

CONSUMER DEMAND FOR FAIR TRADE:

NEW EVIDENCE FROM A FIELD EXPERIMENT USING eBAY AUCTIONS OF FRESH ROASTED COFFEE

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ABSTRACT

A majority of surveyed consumers say they prefer ethically certified products, such as Fair Trade coffee, over non-certified alternatives, and are willing to pay a price premium for such products. There is no clear evidence, however, that people seek out such products and pay a premium for them when shopping. We provide new evidence on consumer behavior from an experiment conducted on eBay. We find that the Fair Trade label has a substantial positive effect on bidding for coffee. On average, shoppers paid a 23% premium for coffee labeled Fair Trade. This premium was not affected by the recent recession.

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## I. INTRODUCTION

Products carrying ethical product labels are an increasingly common sight in retail settings. These types of labels call attention to particular aspects of the way goods have been made (e.g., labor practices, environmental standards, the treatment of animals) and to particular causes that stand to benefit when the goods are purchased (e.g., research on HIV/AIDs and cancer, provision of clean drinking water in developing countries). Perhaps the most well-known of these ethical labels is the Fair Trade label. The Fair Trade certification program aims to raise incomes of poor farmers in developing countries. Fair Trade coffee, tea, and chocolate are now marketed in cafes, restaurants, and supermarket chains across the United States and in Europe, and global sales of Fair Trade products have risen by around 30 percent annually over the past decade.

Ethical product certification and labeling allows for a new, mainstream form of politicized consumption, a departure from the short-lived consumer boycotts organized by activist groups in the past and aimed at punishing businesses for unethical behavior of one form or another. Ethical labels promote a more stable form of politicized consumption; an everyday mechanism by which citizen-consumers vote with their shopping dollar to influence the behavior of firms and bring about political and social change, bypassing traditional political channels through which they might address the same issues via government regulation.

It is currently difficult to assess the potential long-term impact of this new type of politicized consumption, in terms of the size of the market and the associated effects on businesses and outcomes. A critical issue is the strength of latent consumer demand for ethically labeled and cause-related products. Though growing rapidly, sales of ethically labeled products still represent a small segment of the market. There is much debate about the potential for continued growth and long-term impact. Skeptics dismiss Fair Trade and other ethically labeled products as a fad

and a niche market, or as cheap public relations ploys by retail brands, and point out that such products account for a tiny share of retail sales (e.g., Vogel 2005, 2008). Supporters argue that politicized consumption could have a large impact on firm behavior if the market continues to grow at the current rate, and point to the evidence showing that a majority of surveyed consumers say they would prefer, and would be willing to pay extra for, any products they could identify as being made in ethical ways (e.g., Elliott and Freeman 2003). At present, however, there is no clear evidence that consumers will actually support ethically labeled products when it comes to spending their own money and thereby give more firms an incentive to change their behavior and invest in ethical labeling programs.

We report new evidence on consumer demand for Fair Trade labeled products from a field experiment conducted on eBay. We find that the Fair Trade label has a substantial positive effect on bidding for coffee in eBay auctions. On average, shoppers paid a 23% premium for Fair Trade labeled versus unlabeled coffees. This premium was not markedly affected by the recent recession. Consumers were willing to pay the same premium for Fair Trade in 2009, in the middle of the most severe economic downturn since the Great Depression, as they had paid in 2007 and 2008. The findings suggest that there is substantial consumer support for Fair Trade certification, even among price-sensitive eBay shoppers.

To the best of our knowledge, this is one of the first papers to report results from a field experiment in which the researchers manipulate important product attributes to estimate demand effects among buyers in an online retail setting. Previous related empirical research in applied microeconomics has relied almost exclusively upon estimating models of demand using observational data with a variety of techniques applied to account for the endogeneity of distribution and marketing approaches used by firms (Nevo 2010). Our test demonstrates the

advantages and opportunities provided by the field experimental approach in this area of research. The test also complements a growing theoretical literature on the extent and implications of altruism in markets (Fehr and Schmidt, 1999; Andreoni, 2006; Benabou and Tirole, 2006) and provides new evidence of a specific type of altruistic behavior among consumers that is a critical issue in debates about corporate social responsibility (Baron 2003; Baron and Diermeier, 2007; Besley and Ghatak 2007).

## II. FAIR TRADE AND CONSUMER DEMAND FOR ETHICALLY LABELED PRODUCTS

The Fair Trade certification program was developed by a group of humanitarian organizations aiming to alleviate poverty and promote sustainable development among poor farmers in developing countries. Fair Trade certified farmers receive a guaranteed minimum price for their crops and a price premium (above the minimum or the current market price for the commodity, whichever is higher). The current minimum price for coffee (Arabica, unwashed), for example, is set at \$1.25 per pound and the premium over the current market price is 10 cents per pound. In addition, Fair Trade certified importers must agree to long-term (minimum of one year) contracts with farmers and must make available pre-harvest credit (up to 60% of the contract value). Fair Trade certification prohibits forced and child labor on farms, along with ethnic and other forms of discrimination, and restricts the use of potentially hazardous chemicals. Certification is generally restricted to small, family-owned farms and requires that farmers organize into cooperatives that decide democratically how to distribute or invest the fair trade premium paid on each contract.<sup>1</sup>

A group of non-profit Fairtrade Labelling Organizations (FLO) oversees Fair Trade certification and licenses the use of the trademark in each national market (in the United States,

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<sup>1</sup> Fairtrade Labelling Organizations: [http://www.fairtrade.net/generic\\_standards.html](http://www.fairtrade.net/generic_standards.html)

certification and licensing is organized by TransfairUSA). FLO has developed certification standards for a range of agricultural products, including coffee, tea, cocoa, bananas, sugar, rice, cotton, flowers, honey, and wine. FLO conducts inspections of producers, examines trader contracts, and monitors the chain of custody by which the certified goods are supplied to importers and retailers who are licensed to use the Fair Trade label and logo when all the standards have been met. As of 2009 the program included over 1.2 million farmers in 58 nations in Africa, Asia, and Latin America, with annual global sales of certified products exceeding \$4 billion. FLO estimates that approximately \$65 million in premium payments was distributed to communities in 2008 for use in community development (FLO 2010a). In the United States, there were over 800 licensees selling Fair Trade certified products in over 50,000 retail locations in 2009. Fair Trade coffee, the largest selling certified product, accounts for over 3 percent of the total retail market for coffee and for close to 20 percent of the market for specialty coffees, the fastest growing segment of the US coffee market (TransFair USA 2009a, 2009b). Fair Trade coffee is available in major coffee and food retailers, such as Starbucks Coffee, Peet's Coffee and Tea, Seattle's Best Coffee, Dunkin' Donuts, and McDonald's, as well as in many large supermarket chains, including Walmart, Target, Safeway, Giant, Costco, Trader Joe's and Whole Foods Market.

The Fair Trade program has some obvious attractions. It provides poor farmers with a measure of financial security and access to credit, helps relieve them from exploitation by local middle-men, and provides sizeable premiums that are often used to fund local schools and health clinics (e.g., Hayes 2006). Fair Trade is a voluntary, market-based program, so farmers and retailers can opt in or out of the program depending on whether they think it will benefit them and consumers can choose whether or not they wish to support the program by buying the

labeled products.<sup>2</sup> But critics of the program worry that retailers can take a disproportionately large part of the additional margin that consumers pay for Fair Trade items, making labeling an inefficient method for channeling aid from consumers to farmers (e.g., Stecklow and White 2004; Harford, 2006, 33). Some critics also question whether annual FLO inspections can ensure compliance with the Fair Trade standards and worry that the system may encourage overproduction of particular commodities, disadvantage non-certified farmers, and hinder the reallocation of resources to alternative and more productive activities (e.g., Lindsey 2003; Sidwell 2008).<sup>3</sup>

How one assesses the potential impact of the Fair Trade program hangs, to a large degree, on how one evaluates the strength of support for such ethically labeled goods among consumers. There is a great deal of uncertainty about whether the Fair Trade market can survive a sustained recession and reach a size large enough to have a substantial impact in developing nations. Total sales of Fair Trade goods in the United States in 2008 amounted to roughly \$1.1 billion. To put this in perspective, this represents only about one fortieth of the U.S. market for certified organic products and less than \$4 per person annually. For skeptics, this evidence is consistent with the view that Fair Trade, and ethical labeling and marketing more generally, represents little more than a market niche or a fad, limited to a small segment of consumers and vulnerable to recession and changing fashions. It has also been dismissed as a cheap way for brands to burnish their public image – a type of “greenwashing” or “fairwashing.” Distilling these views, Vogel (2008,

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<sup>2</sup> As with other types of third-party certification and labeling, the Fair Trade program can be seen as a way to remove a market inefficiency that exists due to incomplete information on the part of consumers about the manner in which goods are produced (Elliott and Freeman 2003, 47-48). In the simplest models, lack of information about the ethical quality of goods available to consumers leads to welfare losses, as consumers who prefer goods with high ethical quality cannot identify (and thus adequately reward) high-quality producers, and the latter are driven from the market by low-quality producers who face lower costs Bonroy and Constantatos (2003, 2008). Fair Trade labeling has also been modeled as product differentiation that increases consumer welfare by introducing more variety (e.g., Becchetti and Solferino 2005).

<sup>3</sup> Research to date has provided only crude assessments of the effects of Fair Trade certification among developing-country producers, in the form of case studies of certified farmers (e.g., Ronchi 2002; Murray et al. 2005) that do not provide general measures of impact, and surveys studies of certified and non-certified producers (e.g., Arnould, Plastina, and Ball 2006; Becchetti and Constantino 2006, Bacon et al. 2008) that do not account for selection bias effects.

16) has argued that “there is little evidence that consumer behavior has become more politicized: most consumers continue to make their purchasing decisions primarily, if not exclusively, on the basis of price, quality, and convenience.”

The absence of a large market for something does not necessarily indicate an absence of demand, and sales of Fair Trade certified goods have been growing at a steady and impressive rate: the average annual rate of growth in U.S. sales was close to 40% between 1999 and 2008. By way of comparison, U.S. sales of certified organic products grew by around 20% annually between 1990, when certification began, and 2002 (Dimitri and Green 2002). Survey data, widely referenced by those who see Fair Trade as the thin edge of the citizen-consumer wedge, indicate that a majority of consumers say they prefer, and are willing to pay substantially more for, products they can identify as being made in an ethical way. For example, a survey administered in 1999 by the Program on International Policy Attitudes found that 76% of respondents indicated they were willing to pay \$25 for a \$20 garment that was certified as not being made in a sweatshop (PIPA 2000). A poll conducted in the same year by the National Bureau of Economic Research found that roughly 80% of surveyed individuals said they were willing to pay more for an item if assured it was made under good working conditions (see Elliott and Freeman 2003, 29-35). A growing number of survey studies have provided additional evidence of consumers’ willingness to pay for ethical qualities of products and ethical behavior by firms (e.g., Auger et al. 2003, 2008; Dickson 2001; Mohr and Webb 2005). Several of these studies have focused specifically on Fair Trade coffee and report that consumers are willing to pay a sizeable premium for Fair Trade certification (e.g., Loureiro and Lotade 2005; De Pelsmacker et al. 2005). In a recent study Hertel et al. (2009) found that over 75% of surveyed coffee buyers in the U.S. in 2006 said they would be willing to pay at least 50 cents more per

pound for Fair Trade coffee versus non-certified coffee (a premium of roughly 16% over the average price of coffee at the time) and more than half said they would pay a premium of a dollar or more.

Of course, the stated preferences of consumers may be very different from the preferences they reveal in a real market setting. The survey findings most likely reflect some degree of social desirability bias. What is required is direct evidence on how consumers actually behave when they encounter Fair Trade labels while shopping and deciding how to spend their own money. A small set of empirical studies have examined relationships between observed sales and/or prices of goods and their ethical characteristics. For instance, Teisl, Roe, and Hicks (2002) examined scanner data on U.S. retail sales of canned tuna and found that market share (relative to other canned seafood and meat) rose substantially after the introduction of the “dolphin-safe” label in April 1990. Elfenbein and McManus (2010) found a price premium for items sold in eBay’s “Giving Works” program (in which sellers direct a portion of the sale price to charity) compared with prices for similar items sold on eBay, and the premium was increasing in the amount donated to charity. On the Fair Trade label and coffee, specifically, Galarraga and Markandya (2004) gathered data on retail prices of coffee sold in major supermarkets in Britain and estimated that an average premium of around 11% was charged for coffee with a “green” label (they combined Fair Trade, organic, and shade-grown labels in this category). While such studies are suggestive of consumer support for ethically labeled products, because the observed outcomes reflect pricing and distribution decisions by sellers as well as consumer behavior, it is difficult for this type of approach to provide clear inferences about consumer responses to the labels.

Only a small number of field experiments have addressed whether and how consumers alter

their spending behavior when given the opportunity to distinguish Fair Trade or other ethically labeled products from alternatives. Kimeldorf et al. (2004) placed two identical groups of athletic socks in a department store and labeled one group as being made under “Good Working Conditions.” The findings were mixed: when the two types of socks were sold at the same price, only 43% of customers bought the labeled socks; when the labeled socks were sold at prices higher than the non-labeled socks, about 25 percent of consumers bought the labeled type. In another experiment conducted in a retail store in New York City, researchers employed a “Fair and Square” label describing ethical labor standards in facilities making a brand of towels and a brand of candles (see Hiscox and Smyth 2006). Compared with similar brands of towels and candles sold in the store, sales of the labeled brands rose when the labels were put in place, and sales rose further with price increases of 10-20% above pre-test levels. Arnot, Boxall, and Cash (2006) conducted tests with a university campus coffee vendor, adjusting prices for a fresh-brewed Fair Trade certified coffee and a similar tasting alternative. Examining sales on different days, the researchers concluded that demand for Fair Trade coffee was less sensitive to price than was demand for the other alternative coffee.

Each of these field experiments had design limitations that made it impossible for the researchers to isolate the effects of the ethical labels from potential time-variant confounding factors and to compare the effects of ethical product labels with the effects of alternative types of labels. The experiment we report below was designed specifically to overcome these problems and to gather new, direct evidence on how price-sensitive shoppers behave when encountering Fair Trade labels and making real spending decisions in an online retail setting.

### III. RESEARCH DESIGN

#### A. MODEL OF CONSUMER BEHAVIOR

We adopt a standard model of consumer behavior in which individuals may derive utility from a variety of characteristics of goods (see Lancaster 1971; Gorman 1980). We assume consumers maximize their utility when choosing from a set of alternative products (e.g., types of coffee) available in a particular market. Each consumer's utility from buying a particular good depends on the observed product characteristics, which may include Fair Trade certification. In general notation, consumer  $i$ 's utility from buying the  $j$ th good in market  $t$  is given by:

$$U_{ijt} = U(x_{jt}, \zeta_{jt}, v_{it}; \theta)$$

where  $x_{jt}$  is a vector of observed product characteristics,  $\zeta_{jt}$  indicates product characteristics that are unobserved by the researchers,  $v_{it}$  are unobserved differences in consumer tastes, and  $\theta$  is a vector of model parameters that includes how sensitive consumers are to each of the observed product characteristics. Consumers may differ in how they evaluate the different product characteristics. Our test is designed to measure average responses among consumers to one key product characteristic – Fair Trade certification. Bidding by consumers in eBay auctions for identical products labeled as Fair Trade certified (or not), and the resulting endogenously determined market prices for those products, provide us with our measure of consumer response.

We allow that different consumers may place different values on Fair Trade certification and thus some may be willing to pay more (or less) for Fair Trade goods than for otherwise identical alternatives. We do not make specific assumptions about the motives of consumers willing to pay more for Fair Trade certification. The simplest type of assumption is that these consumers derive a “warm glow” satisfaction from supporting a program that is helping poor coffee farmers – this type of assumption is adopted in existing models of markets for ethically labeled goods

(e.g., Richardson and Stahler 2007; Baron 2009a). There are other motives that could generate a preference for purchasing ethically labeled products, however, some of them much less altruistic than others, and our tests are not designed to assess the relative importance of alternative motivations among consumers favoring ethically labeled goods.

In general, the standards under which a good is made can be classified as “credence” attributes and are distinct from other types of product characteristics in that they cannot be directly assessed by the consumer examining or using the item. Other product characteristics, such as price, size, and color, can be evaluated by consumers before they purchase the good – these are sometimes called “search” attributes. Still other characteristics, including quality, durability, and taste, can be assessed by consumers after they have purchased the good and begun to use it – and are known as “experience” attributes.<sup>4</sup> Although these experience attributes are not known to consumers at the point of purchase, since they will be revealed to them by use of the product, firms can use a variety of methods to send credible signals about them, including guarantees and warranties and advertising to brand reputations, and the information asymmetry problem is also partly alleviated because consumers can punish firms for poor quality by making no further purchases of their products (see Akerlof 1970; Shapiro 1983; Palfrey and Romer, 1983). In the case of credence attributes, however, which are never directly observed by consumers before or after purchasing the product, firms find it much more difficult to make credible assurances. Firms that have incurred higher costs to produce goods with these characteristics can make claims about them to consumers, but competing firms can incur no additional costs and make similar claims.

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<sup>4</sup> For discussions of these different types of attributes, see Nelson (1970, 1974), Darby and Karni (1973), and Roe and Sheldon (2007). Besides Fair Trade standards for farmers, other familiar examples of credence attributes include organic standards for production of food and fiber, exclusion of genetically modified organisms from foods, dolphin safe methods for catching tuna, humane treatment of animals on farms, and various forms of environmental management standards adopted by firms to help to sustain forests and fisheries

Certification and labeling of specific credence attributes of goods (e.g., Fair Trade standards) by an independent third party (e.g., FLO), can mitigate this problem, effectively transforming the credence attributes into search attributes (Caswell and Mojduszka 1996). The value of these labels to firms and consumers will depend in part on the degree to which consumers regard the particular third party certifier as trustworthy. Our tests were not designed to assess the importance of third-party certification per se, however, or the trustworthiness of FLO, specifically, in the eyes of consumers.

## B. THE SETTING

We examined consumer demand for the Fair Trade label by conducting an experiment on eBay.com. The eBay website is the world's largest online marketplace, attracting over 90 million active users in 2009, with total merchandise sales amounting to just over \$57 billion. It has a reputation for attracting price-sensitive customers searching for bargains. It is the equivalent of the flea market for online shoppers, with most items selling at a 30-50 percent discount on retail prices (Bettis 2006). As one e-commerce professional has noted, "The eBay buyer is your cheapest kind and the most deal-oriented buyer out there."<sup>5</sup> We discuss the consequences of these features of the setting for external validity in Section V below.

We conducted the test between March 2007 and August 2009, selling fresh-roasted Fair Trade certified coffee in small lots in three-day auctions. There is thriving market on eBay for roasted coffee beans, with sellers offering everything from well-known brands (e.g., Starbucks and Green Mountain Coffee) to coffee supplied by small importers and roasters (e.g., Berceto Coffee and Saratoga Roasters). In 2009, over 30,000 items were listed for sale on eBay in the roasted beans category, resulting in sales of over \$380,000. On average brand-name coffee beans

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<sup>5</sup> Scott Wingo, CEO of ChannelAdvisor.com, quoted in Bettis (2006).

sell at a price (including shipping) that represents a discount of approximately 30 percent on the in-store retail price for the same items.<sup>6</sup>

A growing body of research has examined online commerce, and eBay auctions in particular (e.g., Roth and Ockenfels 2002; Ariely and Simonson 2003; Bajari and Hortseesu 2003, 2004). A variety of recent studies have reported results from experiments conducted on eBay to explore the effects of auction formats (e.g., Lucking-Reiley 1999), seller reputation (e.g., Resnick et al. 2006), shipping costs (e.g., Hossain and Morgan 2006), and public versus secret reserve prices (e.g., Katkar and Reiley 2006). To our knowledge, ours is the first field experiment to examine ethical or politicized consumption among eBay shoppers.

### C. THE PRODUCT AND LABELS

To implement the experiment we partnered with an established coffee importing and roasting company, Johnson's Brothers Coffee, based in Madison, Wisconsin. The company sells a wide selection of high quality coffees, including a variety of Fair Trade certified coffees, to retailers in Wisconsin – mostly to cafes, restaurants, hotels, and stores in the Madison area, often under the retailer's own brand name and label. Johnson Brothers Coffee supplied us with their Fair Trade certified coffees at wholesale prices, helped us create our own retail brand and label (Cambridge Beans), and shipped the fresh-roasted coffee under our brand name directly to eBay buyers. We sold five types of coffee, imported and roasted by Johnson Brothers Coffee, all of them Fair Trade certified: Honduras Cohorsil, Sumatra Mendheling, Ethiopian Yirgacheffe, Guatemala Asobagri, and Peru Norte.

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<sup>6</sup> For example, in eBay auctions occurring in March 2007, 8-pound sample packs of Starbucks coffee sold for \$62 on average, while the same packs were priced at \$84 on the Starbucks website.

We created the retail brand name, Cambridge Beans, with a distinct set of labels for each type of coffee we sold. The labels were incorporated into the packaging of the coffee beans in one-pound bags by Johnson Brothers Coffee at their roasting plant. For each type of coffee we sold, we created a (treatment) Cambridge Beans label that included the official Fair Trade Certified logo in the bottom left corner and an alternative, almost identical (control) label that included a generic “Premium Coffee” logo instead of the Fair Trade Certified logo. The Premium Coffee logo was used in the control condition to allow for a generic logo effect, unrelated to the specific content about Fair Trade, as past research has suggested that even seemingly meaningless forms of differentiation in marketing messages can affect consumer choices (Carpenter, Glazer, and Nakamoto, 1994).<sup>7</sup> Figure 1 shows the treatment and control labels for two of the test coffees, the Honduras Cohorsil and the Peru Norte coffees. The labels for each type of coffee were identical in color and layout and differed only in the name and description for the specific beans provided by Johnson Brothers Coffee (e.g., Honduras Cohorsil, Medium Roast, Medium body with a rustic sweetness). For each coffee the treatment label (with the Fair Trade Certified logo) was tinted slightly orange and the control label (with the Premium Coffee logo) was tinted slightly gold, to help establish a noticeable differentiation. Figure 2 shows the packaged coffees with the Cambridge Beans labels affixed.

#### D. THE AUCTIONS

We listed lots of Cambridge Beans coffee for sale in concurrent three-day auctions under both the treatment and control labels. This allows us to compare the market clearing prices (the winning bids) paid for the Fair Trade labeled coffee and the alternative coffee offered for sale

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<sup>7</sup> Mullainathan et al. (2008) suggest that such effects may in part be due to advertisers encouraging consumers to transfer positive assessments of seemingly irrelevant attributes by analogy or association.

under the same brand, in the same varieties, by the same seller, at exactly the same time. Each treatment-control action pair provides an observation of the price premium eBay shoppers are willing to pay for Fair Trade certification.<sup>8</sup> We typically ran two auction pairs each week, the first beginning on Tuesday and ending on Thursday at 8pm (Eastern), the second beginning on Friday and ending on Sunday at 8pm (Eastern). The auctions began in March 2007 and continued, with short breaks in the spring and summer of 2007 and the winter 2007-2008, until August 2008, the initial target date for ending the auctions. General economic conditions worsened markedly in late 2008 with the onset of recession, and we were curious to see whether this would affect consumer behavior and the results from the tests, so we re-started the auctions in early 2009 and continued them for another seven months. Figure 3 shows the (end) dates for all the auction pairs we ran over the entire period, along with the monthly unemployment rate, from March 2007 to August 2009. In total, we ran 130 auction pairs (i.e., 260 individual auctions) during this period.

Each auction was for 3 one-pound bags of Cambridge Beans fresh-roasted whole bean coffee, under the treatment or control label. During the first three months (25 auction pairs) winning bidders in each auction were permitted to choose any 3 of their preferred types of coffee from among the 5 available Cambridge Beans coffee types (Honduras Cohorsil, Sumatra Mendheling, Ethiopian Yirgacheffe, Guatemala Asobagri, and Peru Norte). Unfortunately, and unbeknownst to us at the outset, this type of listing violated eBay rules requiring that auctions must list specific items for sale and should not allow winning bidders choices among options.

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<sup>8</sup> Besides true auctions, products can be also listed for sale on eBay in fixed-price listings, in which the seller sets a price and a period for which the product is available at that price, or a hybrid form of auction listing that includes a “buy-it-now” price which a shopper can pay to end the auction immediately. We limited the tests to the true auction format (in which the listed items are always sold if they attract at least the specified minimum bid) in order to make simple comparisons between the prices shoppers were willing to pay for Fair Trade labeled items versus unlabeled alternatives. An alternative approach would be to use fixed-price listings and compare the quantities of each type of item sold when listed at the same price over a set period of time.

Alerted to this issue, we modified later auction listings so that each auction offered for sale 3 one-pound bags of specific Cambridge Beans coffees (under the treatment or control label): one bag each of the Sumatran, Guatemalan, and Peruvian beans, the three types that were the most popular picks during the first three months when winning bidders could choose their own types from the menu of options.

An auction listing on eBay consists of several components provided by the seller. Each auction has a title and subtitle (which provide a brief description of the item for sale), a detailed description of the item (which may include photographs), an auction starting price or minimum bid, a reserve price, shipping costs, and payment methods. Figures 4 and 5 display the listings for the auctions under the treatment (Fair Trade Certified) and control (Premium Coffee) labels, respectively. The listings were identical except for the information about Fair Trade certification included in the treatment condition. Specifically, in the treatment condition, the words “FAIR TRADE” were appended in the title and the phrase “Certified by TransfairUSA” was added in the subtitle. The detailed description under the treatment condition included the text: “These coffees are also *Fair Trade Certified by TransfairUSA*. Fair Trade guarantees a better deal for third world producers. For more information about Fair Trade, go to: [transfairusa.org](http://transfairusa.org).”<sup>9</sup> Additionally, the phrase “Fair Trade Certified” was included with the description of each coffee type and the photographs included the Fair Trade Certified logo (on the Cambridge Beans labels and as a stand-alone image). In all other ways the listings under the treatment and control labels were identical. The minimum bid was set to \$1 in all the auctions, with no reserve price, the

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<sup>9</sup> The phrase “Fairtrade guarantees a better deal for third world producers” was the official motto of the Fairtrade Labeling Organizations at the time the auctions were conducted.

shipping cost was initially set to \$8.10 for anywhere in the United States, and the only accepted payment method listed was PayPal.<sup>10</sup>

For each treatment-control auction pair, the eBay “Scheduled Listing” feature was used to ensure that both auctions began at exactly the same time, but the order in which they were officially listed on eBay (treatment auction first or second) was randomized. Thus, for each auction pair, on the list of current auctions within the “roasted coffee beans” eBay category, the treatment and control auctions always appeared together (one after the other) in random order. When shoppers search items in the roasted coffee category, eBay displays a list of current auctions showing the title, subtitle, starting price, and a single photo for each. (The titles displayed in the list provide links to the specific auction listings, which the consumer can simply click on to see additional details for any item). Figure 6 shows how the Cambridge Beans auctions appeared on a list of current auctions for roasted coffee beans in March 2007 – our auctions were the third and fourth entries on the list at that particular moment in time (auctions are listed in order by shortest time remaining).

To conduct the auctions we created a new eBay seller, “mmgoodsonline,” with corresponding PayPal and Gmail accounts to handle payments and correspondence in a way that avoided linking the seller with the researchers and their institutions. To allow buyers to assess the reliability of sellers, eBay maintains a feedback scoring system via which buyers can record their assessment of their experience with a seller after a transaction, posting comments and either adding a point for a seller to indicate a positive experience or subtracting a point for a negative experience (a neutral assessment, with no change in points, is also possible). A seller’s cumulative feedback score and the proportion of positive vs. negative feedback entries are the

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<sup>10</sup> The shipping fee was raised to \$8.95 in August, 2007, when Johnson Brothers Coffee changed the standard rate it charged. To help attract bidders, every auction carried a “no hassle” 14-day money-back return guarantee.

key indicators of seller experience and reliability (Resnick and Zeckhauser 2002; Resnick et al 2006). The feedback score for “mmgoodsonline” started at zero and rose steadily over the course of the experiment.<sup>11</sup>

## IV. RESULTS

### A. SUMMARY STATISTICS

Table 1 reports the key statistics for the auctions under treatment (A) and control (B) labels. The average winning bid price in the treatment (Fair Trade Certified) auctions was \$9.60 compared to \$8.28 in the control (Premium Coffee) auctions – if the flat rate shipping fees are included, the average total price was \$18.38 and \$17.06, respectively. The treatment auctions generated total revenues of \$1247.39 (or \$2389.44 with shipping included), while the control auctions yielded \$1075.76 (or \$2217.81). The difference in means (and in total sales) corresponds to an overall premium of 15.95 percent for the Fair Trade label (or 7.7 percent with flat shipping fees included) – this can also be interpreted as the dollar weighted average premium for Fair Trade across all 130 auction pairs. This difference in means (with and without shipping fees) is statistically significant when assessed using a two-sample *t*-test (two-tailed) with unequal variances. On average, eBay shoppers pay substantially more for Fair Trade certified coffee than for otherwise identical coffee.

The amount of bidding activity is very similar for the treatment and control label groups: the median number of bids in auctions under both labels was 6 and the median number of unique bidders was 4; the total number of bids in all auctions was approximately 840 for each of the labels, with about 510 unique bidders in each case. Many bidders participated in both the

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<sup>11</sup> As of August, 31, 2009, the feedback score for “mmgoodsonline” was 307. There were only two instances of recorded negative feedback, both occurring when winning bidders did not receive coffee in a timely fashion as a result of miscommunication between our research team and Johnson Brothers Coffee.

treatment and control auctions and in auctions at different periods in time: the total number of unique bidders for all auctions combined was approximately 780.<sup>12</sup> In total there were 142 unique auction winners, located in 41 different states in the U.S. and in Canada.

## B. ANALYSIS OF MATCHED AUCTION PAIRS

Table 2 reports the key results for the auction pairs. Across all auction pairs (A) the average premium for Fair Trade was 23.12 percent (or 8.45 percent with shipping costs included). This was considerably larger than the dollar weighted average premium (15.95 percent, as noted above), and clearly statistical significant when we apply a two-sample paired *t*-test. The Fair Trade label earned a positive premium in 62 percent of the auction pairs.

One issue here is whether it is more appropriate to focus on the evaluation of the Fair Trade premium as a percentage calculated in terms of winning bids or total prices (including the flat-rate shipping fees). The winning bids are the numbers that are most readily available for eBay shoppers during the auctions – the eBay listings for active auctions display the current winning bids and not the total prices for the items when shipping costs are factored in. While fully informed and rational shoppers should base their bidding behavior on the total prices for items, evidence suggest that eBay shoppers do not pay close attention to differences in shipping costs across auctions. For instance, Hossain and Morgan (2006) find that auctions with high shipping fees and low minimum starting bids attract more bidders and generate significantly higher revenues than auctions with lower shipping fees and higher minimum bids (and the same effective reserve price). They suggest that shoppers either tend to disregard shipping costs, or

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<sup>12</sup> The eBay auction histories do not record how many additional eBay shoppers also viewed and followed the auctions but did not enter bids. For the first 20 of our auctions we kept track of the page view counters on the bottom of each current auction page as the auctions ended. On average, each of these treatment and control auctions was viewed by 25 unique internet protocol (IP) addresses.

maintain separate mental accounts, separating how much they are willing to pay for the item and how much they will pay for shipping. Here we report premiums calculated based on winning bids as well as total prices, but we pay closer attention to the former.

In general, outcomes from auctions that attract a relatively small number of bidders may be of less interest than others as they presumably reflect the revealed preferences of fewer shoppers. It should be noted, however, that we do not know how many additional shoppers observed auctions without bidding, and of course the number of bidders attracted to an auction is partly endogenous to seller, item, and listing characteristics. The latter issue does not seem particularly critical here as our treatment and control auctions attracted the same number of bidders, on average (as noted above, and in Table 1), and many of these bidders were active in both types of auctions. Two of our auctions actually attracted only 1 bidder each, and those coffee lots were sold for \$1 in each case, the minimum bid we allowed – one of these was a treatment auction and one a control auction, but not in the same matched pair. If we rule out cases with low numbers of bidders as less informative and restrict the analysis to the sample of auction pairs in which both auctions attracted at least three bidders, the results do not change substantively from those obtained with the full sample (see B in Table 2). The average premium for Fair Trade was 23.46 percent (or 9.29 percent with shipping included), and the Fair Trade premium was positive 68 percent of the time.

We were particularly interested in whether consumer willingness to support Fair Trade might be affected by the downturn in the economy beginning in late 2008. One simple way to examine this issue is to divide the analysis of the auction pairs and compare those occurring between March 2007 and August 2008 (see C in Table 2) and those in 2009 (D). The average Fair Trade premium was actually slightly higher (25.34 percent) in the second period compared

with (22.43 percent) in the first period, although the percent of cases in which the premium was positive dropped (to 48 percent in the later period, down from 67 percent). The evidence is thus somewhat mixed, and not consistent with there being a marked decline in consumer support for Fair Trade as a result tougher economic conditions.<sup>13</sup> This is perhaps easier to see in Figure 7, which plots the premiums for all the auction pairs over time (to which we fit a polynomial regression). If there is a downward trend in the premium it is very slight. Part of the story may be that consumers were generally less willing to pay higher prices for *all* items in 2009 than they were earlier. Figure 8 shows the winning bids for all the treatment and control auctions over time, and it does appear that prices were generally lower in the 2009 auctions than in earlier auctions, and the highest winning bids (those above \$20) were all recorded in 2007.

One final point worth highlighting here concerns overall bidding behavior in the auctions and market segmentation. As noted above, in general the number of bidders (and bids) was almost identical for the treatment and control auctions. This is a function of test design. We took measures to ensure that, besides the Fair Trade label itself, there were no differences between the treatment and control auctions that would lead one type of auction to attract more attention from shoppers than the other: specifically, the auctions were conducted at precisely the same time, by the same seller, under the same brand name, and with the order of the listings randomized. In addition, when viewing one of our auctions it was easy for any shopper to view the other (concurrent) auction by clicking on the “View seller’s other items” link that is automatically included in each auction page by eBay. On average, approximately 33 percent of the unique bidders in each auction pair participated in *both* the treatment and control auctions, and we imagine that a larger proportion were watching both auctions even if they only bid in one. It is

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<sup>13</sup> Note that we have kept all auction pairs in the sub-sample analysis here, including auctions attracting less than three bidders. If instead we exclude the auctions with less than three bidders, the percent of pairs with a positive premium was 71 percent in the later period, suggesting continued strong support for Fair Trade.

possible that a segment of shoppers more interested in Fair Trade than other shoppers may have been attracted to the treatment auctions by searching for “Fair Trade” items among the eBay coffee listings (we cannot say by what method of searching individual bidders found our listed auctions). If this was the case it did not result in any overall difference in the number of bidders in the treatment and control auctions, but there is evidence of segmentation given that some of the eBay shoppers limited themselves to bidding in only the treatment auctions (perhaps because they cared deeply about Fair Trade) or in only the control auctions (perhaps because they were mostly concerned with buying at a low price). While about a third of all bidders moved between the auctions, approximately 33 percent participated in only the treatment auctions and another 34 percent bid only in control auctions. This symmetrical pattern may have been generated by chance due to randomness associated with under-searching (if, say, shoppers only paid attention to the first of our listings they happened to come across in the coffee listings), but it is also consistent with segmentation.<sup>14</sup> (In the appendix we present an analysis of auction dynamics for one auction pair that helps to illustrate this pattern in bidding).

## V. DISCUSSION

Consumers are being offered a growing variety of ways to advance ethical and political causes when they are shopping. They can make purchases that support research on particular diseases, supply clean water for poor communities in developing countries, and promote sustainable management of fisheries and forests. Fair Trade certified products offer consumers a way to help improve livelihoods for poor farmers in the developing world. All these forms of politicized consumption effectively bypass the traditional political mechanisms for addressing

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<sup>14</sup> See Lee and Malmendier (2009) for evidence of under-searching (or boundedly rational behavior) among eBay shoppers.

issues via government policy and regulation. In this sense they can be seen as part of a larger phenomenon that Baron (2003) has defined as “private politics” – that is, individual and collective action aimed at resolving conflicts arising from the behavior of businesses without reliance upon government. A growing theoretical literature in political economy has sought to address this phenomenon and explain why more firms are voluntarily adopting socially responsible practices, including ethical and environmental standards and certifications (see Baron 2003; 2009b; Baron and Diermeier 2007).

The potential significance of this new form of politicized consumption hinges on the strength of consumer demand for ethically certified and other cause-related products. To investigate demand for Fair Trade products, specifically, we have examined new evidence on consumer behavior from an experiment conducted on eBay. The first key finding from the experiment is that the Fair Trade label generates a sizeable price premium in eBay auctions. On average, shoppers paid a 23% premium for Fair Trade labeled versus unlabeled coffees. There is strong consumer support for Fair Trade certification, even among price-sensitive eBay shoppers. The second key finding is that this premium was not markedly affected by the recent recession. Consumers were willing to pay the same premium for Fair Trade in 2009, in the middle of the most severe economic downturn since the Great Depression, as they had paid in 2007 and 2008.

The study has a number of limitations. We conducted the test only among eBay shoppers and we must be cautious about how the results generalize to other consumers in other retail contexts. Compared to supermarket shoppers more generally, for example, it is plausible that consumers who buy coffee on eBay may have somewhat higher levels of income and education, and we would not claim that they are necessarily representative of the universe of coffee buyers. But the overall direction of the potential bias, in terms of willingness to pay a premium for Fair

Trade, is not obvious. It may be common to imagine that individuals with higher incomes and education are more likely than others to donate money to help people in need, since they have additional resources, less anxiety about their own economic circumstances, and may feel some sense of “noblesse oblige.” But a wealth of evidence indicates that lower income individuals give proportionally more of their incomes to charity than do higher income counterparts (see Frank 1996; Andreoni 2001).<sup>15</sup> Piff et al. (2010) provide experimental evidence that individuals from lower socioeconomic classes are more generous, charitable, trusting, and helpful towards others compared with upper class counterparts, and trace the effects to a greater commitment to egalitarian values and feelings of compassion among lower class individuals. When it comes to politicized consumption, specifically, existing survey studies typically find no clear connection with income and education levels, and some studies indicate that individuals with higher incomes are less likely to report being supportive and participating than others (e.g., Stolle et al. 2005; Goul Andersen and Tobiasen 2003; Dickson 2001; De Pelsmacker et al. 2005). It is not readily apparent, then, whether findings from a study of a relatively high-income and high-education sample of consumers would tend to overestimate or underestimate the strength of demand for ethically-labeled goods among the broader population.

In addition, there are two important reasons why one might expect the results from the study of eBay shoppers to understate support for Fair Trade among consumers more generally. First, as we noted above, eBay is known for attracting particularly price-sensitive buyers hoping to find bargains, and well-known coffee brands sell on eBay at prices that are around 30 percent lower than their standard retail prices. Shoppers setting out with the explicit goal of saving money by

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<sup>15</sup> Studies indicate that lower income individuals are more cognizant of problems faced by others in dire economic circumstances, they are more dependent on others for assistance in their own lives, and they are more socially engaged and connected with others in general, all of which may lead them to be more charitable (e.g., Batson and Moran 1999; Goetz et al. 2010).

finding bargains are presumably much less likely to pay a premium for the Fair Trade label than counterparts who have other goals in mind and are less focused on price (and thus more attentive to other product characteristics). Second, as with many online interactions, eBay transactions have a degree of anonymity and social distance between actors that distinguishes them from offline transactions in “brick-and-mortar” retail stores. Consumers are presumably less likely to engage in charitable and pro-social behavior (including paying a premium to support the Fair Trade program) in this virtual setting than they are when engaged in face-to-face encounters with shop assistants, possibly while being observed by friends and neighbors in their own community.<sup>16</sup>

Our study does not directly address the motivations of consumers who respond positively to the Fair Trade label. Perhaps they are driven by an intrinsic motivation that reflects private satisfaction from contributing to the well-being of others. One may distinguish between satisfaction derived from specific outcomes (e.g., the overall benefits provided for others, levels of inequality) and the “warm glow” satisfaction derived simply from giving to a cause – this is the distinction drawn between “pure” and “impure” forms of altruism in the literature on pro-social behavior (see Andreoni 1989, 1990). The existing models of markets for ethically labeled goods typically assume a simple “warm glow” motivation for consumers favoring labeled goods (e.g., Richardson and Stahler 2007; Baron 2009a). Becchetti and Rosati (2005) assume instead that ethical consumption is motivated by a general aversion to inequality, as theorized by Fehr and Schmidt (1999), between rich country consumers and poor country farmers.<sup>17</sup> Additional

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<sup>16</sup> See Charness et al. (2007) for a study indicating lower levels of cooperation in online experiments compared with identical experiments in face-to-face settings.

<sup>17</sup> Empirical research on these specific types of motivations is limited. However, one set of findings consistent with pure altruism is from a survey experiment examining consumer’s stated willingness to pay for Fair Trade (Hicks 2007) which showed that the amount individuals were prepared to pay rose when they were provided with information about the positive impact of the program (specifically, information about the percentage of farmers participating and their revenues from Fair Trade sales).

experimental studies could examine the relative importance of these types of motivations by manipulating the informational context in relevant ways. To examine pure versus impure altruism, for example, one could compare the effects of Fair Trade labels that provide information about specific outcomes affected by certification (e.g., the additional income earned by certified farmers) with the effects of labels designed to prime a “warm glow” effect from giving (e.g., something like the Red Cross message appealing for blood donations: “Feel good. Give blood.”).

An alternative potential type of motivation for politicized consumption is related to social status or image – the desire to be well-regarded by others. Individuals seeking approval and esteem from others, and a reputation for moral virtue, may give to a cause in order to demonstrate or signal their virtue in a costly and public way (see Hollaender 1990; Willer 2009).<sup>18</sup> One may distinguish between cases in which status or esteem is valued for its own sake and reputation-building that is aimed at maximizing material rewards from future interactions with others (see Fehr and Fischbacher 2003; Glazer and Konrad 1996; Harbaugh 1998). Hedonic image concerns may also include *self* assessment and the desire to see oneself as virtuous (see Batson 1998).<sup>19</sup> In all these cases, social norms that attach esteem to pro-social behavior, or link such behavior to the definition of an appealing form of social identity (e.g., a good citizen), may play a key role (see Freeman 1997; Batson 1998; Cialdini 2003; Goldstein et al. 2008).<sup>20</sup> It seems unlikely that status or image concerns play a powerful role in motivating buyers of Fair Trade coffee on eBay, as the purchases are being made in a virtually anonymous fashion online

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<sup>18</sup> A growing body of evidence from experimental studies indicates that people are more likely to act in pro-social ways in public settings than in private settings (see Andreoni and Petrie 2007; Ariely, Bracha, and Meier 2009; Rege and Telle 2004).

<sup>19</sup> Benabou and Tirole (2006) have suggested that gaining in terms of self-esteem and self-image actually corresponds best with the idea of the “warm glow” effect from giving, and so the “warm glow” effect should be analyzed as an image-related rather than an intrinsic motivation.

<sup>20</sup> Field experiments indicate that simple messages invoking social norms have powerful effects on pro-social behavior in a variety of contexts (see Griskevicius et al 2006; Goldstein and Cialdini 2008).

(although concerns about self image may still play a role). To assess the importance of image motivations, future tests could compare whether shoppers purchase more Fair Trade labeled items when the results of the auctions are made public in some way (e.g., reported on Facebook pages) with the effects when purchases are made in a less conspicuous way.<sup>21</sup>

It is possible that consumers attracted to Fair Trade labeled goods may be motivated, in full or in part, by a desire for product quality, and may infer that ethically-labeled products are of higher quality than alternatives. Consumers could interpret ethical production standards, along with support for ethical causes and corporate social responsibility initiatives more generally, as a signal that the producing firm is an honest and reliable type that will not skimp on quality (see Fisman et al. 2006; Siegal and Vitaliano 2007; Elfenbein et al. 2010).<sup>22</sup> Pursuit of quality may serve as an extrinsic motivation, in this case, providing buyers of Fair Trade items with a material reward for their pro-social behavior. Again, it seems unlikely that these types of concerns played a large role for shoppers in our eBay test. The brand (Cambridge Beans) and the seller (“mmgoodsonline”) were the same for both the treatment and control coffees, so reputation was effectively held constant in each auction pair. It is conceivable that in the earlier auctions, before shoppers had been able to experience the coffees themselves (and read feedback provided by others), they may have placed more faith in the quality of the coffee beans certified as Fair Trade than the alternative (“premium”) beans. But the feedback score for “mmgoodsonline” rose steadily with each auction pair, as we accumulated positive reviews of the quality of the

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<sup>21</sup> Benabou and Tirole (2006) show formally that, while greater visibility generally encourages pro-social behavior, with heterogeneity among individuals in terms of image concerns, the effects of visibility may be limited by a signal extraction problem, as all good actions are suspected of being motivated by appearances. Frank (1996) has made a similar point, noting the special admiration for the anonymous donor whose acts of generosity are discovered by accident by others, not paraded in front of them. This suggests that the effects of visibility would be strongest when it is a constraint imposed upon consumers and is not something they can chose (or avoid).

<sup>22</sup> Elfenbein, Fisman, and McManus (2010) compared charity-linked auctions on eBay with non-charity auctions involving similar sellers, titles, and start prices. They found that both the likelihood of a sale and the maximum bid price were higher for charity-linked auctions than counterparts, and these effects were stronger among eBay sellers without extensive histories, suggesting that the charity connection is used as a signal for seller quality.

Cambridge Beans coffee and the quick delivery, and this had no noticeable impact on the size of the Fair Trade premium over time. To examine whether the Fair Trade label can serve as a signal about product quality, additional tests could compare the impact of the label on overall performance for separate new brands (sellers) marketing otherwise similar items and assess whether the effect diminishes over time as consumers evaluate quality via experience.

Our study does not examine individual-level variation in support for Fair Trade. Existing research on this issue is based on survey data and the findings are mixed or inconclusive as to whether support for ethically labeled products is associated with key socio-demographic characteristics, including age, education, social status, and – as noted above – income (e.g., Stolle et al. 2005; Goul Andersen and Tobiasen 2003; De Pelsmacker et al. 2005; Loureiro and Lotade 2005). The most robust finding to date seems to be that women are more likely to report supporting and participating in politicized consumption than men (see Stolle and Micheletti 2005; Michelletti 2003; Goul Andersen and Tobiasen 2003). Defining the market for Fair Trade products more clearly in terms of socio-demographic segments is something that could be pursued in future tests designed so as to capture individual-level data on purchasing behavior and characteristics.

Finally, we should note that we have not attempted to evaluate the benefits provided to coffee farmers through the sales of Fair Trade certified coffee, and to compare these benefits with the additional costs paid by shoppers in terms of higher prices. A full cost-benefit evaluation of the Fair Trade model would involve a long-term evaluation of the effects of the program on farmers and comparisons with alternative mechanisms (e.g. trade policy reform, aid or charity programs) by which concerned citizen-consumers in developed countries might attempt to provide assistance to farmers in developing countries.

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Figure 1: Cambridge Beans Labels

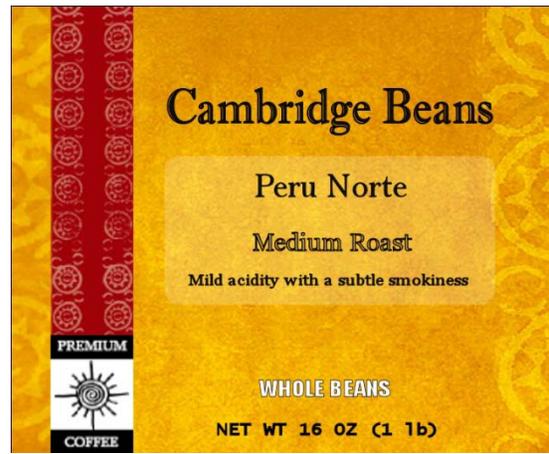
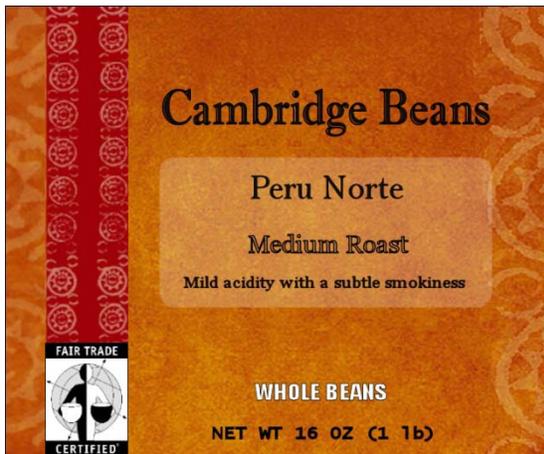
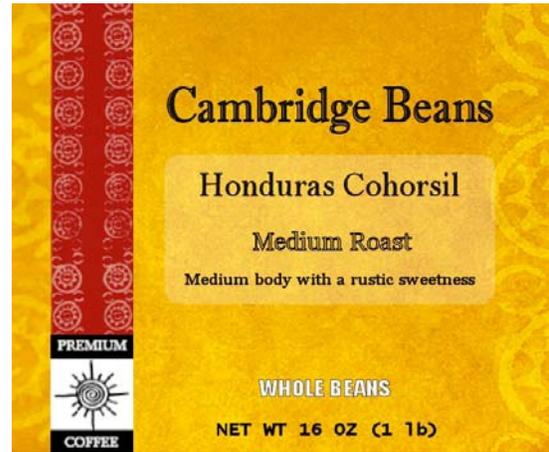
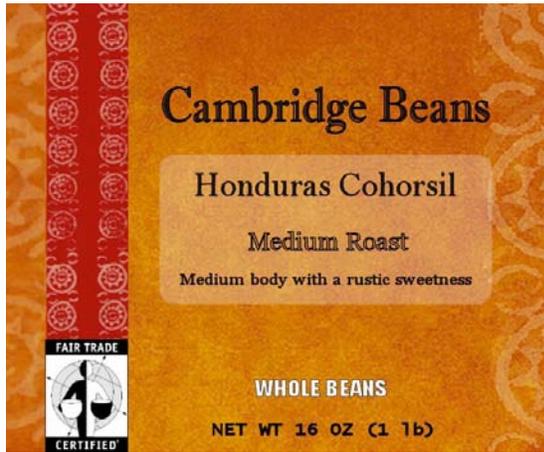


Figure 2: Packaged Cambridge Beans Coffee



Figure 3: Timing of the Auctions

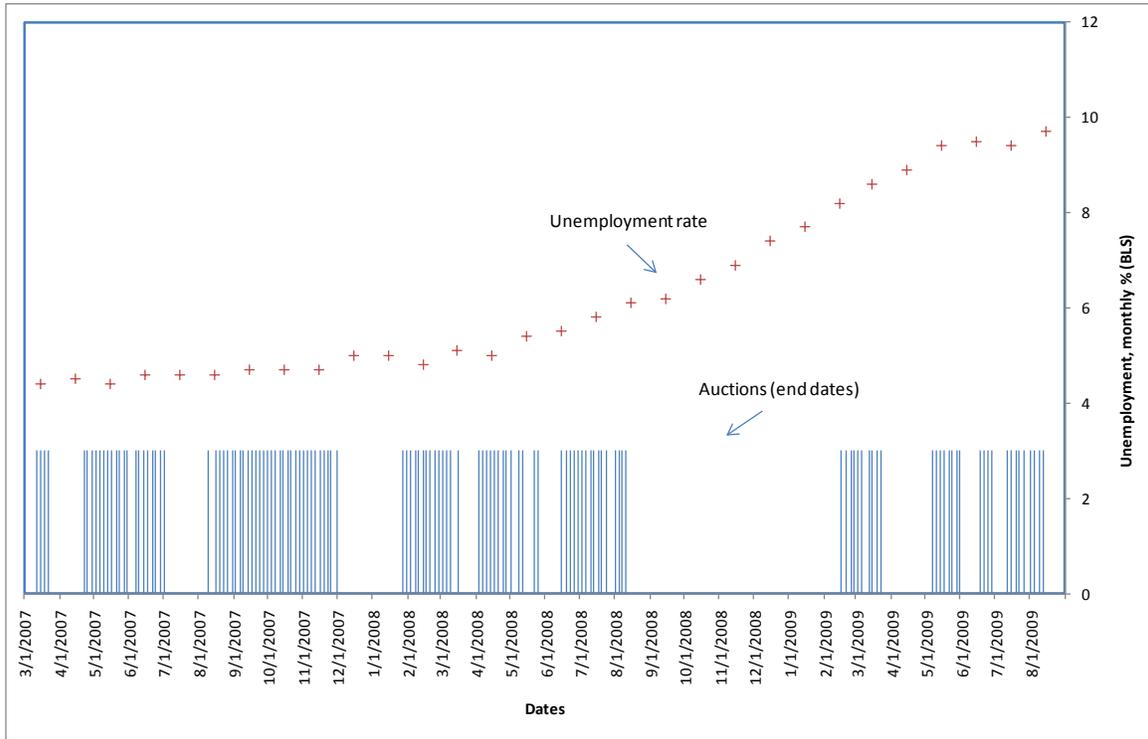


Figure 4: Auction Listing Under the Treatment (Fair Trade Certified) Label

**3 1lb Bags - Cambridge Beans Roasted Coffee -FAIR TRADE**
Item number: 280092244701

Choose Your Roasts! Certified by Transfair USA, NRI

**Bidding has ended for this item**

[Sell an item like this](#) or buy a similar item below.



1 of 3

[View larger picture](#)

Winning bid: **US \$12.50**

Ended: **Mar-16-07 17:00:00 PDT**

Shipping costs: **US \$8.10**  
US Postal Service Priority Mail®  
Service to [United States](#)

Ships to: United States

Item location: Cambridge, MA, United States

History: [10 bids](#)

Winning bidder: [hows2hows](#) (215 ☆)

You can also: [Email to a friend](#)

**Meet the seller**

Seller: [mmgoodsonline](#) (11 ☆) 📧

Feedback: **100% Positive**

Member: since Feb-22-07 in United States

- ▀ [Read feedback comments](#)
- ▀ [Ask seller a question](#)
- ▀ [Add to Favorite Sellers](#)
- ▀ [View seller's other items](#)

**Buy safely**

**1. Check the seller's reputation**  
Score: 11 | 100% Positive  
[Read feedback comments](#)

**2. Check how you're protected**

**PayPal** This item is covered up to \$200 [See eligibility](#)

Returns: Seller accepts returns.  
**14 Days Money Back**

**Listing and payment details:** [Show](#)

**Description**

**A Coffee Lover's Dream**  
*The most delicious coffee in the world. Makes a wonderful gift or a treat for yourself!*

You are bidding on 3 1lb bags of Cambridge Beans of Freshly Roasted Coffee (Whole Beans). At the end of the auction, you get to choose which types of coffee you want. Pick 3 of your favorite kind or explore our variety of flavors!

We select only the highest quality arabica green beans for roasting. In order to get you the best beans possible, we scrutinize each sample of coffee beans we receive to look for subtle hints of tangerine, black currant, honey, floral, and other favorable aromas and flavors. Once you try our beans, coffee will never be the same experience again.

All these irresistible, premium coffees are organic. These coffees are also *Fair Trade Certified by Transfair USA*. Fair Trade guarantees a **better deal** for third world producers. For more information about Fair Trade, go to: [transfairusa.org](http://transfairusa.org)

Coffee options for this auction:

- Sumatra Mandheling - Dark Roast**  
Earthy, full-bodied with flavors of plum.  
(Organic & Fair Trade Certified)
- Ethiopian Yirgacheffe - Medium Roast**  
Smooth and clean with hints of lemon  
(Organic & Fair Trade Certified)
- Honduras Cohorsil - Medium Roast**  
Medium body with a rustic sweetness.  
(Organic & Fair Trade Certified)
- Guatemala Asobagri - Dark Roast**  
Smooth with citrus and chocolate notes.  
(Organic & Fair Trade Certified)
- Peru Norte - Medium Roast**  
Mild acidity with a subtle smokiness  
(Organic & Fair Trade Certified)



Select a picture




Figure 5: Auction Listing Under the Control (Premium Coffee) Label

**3 1lb Bags - Cambridge Beans Roasted Coffee** Item number: 280092241873

Choose Your Roasts! NR!

**Bidding has ended for this item**

[Sell an item like this](#) or buy a similar item below.



1 of 2

[View larger picture](#)

Winning bid: **US \$8.50**

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Ended: **Mar-12-07 18:19:56 PDT**

Shipping costs: **US \$8.10**  
US Postal Service Priority Mail®  
Service to [United States](#)

Ships to: United States

Item location: Cambridge, MA, United States

History: [8 bids](#)

Winning bidder: [domoch\\_dreaming](#) ( 131 ☆ )

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You can also: [Email to a friend](#)

**Meet the seller**

Seller: [mmgoodsonline](#) ( 11 ☆ )

Feedback: **100% Positive**

Member: since Feb-22-07 in United States

- [Read feedback comments](#)
- [Ask seller a question](#)
- [Add to Favorite Sellers](#)
- [View seller's other items](#)

**Buy safely**

1. **Check the seller's reputation**  
Score: 11 | 100% Positive  
[Read feedback comments](#)
2. **Check how you're protected**

**PayPal** This item is covered up to \$200 [See eligibility](#)

Returns: Seller accepts returns.  
[14 Days Money Back](#)

**Description**

**A Coffee Lover's Dream**  
*The most delicious coffee in the world. Makes a wonderful gift or a treat for yourself!*

You are bidding on 3 1lb bags of Cambridge Beans of Freshly Roasted Coffee (Whole Beans). At the end of the auction, you get to choose which types of coffee you want. Pick 3 of your favorite kind or explore our variety of flavors!

We select only the highest quality arabica green beans for roasting. In order to get you the best beans possible, we scrutinize each sample of coffee beans we receive to look for subtle hints of tangerine, black currant, honey, floral, and other favorable aromas and flavors. Once you try our beans, coffee will never be the same experience again.

All these irresistible, premium coffees are organic.

Coffee options for this auction:

- Sumatra Mandheling - Dark Roast**  
Earthy, full-bodied with flavors of plum.  
(Organic)
- Ethiopian Yirgacheffe - Medium Roast**  
Smooth and clean with hints of lemon.  
(Organic)
- Honduras Cohorsil - Medium Roast**  
Medium body with a rustic sweetness.  
(Organic)
- Guatemala Asobagri - Dark Roast**  
Smooth with citrus and chocolate notes.  
(Organic)
- Peru Norte - Medium Roast**  
Mild acidity with a subtle smokiness  
(Organic)



Select a picture



Figure 6: Auction Listings Generated by Search

List View	<a href="#">Picture Gallery</a>	Sort by:	Time: ending soonest	<a href="#">Customize Display</a>			
	Compare	Item Title	PayPal	Bids	Price*	Shipping to 02138, USA	Time Left ▲
<input type="checkbox"/>		<a href="#">5# Extreme BOLD Espresso Coffee beans FIRE ROASTED BEST</a>		-	<b>\$9.99</b>	\$9.95	4m
<input type="checkbox"/>		<a href="#">5 LBS Fresh Roasted GUATEMALA ANTIGUA Coffee Beans</a>		1	<b>\$16.99</b>	\$12.88	1h 09m
<input type="checkbox"/>		<a href="#">3 1lb Bags - Cambridge Beans Roasted Coffee</a> Choose Your Roasts! NR!		13	<b>\$13.01</b>	\$8.10	1h 39m
<input type="checkbox"/>		<a href="#">3 1lb Bags - Cambridge Beans Roasted Coffee -FAIR TRADE</a> Choose Your Roasts! Certified by Transfair USA, NR!		10	<b>\$21.03</b>	\$8.10	1h 39m
<input type="checkbox"/>		<a href="#">1# Fresh Roasted Coffee -Perfect for Espresso or Coffee</a>		<i>Buy It Now</i>	\$8.95	\$4.20	1h 57m
<input type="checkbox"/>		<a href="#">1 FULL lb BRAZIL fresh roasted coffee-Swiss Water Decaf</a>		<i>Buy It Now</i>	\$9.45	\$4.20	1h 57m
<input type="checkbox"/>		<a href="#">1 FULL lb COLOMBIAN Fresh Roasted Coffee beans - Reg</a>		<i>Buy It Now</i>	\$8.95	\$4.20	1h 57m
<input type="checkbox"/>		<a href="#">5 LBS Fresh Roasted SUMATRA MANDHELING Coffee Beans</a>		1	<b>\$16.99</b>	\$12.88	2h 09m
<input type="checkbox"/>		<a href="#">1 LB 100% KONA COFFEE-PEABERRY! FRESH ROASTED!! NO RES!</a>		5	<b>\$4.25</b>	\$6.00	3h 00m

Table 1: Summary Statistics for Auctions

A. Auctions Under the Treatment (Fair Trade) Label							
	Obs	Mean	Median	Std Dev	Min	Max	Totals
Winning bid (\$)	130	9.60	9.22	3.70	1	26	1247.39
Total price, inc. shipping (\$)	130	18.38	18.08	3.67	9.1	34.1	2389.44
Number of bids	130	6.57	6	2.76	1	15	836
Unique bidders	130	3.91	4	1.28	1	7	511
B. Auctions Under the Control (Premium Coffee) Label							
	Obs	Mean	Median	Std Dev	Min	Max	Totals
Winning bid (\$)	130	8.28	8.02	2.84	1	19.27	1075.76
Total price, inc. shipping (\$)	130	17.06	16.64	2.85	9.95	27.37	2217.81
Number of bids	130	6.66	6	2.90	1	16	845
Unique bidders	130	3.96	4	1.31	1	7	516
C. Difference of Means (Treatment - Control)							
	Obs	Difference	Std Err	95% Conf Interval	$t$ -Stat*	P(T > t)*	
Winning bid / Total price (\$)	130	1.32	0.41	0.52	2.13	3.23	0.0007
% Winning bid	130	15.95	4.93	6.28	25.74		

\* Two-sample  $t$ -test (two-tailed) with unequal variances

Table 2: Premium for Fair Trade (Treatment - Control) in Matched Auction Pairs

A. All Auction Pairs (n=130)							
Premium	Mean	Std Err	95% Conf Interval		<i>t</i> -Stat*	P(T > t)*	% > 0
\$	1.32	0.24	0.84	1.80	5.41	0.0000	62.31
% Winning bid	23.12						
% Total price	8.45						
B. Auction Pairs, Minimum 3 bidders (n=97)							
Premium	Mean	Std Err	95% Conf Interval		<i>t</i> -Stat*	P(T > t)*	% > 0
\$	1.48	0.26	0.96	2.00	5.66	0.0000	68.04
% Winning bid	23.46						
% Total price	9.29						
C. Auction Pairs 2007-2008 (n=99)							
Premium	Mean	Std Err	95% Conf Interval		<i>t</i> -Stat*	P(T > t)*	% > 0
\$	1.48	0.26	0.96	2.00	5.67	0.0000	66.67
% Winning bid	22.43						
% Total price	9.01						
D. Auction Pairs 2009 (n=31)							
Premium	Mean	Std Err	95% Conf Interval		<i>t</i> -Stat*	P(T > t)*	% > 0
\$	0.81	0.59	-0.40	2.02	1.37	0.0905	48.39
% Winning bid	25.34						
% Total price	6.67						

\* Two-sample paired *t*-test (one-tailed)

Figure 7: Premium for Fair Trade over Time

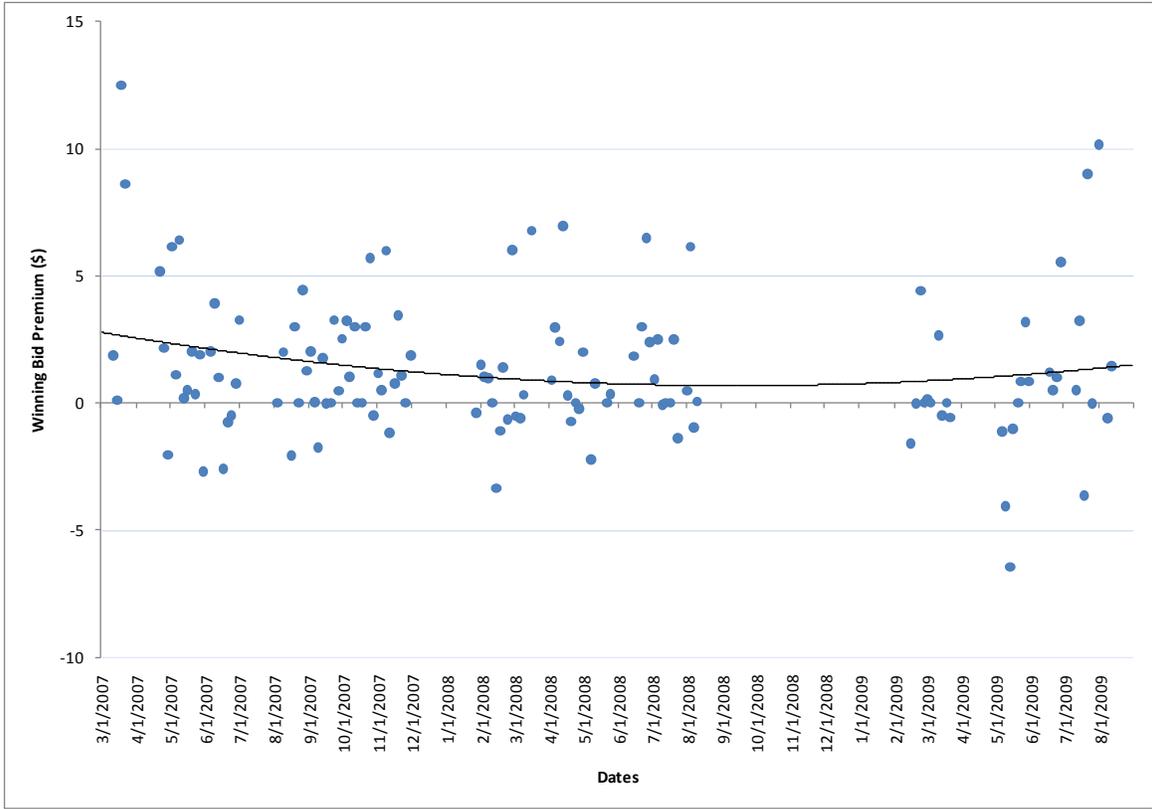
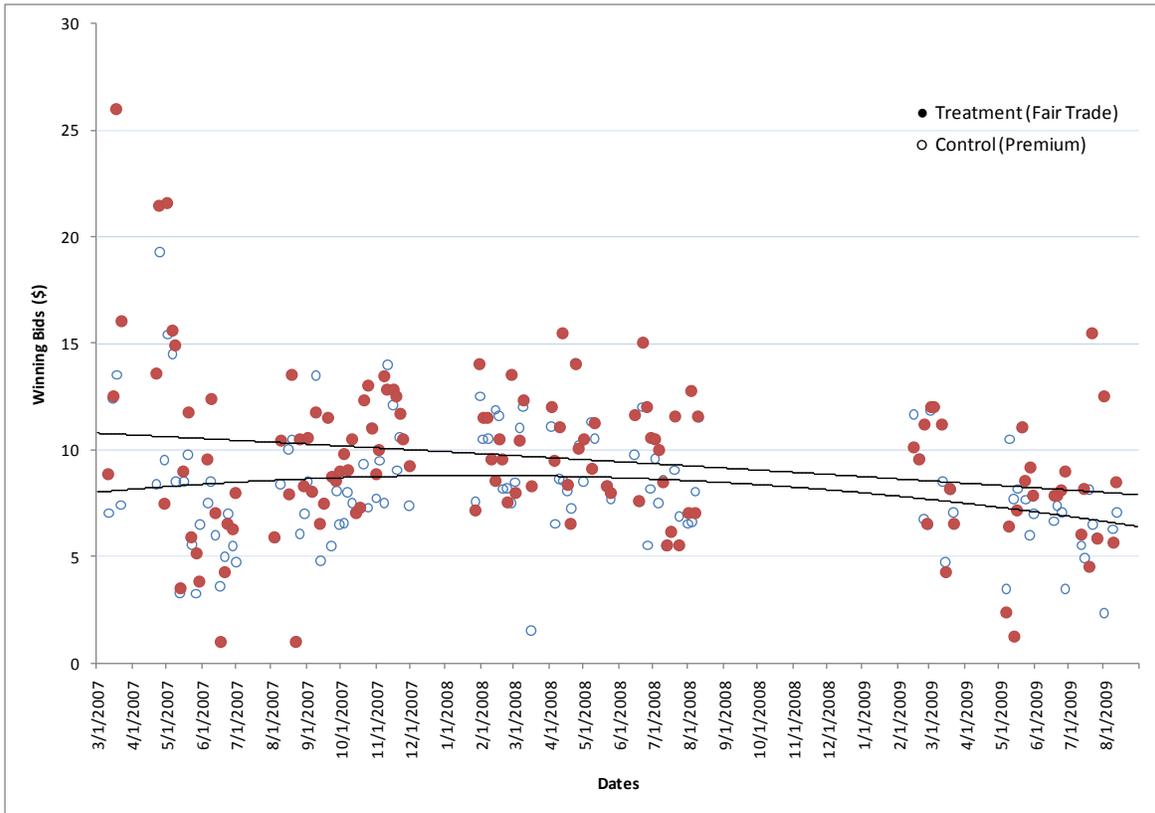


Figure 8: Winning Bids over Time



## NOT FOR PUBLICATION

### APPENDIX: ANALYSIS OF AUCTION DYNAMICS – AN ILLUSTRATIVE CASE

Unlike a traditional live auction, eBay uses a proxy-bidding system in which bidders input the maximum amounts they are willing to pay for an item and eBay incrementally places bids on their behalf as the auction progresses.<sup>23</sup> Under this system, the first “live bid” for an auction is always for the minimum bid set by the seller (in our auctions, \$1) and bidding increments are \$.25 between \$1.00 and \$4.99 and \$.50 between \$5.00 and \$24.99. Thus if the first bidder enters a maximum bid of \$8, the live bid becomes \$1. If a second bidder subsequently enters a maximum bid of \$6 (this bidder only sees the \$1 live bid, not the first bidder’s \$8 maximum bid) then eBay bids on behalf of the first bidder again bringing the new live bid to \$6.50. This amounts to a sealed-bid second-price auction or Vickrey auction, in which the highest bidder wins the auction and pays the amount of the second highest bid (or, here, a marginal increment above it).

At the end of an auction, eBay makes the entire bidding history available to the seller, but only in the unintuitive form of the maximum bids, listed in descending order of bid value. These data can be used to reconstruct the history of live bids for an auction, however, and this history can be represented on a step-graph (see Schmueli and Jank 2005). We have done this for a sample of our auction pairs. The resulting graphs provide vivid illustrations of consumer behavior during the experiment, highlighting the way many bidders participated concurrently in both the treatment and control auctions. By way of illustration, here we provide the bidding history for one of the earliest auction pairs (conducted between March 16 and 18, 2007). Table A1 reports the sequence of both the live bids and the maximum bids entered by specific bidders. Elapsed time during the 3-day period is standardized in days from 0 at the start of the auctions

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<sup>23</sup> For a detailed explanation see: <http://pages.ebay.com/help/buy/proxy-bidding.html>

(i.e. 8:00 pm, Eastern on March 16, 2007), through until 3 the end (i.e. 8:00 pm, Eastern on March 18, 2007). Figure A1 plots the live bids in each auction: each new bid is marked by a circle in the treatment auction or a square in the control auction.

There is minimal bidding activity in the first day and a half of the auctions. Two bidders, “hoppy” and “jb,” enter both auctions (each entering the same maximum bids in each auction). But at this point in time “monter” makes a higher bid only in the auction for the Fair Trade coffee, creating a small virtual premium. This premium widens when “kimm” enters both auctions, setting a maximum bid of “15.51” for the Fair Trade coffee and a maximum bid of “12.51” in the control auction. With the live bid at \$4.50 in the control auction, compared to \$10.50 for the Fair Trade coffee, a new bidder “shoppin” enters the control auction and narrows the Fair Trade premium. Early on the third day the premium grows wider again when “warr” enters a high maximum bid in the Fair Trade auction and “kimm” responds by raising his or her own maximum bid. The live price at this point is \$18.51 in the Fair Trade auction and only \$5.51 in the control auction. Perhaps this disparity attracts the new bidder, “kl”, who enters the control auction and bids the price up to \$13.01. Around the same time, “monter” returns to raise his or her maximum bid in the Fair Trade auction. In the final hour, “kimm” raises his or her maximum bids by just enough to win both the Fair Trade auction (from “monter”) and the control auction (from “kl”). The final winning bids are \$26 in the Fair Trade auction and only \$13.51 in the control auction.

Table A1: Bid History for One Auction Pair

Treatment (Fair Trade)				Control (Premium Coffee)		
Live bid	Max bid	Bidder	Time	Bidder	Max bid	Live bid
			<b>0.20</b>	hoppy	\$4.00	\$1.00
\$1.00	\$4.00	hoppy	<b>0.20</b>			\$1.00
\$1.00			<b>1.02</b>	jb	\$4.00	\$4.00
\$4.00	\$4.00	jb	<b>1.03</b>			\$4.00
\$4.25	\$10.00	monter	<b>1.56</b>			\$4.00
\$10.50	\$15.51	kimm	<b>1.64</b>			\$4.00
\$10.50			<b>1.64</b>	kimm	\$12.51	\$4.50
\$10.50			<b>1.88</b>	shoppin	\$4.51	\$5.01
\$10.50			<b>1.88</b>	shoppin	\$5.01	\$5.51
\$12.50	\$12.00	warr	<b>2.11</b>			\$5.51
\$15.01	\$14.51	warr	<b>2.11</b>			\$5.51
\$16.01	\$18.01	warr	<b>2.11</b>			\$5.51
\$18.51	\$20.53	kimm	<b>2.15</b>			\$5.51
\$18.51			<b>2.89</b>	kl	\$6.01	\$6.51
\$18.51			<b>2.89</b>	kl	\$7.01	\$7.51
\$18.51			<b>2.89</b>	kl	\$8.01	\$8.51
\$18.51			<b>2.89</b>	kl	\$9.01	\$9.51
\$18.51			<b>2.89</b>	kl	\$10.01	\$10.51
\$18.51			<b>2.89</b>	kl	\$11.01	\$11.51
\$18.51			<b>2.89</b>	kl	\$12.01	\$12.51
\$18.51			<b>2.89</b>	kl	\$13.01	\$13.01
\$20.50	\$20.00	monter	<b>2.90</b>			\$13.01
\$21.03	\$25.00	monter	<b>2.90</b>			\$13.01
\$22.50	\$22.00	kimm	<b>3.00</b>			\$13.01
\$24.02	\$23.52	kimm	<b>3.00</b>			\$13.01
\$24.02			<b>3.00</b>	kimm	\$13.51	\$13.51
\$26.00	\$26.00	kimm	<b>3.00</b>			\$13.51

Figure A1: Bid History for One Auction Pair

