration

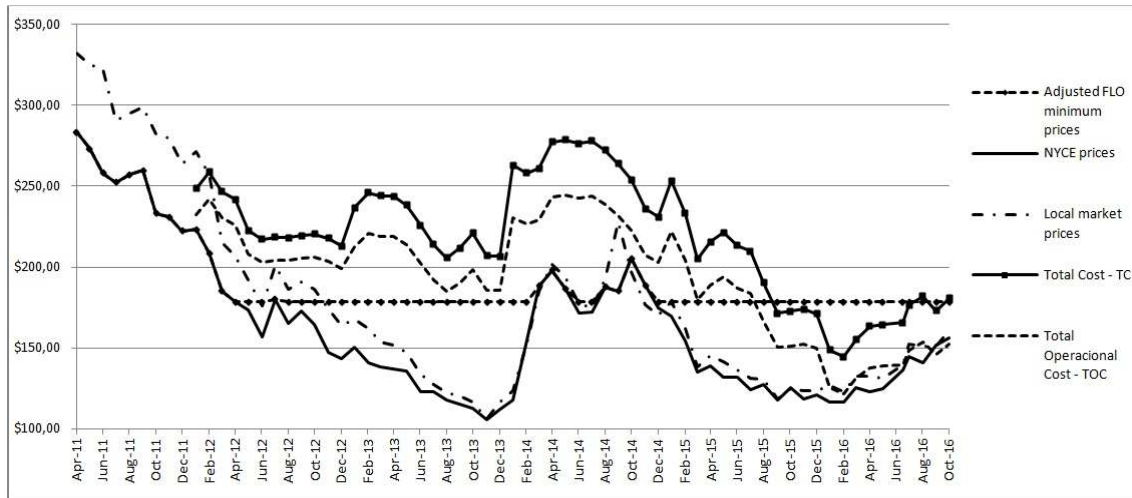


Fig. 8. Comparative analysis of coffee prices (US\$ per 60 kg Arabica coffee bag produced in the southern state of Minas Gerais)

Source: authors

price practiced by other buyers in the local market (in Reais). This fact creates a problem for certified organizations (normally cooperatives) due to these two issues:

- A) Less loyal small farmers tend to side sell their coffee to other operators;
- B) The cooperative must consume part of its reserves or of the accumulated premium set aside in the previous years to compensate this price difference. In Fig. 8 it is also possible to observe the same trend in US\$, but only as a reference since in the local market all coffee is traded in Reais.

Another important difference between fair trade and non-fair trade operators is that this second group usually pays within a shorter time than the fair trade cooperatives, but without any long term commitment. This means that the farmer has to negotiate with different buyers for each transaction. As described by [27] studying about the FTM impact, there are many advantages to the small farmers when they participate in the FTM, but for this author the main benefit is the impact of long-term stable relationships with their buyers on subjective and objective wellbeing indicators.

Since the basic concept of FTM is a fairer trade relationship and the minimum price is its main

characteristic, the price received by small farmers must at least cover their production costs. Figs. 7 and 8 show that there was a long period (February 2012 – October 2015) where the total cost of production was higher than all likely prices in Reais or in US\$ (FLO minimum price, NYSE price and local market price).

Fig. 8 shows a trend similarity to Fig. 7 (in Reais) but it clearly demonstrates the influence of the exchange rate on the prices received by the small coffee farmers. As shown previously, the currency exchange is highly fluctuating and influencing directly both the prices received by small farmers and the production costs due to a large part of the agricultural inputs being imported.

5. CONCLUSIONS AND RECOMMENDATIONS

As described, FTM is an international movement whose main objective is to establish fairer trade relations favoring mainly small farmers in commodities' producing countries, such as coffee. FTM is governed by principles and rules to achieve the proposed objective. In this article, special attention has been given to the minimum price established for coffee by FLO, which is presently the main certifying agent in this international value chain.

FTM has grown worldwide and coffee is its most sold product. Among the principles proposed by the FTM the minimum price stands out and it is often considered to be the main transformation agent for the small farmers and their certified organizations (cooperatives, associations). The minimum price would like to ensure a fairer remuneration for the small coffee farmers but it was calculated by FLO in April 2011 and never updated. This is the cause of the problems. Several authors have analyzed the minimum price impact, but few ones have deepened their studies in the local productive reality of the certified small farmers.

The objective of this paper was to present a more detailed analysis by comparing the minimum price set by FLO for the Arabica coffee to the international prices (NYSE), the local market prices and the production cost in the southern part of Minas Gerais (a Brazilian State), also taking into account the difficulties created by a continuous devaluation of the Reais.

The findings show that the definition of a fixed minimum price for a long period (since 2011 until now) may not necessarily represent a fair remuneration for the small farmers. From the data, we suggest that FLO should abandon the worldwide fixed price approach in US\$ and should apply a more flexible formula incorporating also the production costs in local currency, so that its minimum price would always be compatible with the farmers' expectations and with the local market reality.

Special attention should be given to production cost, as it influences directly the small farmers and their family life. The optimal solution in this case would be a specific survey of the production cost with the FTM certified small farmers, but it is important to maintain the principle that costs expressed in local currency (Reais in this case) can never be greater than the FLO minimum price based on its original principles. On the other hand, it must be recognized that besides the short-term aspect of the minimum price paid to the individual farmer, the FTM adds other factors that the small farmers should take into account: the long-term contracts, the premium price for the strengthening of the organizations and the share for social investments.

Considering that "transparency" and "long terms contracts" are important principles at the FTM,

loyalty must also come from the small farmers, who should not at first abandon the organization to which they are associated, only because for a few months the market price is higher than the one proposed by the organization. In a contractual relationship it is important that both parties take on this responsibility. Side-selling weakens the organizations and reduces the long-term socio-economic development perspectives. This negative behavior should be clearly prohibited or discouraged by the statute of the organization. At the same time, all small farmers belonging to the FTM organizations should be better educated about the difference between short-term gains and long term economic and social achievements. This is what the FTM has always preached and implemented: Tangible benefits for the first suppliers of the value chains, accompanied by the strengthening of their organizations and by social development.

FTM has emerged as an alternative to the conventional market and its characteristics and *modus operandi* are closely linked to this original mission. However, this challenge is complex and requires constant efforts by its actors to counteract the commodities' mainstream. This paper points out some adjustments considered necessary for the FTM to remain a viable and sustainable alternative, especially regarding to a more dignified life for small coffee farmers.

Further research in other areas of the world, for coffee and other commodities, should be done to verify if our conclusions (based on Arabica coffee in one specific area of Brasil) might be shared for other products in different regions. If this is the case, a global reflection about the way FLO determines the minimum prices could be both necessary and welcome.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
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