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INFORMS is located in Maryland, USA



Marketing Science

Publication details, including instructions for authors and subscription information: http://pubsonline.informs.org

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To cite this article:

Minah H. Jung, Leif D. Nelson, Uri Gneezy, Ayelet Gneezy (2017) Signaling Virtue: Charitable Behavior Under Consumer Elective Pricing. Marketing Science 36(2):187-194. http://dx.doi.org/10.1287/mksc.2016.1018

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Signaling Virtue: Charitable Behavior Under Consumer Elective Pricing

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Received: December 13, 2013
Revised: September 18, 2015; July 14, 2016

Accepted: August 19, 2016

Published Online in Articles in Advance:
January 12, 2017

https://doi.org/10.1287/mksc.2016.1018

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Abstract. Two field experiments examined generosity under consumer elective pricing. In shared social responsibility (SSR), consumers choose how much to pay, knowing that a percentage of their payment goes to support a charitable cause. Replicating past research, consumers in our experiments were sensitive to the presence of charitable giving, paying more when a portion of their payment went to charity. Notably, however, they were largely insensitive to the percentage of payment allocated to charity—customers paid little more when 99% of the payment went to charity than when only 1% went to charity. Neither self-selection nor social pressure fully explained higher payments under SSR.

History: Preyas Desai served as the editor-in-chief and Duncan Simester served as associate editor for this article.

Funding: The project was supported by the NSF [Grant SES-1124610].

Supplemental Material: Data and the online appendix are available at https://doi.org/10.1287/mksc.2016.1018.

Keywords: charitable giving • consumer elective pricing • pay what you want • scope insensitivity

Every year, firms spend millions of dollars on corporate social responsibility (CSR) programs (Mohin 2012, Social Investment Forum 2009). Although consumers strongly support socially responsible companies (Arora and Henderson 2007), the success of these programs has been impressively limited (Aupperle et al. 1985, Sen and Bhattacharya 2001), arguably due to consumers' skepticism (Reputation Institute 2013) and suspicion of firms' ulterior motives (David et al. 2005, Friestad and Wright 1994).

One response to these sentiments has been to adopt a CSR strategy that transparently relies on customers' generosity and sense of fairness. No strategy is more reliant on those features than consumer elective pricing. In its simplest form—pay-what-you-want (PWYW) pricing—firms offer a good or service for any price the customer chooses to pay. The modified CSR version of this strategy, shared social responsibility (SSR), pairs a charitable cause with the transaction; a fixed percentage of every dollar the customer chooses to spend goes directly to the charity. Notwithstanding the considerable financial risk to the firm, this approach has been shown to be quite profitable (Gneezy et al. 2010, 2012).

Humble Bundle, for example, is an online media distributor that employs SSR by allowing its customers to pay any price for their product while also specifying how much should go to charitable organizations. Despite allowing for zero profitability, Humble Bundle has grossed over \$50 million using this pricing method

since launching in 2010, with over \$20 million supporting charitable causes (Chalk 2014).

The explanations, whether psychological or financial, are still not fully understood. In particular, under PWYW, customers appear sensitive to norms of reciprocation (Kim et al. 2009, Mak et al. 2010, Regner and Barria 2009, Schmidt et al. 2015, Regner and Riener 2012), anchors and reference prices (Jung et al. 2016, León et al. 2012), and their beliefs about the payments of others (Jung et al. 2014). The factors influencing behavior under SSR are likely more complex.

Behavior Under Consumer Elective Pricing

Payments under consumer elective pricing are telling. A low payment suggests the customer may be frugal or sensible, whereas a high payment could signal generosity or wealth. With SSR, this ostensibly straightforward calculus changes, as payments also reflect one's kindness and generosity. One way to gain insight into consumers' thought process and behavior is to quantifiably vary the altruistic feature of one's payment. Will a customer respond similarly when 1%, 50%, or 100% of payments is allocated to charity? As we lay out below, different theories make different predictions about the answer; we aimed to find the answer experimentally.

A purely selfish customer would pay nothing in both PWYW and SSR pricing, regardless of the portion going to charity. However, a customer who seeks the



prestige of a generous appearance may pay more when being observed and when the purchase is more visibly charitable (Fehr et al. 2009, Greenwald and Breckler 1985, Schlenker 1986, Milinski et al. 2002). Researchers have long challenged the purely selfish player account. For example, a customer might be guided by *reciprocity* and may choose to pay more as the company clearly supports charity through an increased charitable allocation. Alternatively, behavior might be best captured by the *impurely altruistic* account. Impure altruism suggests that people feel a "warm glow" when engaging in prosocial behavior (Andreoni 1990), but that the glow that comes with a little bit of prosocial behavior is almost as bright as that that comes with much more (Frederick and Fischhoff 1998, Hsee and Rottenstreich 2004, Imas 2014, Small et al. 2007). An impurely altruistic customer would be sensitive to the presence of a charitable stimulus but largely insensitive to the scope of that charitable contribution. Finally, consumers who are equity focused might perceive deviations from equality as unfair (e.g., Andreoni and Bernheim 2009, Engelmann and Strobel 2004, Fox et al. 2005, Harris and Joyce 1980). As a result, these individuals are expected to favor an equal split between the firm and the charity. Importantly, the original demonstrations of SSR (Gneezy et al. 2010, 2012) used a 50/50 allocation between charity and firm, perhaps incidentally finding a condition that maximally influences the equity-focused customer.

The Goals of the Present Research

Our investigation has four goals. First, and most directly, we aim to replicate the critical SSR comparison identified in the original papers by Gneezy et al. (2010, 2012). A successful replication can bolster confidence in the original findings and provide the foundation for future investigation. Second, we contribute to the ability to generalize the original findings by testing effects in substantially different domains; whereas the original demonstrated the phenomenon with souvenir photos at an amusement park, the studies in this paper report sales of doughnuts on a college campus and reusable shopping bags at a traditional chain supermarket. Third, our paper seeks to highlight the inferences of SSR for potential practitioners. For example, whereas Gneezy et al. (2010) made the qualitative observation that SSR could be more profitable than PWYW, we show that a further refinement can further increase profitability by a factor of six. Furthermore, because we are testing these conditions in field settings, we designed the studies to offer directly tractable and applicable inferences. As described above, many firms are already using PWYW pricing; there is a real audience for such a practical demonstration of a meaningful increase in profit. Finally, we aim to advance the conceptual and theoretical understanding of SSR. As we describe above, the original finding is possible to explain with a number of different forces. The present paper aims to refine our understanding (if still leaving room for further investigation). As we clarify in the presentation of each study, our manipulations allow us to discriminate the operation of alternative processes and get closer to a central understanding of consumer behavior in this pricing domain.

Two field experiments manipulate the variables, allowing the differentiation of the three accounts outlined above. The first study manipulates the magnitude of charitable allocations in SSR pricing, allowing us to capture individuals' scope (in)sensitivity. The second study, by controlling for self-selection and manipulating the ability to signal socially, shows that neither variable is central to the primary effect.

Study 1: Scope Sensitivity in SSR Setting

We designed Study 1 to test consumer's scope (in)-sensitivity to charity allocation, allowing us to discriminate between the different accounts for consumers' behavior (i.e., reciprocating, impurely altruistic, and equity focused).

We conducted Study 1 in a traditional supermarket located in Oakland, California, that sells typical products available in large grocery chain stores in the United States and attracts primarily local residents with a modest income.

Method

We sold reusable grocery bags with the store logo in front of a large supermarket for 10 nonconsecutive days (from 12 p.m. to 5 p.m.). The timing of Study 1 (November 2012 through February 2013) enabled us to observe the influence of an important, naturally occurring variable. On January 1, 2013, approximately halfway through our study, the Alameda County's Reusable Bag Ordinance¹ (the "bag law") went into effect, mandating stores to charge \$0.10 per paper shopping bag. The bag law functionally changed the environment for our product by increasing the alternative cost per bag from \$0 to \$0.10. Because the implementation of the bag law was not randomly assigned to consumers, we restrict reporting of any law-specific analyses to the online appendix.

We determined the dates and duration of the study based on a few practical grounds. First, the grocery store was already partnered with other nonprofit organizations, so we coordinated our experiment dates to avoid overlap and potential confounds. Second, because this study required at least four research assistants (two at each store entrance) at all times, both the timing and duration of the experimental sessions depended on their availability. We predetermined to collect the minimum of 100 observations per condition. Because we were unsure about the purchase rate per



condition, we ordered 800 bags and decided to continue data collection until the bags were sold.²

We had five percentage allocation conditions: one PWYW (0% going to charity) and four SSR (1%, 50%, 99%, and 100%) offers. Shoppers (N=27,091) approaching the store saw signs corresponding to one of five randomly assigned conditions; the bags were displayed on a table. In the PWYW condition, the sign read, "Take a Bag, Pay What You Want." In the four SSR conditions, signs read, "Take a Bag, Pay What You Want, [1%, 50%, 99%, or 100%] of what you pay goes to [name of the charity]."

The research assistants followed the prerandomized order of conditions throughout the experiment, allowing us to control for time of day and day of week effects. We recorded the number of people who passed by our table, each transaction amount, group size, the number of bags purchased per group, and easily observable demographic information (i.e., gender, ethnic background, and estimated age). At each entrance, we randomized conditions after every 100 customers entering the store by switching the signs. We intermittently examined the data to ensure that the experiment was operating smoothly.

Results and Discussion

We excluded 10 purchases made by the store manager and researchers' friends and acquaintances that were familiar with the purpose of our study. In all analyses we treated bag sold per customer (total number of bags sold = 714) as our unit of analysis and the average payment per bag as our primary dependent variable.³ We also compared purchase rates across conditions as well as the pattern of results before and after the introduction of the bag law.⁴

Purchase Likelihood

Individuals were significantly less likely to purchase a bag when some portion (aggregating the four SSR conditions) went to charity than when none did (2.45% versus 3.40; $\chi^2(1, N = 27,092) = 15.51$, p < 0.001).

Consistent with past work (Gneezy et al. 2010, 2012), purchase likelihood was sensitive to the presence of a charity; shoppers were less likely to purchase a bag, and paid more when *any* portion went to charity. However, they were largely insensitive to the proportion going to charity (and this effect was stronger after the bag law).

Purchase Price

We excluded 85 transactions of pure donations from this analysis.⁵ Customers paid more when a portion of their payment went to charity (mean_{Charity}% = \$2.90 versus mean_{No Charity} = \$0.98, t(712) = 5.76, p < 0.001; see Figure 1, middle panel). This was true when comparing PWYW to each of the SSR conditions (for all

t values, 5.44 < t < 6.09). Controlling for the date and time of day did not change the direction or significance of the results. Supporting the *impurely altruistic* consumer account, pairwise comparisons revealed no significant differences in payment amounts between the four SSR conditions (all t < 1.80; see Table S2 in the online appendix for details). These results are less consistent with the *reciprocating* or *equity-focused* accounts.

Profit per Passerby

To account for potential selection bias, we calculated profit per passerby as our dependent measure. As shown in Figure 1, bottom panel, after deducting the cost of the bags and that of the donations, sales were unprofitable for the store under PWYW, 99% SSR, and 100% SSR. The 50% SSR condition was significantly more profitable than the PWYW condition (mean $_{0\%}$ = -\$0.27 versus mean $_{50\%}$ = \$0.18, t(305) = 2.58, p = 0.010). Finally, the 1% SSR was the most profitable condition (mean $_{1\%}$ = \$0.98 versus mean $_{50\%}$ = \$0.18), t(254) = 2.57, p = 0.011), with the profit per bag being significantly higher than \$0 (t(130) = 3.90, p < 0.001).

We calculated the charitable surplus, including 86 cases of pure donations. (Excluding these cases does not change the direction or significance of the results.) The charitable surplus increased with the percentage allocated to charity (F(1,21,716) = 33.20, p < 0.001).

Consistent with the *impure altruistic* account and with past research, the results of Study 1 show that payments increase whenever a charity benefits from the transaction (Gneezy et al. 2010, 2012), but consumers are largely insensitive to the size of that benefit (Frederick and Fischhoff 1998, Hsee and Rottenstreich 2004, Imas 2014).

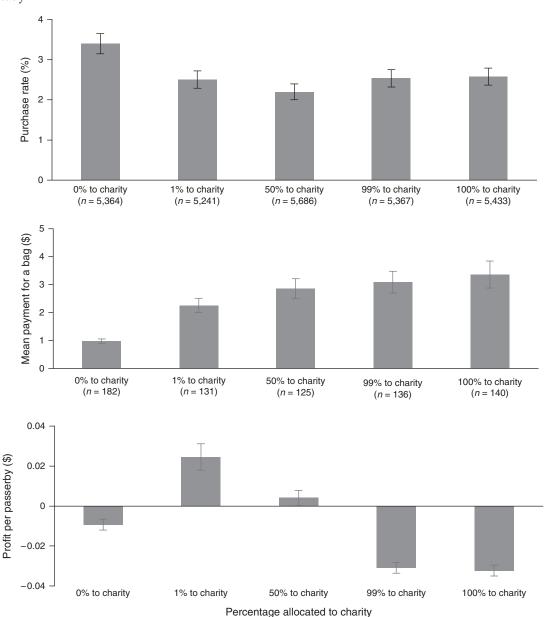
The objective of Study 2 was to investigate two potential confounds that could explain the results of Study 1. In particular, in Study 2 we test whether the higher payments under SSR could be attributed to selection bias (i.e., that SSR pricing attract more generous customers) and/or to the social pressure inherent to situations where payments are observed by others.

Study 2: Scope Sensitivity, Self-Selection, and Social Signaling

To directly address the potential for selection bias, we randomly assigned customers to a pricing condition only *after* they expressed intent to purchase the product. To assess the role of social signaling concerns, we randomly assigned whether participants paid directly or anonymously (i.e., neither the seller nor other customers were aware of the payment). Finally, because it is plausible that reusable grocery bags attracted a particularly socially sensitive consumer, we sold a different product—doughnuts—further allowing us to generalize our results.



Figure 1. Study 1



Notes. The top panel shows the purchase rate by SSR condition. Errors bars reflect (purchase rate \times (1 – purchase rate)/number of total passersby in each condition)². The middle panel shows the mean payment per bag sold by SSR condition in Study 1. Error bars reflect \pm SE of the means. The bottom panel shows the mean store profit per passersby by SSR condition. Error bars reflect \pm SE of the means.

Method

Collaborating with Dream Fluff Donuts, a popular doughnut vendor in Berkeley, California, we sold glazed doughnuts over 11 consecutive business days in September and October 2013. Our charity partner was the Berkeley East Bay Humane Society. We sold doughnuts near Sather's Gate at the University of California, Berkeley, from 11 A.M. to 4 P.M. Our sign read "Dream Fluff Donuts" with a picture of three glazed doughnuts (see the online appendix). Once customers approached the stand and expressed purchase intent, in buying a doughnut they drew a folded note from

an opaque box, which contained the manipulation.⁷ Customers were exposed to one of six conditions in a 3 (price: PWYW, 10% SSR, or 50% SSR) × 2 (payment method: anonymous or public) between-subjects design. For example, the note in the Anonymous–50% SSR condition read, "Today, you can pay what you want for a Dream Fluff Donut! 50% of what you pay goes to the Berkeley East Bay Humane Society. (Your payment will be entirely *anonymous*.)" To ensure accurate and consistent delivery of our manipulation, we asked customers to read the note out loud and show it to the cashier (a research assistant).⁸ To operationalize



payment anonymity, some customers were instructed to place their payment in an envelope and place it in a box located a few feet away from the stand, but out of sight.

We recorded payments, the time of the transaction, the group size, the number of doughnuts purchased per group (where applicable), and apparent demographic information as in Study 1.

Results and Discussion

A total of 480 individuals (418 groups) approached our stand and expressed interest in purchasing a doughnut. We determined our sample size to have at least 50 transactions per condition. Accordingly, based on the first week's sales records, we decided to conduct the study for 11 days. Customers were permitted to purchase only one doughnut, and our unit of analysis was doughnuts sold per person. We excluded 15 transactions because customers knew one of the experimenters and an additional 12 instances where shoppers did not follow the protocol. Finally, we excluded 42 cases in which people decided not to purchase immediately before or after selecting into a condition. Cur final sample includes 411 individual customers (357 groups).

We submitted payments to a 3 (price: PWYW, 10% SSR, or 50% SSR) × 2 (payment method: anonymous or direct) between-subjects analysis of variance. As predicted, the main effect of price was significant $(F(2,405)=6.01,\ p=0.002)$. Neither the main effect of anonymity $(F(1,405)=0.89,\ p=0.346)$ or the interaction between price and anonymity was significant $(F(2,405)=1.76,\ p=0.173)$. Customers paid less in the PWYW condition (\$0.70) than in the 10% SSR condition (\$1.10, $t(266)=3.74,\ p<0.001)$ or in the 50% SSR condition (\$0.97, $t(274)=2.43,\ p=0.016)$.

Though the price × payment method interaction was not significant, a visual inspection of the top panel of Figure 2 suggests that there was a tendency for the higher SSR to be less effective for anonymous customers. We are reluctant to read too much into this, since it was neither predicted nor statistically significant, but it may prove worthy of future research.

The design of Study 2 intended to eliminate the possibility of a selection bias. Nevertheless, some participants (N=40) dropped out before or after pulling a price from the box, potentially reintroducing the selection concern. To address this, we conducted two additional analyses. For the first, we assigned every dropout customer a \$0 purchase price, capturing the idea that the most miserly selected themselves out of the study. The second analysis assigned each of those participants the median purchase price (\$1), capturing the idea that merely reasonable customers were selecting out. The results from both analyses were consistent with our primary analyses: customers paid more when

a larger portion went to charity (for all F values, 5.51 < F < 6.19). It seems unlikely that selection bias could fully explain our findings. ¹⁴

We paid Dream Fluff Donuts \$0.65 per doughnut. As shown in the middle panel of Figure 2, profits per doughnut (after deducting the charitable contribution and doughnut cost) were substantially larger in the 10% SSR condition versus the PWYW and 50% SSR conditions (mean_{10%SSR} = \$0.33 versus mean_{PWYW} = -\$0.05, t(267) = 2.85, p = 0.005; mean_{10%SSR} = \$0.33 versus mean_{50%SSR} = -\$0.17, t(278) = 5.56, p < 0.001). In this study, the PWYW condition was also more profitable than the 50% SSR condition (t(275) = 3.10, p = 0.002).

The results of Study 2 revealed no influence of payment anonymity. That is in contrast to the only other study we know of investigating the influence of anonymity in consumer elective pricing (Gneezy et al. 2012), which showed that anonymity *increased* payments. The settings of the two studies are quite different (e.g., glazed doughnuts in Berkeley versus Pakistani buffet in Vienna). In addition, although quite speculative, it is possible that the different results can be attributed to the fact that the restaurant in Gneezy et al. (2012) exclusively used consumer elective pricing, arguably attracting a systematically different set of customers.

To sum, the results of Study 2 suggest that neither selection bias nor social signaling concerns can fully explain higher payments under SSR.

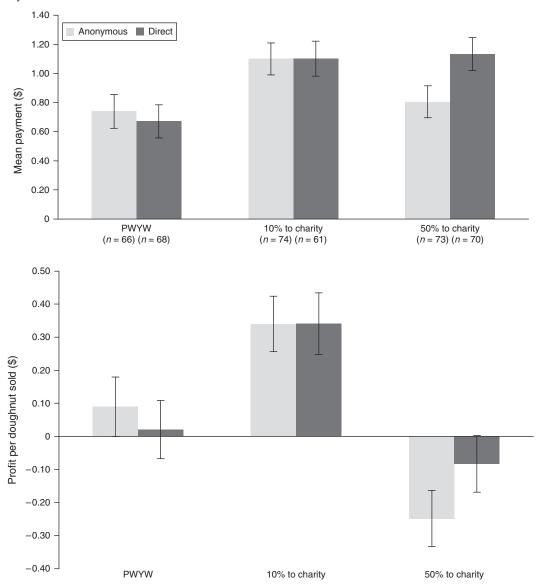
General Discussion

Two field experiments demonstrate that people are sensitive to whether any part of their payment goes to charity, but at the same time are largely insensitive to how much goes to charity. Relative to a charity-free purchase (i.e., PWYW), a 1% charitable contribution meaningfully changes behavior, but going from 1% to 100% has very little effect. These results are consistent with an *impurely altruistic* account. Our results further show that selection bias, by which only the most generous consumers make a purchase (and pay more than the minimum allowed) under SSR, cannot fully explain the behavior under SSR.

Future research could further identify and investigate how personal and social forces interact with features inherent in the marketplace, such as understanding the observed scope insensitivity under SSR settings. For example, both doughnuts and reusable shopping bags have a relatively low retail value, so payments might hit an implicit ceiling rather quickly. If that were the case, we would expect consumers would display greater scope sensitivity when buying higher retail value products.



Figure 2. Study 2 Results



Notes. The top panel shows the mean payment per doughnut sold by SSR and anonymity condition. The bottom panel shows the profit per doughnut sold by SSR and anonymity condition. Error bars reflect \pm SE of the means.

Across both studies, the profit maximizing strategy from firms' perspective would be to use the lowest possible charitable allocation. A cynical reading of that result might suggest that an epsilon-unselfish firm can reap the same revenue benefits of the most generous customers. In the context of consumer elective pricing, that is precisely what the results presented here suggest. On the other hand, however, it is worth noting that in most traditional CSR efforts, actual charitable contributions are frequently small. For example, the participants in the Product RED campaign typically offered less than 5% of revenue or a fraction of the profits (Nixon 2008).

Corporate social responsibility efforts are both a common and an important part of modern business

strategy. Yet, CSR efforts are not particularly effective, either because the gains are small or transient. One might argue that although shared social responsibility offers promise in terms of its local gains, its long-term viability is uncertain. We believe there is reason for optimism regarding the sustainability of SSR, though we agree it is hardly certain. Furthermore, although we are optimistic about the long-term viability of SSR, the strategy might also reduce flexibility—a firm can always plausibly switch from PWYW to SSR, but the reverse will likely bring recriminations from customers. There is great potential for firms to blend elective price with charitable giving, but the exact mixture is still imperfectly known, and therefore warrants further research.



Acknowledgments

The first author is supported by the National Science Foundation Graduate Research Fellowship and the Greater Good Dissertation Fellowship. The second author was supported by the Barbara and Gerson Bakar Faculty Fellowship. Both of those authors were supported by a grant from the Garwood Center for Corporate Innovation. The authors want to thank undergraduate research apprentices of the Science of Giving and Appreciating Lab for their persistent and kind support for our research.

Endnotes

- ¹http://www.reusablebagsac.org/acwma-ordinance-2012-2.
- ²We gave a few bags away to the research assistants and kept some as samples. Some bags arrived with substantial damage (e.g., ripped, logo missing) and were unsuitable for selling. We sold a total of 714 bags in this study.
- ³ If customers wanted to purchase more than one bag, the research assistants indicated they could allow only one bag per person. Nineteen customers insisted on purchasing multiple bags or asked other shoppers to buy bags for them. In our analysis, they are considered as one transaction with the average payment per bag as the dependent variable.
- ⁴See the online appendix.
- ⁵There were 7, 17, 15, 25, and 21 pure donations in the PWYW, 1%, 50%, 99%, and 100% SSR conditions, respectively. The donations in the PWYW condition are somewhat puzzling. Most likely, some customers were initially exposed to an SSR condition and returned later to donate to the charity, therefore ending up in the PWYW condition.
- 6 An additional study selling reusable grocery bags further confirmed that a low percentage SSR was the most profitable. See Study A in the online appendix.
- ⁷For groups, one member drew a piece of paper on behalf of the entire group.
- $^{8}\mbox{If}$ customers preferred to not read it out loud, the cashier did so instead.
- ⁹ Forty individuals decided not to purchase a doughnut when asked to select a price from the box.
- ¹⁰An alternative specification, doughnuts per group, yields similar results in both direction and statistical significance (see the online appendix).
- ¹¹Some customers bought a doughnut before the cashier asked them to draw a note from the box, and in some cases more than one group member drew a note, resulting in experimental contamination.
- 12 We excluded 10 in the PWYW condition, 11 in the 10% SSR condition, and 17 in the 50% condition. Two people approached our stand but did not draw a note and did not participate.
- ¹³See Table S6 in the online appendix for more details.
- ¹⁴Notably, an additional experiment using a similar post-purchaseintent manipulation also showed reliable effects across levels of SSR in coffee sales. See Study B in the online appendix.

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