Efficient Consumer Altruism and Fair Trade*

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Abstract

Consumers have shown a willingness to pay a premium for products labeled as "Fair Trade," and to prefer retailers that are seen as more generous to their suppliers/employees. A fair trade product is essentially a bundle of a base product and a donation to the supplier (e.g., a coffee farmer). An altruistic rational consumer will only choose this bundle if doing so is less expensive than buying the base product and making a direct donation. Thus, for fair trade to be sustainable in a competitive equilibrium, this bundling must yield an efficiency. This efficiency is generated in the following context. A supplier's investment reduces the retailer's cost or boosts the final product's quality. This investment is non-verifiable, hence the first-best level is not achieved. In this environment, the altruism of the consumer can facilitate a more efficient contract: by paying the supplier more, the retailer can both extract more consumer surplus and increase the level of contracted investment, while preserving the supplier's incentive compatibility. We provide some evidence for this model, focusing on the coffee industry.

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1 Introduction

A significant subset of consumers have shown a willingness to pay a premium for products labeled as "Fair Trade," and to prefer retailers that are seen as more generous to their suppliers and employees (The Economist [2007a], Maietta [2003], De Pelsmacker, Driesen and Rayp [2005]).[1] The size of fair trade and "ethical products" market is large and growing: global sales exceed $2.3 billion worldwide (Fairtrade Labeling Organizations International [2007]). Some economists and policy analysts have been dismissive of such behavior, arguing that altruistic consumers could help the suppliers more effectively by making direct transfers (Zehner [2002], Booth and Whetstone [2007], The Economist [2006]). These authors imply that consumers who purchase fair trade must be uninformed or irrational. In contrast, we show that even consumers who are fully informed and rational may prefer to purchase the fair trade product.

In our model, one consumer is *altruistic*; this consumer's utility function depends (in part) on the impact of her actions on others.[2] She is also *informed*: she knows the net results of her choices on the surpluses of all relevant parties. Finally, she is *rational* in the conventional economic sense: she maximizes her utility. We refer to the consumer who meets these assumptions as "AIR": altruistic, informed, and rational. These assumptions allow us to make a strong case for fair trade. Our model demonstrates that even the "wise" AIR consumer still may want to purchase the fair trade product.

[1] We are not discussing "fair trade" in the context of a government's international trade policy. Our model applies to products directly marketed to consumers as fair trade. It is also relevant when consumers care about employees' surpluses, such as in the case of the anti-sweatshop movement.

[2] The consumer weighs these outcomes according to a neutral social welfare function (See, e.g. Rawls [1971]) A neutral social welfare function is one that weights the utility of all agents equally *ex ante*. This implies that utility from altruism does not depend directly on the amount sacrificed, nor on the manner of the contribution. Our assumption is consistent with several models of giving, including the public goods model (Becker [1974]), the impact model (Duncan [2004]), and a specific interpretation of the reciprocity model (Sugden [1984]) or the warm glow model (Andreoni [1990]).

We model a fair trade product as a bundle of a base product and an act of altruism, e.g., a direct donation. An AIR consumer will only choose this bundle (the base product and a direct donation) if purchasing the bundle is cheaper than purchasing both elements separately. The bundle can be produced at a lower cost through the following mechanism. A retailer and a supplier sign a contract where the supplier makes an investment that reduces the retailer's costs. This investment is non-verifiable, hence there is under-investment compared to the first-best efficient investment level. However, a retailer who pays his supplier more is in essence offering the aforementioned direct donation, and thus can capture the altruistic component of the consumer's utility. This larger payment increases the supplier's net benefit of complying with the contract. Thus the contract can specify larger investment, closer to the first-best efficient level, while maintaining the supplier's incentive compatibility constraint. Through this increased investment, the bundle is produced at a lower cost. We further show that the AIR consumer's willingness to pay a premium for a fair trade product may result in an even larger premium going to the supplier. A variation of the mechanism above, where the investment boosts the quality of the base product, yields the same results.

Some scholars have argued that labeling certain products as fair trade will decrease market efficiency by distorting market price (Lindsey [2004], Booth and Whetstone [2007], Harford [2006], Sidwell [2008]). In contrast, our model suggests that fair trade is not a harmful distortion but a successful innovation in a competitive environment with rational consumers. This innovation increases welfare, even when we measure the welfare excluding the altruistic component of consumers' utilities.

Section 2 presents our model and our theoretical results. In Section 3, we provide a literature review of theoretical work on fair trade. In Section 4, we present anecdotal and empirical evidence (in the context of coffee) supporting both our modeling assumptions and our model's predictions. Section 5 concludes and offers suggestions for future research.

2 Model

Our model shows how consumer altruism can lead a firm to offer a fair trade product in a competitive environment. We assume that all retailers have access to the same production process, and that fair trade producers do not have an inherent advantage over charities in providing the altruistic good.

2.1 Primitives

For intuition, we state our model in terms of coffee, but our analysis applies to a wider set of industries. There are four types of actors in our model: coffee farmers, coffee roasters, altruistic consumers, and non-altruistic consumers. A unit of coffee is produced jointly; a farmer (F) grows and prepares the beans and a roaster/retailer (R) buys them, processes them, and sells them to a consumer whose valuation of the coffee is v. The retail market for coffee is perfectly competitive. However, each roaster has bargaining power over the farmers he buys from. Empirical work suggests that the retail coffee market is a fairly competitive industry, while small coffee farmers have little to no market power, and are not well-organized (Dicum and Luttinger [1999], Hayes [2006], Zehner [2002], Lindsey [2004]).[3]

Each farmer can either produce a unit of coffee or produce nothing. A roaster bears the cost of processing a unit of coffee $c(m)$. This cost is determined by the farmer's investment $m \geq 0$. For example, a farmer may carefully sort and clean the beans, and thus save the roaster the cost of doing so. m decreases the processing cost at a decreasing rate, i.e., $c'(m) < 0$ and $c''(m) > 0$.[4]

[3]From a theoretical point of view, a firm can have a monopsony power over the input suppliers, and, at the same time, be a perfectly competitive retailer. As an example, consider the case with a single consumer having unit demand, two roasters each of whom has the potential to produce one unit of roasted coffee beans, and three farmers each of whom has the capacity to produce one unit of coffee beans.

[4]We model the farmer's investment as cost-reducing rather than quantity-boosting. In the case of a quantity-boosting investment, a higher premium to the farmer would induce higher investment and output.

Alternatively, we could interpret $c(0) - c(m)$ as an improvement of quality resulting from investment m. Under this interpretation, the consumers' utility from the coffee will be $v - c(m)$, and all of the subsequent results will be preserved. We suppress this interpretation in main text, but we model it in Appendix A.2.

A roaster pays $\alpha \geq 0$ to a farmer for each unit of coffee. The farmer's net profit from (α, m) is $n := \alpha - m$. n will have the same effect on the altruistic consumer's utility as an n dollar donation to the farmer. Thus, we often refer to the farmer's net profit n as the consumer's donation. We refer to (n, m) as "the contract" between a farmer and a roaster. The roaster's bargaining power allows him to set the contract.

Once having purchased and processed the coffee, the roasters sell this product to the consumers. The coffee is branded "coffee n", or simply coffee(n). Roasters face market price $P(n)$ for coffee(n). The profit of a roaster producing and selling coffee(n) with contract (n, m) is

$$\pi_R(n, m) = P(n) - (n + m) - c(m) \;\; \text{since} \;\; n + m = \alpha.$$

Note that we assume here that the roaster cannot deceive consumers over the level of n.

Both the altruistic and the non-altruistic consumers have unit demand for coffee. The altruistic component of utility is additively separable from the coffee consumption component. Let v represent the two consumers' identical valuation of coffee. Thus, the utilities are v for the non-altruistic consumer and $v + a(n)$ for the altruistic consumer, where $a(n)$ is the altruistic component. We assume that v is large enough so that consumers choose to consume coffee. We further assume that the consumers have quasi-linear utility with respect to money, so their net utilities given price $P(n)$ are

$$U_A(n) = v + a(n) - P(n) \;\; \text{and} \;\; U_0(n) = v - P(n).$$

for the the altruistic consumer and the non-altruistic consumer, respectively. The marginal

However, if supply is competitive enough, the roaster could achieve the same goal by simply contracting with more farmers at the regular zero-premium.

utility of donation n is positive, decreasing in n, and less than unity:

$$\begin{aligned} a'(n) &> 0,\ a''(n) < 0 \\ a'(0) &\leq 1. \end{aligned} \tag{1}$$

Note that these three conditions imply $a(n) \leq n$. Inequality (1) means that the first dollar donation gives less than a dollar utility to the altruistic consumer. We impose this stringent condition to make the strongest case for the potential efficiency of fair trade. This assumption implies that consumers will only buy fair trade coffee if the premium they pay for such coffee is less than the resulting increase in the farmer's income. Thus, our story of fair trade must explain how and when this "magnification" can occur. In Appendix A.1, we provide intuition for Inequality (1), and illustrate that relaxing this stringent assumption only strengthens the case for fair trade.

A period of interaction among the economic agents has the following timing:

(i) A roaster R announces contract (n, m), which becomes common knowledge.

(ii) A farmer F invests $\tilde{m}$.

(iii) The roaster R pays $\alpha = n + m$ to F without observing $\tilde{m}$.

(iv) The roaster R's production cost, $c(\tilde{m})$, is observed by the roaster, but is unverifiable.

(v) Consumers buy coffee(n) at price $P(n)$.

There is information asymmetry. Within each period, $\tilde{m}$ is unobservable to the roaster before payment of $\alpha = n + m$ and unverifiable even after the observation of $c(\tilde{m})$. Thus, even if a farmer deviates to $\tilde{m} \neq m$, the roaster cannot sue for damages. On the other hand, we assume that the roaster always pays the $\alpha = n + m$ that is specified in the contract. This is without loss of generality: we could extend our model so that the threat of a successful suit by a farmer or NGO will prevent the roaster's deviation.

This interaction may be repeated once or infinitely. We refer to $(n, m) = (0, 0)$ as the termination of contract. This might be used to punish the farmer for deviation $\tilde{m} \neq m$ in the previous period.

2.2 Maximization and competitive equilibrium

As a benchmark, we present a one-period interaction between the farmer and the roaster. The farmer's profit is $\alpha - \tilde{m}$. For any level of $\alpha = n + m$, it is always optimal to choose $\tilde{m} = 0$. Considering $a(n) \leq n$, the roaster does not want to implement $n > 0$ since even the altruistic consumer's appreciation $a(n)$ of the farmer's profit n (that is the upper-bound that the roaster can possibly extract) is smaller than the cost, n. Thus the only sustainable contract is $(n, m) = (0, 0)$.

Next we consider an infinite-period interaction. Cooperation implementing strictly positive n and m can be sustained if each party plays a *grim trigger strategy*. Each party cooperates as long as all parties previously cooperated; otherwise, the roaster will propose $(n, m) = (0, 0)$, and the farmer sets $m = 0$ for any (n, m). If the farmer defects from contract (n, m) by investing $\tilde{m} = 0$, he receives $\alpha = n + m$ for that period. However, the roaster will terminate contract (n, m) after detecting the deviation. Thus the farmer will get zero profit from the next period onwards.[5] Therefore, the incentive compatibility constraint for a farmer is

$$n + m \leq \sum_{t=1}^{\infty} {\delta_F}^{t-1} n \iff n \geq \frac{1 - \delta_F}{\delta_F} m \qquad [IC_F]$$

The roaster chooses an optimal contract subject to $[IC_F]$. Given price $P(n)$, the roaster's profit maximization problem is

$$\max_{(n,m)} [P(n) - (n + m) - c(m)] \;\; \text{s.t.} \;\; [IC_F].$$

[5]The assumption of of zero payoffs forever is a simplification: if the farmer who defects has the option to sign a contract with another roaster, but with a costly delay, the qualitative results are preserved.

This optimization can be decomposed into two steps: the roaster chooses m for a given n, and then he chooses n. Firstly, facing the incentive compatibility constraint, the optimal feasible investment for a given n is $m(n) = \underset{m}{\operatorname{argmax}} \left\{ P(n) - (n+m) - c(m) : n \geq \frac{1-\delta_F}{\delta_F} m \right\}$. Secondly, a roaster's objective is to choose n that maximizes his profit, i.e., the roasters' choice of n maximizes $\pi_R(n) := [P(n) - (n + m(n)) - c(m(n))]$.

Facing price $P(n)$, a consumer will choose n to maximize her net utility. Define

$$n_A^C = \underset{n}{\operatorname{argmax}}[v + a(n) - P(n)] \quad \text{and} \quad n_0^C = \underset{n}{\operatorname{argmax}}[v - P(n)].$$

The altruistic consumer purchases coffee(n_A^C), which we call "fair trade coffee." The non-altruistic consumer purchases coffee(n_0^C), which we call "regular coffee."

Because the roasters are perfectly competitive, profit will be driven down to zero. While there are many roasters who *can* produce, we assume, without loss of generality, that only two *choose* to produce. We define n_A^R and n_0^R as the choices of the two roasters, i.e.,

$$n_A^R, n_0^R \in \underset{n}{\operatorname{argmax}}\, \pi(n).$$

In a Walrasian equilibrium, the roasters' choices and the consumers' choices must agree, i.e., the market clearance condition will be

$$n_A^C = n_A^R \quad \text{and} \quad n_0^C = n_0^R.$$

To summarize,

Definition 1 *A vector* $< (n_A^C, n_0^C), (n_A^R, n_0^R), (P(n))_{n \geq 0} >$ *is an* *equilibrium* *if and only if the following conditions hold.*

$$\begin{aligned}
\textit{Consumers' Problem}: \quad & n_A^C \in \underset{n_A}{\operatorname{argmax}}[v + a(n_A) - P(n_A)] \\
& n_0^C \in \underset{n_0}{\operatorname{argmax}}[v - P(n_0)] \\
\textit{Roasters' Problem}: \quad & n_A^R, n_0^R \in \underset{n}{\operatorname{argmax}} \max_{m(n)} \left\{ P(n) - (n + m(n)) - c(m(n)) : n \geq \frac{1-\delta_F}{\delta_F} m(n) \right\} \\
\textit{Market Clearance}: \quad & n_A^C = n_A^R, n_0^C = n_0^R.
\end{aligned}$$

The price-taking behavior of farmers is not incorporated in the definition of equilibrium. Instead, the farmer's role in the definition is only through a constraint on the roasters' achievable n and m. We will show that n_A and n_0 are positive under certain parameter values: farmers who have contracts with roasters (whether fair trade or not) receive strictly positive profit, while farmers who do not have contracts receive zero profit. Without the incentive compatibility constraint of farmers, this "rationing" would not have occurred: other farmers would have accepted a contract with lower n and the same m. The bids would eventually lower the profit of the farmers to zero; hence, no rationing. This rationing prevents the incorporation of farmers' optimization problems into the definition of a Walrasian equilibrium. Similar rationing is found in credit markets (Stiglitz and Weiss [1981]) and general equilibrium principal-agent problems (Bennardo and Chiappori [2003]). We discuss the welfare implications of this assumption in Section 2.3.

Finally, we characterize an equilibrium. Let m_{EF} satisfy $1 = -c'(m_{EF})$; this defines the first best level of investment since the marginal cost of the investment is equivalent to the marginal benefit, i.e., the marginal reduction of processing cost. For given n, if $[IC_F]$ does not bind, the optimal investment is $m(n) = m_{EF}$. Since $1 + c'(m) < 0$ for $m < m_{EF}$, we conclude

$$m(n) = \min\left\{m_{EF}, \frac{\delta_F}{1-\delta_F}n\right\}.$$

Thus we derive the profit function of the roaster supplying coffee(n):

$$\pi_R(n) = \begin{cases} P(n) - \frac{n}{1-\delta_F} - c\left(\frac{\delta_F}{1-\delta_F}n\right) & \text{if } \ m(n) = \frac{\delta_F}{1-\delta_F}n \\ P(n) - (n + m_{EF}) - c(m_{EF}) & \text{if } \ m(n) = m_{EF} \end{cases}$$

Since roasters are perfectly competitive each roaster earns zero profit, i.e.,

$$P(n) = \begin{cases} \frac{n}{1-\delta_F} + c\left(\frac{\delta_F}{1-\delta_F}n\right) & \text{if } n \text{ is such that } \ m(n) = \frac{\delta_F}{1-\delta_F}n, \\ (n + m_{EF}) + c(m_{EF}) & \text{if } n \text{ is such that } \ m(n) = m_{EF}. \end{cases} \tag{2}$$

Let $n_{EF} := \frac{1-\delta_F}{\delta_F} m_{EF}$. Given the price in (2), the altruistic consumer's problem is:

$$n_A^C = \begin{cases} \underset{n}{\text{argmax}}[v + a(n) - \frac{n}{1-\delta_F} - c\big(\frac{\delta_F}{1-\delta_F} n\big)] & \text{if } \ n < n_{EF}, \\ \underset{n}{\text{argmax}}[v + a(n) - (n + m_{EF}) - c(m_{EF})] & \text{if } \ n \geq n_{EF}. \end{cases}$$

But note that $\frac{d}{dn}[v + a(n) - (n + m_{EF}) - c(m_{EF})] < 0$. In other words, $n \geq n_{EF}$ cannot be an optimum. Thus it is enough to consider only

$$n_A^C = \underset{n}{\text{argmax}}[v + a(n) - \frac{n}{1-\delta_F} - c\Big(\frac{\delta_F}{1-\delta_F} n\Big)].$$

For the non-altruistic consumer, we can derive a similar result,

$$n_0^C = \underset{n}{\text{argmax}}[v - \frac{n}{1-\delta_F} - c\Big(\frac{\delta_F}{1-\delta_F} n\Big)].$$

The necessary and sufficient conditions for strictly positive n_A and n_0 are:

Condition 1 $-c'(0) > \frac{1}{\delta_F}$.

Condition 2 $\frac{1-\delta_F}{\delta_F} a'(0) + (-c'(0)) > \frac{1}{\delta_F}$.

Proposition 1 *In equilibrium, the surpluses of farmers* $n_A := n_A^R = n_A^C$ *and* $n_0 := n_0^R = n_0^C$ *satisfy:*

(i) $n_0 > 0$ *if and only if Condition 1 holds, and*

(ii) $n_A > 0$ *if and only if Condition 2 holds.*

Proof. This results are trivially derived from the Kuhn-Tucker conditions for the consumers' maximization problem. ∎

Proposition 1 implies that, as the farmer becomes impatient, the potential for long-term cooperation declines.[6] In order to have positive investment without consumer altruism, the

[6] It is trivial for (i). For (ii), $-c'(0)$ must be larger than $a'(0)$ to have $n_A > 0$. (If not, $(1-\delta_F)a'(0) + \delta_F(-c'(0)) \leq 1$ since $a'(0) \leq 1$.) Thus the result follows.

first-dollar marginal benefit of investment ($-c'(0)$) must exceed the marginal cost of inducing the investment ($\frac{1}{\delta_F}$). This includes both the marginal (unit) cost of compensating the farmer for his investment and the marginal cost of providing the farmer an incentive ($\frac{1-\delta_F}{\delta_F}$, derived from [$IC_F$]) not to deviate. With an altruistic consumer, the roaster gets an additional benefit from the first unit of investment, $\frac{1-\delta_F}{\delta_F}a'(0)$. However, since $a'(0) \leq 1$, consumer altruism alone will never be sufficient for positive investment; the investment must *also* be sufficiently cost-reducing.

Under Condition 1 and Condition 2, we derive the following first order conditions:

$$(1-\delta_F)a'(n_A) + \delta_F\Big(-c'\Big(\frac{\delta_F}{1-\delta_F}n_A\Big)\Big) = 1 \quad \text{for the altruistic consumer} \qquad [FOC_A]$$

$$\delta_F\Big(-c'\Big(\frac{\delta_F}{1-\delta_F}n_0\Big)\Big) = 1 \quad \text{for the non-altruistic consumer} \qquad [FOC_0]$$

From Proposition 1, we derive the following corollary which further characterizes the equilibrium.

Corollary 1 *Under Condition 2, (i)* $n_A > n_0$*, and (ii)* $P(n_A) > P(n_0)$*.*

Proof. Since $a'(n) > 0$, we trivially derive the first result from the two first order conditions. $P(n) = \frac{n}{1-\delta_F} + c\left(\frac{\delta_F}{1-\delta_F}n\right)$ within a relevant range of $\frac{\delta_F}{1-\delta_F}n < m_{EF}$. The first order derivative of the price is $P'(n) = \frac{1}{1-\delta_F} + \frac{\delta_F}{1-\delta_F}c'\left(\frac{\delta_F}{1-\delta_F}n\right) > 0$. Thus the price increases in n. ∎

If we interpret m as an investment that boosts quality (as in Appendix A.2), a strict interpretation of our model would imply that only altruistic consumers purchase high-quality coffee, and that high-quality coffee is always fair trade. However, this no longer holds if we extend our model to include some real-world complications. If the non-altruistic consumers have heterogeneous tastes, some may purchase the fair trade coffee because it is high-quality. Also, if production has a stochastic component, some coffee for which the farmers are not highly paid will be high quality by chance. Alternatively, the production process itself may vary from region to region. In some regions, upstream investment may be verifiable at a certain cost, and thus quality can be improved without paying the farmer too much of a premium (but consumers may have horizontally-differentiated tastes, so no region's coffee will dominate).

In summary we have characterized the equilibrium contracts for four cases, as shown in the following table.

	Without Altruism	With Altruism
Short-term interaction	[1] $(n, m) = (0, 0)$	[2] $(n, m) = (0, 0)$
Long-term interaction	[3] $(n, m) = (n_0, m_0)$	[4] $(n, m) = (n_A, m_A)$

We argue that the institution of fair trade moves the equilibrium contract from [3] to [4]. However, if fair trade itself makes cooperation possible, (i.e., the transition from [1] to [4]), as some advocates claim, the benefits of fair trade are even greater.

2.3 Comparative statics and welfare analysis

In this section, we consider how an increase in altruism affects the economic agents' utilities/profits as well as the welfare of the economy. We consider a parametrized altruism function $\beta a(n)$ with $\beta \in [0, 1]$. An increase in β implies an increase in the utility an altruistic consumer derives from the income passed to the farmer.[7] We restate Condition 2 for this parametrization:

Condition 2a $(1 - \delta_F)\beta a'(0) + \delta_F(-c'(0)) > 1.$

Note that β is included in Condition 2a, as the new altruism function is $\beta a(n)$.

[7]An alternative parametrization would be through an increase in the proportion of altruistic consumers. In the previous section, we derived $n_A > n_0$ and $m_A > m_0$. These four values remain the same even if we increase the proportion of altruists. However, the average level of farmers' profit and investment will increase as more altruists means an increased demand for the fair trade product.

For certain parametric values, altruism makes a non-trivial contract possible when it was impossible otherwise. Suppose $a(\cdot)$ and $c(\cdot)$ fail to satisfy Condition 1, but satisfy Condition 2a. Proposition 1 implies that $n_0 = 0$ and $n_A > 0$; hence, $m_0 = 0$ and $m_A > 0$.

More generally, altruism increases the level of investment m and the profit of the farmer n.

Proposition 2

$$\textit{Under Condition 2a,} \quad \frac{dn_A}{d\beta} > 0 \quad \textit{and} \quad \frac{dm_A}{d\beta} > 0.$$

Proof. With the re-defined altruism component of utility $\beta a(n)$, $[FOC_A]$ is

$$(1 - \delta_F)\beta a'(n_A) + \delta_F \left(-c'\left(\frac{\delta_F}{1-\delta_F} n_A\right)\right) = 1.$$

Total-differentiating the constraint with respect to β and n_A, we derive

$$\frac{dn_A}{d\beta} = -\frac{a'}{\beta a'' - \left(\frac{\delta_F}{1-\delta_F}\right)^2 c''} > 0; \text{ hence, } \frac{dm_A}{d\beta} = \frac{\delta_F}{1-\delta_F}\frac{dn_A}{d\beta} > 0. \quad \blacksquare$$

However note that the level of investment is always below the first-best: m_{EF} is not achieved for any level of β.[8]

We also prove that the fair trade premium the farmer receives exceeds the premium the altruistic consumer pays, i.e., the altruistic consumer's willingness to pay a small additional amount results in an even larger rent paid to farmer.

Proposition 3 *Under Condition 2,* $P(n_A) - P(n_0) < n_A - n_0$

Proof. The fact that the altruistic consumer has chosen n_A over n_0 implies

$$v + a(n_A) - P(n_A) \geq v + a(n_0) - P(n_0).$$

[8] m_A is determined by $(1-\delta_F)\beta a'(\frac{1-\delta_F}{\delta_F} m_A) + \delta_F(-c'(m_A)) = 1$, while m_{EF} is determined by $-c'(m_{EF}) = 1$. The only way $-c'(m_A) = 1$ is to have $\beta a'(\frac{1-\delta_F}{\delta_F} m_A) = 1$. From the given assumption on function $a(\cdot)$, the case is possible only if $\beta = 1$ and $a'(\frac{1-\delta_F}{\delta_F} m_A) = 1$. However such case implies $m_A = 0$, which is not the efficient level of investment.

Thus we derive $P(n_A) - P(n_0) \leq a(n_A) - a(n_0)$. We also derive $a(n_A) - a(n_0) < n_A - n_0$ from $a'(\cdot) \leq 1$. The result follows. ∎

Finally we analyze the effect of the increased altruism on the welfare of the economy. We consider only the welfare of altruistic consumer, fair trade coffee roasters, and fair trade farmers, since β has no effect on any other parties. Welfare is:

$$W(n, m) = [v + \beta a(n)] + [-(n + m) - c(m)] + [n] = v + \beta a(n) - m - c(m).$$

In contrast to the classical general equilibrium approach, we include the monetary transfer $\alpha = n + m$ (hence, n as well) in our definition of welfare because the transfer affects the altruistic consumer's utility.

We also define *welfare net of altruism*:

$$W^N(n, m) := W(n, m) - \beta a(n) = v - m - c(m).$$

The effect of increased altruism on welfare can be decomposed into three parts: (a), (b), and (c) in the equation below.

$$\frac{d}{d\beta}\left[v + \beta a(n_A) - m_A - c(m_A)\right] = \underbrace{\frac{\partial}{\partial\beta}[\beta a(n_A)]}_{(a)} + \underbrace{\beta a'(n_A)\frac{dn_A}{d\beta}}_{(b)} + \underbrace{\frac{d}{d\beta}\left[v - m_A - c(m_A)\right]}_{(c)}$$

We focus on the case satisfying Condition 2a, i.e., $n_A > 0$ and $m_A > 0$. Otherwise, an increase in altruism will have no effect on welfare, since the farmers receive zero surplus both before and after a small increase in β.

(a) measures the direct effect of the increase in β. The direct effect represents the obvious increase in surplus as the product takes on additional altruism value. (b) measures β's indirect effect through the increased n. As the consumer altruism increases, the roaster adapts the product to this change, which in turn increases welfare. (c) measures the indirect effect, as higher investment leads to a net reduction of costs:

$$\frac{d}{d\beta}\left[v - m_A - c(m_A)\right] = \frac{d}{d\beta}W^N(n, m) = -(1 + c'(m_A))\frac{dm_A}{d\beta} > 0 \;\text{ since }\; 1 + c'(m_A) < 0.$$

We can think of the beneficial effect of altruism being magnified through the investment of the farmer. Since the indirect effect (c) is positive, we see that not only can an increase in altruism increase welfare, it will also increase welfare net of altruism. Thus we prove our main proposition:

Proposition 4 *Under Condition 2a, an increase in altruism increases welfare net of altruism. Otherwise, a small change in altruism has no effect on welfare.*

We can alternatively consider the welfare excluding farmers' utility, which we call *domestic welfare*. If the farmer is in a different country, this is relevant to those policy makers who care only about the domestic consumers and retailers. The domestic welfare is

$$W^D(n, m) = [v + \beta a(n)] + [-(n + m) - c(m)] = v + \beta a(n) - (n + m) - c(m).$$

The second-best efficient allocation (with respect to the domestic welfare) is defined as the choice of (n, m) that maximizes the domestic welfare subject to the incentive compatibility constraints of the farmers:

$$\max_{n,m}[v + \beta a(n) - (n + m) - c(m)] \text{ s.t. } n \geq \frac{1 - \delta_F}{\delta_F} m.$$

The first order condition for the maximization problem is identical to $[FOC_A]$. In other words, the equilibrium outcome is also the policy maker's most preferred outcome. Thus we have proved a welfare theorem.

Proposition 5 (Welfare Theorem) *The equilibrium of Definition 1 is second-best efficient with respect to the domestic welfare. Also, a second-best efficient allocation in terms of the domestic welfare can be obtained as an equilibrium.*

3 Literature review: theories of fair trade

Other authors have attempted to explain and/or justify fair trade, either explaining how a retailer might offer the bundled fair trade product at a lower cost to the altruistic consumer, or why the consumer might be willing to buy the bundle even at a higher price. These models depend on either production-side, consumption-side, or strategic explanations.

3.1 Production-side

Several theories purport to explain how the product-donation bundle could be produced at a lower cost than the separate elements. However, we contend that any such theory must explain why such economies depend on the unique position of the fair trade roaster relative to the regular roaster.

Advocates of fair trade often claim that it allows roasters to directly trade with farmers, and this eliminates a node in the supply chain (Transfair USA [2001]). However, if such vertical integration eliminated unproductive middlemen or eliminated a layer of marginalization (markups), it would also be implemented by traditional roasters, nullifying fair trade's advantage. A related justification for the efficiency of fair trade is the elimination of monopsony rents (Hayes [2006]). However, these rents can be maintained in equilibrium only if there are barriers to entry, or if a local market is a natural monopsony (See, e.g., Bain [1956]). Fair trade buyers would need to enter these markets and force the incumbent to exit. Without an efficiency story, this should be an uphill battle, as fair trade buyers must pay more for their inputs.

Some have argued that fair trade itself may be a more efficient way of helping the poor. The proponents of "trade not aid" argue that traditional public-sector aid and charity will have a demoralizing and dis-incentivizing effect, fostering a dependent mentality (Rugasira [2007]). We find this argument dubious: offering a higher price than the traditional market rate could itself be seen as a "handout," and it may bring inefficient distortions of its own.

3.2 Consumption externalities and consumer behavior

If the consumer has a specific concern for the utility of the producers of the *precise* products they consume, e.g., because of a fairness norm (Rabin [1993]), the advantage of the fair trade bundling is clear. It would be prohibitively expensive for a consumer to track down exact same farmer who grew her coffee. Buying the fair trade product may also help the consumer's reputation in a way that donating to charity cannot do. Such purchases may be visible to family, friends, and colleagues, as well as the cute stranger in the coffee shop; it is not as easy or socially acceptable to advertise one's level of direct charitable contributions. Some consumers may use the fair trade products as a way to remember to give, pace their giving, and solve self-control and commitment problems. Finally, as skeptics of fair trade claim, the consumers may simply be misinformed or engage in flawed logic. Consumers may either *believe* that buying fair trade is the most effective contribution they can make, or they might *fail to consider* that they can make a more efficient or effective gift.

We cannot dismiss the possibility that some consumers are motivated by the factors above. However, we believe that altruistic consumers will not be systematically misinformed about the effects of fair trade, which is under the intense scrutiny of NGO's, consumer groups, and governments. Furthermore, in Section 4, we will offer suggestive evidence that bundling the donation and the base product may yield a cost savings; this cost savings could not be explained by the arguments resting only on consumers' behavior. Fundamentally, as stated in the introduction, assuming an AIR consumer enables us to make a stronger case for fair trade.

3.3 Other strategic goals

If altruists have a lower valuation of the base product than non-altruists, bundling coffee and a donation may be used as a tool for price discrimination.[9] However, conventional wisdom (e.g., Harford [2006]) suggests that consumers of fair trade tend to have higher incomes and greater willingness to pay for products such as coffee. Booth and Whetstone (2007) claim that fair trade can be used as a tool for segmenting the market and giving firms in each segment greater market power over prices. Casual observation suggests that the coffee market is not highly concentrated, with numerous boutique cafes and many choices of fair trade and regular coffee in major supermarkets. This theory also fails to explain why a company like Starbucks would offer *both* types of coffee. A final possibility is that the roasters offering fair trade coffee may be taking a loss on this product, at least in the short term, but achieving other strategic goals. Roasters may offer this product for public relations reasons, or as a "loss leader" to cross-subsidize other products. However, this cannot explain why some roasters *solely* offer fair trade products.

4 Empirical evidence: conditions and outcomes

The main goal of the fair trade coffee movement is to support coffee cooperatives and improve the standards of living for coffee farmers by paying a "fair" price. Secondary goals include helping cooperatives gain access to world markets, offering credit at fair rates, and promoting environmentally sustainable agriculture (Transfair USA [2001], Bird and Hughes [1997]). The International Fair Trade Labeling Organization (FLO), established in 1997, maintains a Fair Trade Register of cooperatives (groups of small farmers who pool some of their resources)

[9] In a continuous demand model, this would be interpreted in terms of a higher price-elasticity. Note that if altruists have a *higher* value of the base product (but are AIR), this would not allow for any useful price discrimination since the altruists could always choose the cheaper coffee and give the savings as a direct donation.

that they have selected to participate, and that meet certain minimum conditions.[10] These cooperatives are eligible to sell some of their coffee to roasters and importers to be designated with a fair trade certification. To qualify for a fair trade label, importers and roasters must pay a set minimum price (which varies slightly by coffee origin and type) above the world market rate.[11]

We assess whether the model described is relevant to industries in which fair trade has been touted, focusing on the coffee industry. We assess whether the assumptions driving our model are plausible, and then examine whether the premia resemble those predicted by our model.

4.1 Conditions

Our model depends on the upstream firm making investments to reduce downstream costs and/or boost quality. Such investments are important in the coffee growing industry (The Economist [2007b]). Coffee production generally involves the same basic stages – growing, harvesting, de-pulping, drying, sorting, grading, bagging, and roasting – but there are important variations in technique at each stage (Dicum and Luttinger [1999]).

These investments are difficult to verify and enforce. It may be expensive to write and register a contract over such investment, expensive to go to court in the event of a breach, and/or courts may not be able to reliably determine the level of investment. In many of the poor agricultural regions where fair trade operates, the expense of such a process would outweigh any gains, and there may be no reliable legal authority. Appendix A.3 compares ratings for "legal enforcement of contracts" and "legal system and property rights"

[10]Similar arrangements not affiliated with the FLO, such as Starbucks' CAFE scheme and Cadbury's Cocoa Partnership, are equally captured by our model.

[11]This is a simplification. There are other requirements both for cooperatives and importers/roasters. These include labor and green standards, and specified contract terms such as which include providing some short-term credit to farmers. In addition, if the world coffee price rises high enough, the importers need not pay a premium.

for the home countries of fair trade farmers and for several major industrial countries. Not surprisingly, the scores for the fair trade origin countries are fairly low.

In our model, farmers who are paid fair trade prices invest more than their otherwise equivalent counterparts. Those involved in fair trade directly make this claim of a higher level of investment.[12] There is much evidence of a moral hazard problem in this industry. Zehner (2002) notes "growers may lie about the geographical origin of their crop or add low-quality beans or dirt and stones to the bags of coffee they supply."

4.2 Outcomes

Our model of AIR consumers predicts that the premium they pay (per unit) for the fair trade attribute is less than or equal to the premium that the farmers receive. Harford (2006) has noted that Costa coffee in London charged an extra 10 pence for a cup of fair trade coffee even though the premium paid on the beans used was less than a penny. This simple estimate was cited by other authors (Sidwell [2008] and The Economist [2006]).

As seen in Table 1 of page 21, several papers have estimated the premium that consumers are willing to pay for products labeled as fair trade or having other ethical attributes. Maietta (2003) performs a hedonic regression with a semi-log functional form on Italian supermarket scanner data (from IRI's Infoscan Database) and shows a large (1.07 USD/lb from 1998-2002)[13] and significant average premium paid for the fair trade component of coffee purchases (separate from the premium for the organic component). Gallaraga and Markandya (2004) use UK retail price data from 1997-98 to estimate a similar model, and find (for an average grade of coffee) an 11.26% increase in price for the "green" (fair trade, organic, shade) coffee. This is a markup on a base price of 11.73 Euro/Kg, an average premium of 0.60 Euro/lb. Galarraga and Markandya (2004) have a richer measure of coffee attributes; they commission an expert assessment of several taste characteristics. On the other hand, Maietta (2003) have

[12]Rodney North, Equal Exchange. From email correspondence with David Reinstein, 2003

[13]Converted from 2.36 Euros/Kg at an average (over this period) exchange rate of 1.00 Euros/USD.

Estimates of Premia for FT Coffee

			Retail (estimates/figures)					Farmer-Wholesale (estimates/figures)					
Author	**Date (of data)**	**Data**	**Coffee type**	**(Avg.) FT Price**	**(Avg.) Reg. Price**	**(Avg.) Premium**	**%**	**Coffee type**	**FT Price**	**Reg. Price**	**Premium**	**Relative premium (FT - Reg)**	**%**
Zehner	2002	Six observations on retail prices	Peet's House vs. Fair Trade (FT)	10.95	8.95	$2.00	22.3%	Other mild arabica	$1.51	$0.71	$0.80	-$1.20	40.2%
			Starbucks House blend versus FT	11.45	9.95	$1.50	15.1%					-$0.70	53.6%
			Green Mtn. Organic FT vs. Signature	10.32	9.52	$0.80	8.4%					$0.00	100.5%
Comments:	*Crude comparison, many assumptions; ignores quality issues*												
Our own calculations	2002		*Starbucks Columbian Narino Supremo vs. FT*	*11.45*	*10.95*	*$0.50*	*4.6%*					$0.30	160.8%
	2002		*Peet's Blend 101 vs. FT*	*10.95*	*10.95*	*$0.00*	*0.0%*					$0.80	N/A
Eshuis & Hansen	2003	FT Max Haavelar price, reg. price source unclear. Wholesale prices from avg. world market (NY and London) prices		3.62	2.85	0.77	27.1%	1/3 Robusta, 2/3 Arabica FOB-Price	1.52	0.68	*$0.84*	*$0.07*	108.6%
								Amount to farmer deducting taxes and various costs	*1.12*	*0.31*	*$0.82*	*$0.82*	*105.7%*
Comments:	*Sources of data unclear; simple comparison may ignore quality*												
Maietta et al.	'98-02	Italian supermarket scanner (IRI)	250gm packs, various types, mostly "Moka" format	$4.85	$3.71	$1.14	23.5%						
				Figures for year 2000									
Comments:	*Rich data, hedonic regression, semilog; tiny market for fair trade*												
Gallaraga and M.*,**	'97-98	UK retail price data from 5 major supermarkets & Whittard Coffee	164 varieties, bean and ground	€5.93	€5.33	€0.60	11.3%						
					Rate of currency conversion unclear								
Comments:	*Rich data, hedonic regression, semilog; Independent taste analysis; *Do not separate organic from fair trade*												

FT is fair trade coffee, and Reg. is regular coffee.

All prices in USD ($) /lb. of roasted coffee unless otherwise mentioned; Adjusted at 1.2 lb. green coffee = 1.0 lb. roasted

Currency conversions at mid-year (1 June) exchange rates, except for Eshuis and Hansen (uses E&H figures)

Table 1: Estimates of Premia for Fair Trade Coffee

a larger data set, albeit for a market where fair trade was less prominent. Neither of these studies yields a satisfactory estimate of the premium that would exist in a larger and well-established fair trade market, such as the UK in 2008, where fair trade coffee has an 18% market share (Fairtrade Foundation [2008]).

Few papers have directly compared the premium consumers pay for fair trade products to the premium that the targeted suppliers receive.[14] Zehner (2002) offers one such estimate, finding (for a leading case) "the $0.67 [per pound of green coffee in 2000] received by the grower represents only 45 percent of the retail price premium [of $1.50/lb for his Starbucks example]." He concludes that "the Fair Trade premium is an inefficient subsidy."

However, certain features of his calculations are crude and depend on strong and unrealistic assumptions.[15] In particular, his estimate of the retail premium is based on looking at a few major retail brands in the US (Starbucks and Coffee Bean) and assuming that the hedonic characteristics of their Fair Trade blends are identical to those of their "house blends," which are generally their least expensive offerings.[16] Coffee is far from a homogenous product (Galarraga and Markandya [2004]). Starbucks "Fair Trade Blend" is described as "a dynamic blend of washed Arabica coffees with a flavor profile similar to Latin American coffees." If we compare it to Colombia Nariño Supremo, "a straightforward invigorating brew, with medium-body and smooth nuances," we find a consumer premium of only $0.50 per lb., and Zehner's conclusions are reversed. Comparing Peet's Fair Trade Blend to their "Blend 101," a coffee that is (according to Peets.com) very similar in body and acidity, we find they

[14]The simple analysis of Eshuis and Hansen (2003) allows a comparison of these premia. It makes somewhat arbitrary comparisons – as in Zehner's paper – and it comes to an opposite conclusion to Zehner's.

[15]Zehner also makes the simple error of comparing units of *green* coffee to units of *roasted* coffee. According to the USDA Guidelines on Food Processing, 1.2 pounds of green coffee are required to produce one pound of roasted coffee. We correct Zehner's error in Table 1.

[16]The Coffee Review (Coffeereview.com) a site that conducts "blind, expert cuppings of coffee" and publishes ratings on a scale of zero to 100. They rated Starbucks house blend 77 in 2000, and 80 in 2003; Starbucks Narino Supremo was given 87 points. While Starbuck's Fair Trade Blend was unfortunately not rated, Peet's Fair Trade blend was rated 87 in 2004.

are the same price. Thus, we find some support, albeit anecdotal, for our result that the premium that consumers pay may be smaller than the premium that farmers receive.

5 Conclusion

A typical economic argument for *laissez faire* is that prices signal economic agents to maximize their own welfare, and this leads to efficiency. This view criticizes the practice of fair trade by claiming that catering to consumers' altruism distorts prices, and thus reduces efficiency. However, we have shown that, in the presence of an information asymmetry problem (the moral hazard problem of farmers), their claimed "distortion" of price (higher premium for fair trade coffee) actually represents the use of a concerned outsider (altruistic consumers) to increase efficiency (more efficient investment).

Our finding suggests a generalization that is applicable to contract theory. Parties involved in a bargaining situation may find it useful to involve an outsider who is concerned with the outcome. In turn, this could alleviate the inefficiency caused by the presence of information asymmetry.

Future empirical work will be able to more precisely test the relevance of our model to particular industries and markets. Our model implies that non-verifiable investment will be below the efficient level, even in repeated relationships, while consumer altruism can induce a more favorable long-term contract. A detailed examination of production data will reveal whether, *ceteris paribus*, suppliers getting a larger premium (e.g., fair trade farmers) invest more in quality and in reducing downstream costs. We predict that consumer premium for fair trade must not exceed the premium paid to farmers, and provide some evidence. This can be tested by comparing the coefficient on a fair trade dummy in a hedonic regression at the consumer level (using, e.g., recent supermarket scanner data) to a similar coefficient in a regression at the farmer level.

A Appendix

A.1 Altruism Component of Consumer's Utility

We assume that the first dollar donation gives less than a dollar utility to the altruistic consumer, i.e., $a'(\cdot) \leq 1$. This assumption is stringent; it requires us to build a model in which the altruistic consumer buys fair trade coffee, even though he would not make a direct donation to the farmer. Although the altruistic consumer may have a marginal utility of giving that is larger than unity ($a'(\cdot) > 1$), the assumption that $a'(\cdot) \leq 1$ is without loss of generality. We show this in two ways.

A.1.1 Residual willingness to donate

The consumer's valuation of the coffee itself is p_0, and we define $u(z)$ as the value a consumer places on making a gift of z to the farmer. Assume $u' > 0$, $u'' < 0$, and $\lim_{z\to\infty} u'(z) < 1$: the marginal return to such gifts is positive, decreasing in the gifts, and less than the marginal cost of donation for large gifts.

We assume a "costless" technology (e.g., a charity) for transferring donations to farmers, so that a donor who wants to give z to the farmer can do so at cost $c(z) = z$. (however, a generalization is possible.)[17] Thus, $u'(z) = c'(z)$ determines the optimal donation amount. If no such positive z exists, $z = 0$ (no donation) is the optimal solution. Define $a(x) = u(x+z) - u(z)$. Function $a(x)$ is the "residual" willingness to pay for the fair trade attribute (assuming separability and no income effect).

In reality, the consumer will choose the optimal bundle of the donation, fair trade coffee, and other commodities simultaneously. However, the consumption of fair trade coffee will be only a small fraction of the entire bundle. Thus consideration of the consumer's residual altruism (i.e., assuming $a'(\cdot) \leq 1$) is a reasonable approximation.

[17] We could generalize this to a case where $c(z) = (1-t)(1+k)z$, where t is the consumers' marginal tax rate (if a consumer itemizes tax-deductions), and k represents the fees associated with transferring such a donation. Furthermore, we could imagine other charitable donations are close substitutes, perhaps valued more highly than gifts to farmers.

A.1.2 Simultaneous decision

Again, $u(z)$ is the value a consumer places on making a gift of z to the farmer. We do not need to assume, as in the previous section, that the decision over direct donations precedes the decision whether to buy the fair trade product; we can allow a simultaneous choice. Because the consumer can make a direct donation at unit price (i.e., a costless technology for transferring money to farmers), the consumer is willing to pay at most x to increase the farmer's income by x. Thus, the willingness to pay for x is

$$a(x) = \min(u(x), x).$$

Thus $a'(x) \leq 1$ is derived from the above.

This yields a result that may seem unreasonable: an altruistic consumer will never strictly prefer to make a direct donation (over channeling her gift through fair trade). This would suggest that even if a consumer wants to give $10,000 to the farmer (i.e., $a'(\$10,000) = 1$) but only values a single unit of coffee, she may buy the unit of coffee at a price above $10,000. However, if the consumer values a dollar donation to a charity slightly above a dollar given to the supplier, she may choose to make a fair trade purchase as well as a direct donation, even under a simultaneous decision.

The first unit of money passed to the farmers through fair trade coffee has two positive effects: one is to increase the altruistic consumer's utility, and the other is to alleviate the agency problem related to the investment. However, at a high level of donation, the second positive effect will be close to zero. Thus, if there is a slight preference for making a direct donation, then a consumer who is sufficiently altruistic will choose to buy fair trade coffee as well as make a direct donation. It is plausible to assume that some consumers prefer direct charitable donations because charities can help those in extreme poverty, not just coffee farmers.

A.2 Quality interpretation

Coffee is branded "coffee (n, q)," where n is the transfer to the farmer, and q is the quality of the coffee. Consumer's valuation of coffee is $v + q$. The quality of the coffee, q, depends upon the farmer's investment m, i.e., $q = q(m)$. $q(m)$ corresponds to $-c(m)$ in the cost reduction story.

Now that the characteristics of each coffee are represented by vector (n, q), the price is also indexed by vector (n, q), i.e., $P(n, q)$. The consumers' problems are:

$$\max_{n,q}[v + q - P(n, q)] \quad \text{and} \quad \max_{n,q}[v + q + a(n) - P(n, q)]$$

for the non-altruistic consumer and the altruistic consumer, respectively.

The producer's problem is

$$\max_{n,q}\Big\{P(n, q) - (n + m) : q = q(m) \quad \text{and} \quad n \geq \frac{1 - \delta_F}{\delta_F} m\Big\}$$

From the assumption of perfectly competitive roasters, we derive

$$P(n, q) = n + m(q)$$

where $m(q)$ is an inverse function of $q(m)$.

We consider a pair of (n, q) satisfying the binding incentive compatibility constraint, i.e., $n = \frac{1-\delta_F}{\delta_F} m(q)$. A pair satisfying $n < \frac{1-\delta_F}{\delta_F} m(q)$ is not feasible, and a pair satisfying $n > \frac{1-\delta_F}{\delta_F} m(q)$ is not optimal. Hence, the price function is simplified into

$$p(q) := P\Big(\frac{1 - \delta_F}{\delta_F} m(q), q\Big) = \frac{1 - \delta_F}{\delta_F} m(q) + m(q) = \frac{m(q)}{\delta_F}$$

where $m(q)$ is the inverse function of $q(m)$ and $n(q) := \frac{1-\delta_F}{\delta_F} m(q)$.

In summary, even though the price system seems more complex than the one in the cost reduction story (as it is indexed by a two-dimensional vector (n, q) rather than n only), the price system can be reduced to be one dimensional.

Finally we show that these two interpretations are identical by demonstrating that the first order conditions under the quality interpretation are identical to those derived from the cost reduction model. The consumers' maximization problems with the derived price function $p(q)$ are:

$$\max_{q}[v + q - p(q)] \quad \text{and} \quad \max_{q}[v + q + a\Big(\frac{1 - \delta_F}{\delta_F} m(q)\Big) - p(q)].$$

The first order conditions are:

$$1 - p'(q) = 0 \Leftrightarrow 1 = \frac{m'(q)}{\delta_F} \Leftrightarrow \delta_F = \frac{1}{q'(m)}$$

$$\text{and} \qquad 1 + \frac{1 - \delta_F}{\delta_F} a'(n) m'(q) - \frac{m'(q)}{\delta_F} = 0 \Leftrightarrow 1 + \frac{1 - \delta_F}{\delta_F} a'(n) \frac{1}{q'(m)} - \frac{1}{\delta_F q'(m)} = 0$$

Replacement of $q'(m)$ with $-c'(m)$ makes the above two equations identical to $[FOC_0]$ and $[FOC_A]$.

A.3 Section 4.1

Countries	MEAN	Mean for "FT" countries	United Kingdom	United States	Germany	Japan	Belize	Bolivia	Brazil	China	Colombia	Costa Rica	Cote d'Ivoire	Dominican Rep.	East Timor	Ecuador	El Salvador	Ethiopia	Ghana	Guatemala	Haiti	Honduras	India	Indonesia	Malawi	Mexico	Nicaragua	Pap. New Guinea	Peru	Rwanda	Sri Lanka	Tanzania	Thailand
Legal enforcement of contracts	6.3	5.4	7.2	8.1	8.5	9.5		5.4	5.4	7.1	6.6	3.8	3.6	4.0		6.6	7.6	6.4	8.1	4.1	6.2	4.3	4.6	1.2	3.4	6.1	8.3	2.1	5.5	5.5	5.9	6.5	6.7
Legal System & Property Rights	5.8	4.9	8.7	7.7	8.9	8.3	6.4	4.3	5.2	5.8	5.0	6.9	2.5	4.5		4.1	5.3	4.4	5.0	5.2	3.0	4.2	6.7	3.9	5.3	5.7	4.6	4.4	5.1	3.6	5.1	5.8	6.3

Selection of fair trade origin countries from "producer profiles" listed at <www.transfairusa.org/content/certification/producer_profiles.php>.

Scores for "Legal enforcement of contracts" from the World Bank's "Doing Business."

Scores for "Legal System and Property Rights" combine an index from the PRS Group's "International Country Risk Guide," and from the World Economic Forum "Global Competitiveness Report."

These two scores can be found at Economic Freedom of the World 2007 Annual Report, The Fraser Institute, <www.freetheworld.com>.

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