Appendix A

Estimates from historical sales data

Table A.1. reports the estimates from the discrete choice model for the historical sales data.

Table A.1: Logit Estimates for Elasticities

Dependent Variable:	δ_{jt}
p_{ij}	-0.335
	(0.020)
w	0.002
	(0.001)
w^2	-0.000
	(0.000)
Constant	-2.731
	(0.228)
Product/Store FE	Yes
Observations	20988

Note: Regression coefficients, with robust clustered standard errors in parenthesis. The dependent variable in the regression is the normalized mean utility level $\delta_{jt} = log(s_{jt}) - log(s_{0t})$. The independent variables include the product prices, a quadratic time trend for store week (w), and a full set of product/store fixed effects (coefficients not shown). The estimation is based on weekly sales and prices for the 2007-2009 period (omitting the weeks when the experiments were underway).

Robustness Checks for Effect of Placebo Label and Carry Over

We conduct additional robustness checks to investigate (i) whether the generic placebo label had a negative effect on sales and (ii) the validity of the no carry-over assumption. For these tests we exploit sales data from the weeks prior to the start of the Label experiment. We generate a dummy variable, Phase One, which is coded as 1 for the weeks during the first phase of the experiment and 0 for the weeks prior to the start of the experiment.

First, we restrict the sample to the 13 stores that were randomized to display the FT label in Phase One and regress the log weekly store sales on the Phase One indicator and a full set of store and week fixed effects. The coefficient on the Phase One indicator identifies the difference in sales between the weeks with the FT label and the pre-experimental period. The results are displayed in Table A.2, column 1. We find that sales increased as these stores displayed the Fair Trade Label (the effect estimate is 15%, p. $<$ .03). Second, we restrict the sample to the 13 stores that were randomized to display the generic label in Phase One, so the coefficient on Phase One identifies the difference in sales between the weeks with the generic label and the pre-experimental period. If the generic label had a negative effect on sales compared to the pre-existing label then we would expect sales to decrease. The results are displayed in Table A.2, column 2. We find that sales of the test coffees remained very stable as they started to display the generic label, indicating that it had no negative effect on sales (the effect estimate is 0.4%, p. $<$ .96). Taken together these results suggest that the generic label did not have a negative effect on sales and that the label effect uncovered in our main results, is primarily driven by the Fair Trade label increasing sales, as opposed to the generic label lowering sales.

Third, we fit a full difference-in-differences model to our full sample of stores, where sales are regressed on the Phase One dummy and its interaction with the Fair Trade Label treatment indicator that is coded as 1 for stores where the Fair Trade Label was placed on the test coffees in Phase One and 0 otherwise. The results are displayed in Table A.2, column 3. Comparing the changes in sales from the pre-experimental period to the first four weeks under the Fair Trade and the generic placebo label yields an experimentally identified difference-in-differences estimate that implies that the Fair Trade Label raised sales by 15% (p.$<$ .13) over the generic placebo label in the first phase of the experiment. The fact that this first phase effect is similar to the effect from the full crossover experiment reported in the paper is consistent with the no carry-over assumption since the first phase is not affected by carry-over from switching from the control to the treatment label or vice versa.

Table A.2: Effect of Fair Trade Label on Sales of Test Coffees in Phase One

Model	(1)	(2)	(3)
Dependent Variable		Log Sales	
Store Sample	FT Label First	Control Label First	All Stores
Phase One	0.156	0.004	0.004
	(0.063)	(0.077)	(0.076)
FT Label First × Phase One			0.152
			(0.098)
Constant	5.309	5.410	5.360
	(0.037)	(0.044)	(0.028)
Store FE	Yes	Yes	Yes
Week FE	Yes	Yes	Yes
Observations	88	91	179
Number of store	13	13	26

Note: Models 1-3 display regression coefficients with robust clustered standard errors in parenthesis. The unit of analysis is a store week. All regressions are based on 7 weeks, including the 3 weeks immediately before the start of the experiment and the 4 weeks of the first phase of the cross-over experiment. The dependent variable in the regressions is the logged weekly dollar sales of both test coffees, FR Regular and Coffee Blend. The independent variable is a period indicator, Phase One, coded as 1 for the four weeks of the first phase of the experiment and 0 for the three weeks prior to the experiment and a binary indicator, FT Label coded as 1 for store weeks in which the Fair Trade label was placed on the test coffees and 0 otherwise. All models include a full set of store and week fixed effects.

Appendix B

As an alternative specification to the logit model, we also estimated the elasticities in the historical data using the Almost Ideal Demand System (AIDS) of Deaton and Muellbauer (1980). AIDS is based on the household expenditure function where the log of total expenditures in a given market is given by

$$ln(m_t) = ln(e(p_t, U_t)) = \alpha_0 + \sum_i \alpha_i ln(p_{it}) + .5 \sum_i \sum_j \gamma^*_{ij} ln(p_{it}) ln(p_{jt}) + U_t \beta_0 \prod_i p_{it}^{\beta_i}$$

where m_t is total expenditure, p_{it} is the price of good i, U_t is utility, and α, β, and γ^* are a set of parameters to be estimated. Applying Shepard's lemma and substituting in the indirect utility function this results results in a set of econometrically identified Marshallian demand functions for the observed budget shares w_{it} given by:

$$w_{it} = \alpha_0 + \alpha_i + \sum_j log(p_{jt}) + \beta_i (m_t / P_t) + \varepsilon_{it}$$

where ε is an error term and P is a translog price index:

$$ln(P_t) = \alpha_0 + \sum_i \alpha_i ln(p_{it}) + .5 \sum_i \sum_j \gamma_{ij} ln(p_{it}) log(p_{jt})$$

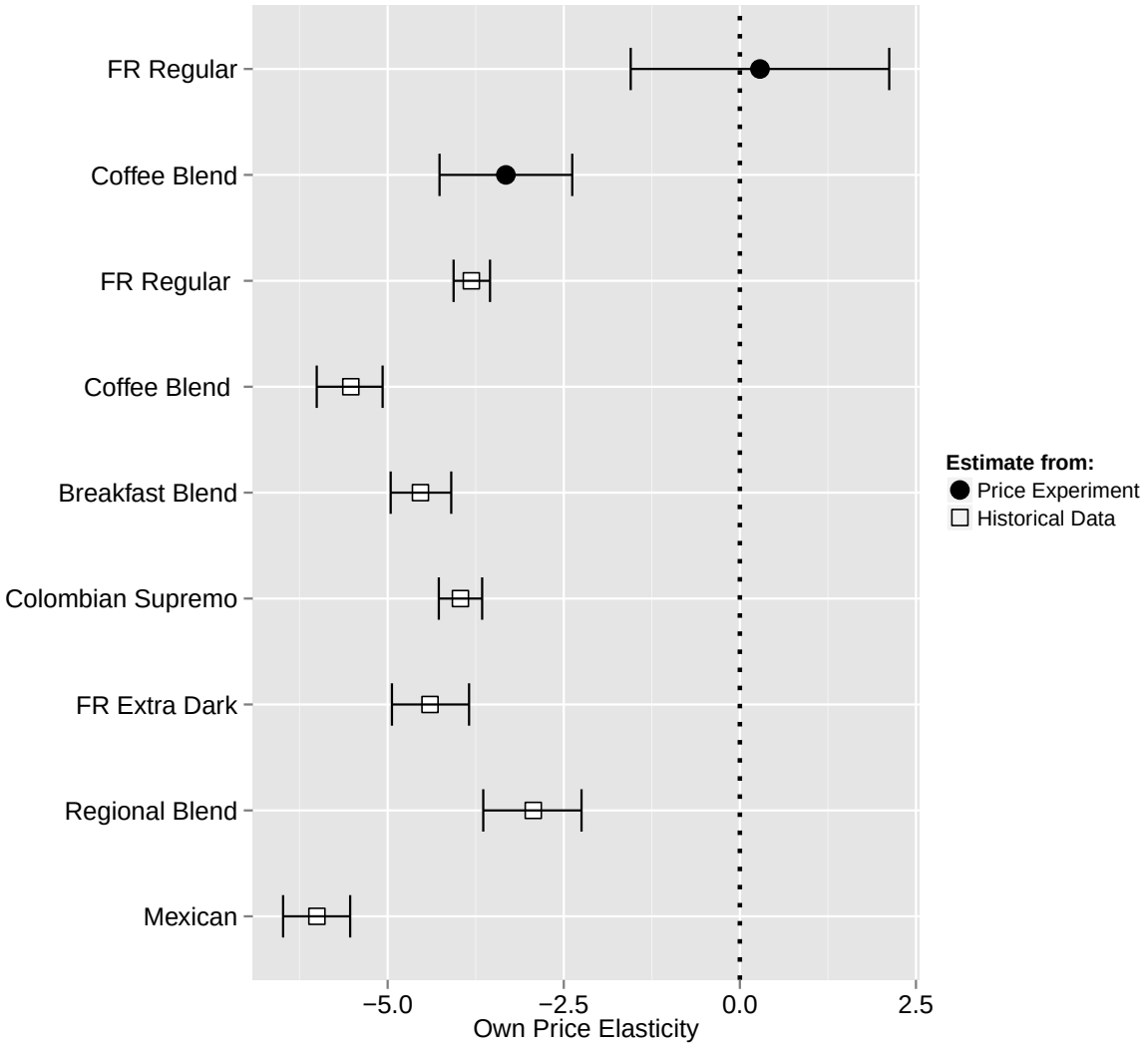
We impose the usual adding up, homogeneity, and symmetry restrictions on the parameters. In order to account for potential unobserved heterogeneity, we include a full set of store fixed effects and a quadratic time trend in the equations as demand shifters.[1]

To linearize the system, Deaton and Muellbauer (1980), approximate the translog price index using the Stone index. However, this can introduce severe approximation error and even inconsistent parameter estimates. Instead, we estimate the full non-linear system of demand equations using iterated linear least squares where we iterate between solving the share equations given a fixed translog price index and updating the index based on the shares (Blundell and Robin 1999). Initial values for the translog price index are obtained from a linear approximation. For the estimation we use the `micEconAids` package (Henningsen 2012). Standard errors are obtained with a non-parametric block-bootstrap where we re-sample stores with replacement.

Figure B.1 presents the estimated own price elasticities with their (block-bootstrapped) 90% confidence intervals from the AIDS model, alongside the own-price elasticities for the test coffees from the price experiment. The results are fairly similar to the elasticities obtained with the logit model. There is slightly more variation in the estimated own-price elasticities among the competitor coffees. However, the elasticities for all competitor coffees are all significantly lower than the elasticity for the FR Regular during the price experiment.

[1]Notice that for the estimation we restrict α_0 to 0. The results are similar if α_0 is estimated without restriction.

Figure B.1: Own Price Elasticities from AIDS Model



Note: Plots show point estimates and 90% confidence intervals for the own price elasticity of different bulk coffees estimated from our AIDS model. The top two estimates refer to the own price elasticity measured for the two test coffees, FR Regular and Coffee Blend, during the Price experiment when the price increase was linked to Fair Trade certification. The estimates below refer to own price elasticities for the two test coffees and competitor bulk coffees estimated from sales promotions using historical sales data for the 2007-2009 period.

Bibliography

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