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Are Fairtrade Prices Fair? An Analysis of the Distribution of Returns in the Swedish Coffee Market

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Abstract

Consumers pay a premium for Fair Trade coffee, often assuming that it mainly benefits poor coffee farmers. However, several studies report that most of the premium accrues to actors in the consumer countries, such as roasters and retailers. This paper analyses how the returns to Fair Trade are distributed among bean producer countries, roasters and retailers, and Fairtrade Sweden, using scanner data on 185 products from Sweden and information about costs of production. The distribution depends on how much more costly it is to produce Fair Trade coffee compared to conventional coffee, given costs of beans and licences. Assuming the difference is 5 SEK per kg (about USD 0.80), which is on the high side, roasters and retailers get 61%, while producer countries, i.e., coffee farmers, cooperatives, middlemen, exporters and Fairtrade International, get 31%. The rest accrues to Fairtrade Sweden. These estimates are uncertain, but there is there strong evidence that Fair Trade retail prices are higher than the level attributable to the costs of Fair Trade beans and licences.

Keywords: coffee supply chains, ethic labels, Fair Trade premium, Fairtrade, market power, organic coffee

JEL Codes: D43, O19, P46

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1. Introduction

Fair Trade products certified by Fairtrade International[1] are available in 125 countries, and sales are increasing rapidly (Fairtrade Foundation, 2012). In Sweden, they rose by 29% during 2013. There exist a large number of Fair Trade products, such as bananas, candy, wine and sports balls, but coffee is a key product. In Sweden, it accounts for over 30% of Fair Trade[2] sales, which corresponds to a market share of 7% in volume terms (Fairtrade Sweden, 2014).

One of the goals of Fairtrade International is to ensure that coffee farmers get a fair price, i.e., a better deal and terms of trade that allow them to improve their lives (Fairtrade International, 2014a). Fair Trade bean prices are indeed higher than conventional bean prices, and several studies report that farmers often benefit from Fair Trade (Weber, 2011; Jena et al. 2012; Dragusanu et al. 2014), though some argue that the economic gains are negligible, at best (Griffiths, 2014; de Janvry et al. 2014; Claar and Haight, 2015).

A number of studies also show that consumers are willing to pay a premium for Fair Trade products (Hertel et al., 2009, Carlsson et al., 2010; Andorfer and Liebe, 2012; Schollenberg, 2012). The most recent one, Hainmueller et al. (2014), provides experimental evidence from the US indicating that a Fair Trade label raises the average price by about 25% to 30%. Thus, Fair Trade certification has the potential to increase market efficiency by creating a new product that consumers are willing to buy, i.e., coffee combined with (perceived) decent income and working conditions for poor farmers. Without the certification, a label and the subsequent monitoring, the market for this product would not exist.

It is also likely that consumers believe that Fair Trade coffee farmers are the main beneficiaries of Fair Trade. Nonetheless, it is a common view that the lion's share of the Fair Trade premium accrues to roasters or retailers, and that the bean-exporting country receives as little as 10% or less (Mohan, 2010; Griffiths 2012; Hartford, 2012, p. 37; Wikipedia, 2014; Claar and Haight, 2015). This view is based on miscellaneous reports on price comparisons

[1] The legally registered name is Fairtrade Labelling Organizations International, which is an umbrella organization that includes three producer networks, 25 Fairtrade organizations, and FLOCERT, the independent certification body of the global Fairtrade system (Fairtrade International, 2014) .

[2] For simplicity, I use the term Fair Trade when referring to Fair Trade organizations in general and the activities of Fairtrade International.

of a small number of select coffees; there seem to be only four published papers. Three of these provide little information about how they obtained their results (Mendoza and Bastiaensen, 2003; Kilian et al., 2006; Johannessen and Wilhite, 2010). The fourth, Valkila et al. (2010), compares four popular conventional coffees with two Fair Trade coffees in Finland in 2006-09. They conclude that Fair Trade mainly empowers roasters and retailers.

Supporters of Fair Trade argue that that there might have been large differences between conventional and Fair Trade coffee prices in the past, when Fair Trade sales were small, but competition has reduced them as markets have matured (Mohan 2010, pp. 52-55; Smith, 2009). And indeed, most studies use data from a period when Fair Trade sales were relatively small (Fairtrade Foundation, 2012).

The purpose of this paper is to estimate how the returns to Fair Trade are distributed in the Swedish market. I have information that allows me to distinguish between three categories of actors: producer countries, which include coffee farmers, cooperatives, middlemen, exporters and Fairtrade International; importers, roasters and retailers in Sweden, called roasters/retailers; and Fairtrade Sweden, which manages the certification of roasters and other related activities in Sweden. The analysis also provides estimates of government income from value added tax (VAT), but they are small and uncertain and not explicitly reported.

I first use scanner data at the barcode (EAN) level, collected by the company Nielsen from Swedish food stores, to estimate average Fair Trade and conventional coffee retail prices for the period March 2009-February 2012. Regression allows for the control of product characteristics that affect the cost of production (type of roasting, organically certified, private label, etc.). I then calculate average returns to Fair Trade using the estimates of retail prices, costs of conventional, organic and Fair Trade beans, and Fair Trade certification costs, while making assumptions of 'other costs'.

The main finding is based on a comparison of non-organic conventional and Fair Trade coffees. Out of the net-of-VAT return to Fair Trade coffee, roasters/retailers get 61% when 'other costs' for Fair Trade coffee are assumed to be 5 SEK per kg higher than for conventional coffee, and 70% when 'other costs' are assumed to be the same. Producer countries thus get 25% to 30%, while Fairtrade Sweden gets 5% to 10%. A difference of 5 SEK

per kg is on the high side, providing a lower bound of the share going to roasters/retailers. When only organically certified conventional and Fair Trade coffees are compared, the distribution of shares is more uncertain: combining the assumptions most favourable to Fair Trade results in producer countries getting 65% and roasters/retailers 28%. But these values should be regarded as extreme upper and lower bounds.

It common to report the share of the Fair Trade premium (the difference between Fair Trade and conventional coffee retail prices) that goes to the producer countries. During the study period, they received 22% of the premium, which is clearly higher than the 11.5% reported by Valkila et al. (2010). Another common measure is the value share, the price paid for beans used to produce 1 kg of ground coffee. It was 50% for conventional coffee and 43% for Fair Trade coffee using my Swedish data, which can be compared to 43% for conventional and 35% for Fair Trade in Finland (Valkila et al., 2010), and to 26% for one Fair Trade coffee brand in Norway (Johannessen and Wilhite, 2010).

I thus find that producer countries receive a substantially larger share of the Fair Trade premium than claimed in the literature (Mohan, 2010; Griffith, 2012, 2014; Wikipedia, 2014). Nevertheless, the findings also indicate that roasters/retailers are the main beneficiaries from Fair Trade: if there were perfect competition in the Swedish coffee market, the returns would have been the same for Fair Trade and conventional coffee, and roasters'/retailers' Fair Trade share would have been close to zero.

The next section briefly reviews earlier research on Fair Trade retail prices. Section 3 describes the data and method. Section 4 reports the regression results, while Section 5 calculates the allocations of the Fair Trade returns. Section 6 concludes the paper.

2. Earlier Research

There exist a vast number of papers on Fair Trade, but very few analyse consumer prices. Many papers are concerned with the impact on farmers' income and therefore focus on markets in bean producing countries; Weber (2011) and Dragusanu et al. (2014) provide discussion and references. Reviews on Fair Trade retail prices sometimes list a number of publications, but few of them systematically compare prices (Mohan, 2010; Griffiths, 2012, 2014; Wikipedia, 2014). Nonetheless, there is a consensus that a very small share of the

additional price paid by consumers for Fair Trade coffee ends up in producer countries. Among those defending Fair Trade, the topic is either not discussed (Dragusanu, et al., 2014) or claims are made without references to other studies (Smith, 2009).

The most recently published study on consumer prices is Johannessen and Wilhite (2011). It analyses 2006-07 data from one brand of Fair Trade coffee, Farmers' Coffee from Guatemala, which is sold in retail stores in Norway. Out of the final consumer price, the retailer gets 13.8%, the Fairtrade certifier 2.4% and the importer/roaster 58.2%. This implies that 74.4% of the value stays in Norway while 26.6% ends up in Guatemala. There is no information about production costs, VAT, etc., and no comparison to prices of conventional coffee, so we cannot say how large the Fair Trade premium was and how it was distributed.

Valkila et al. (2010) compare prices in 2006-09 of the two most popular Fair Trade coffees with four popular conventional coffees sold by a large retail chain in Finland. They find that 35% of the Fair Trade consumer price goes to the bean producer country and 60% stays in Finland; the other 5% are for licence fees and transport costs. The producer country receives €1.30 for a kg of Fair Trade coffee and €1.15 for a kg of conventional coffee, which implies that 11.5% of the extra price paid by consumers for Fair Trade coffee reaches the producer country.

Kilian et al. (2006) report data from 2002 in graphs from the US and Europe on conventional, organic and Fair Trade/organic coffee.[3] There are three noteworthy findings, particularly in Europe. First, there is a relatively small difference between prices charged by roasters for conventional, organic and Fair Trade/organic coffee, indicating that production costs are similar. Second, retailers increase the price of organic and organic Fair Trade coffee by about 100%, while the mark-up on conventional coffee is only 15% to 20%. Third, there is almost no difference in the consumer prices of organic and organic Fair Trade coffee, indicating that the premium for Fair Trade is small. Rough estimates based on the graphs indicate that about 15% of the difference in price between conventional and Fair Trade/organic coffee went to the producer country. However, this was almost all due to the premium on organic coffee.

[3] Kilian et al. (2006) do not present any details about their study, but refer to a report that I have not managed to obtain.

Mendoza and Bastiaensen (2003) compare the costs for one conventional and one Fair Trade instant coffee in the United Kingdom in 1996 and 2003. In 1996, the producer price was similar for conventional and Fair Trade prices, while the Fair Trade consumer price was 40% higher than the price for conventional coffee. Thus, only 4.5% of the Fair Trade premium went to the producer country. World market bean prices declined sharply after 1996, but the impact on Fair Trade coffee prices was small. As a result, the share going to the producer country increased to 19%.

There is also a study that focuses solely on the Fair Trade premium for coffee in Sweden. Schollenberg (2012) estimates hedonic models using Nielsen data for March 2005 - March 2008. The key finding is that a Fair Trade label raises the price by 32% when controlling for a range of factors that influence prices, such as brands. There is no information about bean prices and distribution of shares.

Thus, there is some limited evidence that importers, roasters and/or retailers charge high prices for Fair Trade coffee and keep a large part of the price difference. However, most studies use data from a period when Fair Trade coffee sales were smaller than today, while such sales have more than tripled since 2005 (Fairtrade Foundation, 2012). Therefore, increases in competition might have eroded the price differences, as claimed by Smith (2009). Moreover, the findings of Killian et al. (2006) lack credibility because they are odd and not properly reported, while the other three studies focus on a small selection of products, which might amplify the impact of differences in quality. And even when they have good estimates of Fair Trade bean prices, very cheap beans might have been used in the production of the conventional coffee constituting the benchmark. For example, the conventional coffees studied by Valkila et al. (2010) are the most popular ones, and they are likely to have low prices.

3. Data and Method

The data on coffee products are from weekly sales in 3,088 Swedish food stores from March 1, 2009 to February 26, 2012, collected at the barcode level by the company Nielsen. They include values and volumes of all coffee products sold and information about types of coffee (market segment) and various product characteristics, such as producer, type of roast, size of package, private label, organic and Fair Trade coffee certified by Fairtrade Sweden. Retail

prices are measured as value divided by volume averaged over the sample period and food stores. I focus on ground coffee, by far the largest market segment in Sweden, which accounts for 80% of all coffee sales in value terms according to the Nielsen data. Instant coffee, which accounts for 11% of the sales, is more challenging to analyse due to the small number of Fair Trade products and larger scope to use cheap beans.[4]

Table 1 provides price information on the 185 ground coffee products available in packages of 250 g, 400-499 g and 500 g. There are 22 Fair Trade and 12 organic (but not Fair Trade) products. Both mean and median prices for Fair Trade coffee are relatively high, 30% to 40% higher than for conventional coffee. This is partly due to low prices for conventional coffee at the lower end of the price scale; the minimum price is 30 SEK compared to 69 SEK for Fair Trade coffee, while the maximum price for conventional coffee is only 10 SEK lower than for Fair Trade coffee. Most of the Fair Trade coffees are organic, but the price difference is probably due to the Fair Trade label, since organic, non-Fair Trade, coffee is only slightly more expensive than conventional coffee.

There are two sources of information for green bean prices: International Coffee Organisation (ICO) and Statistics Sweden. ICO publishes daily world market prices for various types of green beans. I used these prices and information on the volume of imports of green beans to construct an index with weights based on the type of Arabica beans imported (ECF, 2014). Statistics Sweden publishes monthly volumes and values of imports of green beans. The average bean prices obtained from the two sources are very similar, 29.15 and 29.72 SEK per kg for March 2009 – February 2012. The difference is probably partly due to additional freight and insurance costs for delivery to Sweden. Converting the prices for freight and insurance used by Valkila et al. (2010) to SEK gives 0.85 SEK/kg for transporting green beans from Latin America to Finland, so the difference of 0.57 SEK between Statistics Sweden and ICO prices makes sense. Because the difference between the prices is small, the choice of data source does matter for the results. In the calculations, I use prices based on import data from Statistics Sweden.

The current Fair Trade (minimum) bean price is 140 US cents per pound for Arabica and 101 US cents per pound for Robusta. When world market prices are higher than minimum prices,

[4] The results from the analysis of instant coffee are available on request. They are qualitatively similar to the ones reported for ground coffee.

Fair Trade adds 20 US cents per pound to the world market price of conventional coffee beans and another 30 US cents for certified organic coffee beans (Fairtrade Foundation, 2012). Before April 2011, the top-ups were 10 and 20 US cents, respectively.

Because world market prices were higher than Fair Trade minimum prices during the study period, I added the Fair Trade top-ups to obtain Fair Trade coffee bean prices. Most Fair Trade coffee sold in Sweden is organic, so Table 1 reports both Fair Trade and organic Fair Trade bean prices. Unfortunately, I do not have systematic information about the price for organic non-Fair Trade beans.

The price of ordinary green beans was 29.72 SEK/kg. Adding Fair Trade's top-up raises it to 32.80 SEK/kg for Fair Trade beans and 37.50 SEK/kg for organic Fair Trade beans. This means that Fair Trade and organic Fair Trade beans are 10% and 26% more expensive than ordinary beans.

Approximately 1.19 kg of green beans is used to produce 1 kg of ground coffee, due to weight loss (ECF, 2014). When comparing green bean and ground coffee prices, it therefore makes sense to multiply bean prices by 1.19. Roasters thus paid 35.37 SEK for beans used to produce 1 kg of ground conventional coffee, 39.03 SEK for 1 kg of Fair Trade coffee and 44.63 SEK for one kg of organic Fair Trade coffee.

We conclude that there are large retail price differences between conventional and Fair Trade coffee and that these hardly are due to differences in bean prices only. However, the comparison ignores the fact that the coffees compared are not identical; many characteristics of the products affect price, such as size of packages and type of roasting.

The main challenge when evaluating Fair Trade prices is that quality might differ both between conventional and Fair Trade and within each category (Elliot, 2012). Another challenge is that most Swedish Fair Trade coffee is organic, and the separate contributions of Fair Trade and organic beans to the price need to be disentangled. I use regression analysis to control for several product characteristics and to separate the contribution of Fair Trade and organics to the price. The key to identification of the impact of Fair Trade on the price is that not all organic products are Fair Trade, and that the price of organically certified

conventional coffee is informative about the contribution of organic beans to the price of organically certified Fair Trade coffee.

Table 1. Ground coffee and bean prices, March 2009-February 2012

Ground coffee	Number	Mean	Median	Min	Max
Conventional	151	71.20	64.08	30.00	175.93
Fairtrade organic	22	107.16	90.80	69.32	185.71
Organic, not Fairtrade	12	71.69	67.54	41.02	129.44

Green beans	Ordinary	Fairtrade	Organic Fairtrade
	29.72	32.80	37.50
Bean price for 1 kg roasted coffee	35.37	39.03	44.63

Note: The sample includes products in packages of 250 g, 400-499 g and 500 g. Coffee products priced at 10 SEK/kg or less have been excluded since they are only sold in large quantities. The green bean import price is from Statistics Sweden, calculated as the value divided by volume of imports. The price paid for beans to produce 1 kg of coffee is based on the requirement to use 1.19 kg of beans due to weight loss (ECF, 2014).

Sources: Own calculations based on data from Fairtrade Foundation (2012), Nielsen Sweden (2014) and Statistics Sweden (2014).

I calculate three measures comparing non-organic conventional and Fair Trade coffee, and organic conventional and Fair Trade coffee, which does not rely on the identification of the non-organic Fair Trade prices but requires additional assumptions about organic bean prices. The key measure is how the return to Fair Trade coffee is distributed between Swedish actors and producer countries. It requires information about retail prices and an analysis of how production costs differ between Fair Trade and conventional coffee. I also calculate the shares of the Fair Trade premium (the difference in retail price between Fair Trade and conventional coffee that accrues to producer and consumer countries) and the value shares (the shares of Fair Trade and conventional coffee retail prices that end up in producer countries as payment for beans). These two measures have been used in a number of studies and reports (Oxfam, 2002; Talbot, 2004; Gilbert 2008; Valkila et al., 2010; Wikipedia, 2014).

I have information about the cost of beans, the main costs of production, and the Fairtrade certification fees (paid by roasters) and the VAT. It is possible that roasters' costs of production are higher for Fair Trade than for conventional coffee, even after controlling for bean prices and fees, although coffee production is fairly straightforward and returns to scale are limited (Sutton, 1991). Fair Trade production costs might be higher if, for example, it is more challenging to find Fair Trade coffee beans of adequate quality or taste. To get a

rough idea of the size of such a potential difference in 'other costs' of production, I used annual data from Statistics Sweden on value and volume of deliveries from Swedish roasters to calculate wholesale prices for ground coffee. All instant coffee is imported to Sweden and retail sales of whole roasted beans make up only a tiny part of all coffee sold to consumers, so almost all imported green beans are used to produce ground coffee. A small share of roasted coffee is exported, which I ignore. The average wholesale delivery price for 2010-2011 was 52 SEK/kg, while the import price of coffee beans was 32 SEK/kg. The difference, 20 SEK, is gross margin plus costs for roasting (including weight loss), packaging, transport to retailers, etc. Thus, a difference in production costs of, let's say, 5 SEK/kg should be an upper limit, which I use in the calculations of the return to Fair Trade coffee.

4. How high are Fair Trade prices?

Table 2 reports OLS regressions on prices per kg of ground coffee in 500 gram packages, by far the most popular product, using robust (sandwich estimator) standard errors. Product characteristics, aimed at capturing quality-related costs, are measured by dummy variables for type of roast (medium, dark and other), private label, decaffeinated, organic (not Fair Trade), and Fair Trade organic coffee (all 500 gram Fair Trade coffees are organic). The dummies are not mutually exclusive: a small number of coffees with private labels are also organic and a few are both organic and Fair Trade. However, the inclusion of more dummy variables, such as non-Fair Trade organic private label, does not affect the results (results are available from the author on request).

The base-category is ground medium roast coffee, national brand with caffeine. Specification (1) includes the 140 products for which there is data. The price of the base-category is 62.00 SEK/kg. The combined Fair Trade and organic labels add 23.27 SEK/kg to the 62.00 SEK/kg, while organic coffee labels by themselves add only 6.14 SEK/kg. The estimate of the contribution of organic beans to the price is somewhat uncertain because it is only significant at the 10% level, but it is clearly much smaller than the 17 SEK/kg (23.27-6.14) contribution of the Fair Trade label.

Because the variable measuring Fair Trade coffee products includes only organic Fair Trade coffee, I re-estimate the model without Fair Trade coffee to focus on organic coffee (specification 2). The results are similar: organic beans add 6.17 SEK/kg to the price.

To check the robustness of the result for the Fair Trade coffee, I then estimate a model with only organic coffee (specification 3). Now the base-category is a 500 gram package of ground medium roast organic coffee, national brand with caffeine. Its price is 69.26 SEK/kg. There are only 24 observations, but the results are strong: the coefficient for Fair Trade coffee is highly significant (t-value = 5.25), showing that the label adds 14.76 SEK/kg to the price of organic coffee. This is in line with the results obtained in the two other specifications. A medium roast, national brand coffee with caffeine that is also Fair Trade but not organic would thus cost about 77 to 79 SEK. This implies that the Fair Trade label increases the price of conventional coffee by about 25%.

All the control variables have expected signs. Private label coffee is about 12 SEK cheaper than national brands, and dark roast is 5 to 7 SEK more expensive. The 'undefined roast' is a control variable that captures products without a description of the type of roast on the package. Decaffeinated coffee is 6 SEK more expensive than conventional coffee, but the estimates are far from significant due to the small number of observations.

Table 2. OLS regression on average price per kg of ground coffee (500 g packages)

	(1) All products	(2) No Fair Trade	(3) Only organic
Dark roast	5.05	4.78	7.54
	(1.97)*	(1.68)*	(3.99)***
Undefined roast	17.45	17.333	-5.07
	(1.85)*	(1.84)*	(1.62)
Decaffeinated	6.40	6.31	
	(0.31)	(0.30)	
Private Label	-11.55	-11.70	-9.72
	(4.96)***	(4.76)***	(2.61)**
Fair Trade organic	23.27		14.76
	(11.90)***		(5.25)***
Organic, not Fair Trade	6.14	6.17	
	(1.74)*	(1.75)*	
Constant	62.00	62.14	69.26
	(26.03)***	(25.18)***	(22.09)***
R^2	0.29	0.20	0.80
N	140	127	24

Note: Average price for March 1, 2009 - February 26, 2012. Robust standard errors are used. * p<0.1; ** p<0.05; *** p<0.01.

To further check for robustness of the findings, I estimated models with five different samples: all 250 g, 400 g - 499 g, and 500 g packages; only 400 g - 499 g and 500 g packages, which excludes several very expensive 250 g packages; the four large roasters that dominate the Swedish market for ground coffee; only inexpensive coffees, i.e., that cost less than 100 SEK/kg; and only coffees with national labels. Although the coefficients of some of the product characteristics differ, the ones for organic and Fair Trade coffee are similar to the coefficients reported in Table 2 (see Table A1 in Appendix).

5. Distribution of returns to Fair Trade

The purpose of this section is to calculate how much of the return to Fair Trade accrues to producer countries, roasters/retailers and Fairtrade Sweden. In addition, I calculate producer countries' share of the premium and producer countries' value shares for Fair Trade and conventional coffee.

During the study period, the average Fair Trade top-up (usually called premium) was 3.11 SEK/kg on ordinary beans and 7.11 SEK/kg on organic beans, which is the additional cost paid by roasters for Fair Trade beans (see Table A2 in Appendix). The certification fee paid by roasters was 1.5% of the consumer price in 2008, and then declined to 0.8% in 2013.[5] In the calculations, I use 1.5% (inclusive of VAT) of the consumer price (exclusive of VAT), which might be on the high side.

Because there is a time lag between the purchase of beans and the sale of processed coffee, I calculated average prices for lags of three and six months, as well as contemporaneous prices. However, price changes are small and the choice does not matter much. The price used in the calculations is the average price of imported green beans for January 2009 - November 2011, a time lag of about three months.

I lack specific information about importers, roasters and retailers, so they are treated as one unit. According to market information, roasters have great flexibility in changing prices[6] and retailers are generally believed to have small margins, because coffee often is a loss leader.

[5] Personal communication with Morgan Zerne, CEO of Fairtrade Sweden.
[6] According to Calle Åkerstedt at the Swedish National Coffee Association, there are no contracts that prevent roasters from adjusting prices.

This indicates that retailers play a minor or passive role in price setting. Yet, retailers have their own brands (private labels), so the distinction between roasters and retailers is not clear-cut.

The main calculations compare conventional and Fair Trade coffee, but I also report comparisons between organically certified conventional and Fair Trade coffee. The following formulas are used in the calculations, where organic coffee is ignored for simplicity:

- Roasters'/retailers' net return for 1 kg of ground conventional or Fair Trade coffee,

  $$P_{Ni} = P_{Ri} - (0.107P_{Ri} - 0.107P_{Bi} - 0.107P_{FTC} - 0.2P_{OCi}) - P_{Bi} - P_{FTC} - P_{OCi},$$

  where *i* is *C* for conventional coffee and *F* for Fair Trade coffee, and P_{Ri} is retail price, P_{Bi} bean price adjusted for weight loss due roasting, P_{FTC} cost for Fair Trade certification and P_{OC} 'other costs'. All prices are inclusive of VAT, so the terms in parentheses deduct VAT from the retail price. VAT is 12% on food and 25% on most other products, i.e., 10.7% or 20% of the price that includes VAT.
- Import price for beans inclusive of VAT and weight loss, $P_{Bi} = P_{impi}(1.12)(1.19)$, where P_{impi} is the border price in SEK/kg, with or without the Fair Trade top-up, and 1.19 is the weight loss (ECF, 2014).
- Return to producer countries from sales of Fair Trade beans, $0.893(P_{BF} - P_{BC})$.
- Return to Fairtrade Sweden from certification fee, $P_{FTC} = 0.893\left(0.015\left(P_{RF}/1.12\right)\right)$.
- Return to roasters/retailers from sales of Fair Trade coffee, $P_{NF} - P_{NC}$, i.e., the difference between net returns to sales of Fair Trade and conventional coffee.
- Total return from Fair Trade retail sales, $R_{FTR} = P_{FTC} + 0.893(P_{BF} - P_{BC}) + (P_{NF} - P_{NC})$.
- Producer countries' share of return from Fair Trade sales, $\left[0.893(P_{BF} - P_{BC})\right]/R_{FTR}$.
- Fair Trade Sweden's share of return from Fair Trade sales, $\left(0.893P_{FTC}\right)/R_{FTR}$.
- Roasters'/retailers' share of return from Fair Trade sales, $(P_{NF} - P_{NC})/R_{FTR}$.
- Producer countries' share of the difference between Fair Trade and conventional retail prices, $0.893(P_{BF} - P_{BC})/(P_{RF} - P_{RC})$.

- Producer countries' value share, which is the price of beans used to produce 1 kg of coffee, exclusive of freight and insurance costs (0.85 SEK), as a share of the retail price $(0.893P_B - 0.85)/P_R$.

Table 4 reports the results for ground coffee in 500 g packages. Consumer prices are from Table 2, specification (1), where we control for product characteristics. They are 62 SEK for conventional coffee and 79 SEK for Fair Trade coffee. The return to producer countries and Fairtrade Sweden is 3.70 and 0.95 SEK/kg, respectively, while assuming no difference in 'other costs' gives a return of 11.10 SEK/kg to roasters/retailers. The total return from Fair Trade sales is thus 15.75 SEK/kg, out of which 24% accrues to producer countries, 70% to roasters/retailers and 6% to Fairtrade Sweden. If we instead assume that 'other costs' are 5 SEK/kg higher for Fair Trade coffee, the producer countries' share increases to 31% and roasters/retailers share decreases to 61%.

Table 4 also reports how large the difference in 'other costs' needs to be to completely erode the return to roasters/retailers; it is 14.80 SEK/kg. In this hypothetical case, roasters'/retailers' return from conventional and Fair Trade coffee would be the same and producer countries would receive 80% of the return.

Table 5 reports calculations with organically certified coffee, assuming that non-Fair Trade organic beans either cost the same as ordinary beans, or the same as ordinary beans plus the Fair Trade top-up on organic beans. These are two extremes. I also assume that the difference in 'other costs' is 5 SEK/kg. When the price of organic and ordinary beans is assumed to be the same, producer countries receive as much as 65% of the return from Fair Trade, while roasters/retailers get 28%. If we instead assume that there is no difference in 'other costs', the shares change to 51% for producer countries and 43% for roasters/retailers (not reported). When the additional cost paid for organic beans is the same for conventional and Fair Trade coffee, and there is a 5 SEK/kg difference in 'other costs', producer countries only receive 27%, while roasters/retailers receive 65%.

The producer countries' share of the premium, the difference between Fair Trade and conventional retail prices, is 22% when non-organic coffees are compared (Table 4), and 20% and 49% in the two cases reported for organic coffee (Table 5). Their share is thus likely to

be much higher than the usually reported 10%. Producer countries' value shares, the price of beans as a percentage of retail prices, are about 50% for conventional and 43%-46% for Fairtrade coffee.

6. Conclusion

Consumers pay a premium for Fair Trade coffee, most likely assuming that it mainly benefits poor coffee farmers. Yet, it is common to claim that almost the entire Fair Trade premium, the difference between Fair Trade and conventional coffee retail prices, is kept by importers, roasters and retailers (Mendoza and Bastiaensen, 2003; Kilian et al., 2006; Johannessen and Wilhite, 2010; Mohan, 2010; Valkila et al., 2010; Griffiths 2012, 2014; Hartford, 2012, p. 37; Wikipedia, 2014; Claar and Haight, 2015). However, the empirical evidence for this claim is weak. Most studies are based on comparisons of a small number of selected coffees, not representative samples, and few of them have been published. They are also somewhat dated, and defenders of Fair Trade argue that the rapid growth of Fair Trade coffee sales has increased competition and reduced premiums (Smith, 2009).

This paper analyses how the return to Fair Trade sales in the Swedish coffee market is distributed between three groups: coffee producer countries, which includes farmers, their cooperatives, middlemen, exporters and Fairtrade International; importers, roasters and retailers; and the organisation managing certification of roasters, Fairtrade Sweden. Scanner data for everyday sales of coffee in 3,088 stores across Sweden are used to estimate price differences between conventional and Fair Trade certified ground coffee, while controlling for product characteristics. Information about conventional and Fair Trade green bean prices, Fair Trade certification fees paid by roasters, and VAT, as well as assumptions about differences in 'other costs' in the production of coffee, are then used to calculate the distribution of returns.

Table 4. Ground coffee, in SEK/kg (500 g packages)

	Definition	Conventional coffee	Fair Trade, other costs = 0 SEK	Fair Trade, other costs = 5 SEK	Fair Trade, other costs = 14.80 SEK
Retail price	P_{Ri}	62.00	79.12	79.12	79.12
Cost of beans (inclusive of VAT and weight loss)	$P_{Bi} = P_{impi}(1.12)(1.19)$	37.95	42.09	42.09	42.09
Other costs (assumed)	P_{OCi}	0.00	0.00	5.00	14.80
Return to producer countries	$0.893(P_{BF} - P_{BC})$	-	3.70	3.70	3.70
Return to Fairtrade	$P_{FTC} = 0.893\left(0.015\left(P_{RF}/1.12\right)\right)$	-	0.95	0.95	0.95
Return to roasters/retailers	$P_{NF} - P_{NC}$	-	11.10	6.64	0.00
Sum of returns from Fairtrade sales	R_{FTR}	-	15.75	11.29	4.65
Producer countries' share of return	$\left[0.893(P_{BF} - P_{BC})\right]/R_{FTR}$	-	24%	31%	80%
Fairtrade's share of Fair Trade return	$\left(0.893P_{FTC}\right)/R_{FTR}$	-	6%	8%	20%
Roasters'/retailers' share of Fair Trade return	$\left[(P_{NF} - P_{NC})\right]/\left[R_{FT} + (P_{NF} - P_{NC})\right]$		70%	61%	0%
Producer countries' share of Fair Trade premium	$0.893(P_{BF} - P_{BC})/(P_{RF} - P_{RC})$	-	22%	22%	22%
Producer countries' value share (price of beans as share of retail price)	$(0.893P_B - 0.85)/P_R$	50%	43%	43%	43%

Note: The price data are from Table 2.

Table 5. Organic ground coffee, in SEK/kg (500 g packages)

		Low cost beans, same price for organic and ordinary beans		High cost beans, same price for organic and Fairtrade organic beans	
	Definition	Conventional organic coffee	Fairtrade organic coffee	Conventional organic coffee	Fairtrade organic coffee
Retail price	P_{Ri}	66.40	85.27	66.40	85.27
Cost of beans (inclusive of VAT and weight loss)	$P_{Bi} = P_{impi}(1.12)(1.19)$	37.95	48.30	44.16	48.30
Other costs (assumed)	P_{OCi}	0.00	5.00	0.00	5.00
Return to producer countries	$0.893(P_{BF} - P_{BC})$	-	9.25	-	3 .70
Return to Fairtrade	$P_{FTC} = 0.893\left(0.015\left(P_{RF}/1.12\right)\right)$	-	1.02	-	1.02
Return to roasters/retailers	$P_{NF} - P_{NC}$	-	3.95	-	8.83
Sum of returns from Fairtrade sales	R_{FTR}	-	14.22	-	13.56
Producer countries' share of return	$\left[0.893(P_{BF} - P_{BC})\right]/R_{FTR}$	-	65%	-	27%
Fairtrade's share of Fair Trade return	$\left(0.893P_{FTC}\right)/R_{FTR}$	-	7%	-	8%
Roasters'/retailers' share of Fair Trade return	$\left[(P_{NF} - P_{NC})\right]/\left[R_{FT} + (P_{NF} - P_{NC})\right]$		28%		65%
Producer countries' share of Fair Trade premium	$0.893(P_{BF} - P_{BC})/(P_{RF} - P_{RC})$	-	49%	-	20%
Producer countries' value share (price of beans as share of retail price)	$(0.893P_B - 0.85)/P_R$	46%	46%	54%	46%

Note: The price data are from Table 2.

One challenge when measuring prices is that quality varies across coffee products. I therefore analyse practically all ground coffee products sold in Sweden, instead of a small select sample, and use estimates of average prices conditional on product characteristics which are likely to reflect production costs, such as type of roast, national brand, size of package, etc. Another challenge is that almost all Fair Trade coffee sold in Sweden is organic, so the price effects of Fair Trade and organic labels need to be separated. One approach is to estimate the average impact on prices of organic coffee labels using information from non-Fair Trade organic coffee, and then deduct the organic price premium from the price of organic Fair Trade coffee. The second approach is to compare organic coffees only. However, this approach has some drawbacks; there is a lack of systematic information about prices of non-Fair Trade organic beans, and the market share for organic ground coffee is small, about 7% in value terms.

The distribution of the return to Fair Trade depends on assumptions about 'other costs' and prices paid for non-Fair Trade organic beans. An informed guess is that 'other costs' are unlikely to be greater than 5 SEK/kg (about USD 0.80). Comparing non-organic coffee and assuming other costs of 5 SEK/kg gives importers, roasters and retailers about 60% of the premium, while assuming that there is no difference in 'other costs' increases the share to 70%. Producer countries receive about 25% to 30%, while Fairtrade Sweden clearly gets less than 10%. In the most favourable case for producer countries, they receive 65% of the return, which happens when we assume that ordinary and organic beans used in the production of conventional organic coffee have the same price and that there is a 5 SEK/kg difference in 'other costs'. However, this is a very high upper bound. The overall finding is thus that importers, roasters and retailers are likely to get the main share of the return to Fair Trade, that is, over 50%.

The calculation of these shares differs from the ones usually reported. A popular approach is to focus on the premium, i.e., the difference between Fair Trade and conventional coffee retail prices, ignoring costs of production and VAT. During the study period, producer countries received over 20% of the premium, but most likely much less than 50%. This is clearly more than the 10% or less often mentioned (Johannessen and Wilhite, 2010; Mohan, 2010; Valkila et al., 2010; Wikipedia, 2014).

Another common measure is the value share, the export price of beans as a percentage of the retail prices (Oxfam, 2002; Talbot, 2004; Gilbert, 2008). In contrast to the other measures, this also captures the return for coffee beans in general, not just the difference between Fair Trade and conventional coffee. It was 50% for conventional coffee, 43% for Fair trade coffee, and 46% for organic Fair Trade coffee. Some other recent estimates are 26% for a Fair Trade coffee brand in Norway (Johannessen and Wilhite, 2010) and 35% for a selection of Fair Trade coffees in Finland (Valkila et al., 2010).

One finding is thus that producer countries' receive a larger share of the returns than generally claimed by critics of Fair Trade. This could be because the Swedish market is different, but this is an unlikely explanation because market structures are similar in most high-income consumer markets, particularly in the Nordic countries (Sutton, 1991; Durevall, 2003). A more likely reason is that I analyse national samples of coffees, not just a few products, and that I control for product characteristics. It is also possible that competition has reduced price differences during the last decade; I find that the Fair Trade premium is 25% during the period March 2009 – February 2012, while Schollenberg (2012) finds that it is 32% during March 2005 - March 2008; however, she controls for 40 brands and compares Fair Trade coffee prices with those of a medium roast ground coffee of unknown (other) brand.

Nonetheless, a key finding is that the margins for Fair Trade coffee are higher than for conventional coffee. This is an indication of market power in the Swedish consumer coffee market. Large multinational and national roasters sell Fair Trade coffee, and they are generally believed to have market power due to their large market shares, in Sweden and elsewhere (Talbot, 2004; Gibbon, 2005; Nakamura and Zerom, 2010). Yet, earlier research on the Swedish coffee market has not found persuasive evidence of market power (Durevall, 2007; Gilbert, 2008). With market power, roasters/retailers can charge prices that more than compensate for additional Fair Trade costs. As a consequence, demand for Fair Trade coffee beans are kept down by high prices, indirectly affecting the income of poor farmers. Hence, instead of improving market efficiency, as argued by Dragusanu et al., (2014), Fair Trade might provide roasters with a new product that earns monopoly rents.

An alternative explanation for the high Fair Trade retail prices is shortages of Fair Trade beans, at least of beans of sufficiently good quality. Although there arguably have been periods when some roasters have had difficulties finding adequate Fair Trade beans, this is unlikely to be a general phenomenon. In fact, most Fair Trade-certified cooperatives sell only a small part of their coffee beans as Fair Trade, because there is excess supply (de Janvry et al., 2014).

Critics of Fair Trade have suggested that consumers may be better off donating money to coffee farmers (supposedly via some institution) instead of buying Fair Trade coffee (de Janvry, 2014; Claar and Haight, 2015). Dragusanu et al. (2014) disagree, arguing that it is better to use market-based mechanisms because direct transfers of money to farmers tend to distort incentives and spur rent-seeking and corruption. Another suggestion is that retailers should declare openly on packages how much of the retail price goes to farmers (Griffiths, 2010). This suggestion is probably unattractive for roasters and retailers in general. But it could be adopted by roasters engaged in Fair Trade, increasing their market shares and boosting competition in the Fair Trade coffee market.

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Appendix

Table A1 reports regressions with various samples to show that the findings are not likely to be due to outliers or extrapolation, that is, comparisons of completely different products. Five samples are used: all 250 g, 400 g - 499 g, and 500 g packages; 400 g - 499 g and 500 g packages; only the four largest roasters; only inexpensive coffee, price < 100 SEK/kg; and only coffee with national labels.

The estimated coefficients for Fair Trade and organic coffee are similar to the ones in Table 2. The most notable result is that the four large roasters have a somewhat higher price for the base category (64.60 compared to 62.00 SEK), and add fewer SEK to Fairtrade and organic coffee. However, using these prices only marginally affected the distribution of shares; for instance, roasters/retailers get 57% instead of 61% when we assume the difference in 'other costs' is 5 SE/kg. Another interesting result is that coffees in 250 g and 400 to 499 g packages are much more expensive than those in the standard 500 g package. However, they are small and heterogeneous groups. For example, in the 250 g group, there are only 23 products. They cost 51 SEK more than 500 g packages on average, but prices range from 52 to 186 SEK/kg. The 250 g group also contains three non-organic Fairtrade coffees, which were excluded from the sample because they are too few to provide a reliable estimate, and there are no non-organic Fairtrade coffees in the other categories. Their prices are 82, 95 and 186 SEK/kg.

The estimates of the coefficients for the control variables vary in some cases, particularly those of decaffeinated coffee and undefined roast. This is primarily due to few observations.

Table A2 reports Fairtrade International's premiums on world market prices of green beans, converted into SEK per kg for the production of one kg of ground coffee. As evident, there was a sharp increase in premiums in March 2011. The values in Table A2 are used to calculate the cost of Fair Trade beans in Tables 4 and 5.

Table A1. OLS regressions on average price of ground coffee, various samples

	250 g - 500 g packages	400 g - 500 g packages	Four large roasters only (400-500 g)	Only with price<100 SEK per kg (400 g - 500 g)	No private label
Dark roast	8.474	6.921	5.183	6.129	6.796
	(3.43)***	(2.80)***	(2.06)**	(2.61)**	(2.27)**
Undefined roast	20.408	20.478	-7.766	7.344	22.440
	(2.69)***	(2.32)*	(3.91)***	(1.20)	(2.41)**
Decaffeinated	7.182	1.442	0.639	7.786	1.733
	(0.58)	(0.09)	(0.25)	(0.64)	(0.11)
Private Label	-14.026	-10.843		-10.957	
	(5.62)***	(4.62)***		(5.06)***	
250 g	51.594				
	(10.18)***				
400 g - 499 g	22.734	24.277	12.792	15.962	24.369
	(5.36)***	(5.63)***	(3.90)***	(4.83)***	(5.59)***
Fairtrade Organic	27.629	26.780	21.631	23.412	27.241
	(7.92)***	(7.52)***	(9.19)***	(12.17)***	(6.60)***
Organic only	7.342	6.907	5.935	7.025	4.373
	(2.00)**	(1.96)*	(2.05)**	(2.23)**	(0.82)
Constant	60.768	60.580	64.642	61.347	60.449
	(26.27)***	(25.48)***	(29.39)***	(26.83)***	(23.39)***
R^2	0.64	0.42	0.44	0.38	0.34
N	182	162	65	155	124

Note: Average price for March 1, 2009 - February 26, 2012. Products with price below 10 SEK/kg and three Fairtrade non-organic products in 250 g packages are excluded. Robust standard errors are used. * $p<0.1$; ** $p<0.05$; *** $p<0.01$.

Table A2. Fairtrade coffee price top-ups (premiums) on world market prices in SEK/kg (washed Arabica), inclusive of weight loss due to roasting.

	Up to March 2011	From April 2011
Fairtrade premium	1.85	3.70
Organic beans premium	3.70	5.55
Sum	5.55	9.25