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An analysis of costs and margins in the value chain of Fair Trade coffee - Is Fair Trade fair to the consumer?

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by

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Executive Summary

In this Bachelor Thesis, we research the role of the different actors of the value chain of coffee and their share of the value of the coffee that is finally sold to end-consumers. We then analyse and compare the various costs and margins incurred by Fair Trade and regular coffee.

The aim of this research is to better understand how value is allocated in the final retail price of coffee sold in Swiss supermarkets, find out how much coffee farmers were paid for the coffee contained in a particular pack of coffee and most importantly if we notice differences between the allocation of value in Fair Trade and regular coffee. Is the premium paid by consumers for Fair Trade coffee entirely going in the pockets of coffee producers or do some other actors of the value chain capture some of that premium?

To achieve this goal, we created a model to compute the various costs and margins in the value chain of coffee. This model was built around the study of financial statements of the various actors involved, the academic literature published on the subject, the publications of large organisations related to coffee trading, and the interview of a junior coffee trader.

Our research found that in one case, the margins applied to Fair Trade coffee increased by 24.03% compared to a comparable regular coffee, while in a second case, the margins decreased by 10.38%. Our results also highlight some of the most well-known realities of the coffee value chain such as the amount of value that remains in coffee-producing countries versus the amount of value that is captured in consuming countries. Finally, our results show an increase in gross household income of 1.06 USD/lb. for Fair Trade coffee growers which equates to an increase in net profit in a range of 0.078 USD/lb. to 0.254 USD/lb.

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List of Abbreviations

CHF	Swiss Francs
EBIT	Earnings before Interests and Taxes
EBITDA	Earnings before Interests, Taxes Depreciation, and Amortization
FBX	Freightos Baltic Index
FEU	Forty-foot Equivalent Unit
FLO	Fairtrade Labelling Organizations International
ICE	Intercontinental Exchange
ITC	International Trade Centre
lb.	Pound
P&L	Profit and loss statement
SCA	Specialty Coffee Association
UNCTAD	United Nations Conference on Trade and Development
VAT	Value Added Tax

Disambiguation

In the following paper, the terms “Fair Trade” and “Fairtrade” are used interchangeably a large number of times. Unless specified otherwise, both refer to products labelled by The Fairtrade Labelling Organizations International (FLO), better known in Switzerland by the name of Max Havelaar.

1. Introduction

In the past decade, more and more people have become aware of the impact of their consumption habits and are trying to become more socially responsible. To respond to this trend and those concerns, companies of all industries have started taking actions and changing their ways of operating to become more socially responsible themselves. One of these actions is fair trade. While not a new concept, it is a complex one, and production and sales of fair trade coffee have been steadily growing for the past decade (Naegele 2019; Raynolds 2009). However, despite the emerging trends, increased interest of the general public, and increased scrutiny, the value chain of coffees remains opaque. Figures are hard to come by and transparency has not yet reached a point at which consumers can easily access information such as the price paid to the producer of the coffee they are buying, let alone who planted, grew, and harvested the green coffee beans.

A simple reflection that can come out this new trend is what advantages would retailers and roasters have, to go through the more costly and more complicated process of buying and selling Fair Trade Coffee over regular coffee. Is the unique benefit of complying with corporate social responsibility enough to warrant those additional efforts and expenses or do they have an ulterior motive. How can we explain that companies such as Starbuck or Nestlé, two of the world's largest coffee roasters, that produce rather simple products compared to companies such as Samsung or Apple, apply similar operating margins? Indeed, Nestlé's and Starbucks' operating margin in the last five years averaged between 20% and 22%, while Samsung's operating margin in 2018 was around 24% (Starbucks Corporation 2019; Nestlé 2020; Samsung Electronics Co. 2019)?

A fair assumption of consumer's intent when purchasing Fair Trade coffee is that the premium they pay actually goes to farmers, who need this additional premium to make a profit cultivating coffee and not produce at a loss, to live decently and continue to produce coffee and not to further enrich large multinationals.

However, a cynical approach to this issue would lead to believing that some actors of the coffee value chain are making an extra profit selling Fair Trade coffee while at the same time banking on the trend of more responsible purchases.

This paper aims at studying this observation and to build a model of cost allocation of the final retail price of coffee to find out how much of the price paid by consumers goes

to each actor of the value chain. Then by comparing the results obtained from this model from comparable Fair Trade and non-Fair Trade coffee, to answer the following research question: do coffee traders, roasters, or retailers make an extra relative profit selling Fair Trade coffee?

1.1 A brief introduction to Fair Trade

This paper's main theme is Fair Trade coffee; therefore, it makes sense to briefly introduce the topic of Fair Trade to better understand what comes next. The Fairtrade Labelling Organizations International is a non-profit association composed of national member organizations founded in 1997 and headquartered in Bonn Germany. The Swiss national antenna of the association is the Max Havelaar Foundation (Fairtrade International 2020).

Amongst its activities, FLO certifies various goods with their label to guarantee that they were produced in accordance with the organization's standards. There is a set of base standards applicable to all certifiable goods and then particular standards for each good. The main four standards are the social development, economic development, and environmental development of producers as well as the prohibition of forced labour and child labour. The economic development revolves around the payment of a minimum price to the producer, this price is either the market price or the Fairtrade minimum price set by FLO. On top of this price guarantee, comes a Fairtrade premium which is paid to the farmer's cooperative and that must finance projects benefiting the community. Additional premiums can apply such as an organic premium and those are added to the total purchase price. FLO updates regularly those prices and premiums to keep up with the evolution of the market (Fairtrade International 2020; 2020).

To obtain the right to apply the FLO label to a specific good, producers, traders, and companies must be certified by FLOCERT, the certification body of the FLO. For producers, this certification is obtained after an initial on-site audit and a confirmation audit. The certification is valid for three years after which a renewal audit is conducted. Other than those three audits, FLOCERT also regularly conducts unannounced audits. Traders are also audited by FLOCERT, who checks regularly that all Fairtrade transactions were concluded according to FLO's regulation (Fairtrade International 2020).

Therefore, when consumers purchase a product sporting FLO's label, they have the guarantee that the goods they are purchasing were produced with the economic, social, and environmental development of producers in mind.

2. Literature review

In order to get a better understanding of the current literature available on the subject of Fair Trade coffee, the value chain of coffee, and how profit is split along this value chain. As well as in order to set the foundations to write this paper, around 20 publications of both academics as well as non-governmental organisations were reviewed and a selection of 10 publications will be reviewed hereafter. This selection was made based on the relevance of the publications to the present paper as well as to avoid repetition as many publications refer to one another.

When it comes to the value chain of coffee, there are slight variations on how the various reviewed publications describe every process taking place from the planting to the final sale, who are all the actors composing this value chain and what part of the value chain occurs in the producing country or consuming country. Indeed, Slob, Murphy et al. and the International Trade Centre base their respective analysis on a simplified value chain. Namely, a producer whose role is to plant, cultivate and harvest the coffee beans but also to either put it through dry or wet processing, a trader, whose role is to match the supply of producing countries with the demand of consuming countries and insuring the transportation of the coffee from producer to the roaster, a roaster whose role is to roast the green coffee beans and to package the roasted coffee and retailers who then sell the roasted coffee to the end-consumer (Slob 2006; Murphy, Dowding 2017; International Trade Centre 2011).

On the other hand, UNCTAD and Byrnes et al. provide a more detailed and complete value chain in their respective publications. Indeed, in addition to the different actors previously mentioned, UNCTAD adds local traders, dry milling facilities, and domestic roasting/manufacturing facilities on the producing country's side of the value chain and adds importers, brokers, and warehousemen to the consuming country's side of the value chain. Byrnes et al. also add domestic traders, exporters, and cooperative/farmer groups to the producing country's side and brokers to the consuming country's side (UNCTAD 2019; Byrnes, Khodakarami, Perez 2016).

However, despite those slight changes, a consensus is emerging from these publications, namely that the four actors of the simplified value chain are the largest and most important and, in some cases, play the role of some of the smaller actors described by UNCTAD or Byrnes et al.

When it comes to the allocation of the value of retail coffee between the various actors of the value chain, three publications were selected. Those three publications provide

very different results. In the most recent one, Naegele conducted a statistical analysis of Fair Trade coffee sold in US supermarkets to analyse how much of the price of Fair Trade coffee sold in supermarkets is attributable to Fair Trade and how this premium is then shared along the chain. In her study, she finds that around a 1 USD/lb. premium is paid by the consumer of Fair Trade coffee. She finds that about 20% of the premium is passed on to the producer/farmer and that roasters take the lion's share of profit while retailers seem to make a smaller profit on Fair Trade coffee than they do on regular coffee (Naegele 2019).

In their special issue on coffee, UNCTAD created a model of the value distribution of Ethiopian specialty coffee based on figures of the European Coffee Federation. Their model shows that around 5% of the retail value of coffee is retained in the producing country, while retailers take away around half of the value. What is surprising in this study however is how the different actors selected for the value allocation vary from the ones identified in the value chain portion of the same publication. For instance, no trader is mentioned in the model. Based on this model, UNCTAD raises the issue of the poor value allocation of the final retail price in the producing country and how this reality already has and will continue to have an impact on the sustainability of coffee production (UNCTAD 2019).

In their publication, Byrnes at al. mention another study led in 1997 by Talbot on the subject of the income allocation in the coffee value chain. Talbot's study is based on coffee sold in the US in the period 1971-1995. While more than 20 years old, this study remains interesting and yields results not so disparate with Naegele's and UNCTAD's studies. According to Talbot's results, 20% of the income generated by the sale of coffee as a finished product goes to the producer, 30% to the roasters, 15% to the retailers, and the rest is split between smaller actors, costs, and taxes (Talbot 1997; Byrnes, Khodakarami, Perez 2016).

While there does not seem to be a consensus on the exact allocation of the value between the different actors, there seems to be a consensus on who shares most of the value, namely roasters and retailers, and how little of the value actually goes to the producing country.

When it comes to the impact and benefits of Fair Trade in coffee, three studies were selected to be reviewed in this paper. The first one, commissioned by Fairtrade International and published by the University of Greenwich, assessed the impact of the FLO certification of coffee farmers and farmers organisations in Peru, Mexico, Tanzania, and Indonesia. The study is based on both qualitative and quantitative survey filled by

Fair Trade farmers in the selected countries. Based on the answers to this survey, they rated various key performance indicators of Fair Trade separated into four categories. First, indicators related to the direct intervention of FLO, second, indicators linked to the implementation of Fair Trade, third, indicators linked to producer organisations (i.e. cooperatives), finally, the direct impact of Fair Trade on farmers. Amongst other findings, the authors concluded that Fair Trade has a positive impact on the household income of farmers in the order of 16% to 107% depending on the country. There was however an exception with Indonesia were non-Fair Trade farmers had a better household income due to higher productivity linked with using chemicals. They also found that despite having a higher income, Fair Trade farmers were more likely to feel worse off due to the feeling of having become dependent on coffee farming. The study also showed that Fair Trade provided farmers with increased exposure and reputation and therefore better access to various markets and alternative sources of funding. Overall, the results of the study were positive, but a few areas remained to be improved notably indicators linked to producer organisations (Nelson, Haggar, Martin, Donovan, Borasino, Hasyim, Mhando, Senga, Guadarrama, Kendar, Valdez, Morales 2016).

Those results are to be somewhat mitigated by Weber's findings in his study. In his study, based on a sample of southern Mexico coffee growers, Weber concluded that although there was indeed a positive increase in the household gross income of Fair Trade coffee growers compared to non-Fair Trade coffee growers, this increase was only in the order of 5% corresponding to the average 0.128 USD/lb. premium the farmers received. The study did not take into account the costs associated with becoming FLO certified which would reduce that income increase further. The author concludes that indeed Fair Trade increases the household income of the grower but, that alone, this increase is not enough to transform their condition (Weber 2011).

The final study reviewed explored the direct and indirect benefits of Fair Trade and free-market channels on the income of producers in the Oromia region of Ethiopia and the Kilimanjaro region of Tanzania. The study is based on interviews and discussions with various stakeholders in those regions. Much like Weber, Coles found in his study that while producers were benefitting from a higher gross margin this would not necessarily translate to higher profits due to increased costs, lower yields, and other issues incurred by the producers at the time of the survey. When it came to the investment of the premium by the cooperatives, the study shows that of the various cooperatives surveyed, only a few were able to earn that premium in the past few years as they didn't reach the minimum volume required to be eligible to receive the premium. This was caused amongst other things by the high indebtedness level of those cooperatives that were

therefore not able to purchase enough coffee to then resell it and earn the premium (Coles 2011).

To summarize the current state of the literature, while there might be some slight variations, notably in the importance given to certain actors of the coffee value chain, there is a general consensus on how the simplified value chain should be depicted. The value chain starts with a producer, who then sells to an international trader, which in turn resell and ship the green coffee to a roaster. The roaster then roasts the green coffee beans, packages them, and sell them to retailers, which themselves realise the final sale to the end-consumer.

There is no consensus when it comes to how much of the retail value of coffee is attributable to each actor of the value chain. However, certain common trends are emerging, such as the low percentage going to the producers, and the large importance of the roasters in the final value. Where it mostly differs is the exact value for each actor and particularly for the retailers and producers.

Finally, there is a general consensus that Fair Trade coffee is beneficial to coffee growers, notably in terms of increased household income but not only. Findings show that Fair Trade producers also seem to benefit from better exposure and access to the market than their non-Fair Trade counterparts. There seems to be a consensus when it comes to the important role that farmer cooperatives play in the production of coffee, and the large potential of improvement in that area. Where the various studies seem to differ is to the actual net financial benefits of Fair Trade for coffee growers. Some studies tend to show that while there is indeed a benefit, it might not be as high as expected and high enough to drastically improve farmer's economic situation.

3. Methodology

To answer our research question, a model of costs and margins allocation was designed. This model allows, by plugging the retail price of a pack of roasted coffee beans, to break down the various costs supported by the different actors of the value chain of coffee, as well as their margins. This, in turn, allows to find out the price that was paid to the coffee producer. Based on those prices paid to the producer, it can then be analysed whether the margins of retailers, roasters, and traders are the same for comparable products, labelled Fair Trade or not. The various parameters of the model were established as detailed below thanks to a combination of research of financial reports, the interview of Jonathan Garcia, a Junior Coffee Trader and middle officer at Cargill and Touton, the comparison with existing models mentioned in the literature review and some assumptions detailed hereafter.

3.1 Data gathering

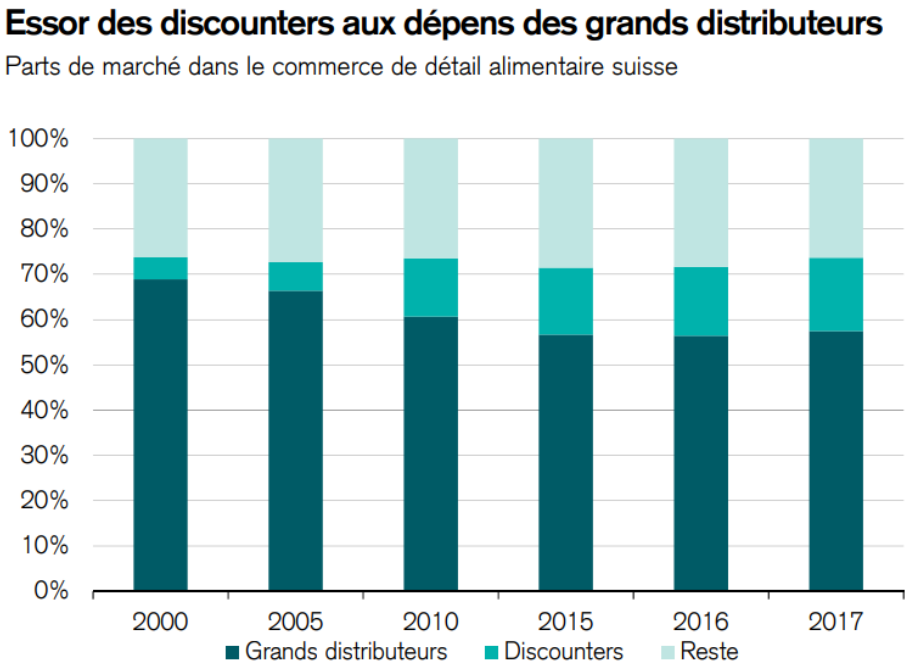
The first step of building the model was to gather a sample of coffees sold in Switzerland, more precisely in Geneva, that would be plugged into the model. Based on the coffee value chain, the first step was to choose whether coffee sold for *in-home* consumption or *out-of-home* consumption would be used. The former is the coffee sold by retailers such as supermarkets or specialty shops, while the latter is the coffee sold by restaurants, bars, and coffee shops.

First, supermarkets' sales of coffee represent between 70% and 80% of the market, while the remainder is shared between the other players (UNCTAD 2019). Second, *out-of-home* consumption coffee sold in restaurants, bars, and coffee shops is not merely coffee anymore, but a transformed product. The coffee is served with sugar and cream. It can be served in a single-use cup with napkins and stirrers. All those additional costs must be removed from the equation and that would prove to be hard to do. Furthermore, the price of a cup of coffee in a restaurant, bar, or coffee shop depends on a lot of factors other than the price of coffee as raw material, such as the location of the establishment or its standing. Moreover, *out-of-home* coffee is a very fragmented market as most players are individual establishments and not franchises or chains. In 2015 in the canton of Geneva alone, there were more than 2000 food service establishments (Office Cantonal de la Statistique 2017), which renders the task of finding comparable products extremely hard. Finally, as each of those establishments has very different pricing strategies and sell different brands of coffee, again, to find comparable products is

tenuous. For those reasons, the model is based on coffee sold at retailers for *in-home* consumption.

When it comes to the retailers, to have a basis comparable for coffee sold in Switzerland, nation-wide retailers were chosen. In 2017, Coop and Migros shared slightly less than 60% of the food retail market in Switzerland, while discounters such as Denner, Aldi or Lidl shared less than 20% and the rest is divided between smaller retailers (Crédit Suisse AG, Fuhrer & Hotz 2019).

Figure 1 - Discounters' boom at the expense of large distributors



Source: (Crédit Suisse AG, Fuhrer & Hotz 2019)

Because Migros and Coop share such a significant portion of the food retail market, data was gathered from those two retailers.

The data was gathered on five occasions[1] (the first collection for Coop and Migros was 5 days apart, but the following 3 were made the same day for both retailers) at the same two Migros and Coop retailers[2].

The following information was recorded:

- Name of the product
- Brand

1 January 7th 2020, January 13th 2020, February 10th 2020, March 10th & April 2nd 2020

2 Coop Genève Florissant & Migros Genève Rieu

- Roaster
- Type of bean (Arabica, Robusta, or blend)
- FLO Label (yes or no)
- Bio Label (yes or no)
- Type of coffee (beans, instant or capsules)
- Volume in gram
- Price in CHF[3]

3.1.1 Coop

On the first collection, amongst the various coffees on offer at Coop, five pairs of comparable products were selected, one with an FLO label and one without it. Those pairs are products of the same brand, same type of bean, same type of coffee, and the same volume. The selection in pairs was made in order to have the fairest comparison possible between Fair Trade and non-Fair Trade coffee.

The pairs are the following:

Table 1 - Coffees selected at Coop

Name	Brand	Roaster	Bean	FLO Label	Bio Label	Type	Volume (g)	Price (CHF)	Price per 100g (CHF)
Mocca bio	La Semeuse	La Semeuse	Arabica	Yes	Yes	Beans	500	11.95	2.39
Mocca surfin	La Semeuse	La Semeuse	Arabica	No	No	Beans	500	9.80	1.96
NESCAFE Gold Deluxe	Nescafé	Nestlé	Arabica	No	No	Instant coffee	100	7.90	7.90
NESCAFE Gold Bio	Nescafé	Nestlé	Arabica	Yes	Yes	Instant coffee	100	8.95	8.95
NESCAFE Gold Finesse	Nescafé	Nestlé	Arabica	No	No	Instant coffee	180	11.00	6.11
NESCAFE Gold Bio	Nescafé	Nestlé	Arabica	Yes	Yes	Instant coffee	180	11.95	6.64
Chicco d'Oro Tradition	Chicco d'Oro	Chicco d'Oro	Arabica	No	No	Beans	500	9.95	1.99
Chicco d'Oro Bio	Chicco d'Oro	Chicco d'Oro	Arabica	Yes	Yes	Beans	500	10.95	2.19
Mocca Lungo forte	La Semeuse	La Semeuse	Arabica	No	No	Capsules	55	5.95	10.82
Mocca bio (capsule)	La Semeuse	La Semeuse	Arabica	Yes	Yes	Capsules	53	6.50	12.26

Source: Author's data collection

3.1.2 Migros

Migros' business model is such that the Migros group is divided into 5 business units. Two of which are *Cooperative Retailing* and *Industry & Wholesaling*. The *Cooperative Retailing* unit operates the supermarkets and the specialist markets (i.e. SportXX, Melectronics, etc.). The *Industry & Wholesaling* unit is composed of many companies that manufacture own-brand goods that are then sold by the *Cooperative Retailing* unit

3 Special discounts and offers were disregarded

(Migros Group 2019). This means that goods sold at Migros, exception made for very rare products, are manufactured by companies owned by Migros. Coffee is no exception and most if not all coffees sold at Migros are produced by Delica AG, a 100% Migros owned company (Migros Group 2019). Delica AG is responsible for the procurement, the roasting, and the processing of coffee (Delica 2020). It is one of the largest swiss roasters, processing 16'500 metric tons of green coffee per year (Delica 2020), roughly a quarter of the 65'500 metric tons of coffee processed in Switzerland (Procafé 2020). Delica delivers its coffee to Migros under different brands (for instance Delizio and Café Royal), each targeting a different consumer base. None of those brands offer an FLO labelled alternative. Instead, the FLO labelled coffee available at Migros, although being produced by Delica, is sold in non-branded packaging such as presented in Figure 2.

Figure 2 - Migros Bio Max Havelaar packaging

Source: www.produit.migros.ch

For these reasons, it was not possible to create pairs of FLO labelled and non-labelled coffee, as it was done at Coop. Furthermore, as the first collection at Migros was made a few days later than at Coop, the third observation described below had already been made. Therefore, only coffees in beans were selected at Migros. Moreover, as it was not possible to create pairs, the data collected at Migros will not be used in the comparison between FLO labelled and regular coffee but used as a control for the model.

Finally, as the selection of coffees in grain at the selected Migros physical store was thin, the selection was completed with coffees found on their online platform[4]. The prices

4 https://produits.migros.ch/assortiment/supermarche

online are the same prices as in the shops and none of the products listed online are exclusive to the online platform.

The selected coffees are the following:

Table 2 - Coffees selected at Migros

Name	Brand	Roaster	Bean	FLO Label	Bio Label	Type	Volume (g)	Price (CHF)	Price per 100g (CHF)
Caruso Espresso	Caruso	Delica	Blend	No	No	Beans	500	8.50	1.70
Boncampo Classico	Boncampo	Delica	Blend	No	No	Beans	500	4.70	0.94
Exquisito Crema grains	Exquisito	Delica	Arabica	No	No	Beans	500	7.50	1.50
Bio Max Havelaar grains	N/A	Delica	Arabica	Yes	Yes	Beans	500	7.95	1.59
Caruso Oro	Caruso	Delica	Blend	No	No	Beans	500	9.40	1.88
Max Havelaar Espresso grains	N/A	Delica	Blend	Yes	No	Beans	500	8.30	1.66
Café Royal espresso Honduras	Café Royal	Delica	Arabica	No	No	Beans	500	9.95	1.99

Source: Author's data collection

3.1.3 First observations

From this raw data, four important observations can be made. First, there is a strong correlation between the FLO label and the Bio label. Indeed, at Coop, every FLO labelled product is also labelled Bio, while none of the regular coffees sport a Bio label. At Migros, one of the two FLO labelled coffee also sports a Bio label. However, this correlation is to be mitigated by the report of Jonathan Garcia that about only one third to half of the FLO labelled coffee he would trade was also Bio. Nonetheless, this is an interesting demonstration of the trend described in the introduction.

Second, in the three months between the first and final collection, not a single variation in the price of the selected products was observed. It is interesting to see that despite the extremely high volatility of the coffee market price, these variations at the beginning of the value chain do not seem to affect the final retail price. A further observation is that the final collection was done during the confinement period ordered by the Swiss Federal Council to slow down the propagation of COVID-19 and the turmoil created in the markets by those measures and the general situation caused by the pandemic, both in Switzerland and in the rest of the world, didn't affect the retail prices at this point in time. For those reasons, the prices are only mentioned once in Table 1 and Table 2 although they were collected on four different occasions.

Third, there is a tremendous difference in price per 100g between the different types of coffee. Indeed, beans are in a 0.94 CHF/100g to 2.39 CHF/100g range, instant coffees are in a 6.11 CHF/100g to 8.95 CHF/100g range and capsules in a 10.82 CHF/100g to 12.26 CHF/g. While not surprising, this observation is to take into account for the model. Indeed, instant coffees and capsules, as they are both grounded and the latter is put into capsules, incur a few more costs to the roaster.

Because of these additional costs and the difficulty to come to a precise estimate of them, the model was built only around the products sold in beans.

Finally, the prices at Migros for coffee in beans is on average lower than at Coop, especially for FLO labelled coffee. The business model of Migros detailed above is certainly the cause of this difference in price and will be discussed further in the Discussion chapter of this paper.

3.2 The model

Based on the coffee value chain described in the introduction, the model was created including all of the costs and margins applicable along the value chain of coffee starting from the retail price and ending with the price paid to the producer. This model does not only show the various costs and margins but also shows the price paid by each actor of the value chain to the previous one (for instance the price paid by the retailer to the roaster). As the volume and currency standardly used in the trade of Arabica coffee are pounds and US Dollar, when necessary the prices have been converted in USD/lb. from their original currency and/or unit of volume. This was done in order to ease the comparison of the figures.

The elements of the model are the following:

1. **Retail price**
2. VAT
3. **Retail price duty-free**
4. Retailer's margin
5. Retailer's costs
6. **Roaster's price**
7. Roaster's margin
8. Roaster's costs
9. **Trader's price**
10. Trader's margin

11. Freight and insurance costs
12. **Producer's price**
13. Equilibrium price

The price (in bold) of a particular actor in the chain is the price at which they sold the goods to the next actor in the chain and are equal to the addition of the actor's costs and margin to the price paid to the previous actor in the chain, for instance: Roaster price = Trader price + Retailers costs + Retailers margin. Thus, those elements of the model will not be detailed hereunder.

3.2.1 Assumptions and limitations

Like any model, this model is based on and limited by the following assumptions.

1. Other than the price paid to the producer, all other costs remain the same for all the actors of the value chain when comparing regular and FLO labelled coffee.
2. The differentials applied to the price paid to producers by traders were not considered.
3. It is assumed that the model applies to any coffee sold in Switzerland, regardless of quality and origin.
4. Broker's fees were not taken into account.
5. It is assumed that the margins and costs of the retailers are the same for the sale of coffee as it is for any other product of their assortment.
6. It is assumed that basic microeconomics principles apply, namely that coffee is bought or sold at market price or FLO minimum price plus premium(s). In other words, coffee is bought at the equilibrium
7. The difference between the model's price paid to the producers and the market price or the FLO minimum price plus premium(s) is explained by assumptions 2, 3, and 4.

The first assumption relies on the fact that once FLOCERT has certified an actor of the value chain, the transportation and insurance costs, the trading costs, the costs of roasting and packaging as well as the retailing costs are the same for regular and certified coffee, as the raw material (green coffee beans) is the same. The green beans were grown and harvested according to specific standards, but it does not make them any different in terms of biology (i.e. size, weight, composition). Therefore, a 60kg bag of Fair Trade certified coffee contains the same amount of beans as a non-Fair Trade 60kg bag, and thus, costs the same to ship. A green bean is roasted in the same machine, at the same temperature, and for the same time regardless of whether it is Fair

Trade certified or not. This assumption was confirmed by Jonathan Garcia during his interview.

The second assumption, results from Jonathan Garcia's interview, as he explains, the mechanism of differentials, whether they are a premium or a discount, applied to the price of coffee relies on various factors that are not accessible. Therefore, they were disregarded.

The third assumption is linked to the second. Indeed, as the precise origin of the beans and their quality is not known, every one of the coffees that were collected have to be considered as of the same quality and origin. To illustrate the incomplete information regarding the origin, see figure 3. As shown in figure 3, most of the coffee that was selected comes with little information regarding the precise origin of the beans. Moreover, many if not all of them are a blend of various beans from various origins.

Figure 3 - La Semeuse Mocca Surfin origins

Source: Author's data collection

The fourth assumption stems from a discussion with Jonathan Garcia, following his interview. When presented with the model and asked about what cost could be missing, he mentioned the broker's fee. Indeed, as he explained in some very rare cases, traders pay a broker's fee to be able to trade with the producer. Namely, this is a 7 to 10 USD cents per pound of coffee that is paid to a broker, which sometimes happens to be a family member of the producer. As he explains, such fees would intervene in a maximum of 20% of his trades and can be considered as more of a hustle, inherent to dealing in

poor countries, than a fixed cost. Therefore, due to the rarity of the occurrence and its sometimes unofficial aspect, this cost was disregarded.

The fifth assumption derives from the source of the data collected. For the margins and costs of a retailer, the model is based on the analysis of the financial reports of both Coop and Migros. As both reports do not provide a detailed statement for particular products or even product ranges, it is assumed that their overall costs and margins apply similarly to any goods sold in their shops.

The sixth assumption is that as any free market, coffee trading is ruled by supply and demand, microeconomics concept. Therefore, it is assumed that the actors of the value chain respect those concepts and that at every link of the chain, the equilibrium or market price was enforced. In the case of Fair Trade coffee, the equilibrium equates to the FLO minimum price plus the applicable premiums.

The seventh assumption derives from the sixth one. Because it is assumed that the equilibrium is respected, any difference between the equilibrium and the model's price paid to the producer is explained by either one or a combination of the second, third and fourth assumption.

3.2.2 Retail price

The retail price is the price of the various products gathered and shown in Table 1 and Table 2. As Jonathan Garcia explained, the benchmark for the Arabica coffee market and therefore the market price of Arabica coffee is the ICE Coffee C Futures. As the Coffee C Futures prices are expressed in USD cents per pound (Intercontinental Exchange 2020), we converted the prices and volume of the data from CHF to USD and from grams to pounds to ease the calculations and the reading of the data. For the currency conversion, the 2019 average published by the Swiss National Bank of 1 USD = 0.9937 CHF or 1 CHF = 1.0063 USD was used (Banque Nationale Suisse 2020). For the volumes, 1 kg = 2.2046 lb.

3.2.3 VAT

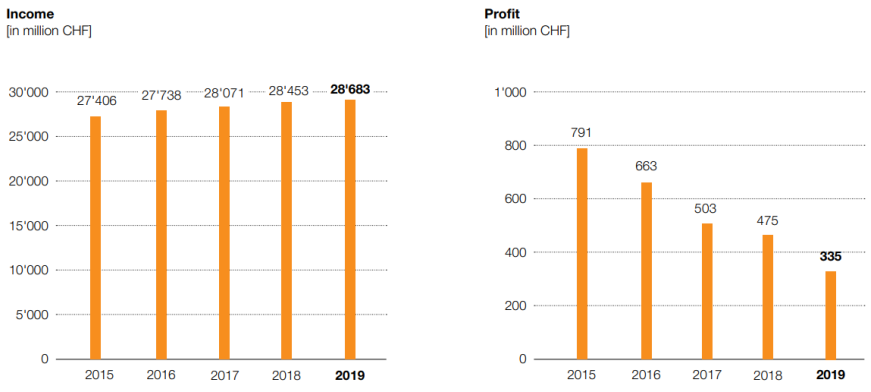
In Switzerland, the VAT is ruled by the Federal Act on Value Added Tax. There are three different rates described in article 25 of the Act, the normal rate of 7.7%, the reduced rate of 2.5%, and the special rate of 3.7%. The reduced rate is applied, amongst other goods and services, to foodstuff other than alcoholic beverages (Federal Assembly of Switzerland 2019). Therefore, the reduced rate of 2.5% is applicable.

3.2.4 Retailer's margin

For the retailer's margin, the calculations are based on the financial reports from both Migros and Coop. Both companies have the legal statute of cooperative, which is ruled by the Swiss Code of Obligations, according to article 856 of the Code of Obligations, they are obliged to have their annual report and financial statements at disposal of any of their members (Federal Assembly of Switzerland 2020). To become a member of either Coop or Migros, one has to sign up free of charge (Migros Group 2020). Effectively, anyone 18 or older can, therefore, become a member. Thus, Coop and Migros publish their annual report online, to ease the access to this document for their members.

The first issue when it comes to dealing with financial statements is to choose which ratio to apply, namely which margin. With the numbers provided in both Migros and Coop reports, their EBITDA margin, their EBIT margin, and their profit margin can be computed (if not already provided). However, focusing on a single year would not necessarily be a fair representation of the long term financial reality of both companies. Indeed, as shown in Figure 4 and Figure 5, while net sales increased steadily for both companies over the past five years, their profit has just as steadily decreased[5]. When it comes to choosing which ratio to use, the EBITDA margin was chosen. Indeed, the model is built around the operational aspect of the value chain, therefore, interests, taxes, depreciation, and amortisations are not of interest.

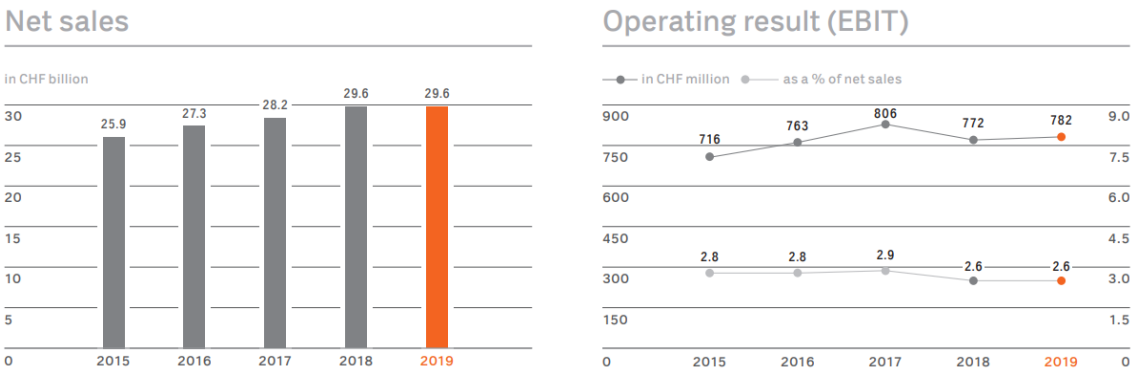
Figure 4 - Migros Income and Profit 2015-2019



Source: (Migros Group 2020)

5 In terms of EBIT margin for Coop, in terms of both net profit and profit margin for Migros

Figure 5 - Coop Net sales and Operating result 2015-2019



Source: (Coop Group 2020)

3.2.5 Retailer's costs

The retailer's costs are the hardest data to come by. Indeed, as supermarkets sell a wide variety of goods, it is close to impossible to pin a specific figure to a range of products, let alone a specific product. However, previously published models will be used to define the costs of retail for the present model. Of the various models discussed in the literature review, the model created by UNCTAD with data from the European Coffee Federation is the most relevant. Compared to John Talbot Model, it is more recent and based on aggregated data from figures of EU countries as well as Switzerland rather than on US figures. Therefore, the figures from this model will be considered and slightly modified, so that they represent Switzerland's reality.

3.2.6 Roaster's margin

The roaster's margin used in the model is based on the publicly available financial statements of the largest coffee roasters, identified by UNCTAD (UNCTAD 2019). Of the seven largest roasters, five publish their reports publicly, namely Nestlé, Starbucks, Lavazza, Elite-Strauss, and J. M. Smucker. Furthermore, the margin computed from the SCA Economics of the coffee supply chain were also considered.

3.2.7 Roaster's costs

The roaster's costs of this model are based on two different sources. First, figures published by the Specialty Coffee Association in *Economics of the Coffee Supply Chain - An Illustrative Outlook.* This publication is a model of the various costs associated with the roasting and retail of coffee. This model is built on figures from another of the association's publications and is based on figures provided by their members. Those figures were then aggregated to create a reference for each cost (Specialty Coffee

Association 2019). The second source is the figures published by Direct Coffee, a Swiss fair trade coffee roaster and retailer based in Basel. Direct Coffee disclosed the costs rundown of their operation for the 2015 harvest. As both sources are based on data from small to medium size roasters, and the data coffee selected for this paper is roasted by larger companies, the figures were then adapted to better fit this reality.

3.2.8 Trader's margin

Similarly, to the retailer's and roaster's margin, the figure used in the model are based on the financial statements of the world's largest coffee traders. According to the International Trade Centre's estimates, the five largest trading companies, in terms of volume, share 45% of the world's total volume. Those companies are Neumann, Ecom, Olam, Volcafe, and Louis Dreyfuss (International Trade Centre 2011). Of those five companies, three publish financial reports, Neumann and Ecom do not. As for the previous margins, the model is based on the five year average of the EBITDA margin. If applicable, the figures for the coffee segment were used, otherwise, the figures for the overall business were used.

3.2.9 Freight and insurance costs

As Jonathan Garcia pointed out during his interview, the most commonly used terms for sales contracts were "C" or "D" terms. Therefore, the costs of shipping and insurance are supported by the seller (i.e. the trader). Those costs are evidently passed down the value chain, but they will be considered as trader's costs. Jonathan Garcia also confirmed that coffee is shipped in a forty-foot equivalent unit (FEU), in other words, forty-foot containers. Several indexes provide figures for the price of shipping goods in FEU (Marine Traffic Blog 2020).

Amongst those indexes, is the Shanghai Containerised Freight Index (SCFI), this index is a weighted average of the cost of shipping through various routes. However, as only 27.5% of the weight of the index is representative of FEU[6] (Shanghai Shipping Exchange 2020), the model will not be based on this index.

A second index is the Freightos Baltic Index (FBX). This index is based on a combination of twelve routes and tens of thousands of daily data points from global logistics providers and expressed in USD/FEU (Freightos Baltic Index 2020). Amongst the twelve routes, only one is a route usually used in the trade of coffee, namely the *Europe - South America*

6 The other 72.5% are twenty-foot equivalent unit (TEU)

East Coast route (FBX24). The historical data for the FBX24 is not available to the public past a certain time. Therefore, the 2019 half-year data (June-December) was considered.

A third index is the World Container Index published by Drewry, a shipping consulting firm. The index is published weekly and is a composite of 8 major routes (Drewry 2020). The year to date average of the latest report for 2019, published on December 21st, 2019 was considered.

A final index is the Xeneta Shipping Index (XSI). This index is based on long term contracts and is a weighted average of various US, European, and Far Eastern routes (Xeneta AS 2020a). However, the publicly available index is expressed in relative terms and not in USD/FEU. Furthermore, Xeneta's disclaimer regarding its public report is the following: *"The monthly XSI® Public Indices report is meant to give an indication of the global market movements for the long-term contract market in the container shipping industry focusing on the biggest regions in the world. Xeneta does not recommend price setting on this market report as it is based on an aggregation of trade-weighted uncorrelated corridors."* (Xeneta AS 2020b). Therefore, this index will not be considered for the model.

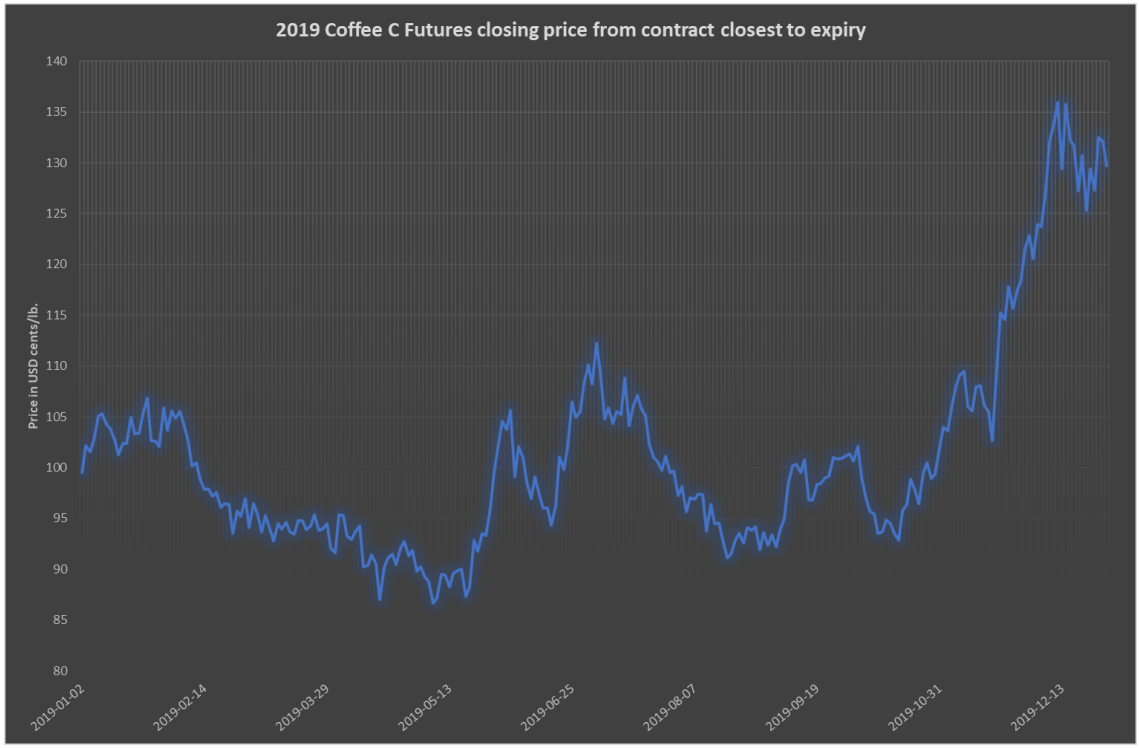
3.2.10 Equilibrium price

The equilibrium price of the model acts as a control of the producer price. The equilibrium price is the price that should have theoretically been paid to the coffee producer. It is either the market price for the non-FLO labelled coffees and the Fair Trade minimum price plus applicable premiums for the FLO labelled coffees.

As the coffees retained for the model are all of the Arabica variety, the equilibrium price was defined as the 2019 average closing price for the Coffee C Futures contract closer to expiry[7]. The data for the contracts was extracted from the following contracts: March 19, May 19, July 19, October 19, December 19, and March 20. The computed average is 1.0114 USD/lb. Those closing prices are displayed in Figure 6 below.

7 For instance, the July 19 contract was used as the closing price for June 14th 2019

Figure 6 - 2019 Coffee C Futures closing price from contract closest to expiry



Source: Author's computations of data retrieved from www.barchart.com

For the FLO labelled coffees, FLO publishes a table with the applicable minimum prices and premiums and updates this table regularly. The past 3 versions[8] of this table (i.e. published during the time of writing this paper) did not make any change to the minimum price of coffee or to any of the premiums. For coffee, two elements are taken into account to compute the minimum price. Those are the variety of bean (Arabica or Robusta) and whether the coffee is washed or natural. The FLO labelled coffees that were selected are all Arabicas. As for the state of the coffee (i.e. washed or natural), Jonathan Garcia reported in his interview that natural coffee is traded in larger volume than washed coffee by a wide margin. Therefore, the Arabica washed minimum price of 1.40 USD/lb. will be used as the equilibrium. To this minimum price, the Fairtrade premium of 0.20 USD/lb. was added and if the coffee was sporting a Bio Label, the organic premium of 0.30 USD/lb was also added. Thus, the FLO equilibrium price is either 1.60 USD/lb. or 1.90 USD/lb. depending on whether the selected coffee is labelled Bio or not.

8 09.10.19, 18.12.19 & 01.01.2020

4. Results

4.1 Retailer's margin

First, the five year average of Coop's and Migros' various margin was computed to get a gross view of the figure. The computations are found hereunder in Table 3.

Table 3 - Migros & Coop Margins

	Migros	Coop
EBITDA Margin		
2015	8.40%	7.50%
2016	8.20%	7.50%
2017	7.50%	7.10%
2018	7.40%	7.10%
2019	6.00%	6.90%
Average	**7.50%**	**7.22%**
EBIT Margin		
2015	3.60%	2.80%
2016	3.30%	2.80%
2017	2.10%	2.90%
2018	2.30%	2.60%
2019	0.70%	2.60%
Average	**2.40%**	**2.74%**
Profit Margin		
2015	2.90%	1.60%
2016	2.40%	1.70%
2017	1.80%	1.70%
2018	1.70%	1.60%
2019	1.20%	1.80%
Average	**2.00%**	**1.68%**

Source: Author's computation based on figures retrieved from (Migros Group 2020) & (Coop Group 2020)

As shown in Table 3, both companies work with very similar margins. However, those margins are not satisfactory yet. Indeed, those ratios are based on both Migros' and Coop's Group financials. This includes its electronics shops, restaurants, etc. As all of those businesses apply different margins, further research was conducted.

In Coop's report, the group's net sales are broken down into the net sales of all of their outlets/markets. The group's total workforce is also broken down into the workforce of all of their outlets/markets. Therefore, assuming that the ratio of expenses from a particular outlet over the group's total expenses is equal to its ratio of sales over the group's total sales, and assuming that the ratio of a particular outlet's workforce over the group's total

workforce is equal to its ratio of wages and social security over the group's total wages and social security, a particular outlet's EBITDA can be computed by reconstructing a P&L applying those ratios. Those computations led to the results shown in Table 4.

Table 4 - Coop's revisited P&L[9]

	Coop Group	Coop Supermarkets
Total sales	(in CHF million, in % of group's total sales)	
2015	26 932	10 290
	100%	38.21%
2016	28322	10 274
	100%	36.28%
2017	29207	10 326
	100%	35.35%
2018	29 565	10 408
	100%	35.20%
2019	29 633	10 452
	100%	35.27%
Average	**28 732**	**10 350**
	100%	**36.06%**
Employees	(in FTE, in % of group's total FTE)	
2015	69 039	18 859
	100%	27.32%
2016	73 451	18 769
	100%	25.55%
2017	74 532	18 690
	100%	25.08%
2018	77 448	18 833
	100%	24.32%
2019	78 264	18 945
	100%	24.21%
Average	**74 547**	**18 819**
	100%	**25.29%**

	Coop Group	Coop Supermarkets
P&L 2015-2019		(in CHF million)
Net sales		
2015	25 895	10 290
2016	27 259	10 274
2017	28 152	10 326
2018	29 565	10 408
2019	29 633	10 452
Average	**28 101**	**10 350**
Merchandise expenses and other upstream services		
2015	19 790	7 561
2016	20 832	7 557
2017	21 547	7 618
2018	22 475	7 912
2019	22 418	7 907
Average	**21 412**	**7 711**
Wages and salaries		
2015	3 189	871
2016	3 410	871
2017	3 509	880
2018	3 821	929
2019	3 884	940
Average	**3 563**	**898**
Social security contributions/other contributions		
2015	1 063	290
2016	1 073	274
2017	1 149	288
2018	1 232	300
2019	1 259	305
Average	**1 155**	**291**
EBITDA		
2015	1 853	1 567
2016	1 944	1 572
2017	1 947	1 540
2018	2 037	1 267
2019	2 072	1 300
Average	**1 971**	**1 449**
EBITDA in % of sales		
2015	7.16%	15.23%
2016	7.13%	15.30%
2017	6.92%	14.91%
2018	6.89%	12.18%
2019	6.99%	12.44%
Average	**7.02%**	**14.01%**

Source: Author's computation based on figures retrieved from (Coop Group 2020; 2018; 2017)

Thanks to those computations, an EBITDA margin of 14.01% for the supermarket unit of the Coop Group was computed and this is the figure that is used in the model. Therefore, the retailer's margin equals 14.01% of the Retail price duty-free.

4.2 Retailer's costs

The model published by UNCTAD in its *Special Issue on Coffee in East Africa* defines the costs carried by the retailers as 12% of the retail price. However, this figure stems from an aggregate of figures from European countries and is therefore not necessarily

9 A slight difference can be noticed between the computation from Table 4 and the figures from Table 3. This difference comes from the rounding of numbers.

representative of each country whose figures have been aggregated. Indeed, Switzerland has amongst the highest wages and rent in the world, let alone in Europe, and those two costs represent a large portion of a retailer's costs. Wages and social security represented for Coop and Migros 21.46% and 22.46% of their respective operating expenses. According to data published by the statistical office of the European Union (Eurostat 2020), the swiss median gross hourly earnings in 2014, was 124% higher than the European Union average, comparable only to countries such as Denmark or Ireland. Therefore, this large difference must be considered in the model.

For the cost of rent, the reality is more complex. Indeed, both Coop's and Migros' retail locations are either rented or own. A research of the land registry shows that retail locations are sometimes owned by the retailer or sometimes by a third party. For instance, Coop Florissant supermarket in Geneva, where the data for this paper was collected is owned by the Coop Group, while the Coop Augustin supermarket located less than two kilometres away is owned by Zurich Insurance[10]. For Migros, the situation is a little bit different as the various Migros Geneva locations that were researched on the land registry were all owned by third parties[11]. However, Migros also owned and rent property in some of its malls in Vaud (Migros Group 2020). Due to the complexity of the issue, the higher cost of land in Switzerland compared to EU countries was disregarded.

Therefore, it is assumed that 21.96% (average of Coop's and Migros' weight of personnel cost in their total operating expense) of the retailers' costs in Switzerland is 124% higher than the European aggregated figure published by UNCTAD. Therefore, the figure that will be used is 15.27%[12] of the duty-free retail price correspond to the retailer's costs.

Furthermore, as mentioned in the assumptions of the model, the costs must remain the same regardless of quality or certification of coffee. Thus, the relative 15.27% had to be converted into a single figure. To do so, this figure was applied to the duty-free retail price of the selected coffees and then averaged to the figure of 1.22 USD/lb.

4.3 Roaster's margin

Unfortunately, the precision of the five financial statements that were analysed varies tremendously. Indeed, some companies report their figures by segment, some overall,

10 Data retrieved from the Geneva land registry available at https://ge.ch/terextraitfoncier/adresse.aspx

11 *Idem*

12 $0.12 + (1.24 \cdot 0.2196 \cdot 0.12)$

some only report their operating results while some other more detailed financial statements. The margins closest to the EBITDA margin were computed for each of the selected companies and are the following: operating profit margin of the *Liquid and powdered beverages* for Nestlé; global operating profit margin for Starbucks; EBITDA margin for Lavazza; EBITDA Margin of the *Total coffee* segment for Strauss; coffee gross profit margin for J.M. Smucker. The computations are the following:

Table 5 - Roaster's margins

Nestlé Trading operating profit Liquid & powdered beverages					
2015	2016	2017	2018	2019	**Average**
21.30%	20.86%	21.08%	21.06%	20.24%	**20.91%**
SCA Economics of the coffee supply chain net operating margin					
2014	2019	**Average**			
16.79%	15.55%	**16.17%**			
Starbucks global operating profit					
2015	2016	2017	2018	2019	**Average**
23.69%	24.77%	23.43%	19.72%	18.93%	**22.11%**
Lavazza EBITDA Margin					
2015	2016	2017	2018	**Average**	
8.80%	9.40%	11.10%	11.00%	**10.08%**	
Strauss Total coffee EBITDA Margin					
2014	2015	2016	2017	**Average**	
9.09%	7.81%	9.77%	9.58%	**9.06%**	
J.M. Smucker Coffee gross profit margin					
2015	2016	2017	2018	2019	**Average**
26.50%	32.30%	32.40%	29.40%	31.90%	**30.50%**

Source: Author's computations based on data retrieved from (Nestlé 2018; 2019; 2020; Specialty Coffee Association 2014; 2019; Starbucks Corporation 2018; 2019; 2020; Lavazza 2017; 2018; 2019; Strauss Group 2016; 2017; 2018; J.M. Smucker 2018; 2019; 2020)

As shown in Table 5, the computations vary widely. However, Lavazza's and Strauss' EBITDA margins are the most interesting for the present analysis. Indeed, as mentioned in the Methodology, the model aims to capture the operational added value of each actor of the value chain. Therefore, the EBITDA margin is the closest margin available. Furthermore, Strauss's margin is based solely on the costs and revenues of their coffee operations. Therefore, the model is based on the average of the two margins, namely 9.57%. Therefore, the retailer's margin in the model is equal to 9.57% of the roaster's price.

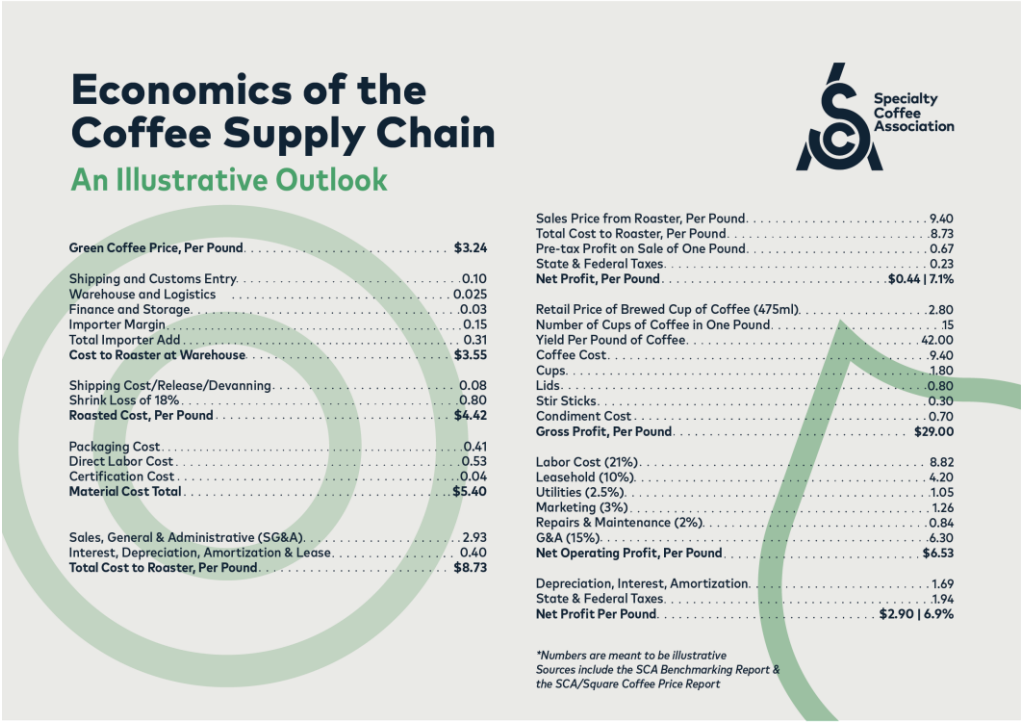
4.4 Roaster's costs

For the roaster's costs, data was extracted from the *Economics of the Coffee Supply Chain* (see Figure 7) published by the SCA. The 2014 and 2019 editions were considered

and averaged. Of the costs contained in this outlook, the costs starting with *Warehouse and Logistics* to *Certification Costs* were considered. This amounts to a total of 3.72 USD/lb. for 2014 and 5.31 USD/lb. for 2019. As the study whose data were used to create this tool was based on costs reported mostly by the North American members of the association (Specialty Coffee Association 2019), it should be compared with the costs of a Swiss roaster. Therefore, the data published by Direct Coffee (see Figure 8) was used as a basis of comparison. The costs of *Roasting*, *Packaging,* and *Marketing* were considered and amount to 4.91 CHF/350g. Converted in USD/lb., the figure of 3.81 USD/lb. is obtained. As the numbers of Direct Coffee are from 2015, they were compared with the figures from SCA of 2014. This represents a difference of 0.09 USD/lb. with the figures of the SCA or about 2.36% which is satisfactory. Therefore, the average of the 2014 and 2019 SCA figures was considered, 4.52 USD/lb (Specialty Coffee Association 2014; 2019).

However, the data from this study comes mostly from small to medium-sized roasters and the coffees selected for the model are produced by larger roasters. Thus, those would benefit from the economy of scale and the figure for a larger roaster is likely inferior to 4.52 USD/lb. For the model, it is assumed that a larger roaster would benefit from a 10% decrease in costs thanks to the larger volume of its operation. Therefore, the figure retained for the model is 4.07 USD/lb.

Figure 7 - Economics of the Coffee Supply Chain 2019



Source: (Specialty Coffee Association 2019)

Figure 8 - Direct Coffee, what the farmer gets

Source: (Tuil 2016)

4.5 Trader's margin

Based on their respective financial statements, the five years EBITDA margin average of Volcafe Olam, (ED&F Man), and Louis Dreyfuss were computed. For Louis Dreyfuss and Volcafe, the figures are the EBITDA of their business as a whole. Indeed, they do not publish detailed financials for each source of revenue. Olam, on the other hand, publishes its revenue and EBITDA detailed by the source of revenue. Therefore, the figures for Olam are from the *Confectionery and Beverage Ingredients* segment. Those figures are slightly below the EBITDA of all the segments.

Table 6 - Traders' Margins

	2014 EBITDA in % of sales	2015 EBITDA in % of sales	2016 EBITDA in % of sales	2017 EBITDA in % of sales	2018 EBITDA in % of sales	2019 EBITDA in % of sales	Average **EBITDA in % of sales**
Olam	4.82%	4.14%	5.28%	4.03%	6.23%		**4.90%**
Volcafe (ED&F Man)	0.79%	1.39%	2.20%	-0.28%	0.50%		**0.92%**
Louis Dreyfuss		1.07%	0.98%	1.86%	2.87%	2.49%	**1.85%**
Average	**2.80%**	**2.20%**	**2.82%**	**1.87%**	**3.20%**	**2.49%**	**2.56%**

Source: Author's computations based on data retrieved from (Olam Group 2019; ED&F Man 2017; 2018; 2019; Louis Dreyfus Company 2018; 2019; 2020)

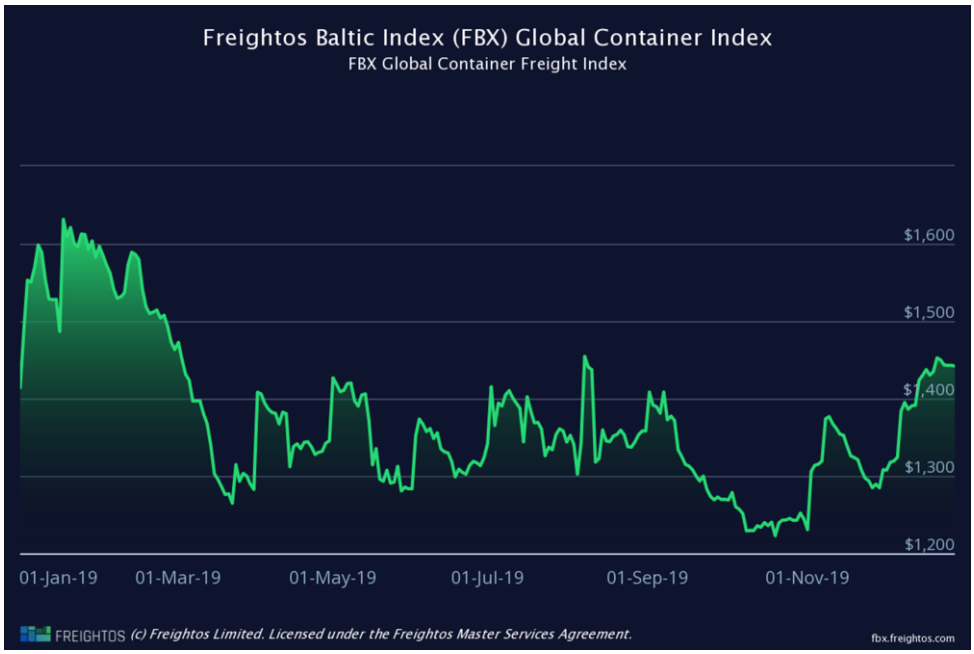
As shown in Table 6, the margins of traders are tremendously more volatile and unstable than the previous actors of the value chain. Margins can change drastically from one

year to the next and from one trader to the other. The average of five years of the three companies, once put together, comes up to 2.56%. When asked about the figures of Louis Dreyfuss, Jonathan Garcia said: *"I'd say 3% or more or less 3% for coffee is really good"* (Appendix 1, p. 50). Therefore, the figure of 2.56% of the trader's price as the trader's margin can be confidently used in the model

4.6 Freight and Insurance costs

For the Freightos Baltic Index, the FBX24, as shown in Figure 9 and Figure 10, has constantly been below the global index. FBX24 2019 half-year average computation is 959.97 USD/FEU with a volatility of 4.83%[13], slightly below the 1373.18 USD/FEU with a 1.85% volatility[14] of the global index. As the data for FBX24 is too scarce and concerns only a single route, the global FBX index will be used.

Figure 9 - FBX Index 2019

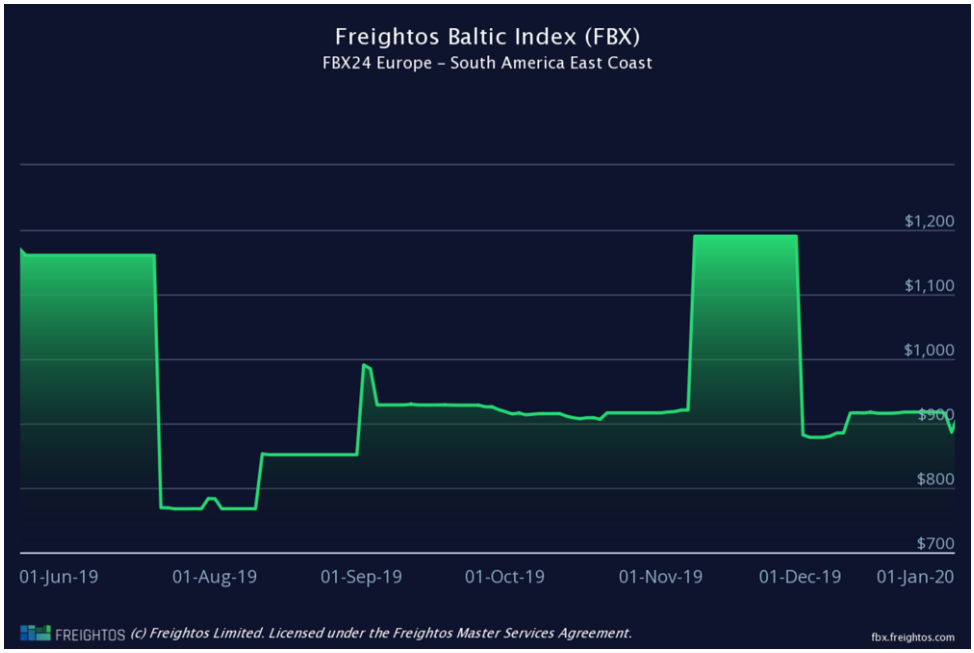


Source: (Freightos Baltic Index 2020a)

13 Author's computation based on figures retrieved from FBX

14 *Idem*

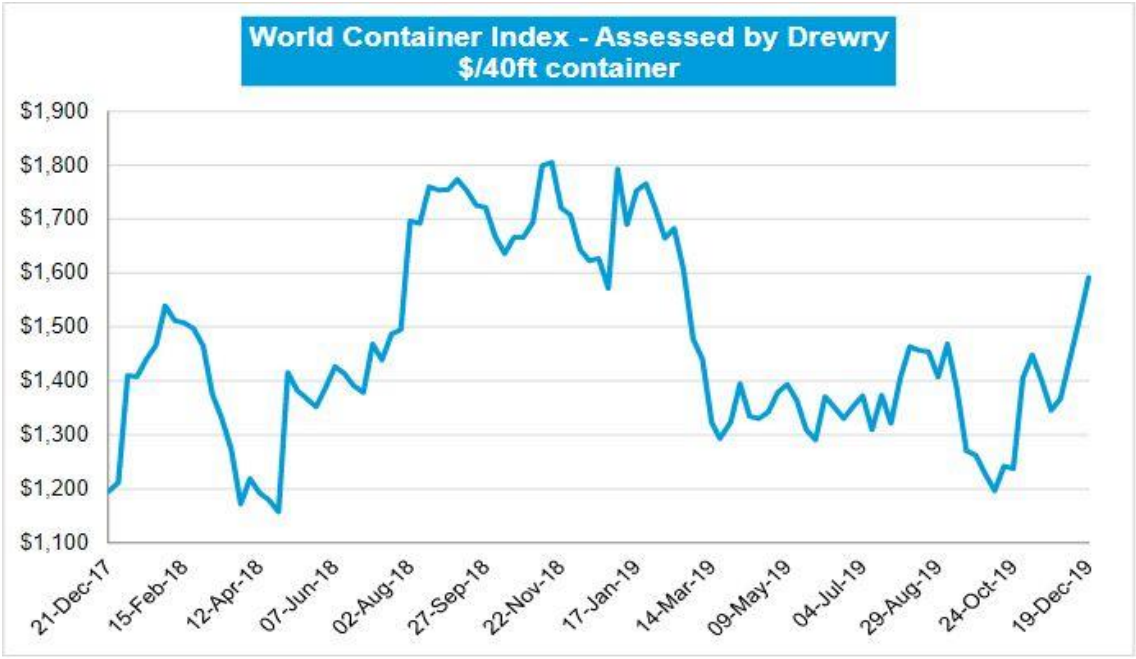
Figure 10 - FBX24 Index June-December 2019



Source: (Freightos Baltic Index 2020b)

When it comes to the WCI, the final weekly report of the index, published on December 21st, 2019, was considered. This one reported a year to date average of 1420 USD/FEU. Therefore, we will use this figure.

Figure 11 - World Container Index December 2017 to December 2019



Source: (Hellenic Shipping news 2019)

Thus, to compute the freight costs in the model, the mean of the 2019 FBX and 2019 WCI will be used, namely 1396.59 USD/FEU. This number is in line with Jonathan Garcia's assessment of 1400 USD/FEU.

For the volume of coffee contained in a 40-foot container, the International Trade Centre's Coffee Exporter's Guide gives an estimate of the maximum net payload of an FEU[15]. This estimate is between 26.4 and 27.5 Metric Tons of coffee (International Trade Centre 2011). Converted in pounds, between 58'202 and 59'525 pounds. The price of 1396.59 USD/FEU was then applied to find between 0.23 USD/lb. and 0.25 USD/lb. so an average of 0.24 USD/lb.

For the insurance costs, the figure of 1.5 USD cents/lb. provided by Jonathan Garcia was used. Therefore, the model uses the figure of 0.26 USD/lb. for freight and insurance costs.

4.7 The Model

Once all those figures were added together, the model was completed, and the data collected could be plugged into it. The results are shown in Table 7 hereafter and will be discussed in the next chapter.

15 Named FTE in the guide

Table 7 - The Model

In USD/lb.		Mocca bio	Mocca surfin	Chicco d'Oro Tradition	Chicco d'Oro Bio	Caruso Espresso	Boncampo Classico	Exquisito Crema grains	Bio Max Havelaar grains	Caruso Oro	Max Havelaar Espresso grains	Café Royal espresso Honduras
Retailer		Coop	Coop	Coop	Coop	Migros	Migros	Migros	Migros	Migros	Migros	Migros
Fairt trade		Yes	No	No	Yes	No	No	No	Yes	No	Yes	No
Bio		Yes	No	No	Yes	No	No	No	Yes	No	No	No
Retail Price		**10.91**	**8.95**	**9.08**	**10.00**	**7.76**	**4.29**	**6.85**	**7.26**	**8.58**	**7.58**	**9.08**
VAT	2.50%	0.27	0.22	0.23	0.25	0.19	0.11	0.17	0.18	0.21	0.19	0.23
Retail Price duty free		**10.64**	**8.72**	**8.86**	**9.75**	**7.57**	**4.18**	**6.68**	**7.08**	**8.37**	**7.39**	**8.86**
Retailers Margin	14.01%	1.49	1.22	1.24	1.37	1.06	0.59	0.94	0.99	1.17	1.04	1.24
Retailers Costs		1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Roaster Price		**7.93**	**6.28**	**6.40**	**7.16**	**5.29**	**2.38**	**4.52**	**4.86**	**5.97**	**5.13**	**6.40**
Roasters Margins	9.57%	0.76	0.60	0.61	0.69	0.51	0.23	0.43	0.47	0.57	0.49	0.61
Roasters costs		4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07
Trader Price		**3.10**	**1.61**	**1.71**	**2.41**	**0.71**	**-1.92**	**0.02**	**0.33**	**1.33**	**0.57**	**1.71**
Traders Margin	2.56%	0.08	0.04	0.04	0.06	0.02	-0.05	0.00	0.01	0.03	0.01	0.04
Freight/Insurance costs		0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Producer Price		**2.76**	**1.31**	**1.41**	**2.08**	**0.43**	**-2.13**	**-0.24**	**0.06**	**1.04**	**0.30**	**1.41**
Equilibrium price		1.90	1.01	1.01	1.90	1.01	1.01	1.01	1.90	1.01	1.60	1.01
Difference Producer/Equilibrium		0.86	0.30	0.40	0.18	-0.58	-3.14	-1.25	-1.84	0.03	-1.30	0.40

Source: Author's computations

5. Discussion

5.1 Analysis of the results - margins of the pairs

Before going into the details of each cost, it is interesting to take a first look at the difference between the equilibrium price of Fair Trade coffee and regular coffee. Indeed, assuming, that costs remain the same along the value chain, once the producer has been paid, the difference between the two equilibrium prices of comparable products and the final retail prices of those two products should be the same or very close (accounting for the margins which are in relative term and not fixed like the costs).

As defined previously, the equilibrium price of Fair Trade coffee is 1.90 USD/lb. for Bio Arabica and 1.60 USD/lb. for non-Bio Arabica, and the average price of coffee computed for 2019 was 1.01 USD/lb. Therefore, the difference in the retail price (duty-free) should be about 0.89 USD/lb. for Bio Arabica and 0.59 USD/lb. for non-Bio Arabica. Looking at the model's output, the pairs of coffee selected at Coop, present a difference of 1.90 USD/lb. for the *La Semeuse* pair and a difference of 0.89 USD/lb. for the *Chicco d'Oro* pair.

At first glance, *Chicco d'Oro* seems to respect this claim, while the difference for the *Chicco d'Oro* pair is more than double the 0.89 USD/lb. However, before jumping too fast to conclusions, those figures are based on benchmarks. And as mentioned previously, a variety of premiums and discounts are applied to those benchmarks to define the real price paid to the producer. Therefore, those figures might not apply to the coffees selected for this study. To have a fairer assessment of the situation, the outputs of the model should be used and would provide a better analysis.

Based on the model's assumptions, the pairs of the coffees selected at Coop should be of the same quality and origins and should have therefore been traded at an identical differential over the Coffee C Futures Benchmark. Thus, the difference between the Equilibrium price and Producer price of the model should be the same for a pair.

Looking at the difference between Producer Price and Equilibrium for *La Semeuse* pair, the Fair Trade coffee has a difference of +0.86 USD/lb., while the regular coffee has a difference of +0.30 USD/lb. For the *Chicco d'Oro* pair, there is a +0.18 USD/lb. difference for the Fair Trade coffee and a +0.40 USD/lb. difference for the regular coffee. Therefore, there is an unexplained +0.56 USD/lb and -0.22 USD/lb. difference. Based on the model's assumption, this difference must be explained by margins varying between the sale of Fair Trade and non-Fair Trade coffee. Indeed, as costs remain the same and

quality, origins and differentials are assumed to be the same, the only remaining explanation is a variation in margins.

In the case of *La Semeuse*, it would mean that one or more actors increased their margins for a total of 0.56 USD/lb. and for *Chicco d'Oro*, that one or more actors actually decreased their margins for a total of 0.22 USD/lb. Considering that the sum of margins for *La Semeuse* Fair Trade coffee equates to 2.33 USD/lb., this 0.56 USD/lb. difference represents an increase of 24.03% of the sum of margins. If this concerns a single actor, this will mean that the retailer is increasing its margin by 37.58%, the roaster is increasing its margin by 73.68% and the trader by 662.5%.

In the case of *Chicco d'Oro,* this negative difference means that one or more actor decreased their margin for a total of 0.22 USD/lb. Considering that the sum of margins for *Chicco d'Oro* Fair Trade coffee is 2.12 USD/lb., this difference represents a 10.38% decrease in the sums of margins. If this concerns a single actor, this will mean that the retailer is decreasing its margin by 16.06%, the roaster by 31.88%, and the trader would trade at a loss.

Based on the computations and the data selected, the answer to the research question is that, while it is not necessarily an increase in margins, there is in any case a difference in margins between Fair Trade and regular coffee. Indeed, the results show in one case that one or more actor is increasing its margin, while the other indicates the opposite.

Furthermore, it seems more likely that this difference is an increase in margins, and it would most probably come from the retailer and/or roaster. Indeed, considering that the trader's margin is lower than 0.10 USD/lb., it seems extremely unlikely that the increase or decrease computed could be attributed to him.

Based on those computations, an interesting reflexion emerges. While the reason why actors would increase their margins is rather straightforward, it is more surprising to see that in some cases they would reduce it.

A first possibilities would be that they use this coffee as a loss leader to attract potential buyers with a cheaper Fair Trade alternative before convincing them to go for a more expensive product. However, this seems unlikely in *Chicco d'Oro's case*. Indeed, they only have one line of Fair Trade coffee, differing from themselves only by their volume.

A second possibility is that, the emergence of trends mentioned in the introduction has forced some coffee roasters to offer a Bio and Fairtrade alternative in addition to their regular range and that this will for change from consumer might be more for show than

anything and do not translate into sales. Therefore, roasters offer a Fair Trade alternative to comply with the trend and seem socially responsible, while knowing that this product does not sell as well as some others from their range.

5.2 Migros vertical integration's impact on the model

The results of the pairs selected at Coop, discussed previously, tell a very different story than the results of the model for the coffees selected at Migros. Indeed, the output of the model, for coffees selected at Migros, are mostly outright unrealistic with negative producer prices or producer prices below the Fair Trade minimum price plus premium(s).

The question then becomes why do the results vary so much between Coop and Migros while they share so many similarities. Indeed, both groups are active and compete in the same various retail industries (supermarkets, restaurants, electronic shops, etc), they employ roughly the same number of employees, they have similar figures when it comes to net sales, EBITDA, and their various margins, and they have retail locations in the same area, usually very close to one another.

The answer comes mostly from Migros' business model. Indeed, while Coop's business model is rather classic for a retailer, they buy wholesale and resell to the end-customer, Migros Group is vertically integrated. In the case of coffee, it means that from the procurement of the coffee beans to the final sale, every operation is handled by a company of the group (namely Delica and Migros supermarkets) (M-Industry 2020). This, in turn, allows Migros to benefit from the cost reductions linked to the bypassing of intermediaries and getting rid of certain costs associated with marketing sales and transportation. Indeed, Delica does not need to market its products to potential retailers the way Nestlé or Starbuck would, similarly they do not need to invest as much in sales. Furthermore, a value chain like Coop's with three different actors taking on the role of trader, roaster, and retailer means that each actor will have to generate profit and apply a margin to the next actor in the value chain, whereas for a value chain like Migros, as the three roles are played by companies owned by the same group and whose accounts are consolidated into one single financial report, the margins are evidently not the same.

Indeed, as demonstrated by the model, if applied to Migros' coffee, the computed producer price is either unlikely or outright impossible. Therefore, it is interesting to look at what the results would look like if the various margins (the trader's and roaster's) are removed and the costs of the roaster are reduced by 1.50 USD/lb., this amount corresponding to the assumed cost reduction linked to Migros' business model. The result then becomes the following:

Table 8 - The model revisited for Migros

In USD/lb.		Caruso Espresso	Boncampo Classico	Exquisito Crema grains	Bio Max Havelaar grains	Caruso Oro	Max Havelaar Espresso grains	Café Royal espresso Honduras
Fairt trade		No	No	No	Yes	No	Yes	No
Bio		No	No	No	Yes	No	No	No
Retail Price		**7.76**	**4.29**	**6.85**	**7.26**	**8.58**	**7.58**	**9.08**
VAT	2.50%	0.19	0.11	0.17	0.18	0.21	0.19	0.23
Retail Price duty free		**7.57**	**4.18**	**6.68**	**7.08**	**8.37**	**7.39**	**8.86**
Retailers Costs		1.22	1.22	1.22	1.22	1.22	1.22	1.22
Retailers Margin	14.01%	1.06	0.59	0.94	0.99	1.17	1.04	1.24
Roaster Price		**5.29**	**2.38**	**4.52**	**4.86**	**5.97**	**5.13**	**6.40**
Roasters costs		2.57	2.57	2.57	2.57	2.57	2.57	2.57
Trader Price		**2.72**	**-0.19**	**1.95**	**2.29**	**3.40**	**2.56**	**3.83**
Freight/Insurance costs		0.26	0.26	0.26	0.26	0.26	0.26	0.26
Producer Price		**2.46**	**-0.45**	**1.69**	**2.03**	**3.14**	**2.30**	**3.57**
Equilibrium price		1.01	1.01	1.01	1.90	1.01	1.60	1.01
Difference Producer/Equilibrium		1.44	-1.46	0.68	0.13	2.13	0.70	2.55

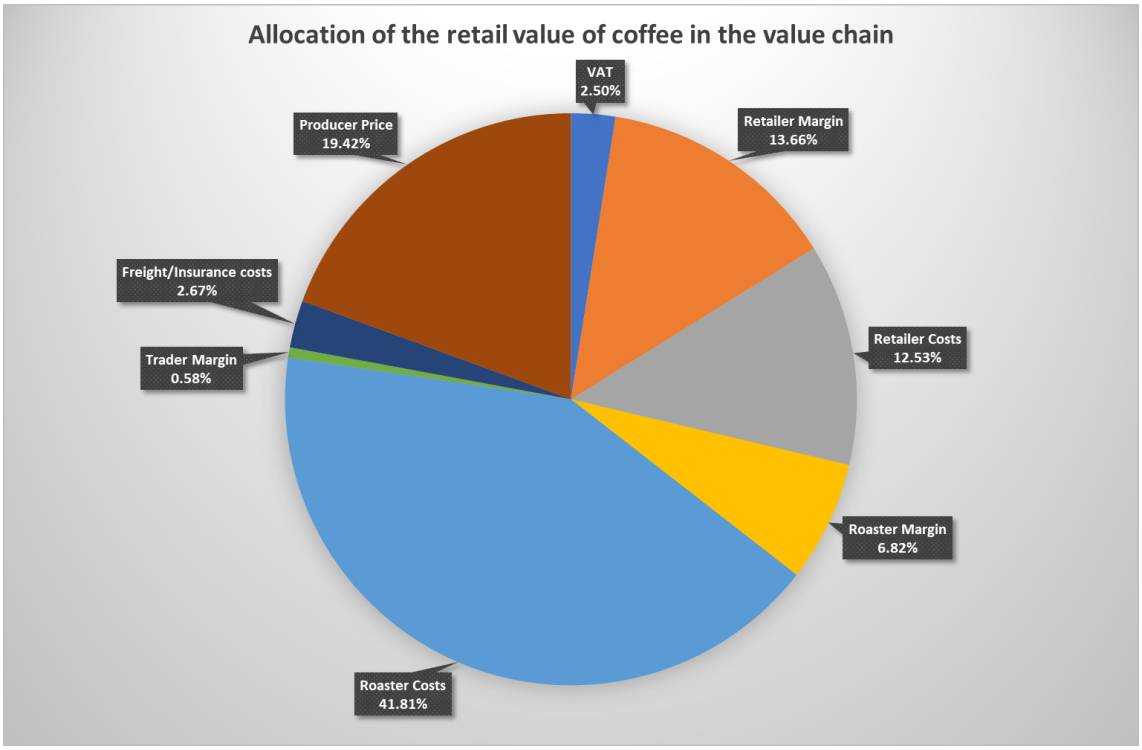
Source: Author's computations

As shown in Table 8, the various outputs become a lot more realistic. Except for *Boncampo Classico*, the producer price becomes a lot more correlated to the retail price and the Fair Trade coffees were purchased at a price above the Fair Trade minimum price plus premium(s) and are also more in line with the prices based on coffees sold at Coop. *Boncampo Classico* is a definite outlier considering its retail price is barely four times the market price of the coffee green beans.

5.3 Allocation of the retail value along the value chain

In addition to computing the various costs and margins along the value chain of coffee, the model can also provide an illustration of the weight of every actor in the value chain of coffee and breakdown how much each actor's costs and margins affect the final price paid by the end-consumer.

Figure 12 - Allocation of the retail value of coffee in the value chain (Aggregate)



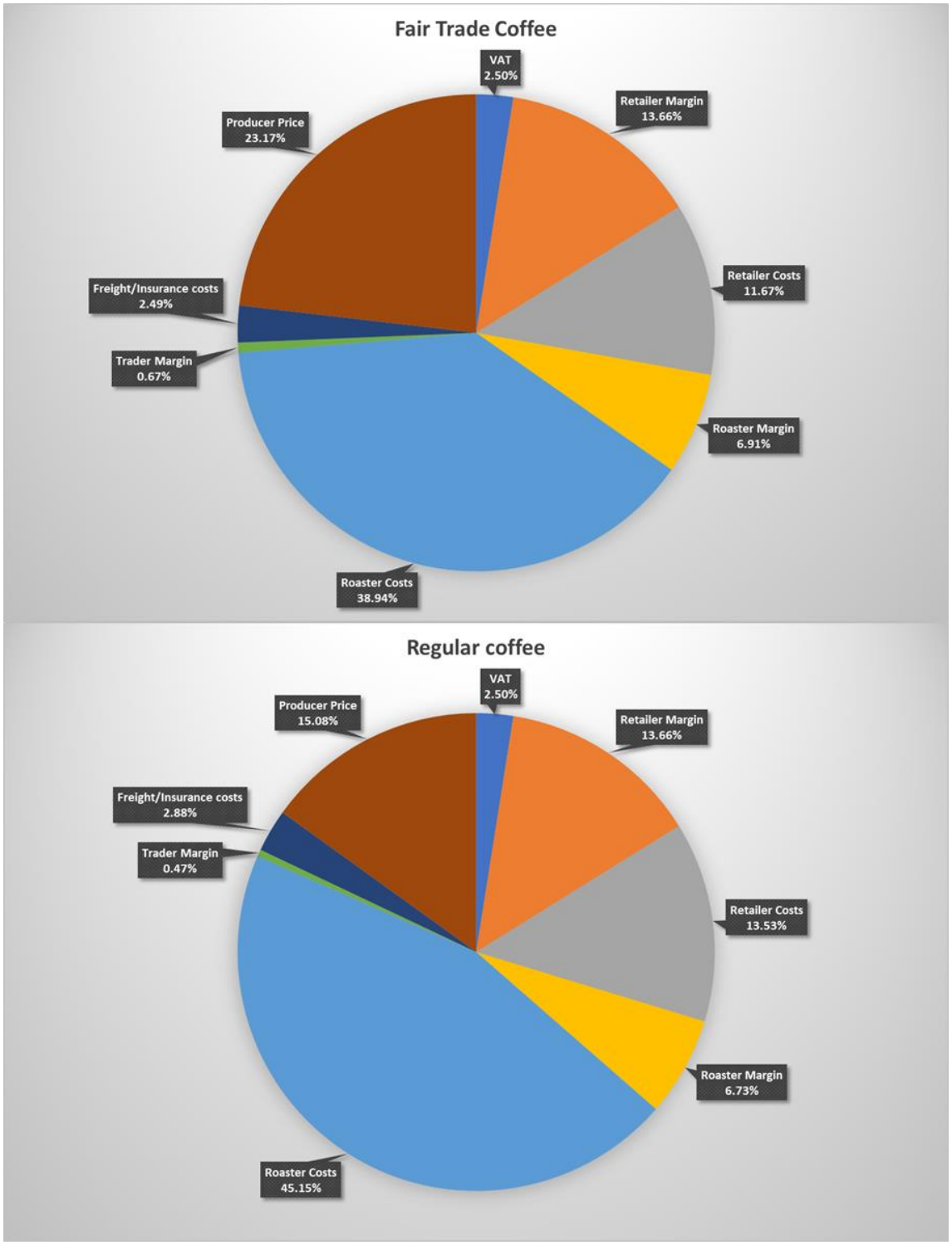
Source: Author's computations

As shown in Figure 12, based on the average of the model's input from the coffees selected at Coop, a few clear trends are apparent. First, there is a tremendous divide between the value created in the producing country and the value produced in the consuming countries. Indeed, slightly less than 20% of the retail value of coffee corresponds to the price paid to the producer, for the planting, harvesting, gathering, and dry-milling of the coffee beans, while 80% of the value is created in the consuming countries by the traders, roasters, retailers, and taxes.

When looking at the value created in the consuming country, a few other trends show up. First, when it comes to costs, roasters incur the largest costs, with around 42% of the total value of retail. This makes sense when breaking down what each actor does to add value to the raw material, as described in the Introduction. What is more surprising is that despite this reality, the lion's share of profits goes to the retailers. Indeed, the retailer's margin amounts to almost 14% of the total retail value, more than double the margin of roasters. While the value added by retailers is minimal compared to other actors of the value chain, they still manage to extract the most profit. Figure 12 also confirms the thin margins of traders, already analysed in their financial statements. With less than 0.6% of the value of coffee being imputable to the trader's margin, it is easy to understand how volume-driven commodity trading is as well as coffee trading, in this

particular case. Creating the same breakdown, but differentiating Fair Trade and regular coffee, also allows to highlight a few trends.

Figure 13 - Allocation of the retail value of coffee in the value chain (FT/Regular)



Source: Author's computations

First, Figure 13 shows that the value going to the producer is significantly higher for Fair Trade coffee than it is for regular coffee. Indeed, while the price paid to producer is only 15% of the retail value for regular coffees, it increases to 23% for Fair Trade coffee. In other words, farmers will earn close to 54% more when selling Fair Trade coffee than regular coffee. This is non-negligible, and this would tend to dispel the myth that Fair Trade accomplishes nothing for the farmers, at least in the case of coffee.

This also allows to formulate an answer to the research sub-question of who would make an extra profit selling Fairtrade over regular coffee. Based on the weight of each margin in the final retail value of coffee, some assumptions can be made.

First, it seems completely unlikely that traders make an extra-profit selling Fair Trade over regular coffee. Indeed, their margin is razor-thin, and therefore to make a profit and remain competitive, traders are better off increasing their volume of sale rather than their margin. Trader's margins might not be as set in stone as they are for roasters and retailers, however, the occasional increase in the margin that a trader might be able to negotiate once in a while would have almost no significance on the final retail price. Indeed, if a trader can double their margin, which seems unlikely, this would still barely represent 1% of the final retail price. Therefore, it seems highly unlikely that traders make a relative extra profit buying and reselling Fairtrade coffee.

However, there is no such assumption that could be made for retailers and roasters. Indeed, if someone were to benefit from selling Fairtrade coffee, it would most probably be one of the two or both of them. They both share the largest part of the final value and the highest margins.

5.4 Comparison with the literature review

Comparing the results of this research with the literature reviewed in chapter 2 and analysed throughout this paper allows for interesting observations. First, when it comes to the allocation of the retail value of coffee between the various actors of the value chain. Indeed, the present results, much like the different studies reviewed in the literature review, do not entirely match the results of the others but sees similar trends. Indeed, much like Naegele's and Talbot's results, the present results show that the producer's share of the total retail value is between 15% and 23% depending on the certification or not of the coffee. Those results are far higher than the 5% reported by UNCTAD. The present results also tend to confirm the general consensus that roasters represent a major part of the final value while they are slightly higher than those reported by Talbot. However, the present results differ when it comes to margins. Indeed, the model shows

that retailers enjoy the larger margin, followed by roasters and traders. This disputes the claims of both Byrnes et al. and Naegele but is in agreement with UNCTAD's model. However, there is still a significant difference between the present figure of 13.66% of the retailer's margin and the 48% of UNCTAD. Finally, Naegele found a 1 USD/lb. premium paid by consumers of Fair Trade coffee, which is not quite the 1.41 USD/lb. the present results show (average of the difference between the purchase price of Fair Trade/regular coffee pair). However, Naegele's study was based on US retail locations which might explain this difference due, probably in part to the higher wages and cost of land in Switzerland described previously. Indeed, those have to be passed on at some point to the consumer and this might explain the 41 cents difference (Naegele 2019; Byrnes, Khodakarami, Perez 2016; Talbot 1997; UNCTAD 2019).

A second interesting point of comparison with the literature review is the financial benefits for the producers of Fair Trade coffee over regular coffee. Indeed, as reported, Weber results showed an increase in revenue of 5% or 0.128 USD/lb. On the other hand, Nelson et al. results showed an increased gross income in the order of 16% to 107% for Fair Trade coffee growers over regular coffee farmers (Weber 2011; Nelson, Haggar, Martin, Donovan, Borasino, Hasyim, Mhando, Senga, Guadarrama, Kendar, Valdez, Morales 2016).

To start the comparison with Weber, the present results show an average increase in the gross income of 1.06 USD/lb. (average of the difference between the producer price of Fair Trade/regular coffee pair) far higher than the 0.128 USD/lb. However, his results are equivalent to the grower's net profit as it takes into account the costs incurred by the farmer except for certification costs. For the present results to be on par with Weber's would mean that a grower's net profit margin is around 12%. This seems to be low compared to the estimate stemming from a study led by Caravela Coffee, a large coffee exporter active in Central America and the northeastern countries of South America. According to the results of the study reported in Figure 14, the average profit margin for coffee farmers was 24% despite the high volatility of the coffee prices (Cadena 2018).

Figure 14 - Coffee growers net profit margin in Latin America 2010-2018

Source: (Cadena 2018)

Based on this figure, the net income computed by our model would be 0.254 USD/lb. or the double of Weber's figure. However, considering the profit margins of the 2015-2018 period averaging to 7.25%, the model's computation returns a result even lower than Weber's.

Comparing the model's results with the figures obtained by Nelson and al., similarities can be observed. Indeed, as reported in chapter 5.3, the model's producer price is 57% higher for Fair Trade coffee, right in the middle of the estimates of Nelson et al.'s study.

5.5 The validity of the model

Considering the comparisons made with existing literature in the previous chapter, the computations provided by the model are on par with the actual consensus. Indeed, while some variation exists, notably with UNCTAD's model, however, the figures obtained are all within a reasonable range of previously obtained results and comparable to at least one or more figures. Furthermore, some of the larger differences can be explained by a variety of factors, such as the time of publication of the various sources. Indeed, as shown in various Tables (notably Table 5 and Table 6), both the margins of the various actors and the prices of coffee fluctuates and can be highly volatile, which could have an impact on the computations. Furthermore, most studies that were compared to the current one are based on US retail locations or EU retail locations, whose reality can also vary widely from Switzerland's retail locations, notably due to the cost of land and wages being higher in Switzerland. While some of those variations were taken into account in the model, some differences might subsist.

Furthermore, considering the general opacity of coffee trading and the data publicly and freely available, the results obtained are quite satisfactory.

When it comes to the data used in the computations, the data sample remains extremely scarce and would benefit from being larger. It is unfortunately difficult to find comparable products to compute and analyse Fair Trade and regular coffee fairly. Indeed, as reported in chapter 3.1.1, it was only possible to create 2 pairs of comparable products based on the range of products available in one of Switzerland's largest retailer.

In the same vein as the lack of a variety of data, this model is only applicable to a very specific situation. Namely, roasted coffee in beans purchased in one of the major Swiss retailers and roasted by larger companies. Unfortunately, it does not apply to coffee purchased in restaurants or coffee shops as the reality in this retail space is tremendously different from the one of supermarkets. Furthermore, the model's computation loses accuracy when based on either high-end are low-end coffee.

The model itself is overall satisfactory, considering the scope of this paper and the available resource. Its results are on par with already published literature and some of the more agreed upon trends in the value chain of coffee can be highlighted by the computations, as reported throughout chapter 5.

5.6 Recommendations

Based on the observations made in the previous chapter, some improvements would be recommended for this model. First, the data pool should be expended, for instance, by enlarging the numbers of retailers selected. This would allow for a better comparison of the results and a better idea of the general trends when it comes to margins.

Second, some additional research should be made into the costs of roasters to create a model applicable to coffee sold in capsules or grounded and not only to coffee sold in beans. This would again broaden the data availability and provide more differentiated results to come to a more precise estimate.

Finally, the model would gain on interest if it were also applicable to out-of-home coffee consumption, the results computed would probably vary widely with in-home consumption and could lead to an interesting discussion. However, to be able to construct a similar model or to improve the current one to include restaurants, coffee shops, etc. Working with a number of them as a partner organisations would probably be the only way to estimate the various costs and margins of the retailers. Furthermore, the model built would probably be even more specific than the current one.

6. Conclusion

This paper has researched the various actors of the coffee value chains and particularly their financial statements to come up with a model allowing its user to allocate the value of roasted coffee beans they purchased in a major Swiss retailer and find out how much of that purchase price was allocated to each actor's costs and margins. Most importantly, this model allows its user to find out how much of that purchase price ended up in the pockets of coffee growers.

This model also allows its users to compare products such as pairs of Fair Trade/regular coffee to find out if the premium they pay purchasing Fair Trade products entirely benefits the coffee producers or if some other actors such as retailers, roasters and traders also take home a share of that premium.

The results provided by the model and the data that were inputted show in one case the margins applied to Fair Trade coffee was increased compared to the regular coffee and decreased in a second case. It, therefore, seems very likely that margins do not remain the same for Fair Trade and regular coffee. The results are based on a particular range of products, in a particular retail space. Hence those results might differ for other categories of coffee.

We consider this model successful in that, given the available resource, it can produce sensible results that allow to see some of the most common and widely agreed upon trends of the coffee value chain and allow to partially answer our research question. We consider this model worthy of being further improved to take into account some of the more complicated aspects of the value chain and to be able to input a larger array of products such as capsules or instant coffee, as well as coffee sold in other retail locations than supermarkets.

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Appendix 1: Transcript of the interview of Jonathan Garcia

A: Hello Jon, first thank you very much for giving me the opportunity to interview you today. First, I would like to ask you a few questions about the various position you have held in the commodity industry. So, you were enrolled in the graduate program at Cargill, then became a trading assistant over there and you also held a position in trading and middle office at Touton. Can you tell me a little bit more about what you did in those various positions when it comes to coffee trading?

J: Sure, one little correction first, I was not a trading assistant at Cargill, I was a trading assistant at Touton a couple of years ago. So, when I graduated from the HEG, I indeed started the graduate program at Cargill, back in December 2011. This program is a rotational program. There are several actually. There is one for accounting and finance and there is one for sales and I believe there is also one for logistics, AKA middle office. So, the one I did was the finance one. This lasted about three years, three years and a half, during which I first joined as a corporate accountant for about six months, then I did trading accounting for six months, then I did some market risk, credit risk, also some trading assisting but very lightly in replacement of maternity leave. And then I also spent six months in Bucharest Romania, assisting the commercial guys. Which was indeed a more trading assistant related position, but I did not really have the label back then. So, I quit Cargill back in 2014 and did a bit of consulting for a couple of years and then I got back into trading. First in the cotton business at Cotton distributors, International in Lausanne for about a year where I was a middle officer handling the transfer of Cotton, mostly from South America, from Africa to Asia and Colombia. That was two-third of my workload at least and also handling the samples and then, when I was at CDI, I was offered a job at Touton as a middle officer for the coffee trading desk and so this position even though my contract said middle officer, my position was a junior trader because I was handling the reconciliation of the P&L, I was booking the hedging, I was booking the futures directly to the brokers, I was making sure that the position was fully hedge or at least most of it according to the strategy. I was also handling the samples of the coffee every day. So, receiving the samples, roasting the coffee, cupping it, and grading it and then dispatching the samples to the clients. I was also drafting the contracts and handling the relationship with most of our brokers. A pretty extensive role that covered front and middle office and then the job ended when the company shut down the Geneva office to move down to Bordeaux. So, all and all, over my years and years of experience in commodity trading, I have covered everything from back office and accounting to actual trade desk and a front position.

A: During that time and especially at Touton, did you trade Fair Trade labelled coffee?

J: Yes, we did. It was not the majority of our coffee, but if I had to give a rough estimate, I would say 15% of our volume was FT more or less.

A: When we say FT, those were labelled by the Fair Trade Labelling Organisation?

J: Absolutely, yes.

A: Now, I will go down the value chain of coffee and the parts in which the trader is involved, and ask you questions around their activities. So, first, coffee beans can be bought washed or natural, can you tell me more about the difference between the two in a trader's perspective. So, what is the difference between buying washed or natural and why would you buy one or the other?

J: First off, the impact on the trader you see is mostly non-existent. The trader is just in charge of buying the coffee that is required by his customers. The difference between a washed coffee and a natural coffee essentially is the process through which the beans go through. Typically, the washed beans go through a washing

process that is either through a liquid, through water, or through some other chemicals. While natural coffee is usually just dried up. Either on the ground or tables, just drying out in the open or by using big machines essentially dry the coffee, take out the moisture. As I said, there is not really any impact on the trader because when a trader decides to buy coffee is normally to supply a given customer, most of the time. So, in the end, the real actors that make the decision on whether to buy natural or washed coffee are mostly the roaster, more than anyone. And how do they choose? Well, it depends on the blends they want to market to their customer base.

A: And would you say, in terms of volume, would you trade more washed or natural or about the same?

J: Natural by a wide, wide margin. Because the really good washed coffee sells usually at a pretty substantial premium and there are what we considered, at least for the most part, as specialty coffee. So, coffee that is going to be quite particular, quite tasty, and not really for the mass market, for people that drink whichever coffee is available or the cheapest option. Specialty coffee is really for the connoisseur and the, usually higher brands or higher markets.

A: So that is not coffee you would typically find at a big retailer?

J: Big retailers, will usually, for the most part, buy natural coffee. If you take for instance the case of the Swiss market and you consider Migros. If you look at the coffee selection in Migros, most of them will be very average blends, mostly Robustas from most likely Uganda, Vietnam with a most likely 20% blend of Arabica from Brazil or Columbia and that is going to be 90% of the offering. And then, you have those nice packages in recycled paper, with the farmer's face on it and stuff like that, that would advertise a premium coffee, and those, usually, for example, if you take the example of Migros, they will have those packages of washed Burundi coffee or washed Ethiopian coffee and it's clearly labelled on the packaging and those are usually smaller packages and more expensive. They target an audience that is more aware of the coffee they are drinking. And those are usually single-origin compared to other blends.

A: So, when you purchase your coffee to the producer, the exporter, or the cooperative, you base your price on a benchmark and you then apply a premium or a discount. Correct?

J: Yes

A: So which benchmark would you typically use and what dictates the differential you apply, whether it is a premium or a discount?

J: Well the benchmarks or the futures, the markets right. So, for Arabica, it's going to be the New York C coffee futures and for Robusta it's going to be the London one. So those are the benchmarks. There are different grades you can deliver against those futures, but typically for Arabica, it is the Brazilian Connilon the benchmark and for Robusta the range is a lot wider, but you can consider some Ugandans and some Vietnamese amongst others. So those are the Benchmarks and then how do you establish the differentials, either the premium or the discount, well it is the relative quality of any given coffee against the benchmark, and who decides that? Well, it is the market essentially, it's not any particular individual that is going to decide if any particular washed Burundi is more or less expensive than the benchmark for Arabica. Some years, if you take an example, you will have a huge production of Burundi coffee for example and that will pressure a little bit the premium. Maybe three years later the production will be low and the quality exponentially better, and this will drive the premium up, so really, it's the supply and demand for each coffee that essentially decides if it trades at a premium or a discount. Then obviously there are trends, a washed Burundi coffee will almost always trade at a premium over the benchmark, because intrinsically it is a rarer, better coffee, and then if I take for examples the case of Robusta, most of the

Ugandans coffees will trade at a discount, especially the lower qualities like black beans or the least good beans as we call them.

A: So typically, to use the example of Burundi, two coffees from Burundi would be traded with approximately the same premium right?

J: It depends, again, if we consider the market of the specialty coffee, some coffees can be expensive, because a panel of expert would have tasted the coffee and said that this production is exceptionally good and they rated the coffee 92 out of a 100, that would make the coffee exponentially more expensive. In the opposite, if some Burundi coffee is not that great in any given year, then the premium might not be as good as the other one and also the quality can change from one farm to the other. Especially when you consider countries such as Burundi, Uganda, Rwanda, and Kenya, where most of the coffee is grown on very small farms where people do not have either the technical knowledge or the capacity to grow their coffee to the fullest. Neither in terms of quality nor quantity. So what happens, for example, there is one spot where the coffee is handled by a farmer that knows what he is doing, that has the capital and can buy fertilizer, really take good care of his coffee and the coffee is going to be good and only 20 miles away, there is going to be another farmer of the same coffee but he doesn't have the capital to buy fertilizer, barely takes care of the plants, so the same coffee will have a lot less production and most likely a lower quality so you can't say that two different Burundi will be traded at the same price. It is not typically how it works, because what makes coffee so special compared to other commodities such as wheat, for example, is that it is a lot less standardized. If you trade cotton or wheat, for example, there is only, I'm not going to say anything wrong, but just take it as an example, there is only a dozen type of wheat whereas there is going to be 200+ types of coffee, so that what makes coffee special in the world of commodities. So, it's hard to price and coffee is more or less unique, at least the coffee that we consider specialty coffee.

A: When you purchase coffee from the producer, or the cooperative which Incoterms would you most often use? FOB, Ex Work?

J: It really depends on the location and what we are trying to do. But I would say, at least during my time at Touton, we would usually buy FOB, either FOB or Free On Truck because obviously in Uganda you cannot buy FOB because there is no sea. You buy Free Carrier FCA, Free On Truck, then truck it Mombasa and put it on the ship and then sell it to Le Havre, most likely, because the most major roasters are based around Belgium and the northern parts of France, so it makes sense to deliver most of the coffee in northern Europe. In Brazil, we would most often buy FOB. Then more than half the sales contracts would be CIF, some contracts, 10 or 15 percent would be Delivered At Place or Delivered at Terminal for some particular roasters that wanted the coffee delivered directly at their facilities. In very rare cases, we would do back to back contracts, buy FOB and sell FOB, but this would be 10% or less of the contracts.

A: So, selling CIF or with a D-term, that would mean the trader would pay the freight and insurance. Could you give me a rough estimate of the price of those, for a pound of coffee, for instance?

J: That is very hard to say because it changes every time. When you trade with freight involved, you usually negotiate the rates on a monthly or quarterly basis, and it changes all the time. As you know already, coffee is traded via containers right, so typically a 40 foot container would be, at least when I used to work at Touton, 1400 Dollars per Metric Ton so, one 40 foot container would be about a little be less than 20 tons I believe. If I remember correctly.

A: So, that is freight, what about insurance?

J: Insurance would be 1.5 cents per pound more or less.

A: So very negligible?

J: No because it is per pounds and not per tons. It scales up fast. But, indeed in the grand scheme of things insurance is not what costs the most for sure.

A: Would the figure 55 cents per pound including freight and insurance make sense for coffee?
J: Do you mean the total cost per contract?
A: Per pound, so 55 cents per pound, meaning freight and insurance.
J: That sounds a little bit low. I can double-check with a few of my friends. Do you know what, I can even ask if I can put you in contact with them, because they'll have more up to date figures because I left Touton at the end of 2018, so my figures are completely out of date I assume.
A: Moving on to the end of the deal. When the deal is done, you can calculate your gross margin and profit margin eventually. What would your typical margin be on a sale and purchase?
J: Not much, not much at all. I would say at the very least 1 cent per pound. So, the margin is very thin, there is not a lot of room for errors, but typically 1 to 1.5 cents per pound, so you must make a lot a volume to make a decent amount of money.
A: For instance, Louis Dreyfuss in their financial report for the year 2019, reported a 2.85% gross margin. Does that make sense for the whole of the industry?
J: 2.85%, well I assume that is possible yes.
A: Would that be in touch with the rest of the trading companies or is it an outlier?
J: It's hard to say because most of these companies are private companies and they don't disclose their figures so you can't really tell and some players do really well one year and really bad the next, so it's really hard to say. I'd say 3% or more or less 3% for coffee is really good then if you consider other types of businesses it's pretty bad because if you consider the return on investment you would rather drop the money in the bank. But yes, I would assume 3% is something plausible and decent, but again as I said it's difficult to have points of comparison here.
A: So now I'll move on to FT coffee. So, in Switzerland, we already talked a little bit about Migros. In Migros or Coop, most of the coffee that is sold with a FT Label also sports a Bio label. Can you tell me a little bit more about this correlation?
J: I would assume it is just marketing more than anything. What distributors want to do is appeal to the masses and there is an obvious trend for Bio products, and I believe it's just a consequence of that. Because FT coffee does not have to be Bio to be FT. This is a different thing. Why most of the FT is also FT, well I guess they are trying to capture more margins. Because you capture margin for the coffee, then you capture more margin for the FT and then you capture even more margins for the Bio. And let us face it, people that buy Bio earn on average more money than the other consumers, so they are usually charged a fair bit more than the others.
A: So, you talked about the fact that FT coffee does not have to be Bio, but if it is there is an organic premium that is paid on top of the minimum price. Would you say that every product fond at Migros or Coop with bot a FT and Bio Label was bought with that organic premium?
J: Yes, absolutely.
A: Now, could you give an estimate of how much Bio coffee you would buy? So, you told me you would buy 15% of your volume FT and of that 15 %, how much would be Bio?
J: Probably a little less than half of it. Maybe less, one third. Between one third and one half, it is hard to say, but we did not sell a lot of Bio coffee, this was not the bulk of the volume for sure. I know there is a big trend about Fair Trade and Bio and stuff like that, but let's be honest most of the coffee is just regular coffee. Most of the volume are Ugandans and Vietnamese Robustas or Brazilian and Columbian Arabicas and those will end up in those Selecta machines you have at school or at the airport, the blends you buy at Migros, this is the bulk of the volume traded.
A: When you buy your Fairtrade coffee, we already mentioned there is a minimum price, today it is between 1.01 US dollars and 1.70 depending on whether it is an Arabica or Robusta, whether it is organic or not, etc. Then there is a premium added and finally, would you apply a differential, like you would for any regular coffee?

J: Of course, if we take again the example of the washed Burundi coffee, this will trade at a 30 cents premium over the Arabica Futures. So, this would remain, and on top of that, we would the premium and the organic premium if the case applies. And all of this would then be charged to the buyer.

A: So, we talked about a premium, but do you also sometimes apply a discount to FT products?

J: Yes, I would say you could totally imagine a case of a coffee that is traded at a discount. If we take the example of a Vietnamese Robusta, which usually trades at a discount. If said coffee is FT and Bio and every label you want, you would still consider a discount and then add all of the other premiums on top of the discount. Now would the final amount be above or below the benchmark? That depends on the initial discount and the difference between the premiums and the discount.

A: Would that mean that theoretically a FT product could be bought at a lower price than the minimum price if you apply a discount?

J: Imagine if a Vietnamese Robusta is traded at 1400 USD per ton that's the price for normal coffee, the FT coffee will always trade higher than that. But then if the question is whether it will trade above or below the benchmark, then again that depends on the initial discount and the FT and Bio premium you add on top of it and the situation of the market at any given time. So, it might be true today, it might not be true tomorrow. But you will never have a FT coffee traded for a lower amount than the same regular coffee.

A: Could it be cheaper than the FT recommended price? So, let us say the minimum price for Arabica is 1.35 and we're trading a poor quality Arabica so you apply a discount of 30 cents, you would now buy it at 1.05 dollars which is lower than the minimum price of 1.35. Would that be a possible scenario?

J: No, if the coffee is FT you cannot go below the minimum price. And these guys will check. We have had these guys come to the office, have the contracts sent to them. Yes, they do check. I have heard people say that FT is a scam, that they check nothing, that is not true. They do. They actually make a pretty good work at checking from end to end if the premium as been paid throughout the value chain.

A: Other than the purchase price, is there a difference in costs for the trader when he trades FT coffee or regular coffee.

J: No, because the FT premium you would charge to the purchaser anyway and transporting FT coffee is not expensive than the normal one, so no it is not necessarily more expensive for the trader.

A: Would you say that applies too to roasters and retailers? Or do they maybe have different costs when the coffee is FT?

J: No, I doubt it. I have never worked for a roaster of course, so I would not be able to say a 100%, but I can't imagine why roasting a FT Arabica might be more expensive than roasting washed Burundi. There is no reason. For instance, you could be roasting FT Burundi and the next day a non-FT batch. You are not going to change the machine or finetune anything, because, in the end, it is still Arabica. They would most likely be roasted at the same temperature for the same duration in the same machine. So, no I doubt the processing costs are more expensive, I really doubt it.

A: We come back to margins, is the margin of trader typically the same when he trades FT or regular coffee, or does it vary.

J: There is no change because the FT premium is in place to make sure the producer gets more money, not the trader. In the end, it is the same whether you trade Ugandan Robusta or FT Ugandan Robusta, the margin is going to be the same. Because the premium is going to be passed on from the buyer to the seller anyway.

A: Do you think, and I only ask for your personal opinion, it is the same for roasters and retailers or would you think that they apply different margins?

J: Of course, I do not doubt it. Normally, all the price etiquettes at Migros have the price per 100 gram to make it easier for the consumer to compare products. You can see that the price per gram for FT coffee is so much higher than what you would expect

from applying the premium. If the regular coffee is traded at 1 USD per pound and the FT one at 1.35, that's a 35% difference, but you can find out more often than not that FT coffee is more than double the price of regular coffee. So, the roaster themselves take more margin because they are surfing on this trend of FT, Bio, specialty coffee, etc. But that is for sure. I am sure it is easy to prove. Because for example, you consider Migros and take the cheapest coffee, you will have one kilo for 6 CHF, and you will have the FT one for 12 CHF for 300 grams. There is nothing that warrants that kind of difference.

A: When it comes to FT labels, we have talked up until now about the FLO, but major brands such as Nespresso and Starbucks have progressively abandoned FT in profit of their own label. Do you know why that is?

J: Yes, of course, because it is less expensive. It is easier to supposedly trade FT if you do not have anything to put his nose in. Who is going to check? If you are a financial company making good money and someone says "Are your accounts audited" and your answer is "Yes our accounts are good, we audited them ourselves" Would you trust that company over one that has been audited by EY or KPNG? You have to have a trustworthy 3rd party to put its nose in otherwise the label misses entirely its essence if there is no referee to ask, control documents and ask for proof. It's too easy for these companies to say "Yes it's FT don't worry about it. Proof yes do not worry we double-checked everything, no worries". That is too easy. I assume they do not pay the same premium.

A: So, you assume that it does not benefit the farmers as much as FT Labels?

J: I'm sure in some ways the farmers benefit from it. When you are a business like Starbucks or Nespresso you want to secure the procurement. You need the coffee to sell it because if you do not have the coffee, you cannot sell it and you cannot make a profit? So, to secure the best suppliers it has to be a decent price. Otherwise, someone else would pay more. So, for the farms that are in that kind of label, I am sure they are getting paid above market price in any case. Nonetheless, bypassing a trustworthy third party is a little bit scummy in my opinion.

A: Final question, I know you are a supporter of Fair Trade coffee, you talked to me about it already, can you tell me why?

J: Well, because in some countries at some point in time you do not even make money with coffee anymore. For instance, when Arabica prices dropped below 100 cents a few months ago. Columbian farmers were producing at a loss. These guys have to eat, they have families, kids. They have to buy gasoline for their machine. If these guys cannot make money, they will stop producing and that would be a shame because their coffee is actually pretty good. We would be missing out on that great coffee. I actually love Columbian coffee. 90% of the coffee I drink is from Honduras. If these guys stop making coffee that would be a loss for humanity. I am taking it too far, but it would be a shame and if we don't want to lose that good quality coffee, we have to pay those farmers. There is no reason why Migros would sell 200 grams of beans for 12 CHF and these guys get less than 100 cents per pound. There is no reason, that is not how it should work.

A: Thank you very much, those were all the questions I had for you.