

**Supplementary Appendix for**

**“Income Differences and Prices of Tradables: Insights from an Online Retailer”**

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This documents contains all supplementary appendices for “Income Differences and Prices of Tradables: Insights from an Online Retailer.”

## Supplementary Appendix I: Linear Demand in General Equilibrium

In this section, I characterize the equilibrium of a heterogeneous-firm model of international trade with linear demand à la Melitz and Ottaviano (2008). I assume that the market structure is identical to the one in the main body of the paper, so I let per-capita income equal the wage rate.

The maximization problem of a consumer in country  $j$  is

$$\max_{q_j^c(\omega) \geq 0} \int_{\omega \in \Omega_j} q_j^c(\omega) d\omega - \frac{1}{2} \alpha \int_{\omega \in \Omega_j} (q_j^c(\omega))^2 d\omega - \frac{1}{2} \eta \left( \int_{\omega \in \Omega_j} q_j^c(\omega) d\omega \right)^2 \quad \text{s.t.} \quad \nu_j \left[ \int_{\omega \in \Omega_j} p_j(\omega) q_j^c(\omega) d\omega \leq w_j \right],$$

where  $\eta$  and  $\alpha$  are positive parameters, and high values of  $\alpha$  make the varieties less substitutable. Taking the ratio of FOCs for a pair of varieties and integrating out  $\nu_j$  yields individual demand for  $q_{ij}^c(\omega) > 0$

$$q_{ij}^c(\omega) = \frac{1}{\alpha P_j} [P_j(1 - \eta Q_j^c) - p_{ij}(\omega)(N_j - \alpha Q_j^c - \eta Q_j^c N_j)], \quad (\text{b.1})$$

where  $Q_j^c \equiv \sum_{v=1}^I \int_{\Omega_{vj}} q_{vj}^c(\omega') d\omega'$  is an aggregate demand statistic for a consumer. In the above expression, aggregate statistics  $P_j$  and  $N_j$  are defined in (3) and (2), respectively. The total demand from country  $j$  is simply the product of individual demand (b.1) and country size  $L_j$ .

After relabeling a variety by the productivity and the country of origin of the firm that produces it, I use (b.1) in the firm problem in (6) and maximize with respect to price to obtain

$$p_{ij}(\phi) = \frac{1}{2} \left( \frac{\tau_{ij} w_i}{\phi} + \frac{P_j(1 - \eta Q_j^c)}{N_j - \alpha Q_j^c - \eta Q_j^c N_j} \right). \quad (\text{b.2})$$

To characterize the cutoff productivity  $\bar{\phi}_{ij}$  combine zero-demand and zero-profit to obtain

$$\bar{\phi}_{ij} = \frac{\tau_{ij} w_i (N_j - \alpha Q_j^c - \eta Q_j^c N_j)}{P_j(1 - \eta Q_j^c)}. \quad (\text{b.3})$$

Substituting (b.3) into (b.2) yields the following pricing rule

$$p_{ij}(\phi) = \frac{\tau_{ij} w_i}{2} \left[ \frac{1}{\phi} + \frac{1}{\bar{\phi}_{ij}} \right]. \quad (\text{b.4})$$

Next, I modify the steps in Appendix A.2 to characterize the equilibrium in the present model. After relabeling varieties, substitute (b.4) into (b.1) and use (b.1) in the definition of  $Q_j^c$  to obtain

$$Q_j^c = \frac{N_j}{2\alpha(\theta + 1) + \eta N_j}, \quad (\text{b.5})$$

where  $N_j \equiv \sum_{v=1}^I J_v b_v^\theta \bar{\phi}_{vj}^{-\theta}$ . Then, using the optimal price from (b.4) in the price index  $P_j$  yields

$$P_j = \frac{2\theta + 1}{2\theta + 2} \frac{w_j}{\bar{\phi}_{jj}} N_j.$$

To solve the model, it is necessary to jointly determine wages,  $w_i$ , and measures of entrants,  $J_i$ ,  $\forall i$ . The system of equilibrium equations consists of a free entry condition and an income/spending equality for each country. Free entry requires that average profits cover the fixed cost of entry, so

$$w_i f_e = \sum_{v=1}^I \frac{b_i^\theta}{\bar{\phi}_{iv}^\theta} \frac{L_v (1 - \eta Q_v^c)}{2\alpha(\theta + 1)(\theta + 2)} \frac{\tau_{iv} w_i}{\bar{\phi}_{iv}}. \quad (\text{b.6})$$

The income/spending identity requires that country  $i$ 's consumers spend their entire income on imported and domestically-produced varieties, so

$$w_i L_i = \sum_{v=1}^I J_i \frac{b_i^\theta}{\bar{\phi}_{iv}^\theta} \frac{L_v (1 - \eta Q_v^c)}{2\alpha(\theta + 2)} \frac{\tau_{iv} w_i}{\bar{\phi}_{iv}}. \quad (\text{b.7})$$

Expressions (b.6) and (b.7) yield

$$J_i = L_i [(\theta + 1) f_e]^{-1}. \quad (\text{b.8})$$

Substituting (b.8) and (b.5) in (b.7) for country  $j$  obtains the following characterization of cutoffs

$$\frac{\theta + 1}{\theta + 2} = \frac{\eta w_j \bar{\phi}_{ij}}{w_i \tau_{ij}} + \frac{2\alpha(\theta + 1)^2 f_e w_j (\bar{\phi}_{ij})^{\theta+1}}{(\tau_{ij} w_i)^{\theta+1} \sum_{v=1}^I L_v b_v^\theta (\tau_{vj} w_v)^{-\theta}}. \quad (\text{b.9})$$

Finally, to characterize wages, first derive import shares, which are identical to the model in the main text and are given by (23). Together with trade balance  $\sum_j T_{ij} = \sum_j T_{ji}$ , substitute them into the income/spending equality (b.7) to arrive at

$$\frac{w_i^{\theta+1}}{b_i^\theta} = \sum_{j=1}^I \left( \frac{L_j w_j}{\tau_{ij}^\theta \sum_{v=1}^I L_v b_v^\theta (\tau_{vj} w_v)^{-\theta}} \right). \quad (\text{b.10})$$

(b.10) implicitly solves for the wage rate  $w_i$  for each country  $i$  as a function of the remaining countries' wages.

It is straightforward to verify that the price of a variety is increasing in a destination's per-capita income and falling in a destination's market size. From the pricing rule in (b.4), notice that it is sufficient to examine how productivity cutoffs vary with destination-specific characteristics.

Using the implicit function theorem and the characterization of thresholds in (b.9) yields

$$\frac{\partial \bar{\phi}_{ij}}{\partial w_j} = - \left[ \frac{\frac{\eta \bar{\phi}_{ij}}{\tau_{ij} w_i} + \frac{2\alpha(\theta+1)^2 f_e(\bar{\phi}_{ij})^{\theta+1} [(\theta+1)L_j b_j^\theta (\tau_{jj} w_j)^{-\theta} + \sum_{v \neq j} L_v b_v^\theta (\tau_{vj} w_v)^{-\theta}]}{(\tau_{ij} w_i)^{\theta+1} [\sum_{v=1}^I L_v b_v^\theta (\tau_{vj} w_v)^{-\theta}]^2}}{\frac{\eta w_j}{w_i \tau_{ij}} + \frac{2\alpha(\theta+1)^3 f_e w_j (\bar{\phi}_{ij})^\theta}{(\tau_{ij} w_i)^{\theta+1} \sum_{v=1}^I L_v b_v^\theta (\tau_{vj} w_v)^{-\theta}}} \right] < 0,$$

$$\frac{\partial \bar{\phi}_{ij}}{\partial L_j} = \frac{\frac{2\alpha(\theta+1)^2 f_e(\bar{\phi}_{ij})^{\theta+1} w_j b_j^\theta (\tau_{jj} w_j)^{-\theta}}{(\tau_{ij} w_i)^{\theta+1} [\sum_{v=1}^I L_v b_v^\theta (\tau_{vj} w_v)^{-\theta}]^2}}{\frac{\eta w_j}{w_i \tau_{ij}} + \frac{2\alpha(\theta+1)^3 f_e w_j (\bar{\phi}_{ij})^\theta}{(\tau_{ij} w_i)^{\theta+1} \sum_{v=1}^I L_v b_v^\theta (\tau_{vj} w_v)^{-\theta}}} > 0.$$

Thresholds are falling in the per-capita income and rising in the size of the destination, so the opposite is true of the price of a variety. However, since prices feature additive mark-ups, it is not trivial to determine how the relative price of an identical variety behaves across countries.

### Supplementary Appendix II: Model With Destination-Specific Taxes and Tariffs

Suppose that the consumer in destination  $j$  pays a tax/tariff  $t_j > 0$ . Let  $\kappa_j \equiv 1 + t_j$  be the gross tax/tariff. The maximization problem of a consumer in  $j$ , potentially buying varieties from  $i = 1, \dots, I$ , is given below, and the solution steps of the model are identical to the basic model.

$$\max_{\{q_{ij}^c(\omega)\}_{i=1}^I \geq 0} \sum_{i=1}^I \int_{\omega \in \Omega_{ij}} \log(q_{ij}^c(\omega) + \bar{q}) d\omega \quad \text{s.t.} \quad \nu_j \left[ \sum_{i=1}^I \int_{\omega \in \Omega_{ij}} \kappa_j p_{ij}(\omega) q_{ij}^c(\omega) d\omega \leq y_j \right]$$

Denoting the tax/tariff/shipping-cost-inclusive price in market  $j$  for a variety produced by a firm with productivity  $\phi$  from country  $i$  by  $p_{ij}^\kappa(\phi)$ , one obtains the following relative pricing rule across destinations (in logs) from the augmented model,

$$\log \left( \frac{p_{ij}^\kappa(\phi)}{p_{ik}^\kappa(\phi)} \right) = \underbrace{\frac{1}{2(\theta+1)} \log \left( \frac{y_j}{y_k} \right)}_{\beta_y} + \underbrace{\frac{2\theta+1}{2(\theta+1)} \log \left( \frac{\tau_{ij}}{\tau_{ik}} \right)}_{\beta_\tau} + \underbrace{\frac{1}{2(\theta+1)} \log \left( \frac{\lambda_{ij}}{\lambda_{ik}} \right)}_{\beta_\lambda} + \underbrace{\frac{2\theta+1}{2(\theta+1)} \log \left( \frac{\kappa_j}{\kappa_k} \right)}_{\beta_\kappa}.$$

The model predicts that, after controlling for relative import shares, international trade barriers/shipping costs, and sales taxes and tariffs, the elasticity of relative prices with respect to relative per-capita incomes is  $\beta_y \equiv 1/[2(\theta+1)]$  as in the benchmark model.

## Supplementary Appendix III: Different Measures of Per-Capita Income

### Benchmark Specification: One-Item Purchase

Table 12: Consumption Expenditure as Measure of Income—One-Item Purchase, 29 Countries

	Per-capita Consumption			Per-Capita HH Consumption		
	Market Share Measure			Market Share Measure		
	tr.shr.ICP	tr.shr.GO	population	tr.shr.ICP	tr.shr.GO	population
pc.income	0.224*** (0.048)	0.180*** (0.044)	0.166*** (0.032)	0.217*** (0.054)	0.177*** (0.048)	0.174*** (0.032)
dhl	0.467*** (0.083)	0.431*** (0.085)	0.342*** (0.067)	0.438*** (0.078)	0.409*** (0.083)	0.337*** (0.061)
market.shr	0.033** (0.013)	0.014* (0.008)	-0.031*** (0.009)	0.029** (0.013)	0.012 (0.007)	-0.034*** (0.009)
tax/tariff	0.183 (0.427)	-0.215 (0.393)	0.001 (0.377)	0.129 (0.455)	-0.232 (0.406)	0.104 (0.334)
gini	0.030 (0.105)	-0.043 (0.099)	0.017 (0.077)	-0.034 (0.108)	-0.090 (0.099)	-0.004 (0.069)
euro	-0.165*** (0.033)	-0.162*** (0.033)	-0.178*** (0.034)	-0.174*** (0.032)	-0.170*** (0.033)	-0.184*** (0.032)
in.all.stores	-0.126*** (0.039)	-0.146*** (0.043)	-0.136*** (0.035)	-0.120*** (0.040)	-0.139*** (0.043)	-0.133*** (0.034)
in.one.store	0.025 (0.065)	0.000 (0.070)	0.050 (0.046)	0.037 (0.068)	0.013 (0.072)	0.049 (0.047)
mail.local	-0.094*** (0.029)	-0.082*** (0.031)	-0.064** (0.028)	-0.093*** (0.030)	-0.083*** (0.032)	-0.059** (0.028)
home.pick.up	0.039 (0.042)	0.043 (0.046)	0.064 (0.041)	0.023 (0.043)	0.029 (0.048)	0.054 (0.038)
within $R^2$	0.659	0.650	0.668	0.655	0.646	0.672

The regressand is the price of an item sold by Mango in one of 28 destinations, measured relative to the price of the same item sold in Spain, in logs. Regressors and expected signs of coefficients are described in Section 4.2.1.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level, respectively.

Standard errors clustered by country in parentheses.

Observations: 6860. Fixed Effects: 244 (relative to good 1).

Table 13: GNI as Measure of Income—One-Item Purchase, 29 Countries

	<u>Per-capita GNI</u>			<u>Per-Capita GNI Atlas Method</u>		
	Market Share Measure			Market Share Measure		
	tr.shr.ICP	tr.shr.GO	population	tr.shr.ICP	tr.shr.GO	population
pc.income	0.206*** (0.051)	0.175*** (0.045)	0.141*** (0.039)	0.201*** (0.050)	0.171*** (0.050)	0.146*** (0.044)
dhl	0.451*** (0.106)	0.447*** (0.097)	0.320*** (0.080)	0.423*** (0.094)	0.409*** (0.091)	0.316*** (0.074)
market.shr	0.031** (0.013)	0.017** (0.008)	-0.025** (0.010)	0.025* (0.013)	0.012 (0.008)	-0.024** (0.011)
tax/tariff	0.498 (0.585)	0.164 (0.513)	0.080 (0.507)	0.298 (0.543)	-0.013 (0.511)	0.030 (0.495)
gini	0.050 (0.113)	-0.007 (0.107)	-0.003 (0.099)	0.035 (0.115)	-0.020 (0.119)	0.002 (0.105)
euro	-0.165*** (0.037)	-0.159*** (0.036)	-0.179*** (0.037)	-0.171*** (0.035)	-0.166*** (0.036)	-0.182*** (0.036)
in.all.stores	-0.105*** (0.039)	-0.131*** (0.043)	-0.117*** (0.038)	-0.123*** (0.046)	-0.141*** (0.048)	-0.129*** (0.042)
in.one.store	0.058 (0.059)	0.014 (0.065)	0.087 (0.054)	0.058 (0.065)	0.028 (0.069)	0.083 (0.063)
mail.local	-0.109*** (0.029)	-0.091*** (0.031)	-0.081*** (0.030)	-0.108*** (0.030)	-0.096*** (0.031)	-0.082*** (0.029)
home.pick.up	0.030 (0.048)	0.041 (0.049)	0.054 (0.049)	0.028 (0.050)	0.034 (0.052)	0.053 (0.050)
within $R^2$	0.653	0.650	0.654	0.649	0.644	0.654

The regressand is the price of an item sold by Mango in one of 28 destinations, measured relative to the price of the same item sold in Spain, in logs. Regressors and expected signs of coefficients are described in Section 4.2.1.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level, respectively.

Standard errors clustered by country in parentheses.

Observations: 6860. Fixed Effects: 244 (relative to good 1).

Table 14: PPP GDP as Measure of Income—One-Item Purchase, 29 Countries

	Market Share Measure		
	trade shr (ICP)	trade shr (GO)	population
pc.income	0.160* (0.081)	0.145* (0.076)	0.089 (0.074)
dhl	0.269*** (0.089)	0.281*** (0.089)	0.199** (0.083)
market.shr	0.009 (0.014)	0.008 (0.010)	-0.026* (0.014)
tax/tariff	-0.386 (0.677)	-0.461 (0.640)	-0.472 (0.587)
gini	-0.176 (0.123)	-0.187 (0.123)	-0.159 (0.114)
euro	-0.187*** (0.041)	-0.184*** (0.040)	-0.201*** (0.042)
in.all.stores	-0.114** (0.051)	-0.122** (0.052)	-0.106** (0.045)
in.one.store	0.152** (0.060)	0.133** (0.061)	0.186*** (0.063)
mail.local	-0.105*** (0.039)	-0.097** (0.041)	-0.079** (0.039)
home.pick.up	0.057 (0.069)	0.065 (0.068)	0.093 (0.060)
within $R^2$	0.607	0.608	0.620

The regressand is the price of an item sold by Mango in one of 28 destinations, measured relative to the price of the same item sold in Spain, in logs. Regressors and expected signs of coefficients are described in Section 4.2.1.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level, respectively.

Standard errors clustered by country in parentheses.

Observations: 6860. Fixed Effects: 244 (relative to good 1).

Table 15: Total PC Cons and Gravity Measure of Trade Barriers: One-Item Purchase, 29 Countries

	<u>Distance Polynomial</u>				<u>Distance Regions</u>		
	Market Share Measure				Market Share Measure		
	tr.shr.ICP	tr.shr.GO	population		tr.shr.ICP	tr.shr.GO	population
pc.cons	0.202*** (0.034)	0.191*** (0.036)	0.174*** (0.027)	pc.cons	0.198*** (0.044)	0.177*** (0.041)	0.146*** (0.030)
dhl	0.487*** (0.065)	0.456*** (0.073)	0.419*** (0.052)	dhl	0.437*** (0.077)	0.420*** (0.080)	0.307*** (0.047)
market.shr	0.012 (0.009)	-0.002 (0.005)	-0.023*** (0.007)	market.shr	0.013 (0.010)	0.007 (0.006)	-0.037** (0.007)
tax/tariff	-0.758 (0.553)	-1.138** (0.567)	-0.017 (0.535)	tax/tariff	-1.002 (0.642)	-1.094* (0.630)	0.533 (0.650)
gini	-0.171 (0.110)	-0.211* (0.111)	-0.073 (0.085)	gini	-0.219 (0.137)	-0.263* (0.133)	-0.068 (0.103)
euro	-0.193*** (0.033)	-0.198*** (0.033)	-0.191*** (0.031)	euro	-0.192*** (0.035)	-0.190*** (0.034)	-0.173*** (0.028)
in.all.stores	-0.176*** (0.032)	-0.189*** (0.031)	-0.170*** (0.030)	in.all.stores	-0.172*** (0.033)	-0.180*** (0.034)	-0.145*** (0.031)
in.one.store	0.012 (0.048)	0.009 (0.049)	-0.036 (0.033)	in.one.store	0.024 (0.068)	0.006 (0.069)	-0.055 (0.066)
mail.local	-0.067*** (0.025)	-0.062** (0.026)	-0.054*** (0.021)	mail.local	-0.082*** (0.028)	-0.081*** (0.028)	-0.071*** (0.018)
home.pick.up	-0.013 (0.030)	-0.027 (0.037)	0.035 (0.026)	home.pick.up	-0.043 (0.042)	-0.043 (0.048)	0.013 (0.019)
landlocked	-0.082*** (0.025)	-0.087*** (0.026)	-0.063*** (0.024)	landlocked	-0.096*** (0.023)	-0.103*** (0.023)	-0.070*** (0.018)
island	0.014 (0.030)	0.025 (0.026)	0.039 (0.025)	island	0.021 (0.032)	0.023 (0.029)	0.069** (0.032)
rta	-0.154 (0.153)	-0.191 (0.160)	0.049 (0.151)	rta	-0.197*** (0.063)	-0.202*** (0.068)	-0.092** (0.046)
distance	-42.995*** (13.861)	-47.238*** (13.332)	-38.489*** (11.712)	region 1	0.459*** (0.107)	0.464*** (0.113)	0.241*** (0.089)
distance <sup>2</sup>	5.355*** (1.707)	5.908*** (1.642)	4.683*** (1.443)	region 2	0.320*** (0.119)	0.304** (0.122)	-0.035 (0.132)
distance <sup>3</sup>	-0.222*** (0.070)	-0.246*** (0.067)	-0.189*** (0.059)	region 3	0.289** (0.125)	0.267** (0.129)	-0.079 (0.141)
within $R^2$	0.694	0.692	0.702		0.695	0.694	0.714

The regressand is the price of an item sold by Mango in one of 28 markets, measured relative to the price of the same item sold in Spain, in logs. Regressors and expected signs of coefficients are described in Sections 4.2.1, 4.2.3. \*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors clustered by country in parentheses. Observations: 6860. Fixed Effects: 244 (relative to good 1). Distance interval 4 is numéraire.



Table 16: HH PC Cons and Gravity Measure of Trade Barriers: One-Item Purchase, 29 Countries

	Distance Polynomial			Distance Regions			
	Market Share Measure			Market Share Measure			
	tr.shr.ICP	tr.shr.GO	population	tr.shr.ICP	tr.shr.GO	population	
pc.cons	0.189*** (0.039)	0.179*** (0.039)	0.170*** (0.025)	pc.cons	0.182*** (0.051)	0.162*** (0.044)	0.139*** (0.032)
dhl	0.455*** (0.074)	0.427*** (0.082)	0.399*** (0.050)	dhl	0.399*** (0.087)	0.385*** (0.086)	0.283*** (0.047)
market.shr	0.011 (0.010)	-0.002 (0.005)	-0.027*** (0.006)	market.shr	0.012 (0.011)	0.006 (0.006)	-0.040*** (0.007)
tax/tariff	-0.926 (0.618)	-1.265* (0.632)	0.093 (0.525)	tax/tariff	-1.299* (0.654)	-1.358** (0.627)	0.475 (0.678)
gini	-0.273 (0.124)	-0.305** (0.123)	-0.117 (0.091)	gini	-0.328** (0.140)	-0.360*** (0.135)	-0.125 (0.110)
euro	-0.205*** (0.035)	-0.209*** (0.034)	-0.198*** (0.031)	euro	-0.208*** (0.037)	-0.204*** (0.036)	-0.182*** (0.029)
in.all.stores	-0.169*** (0.034)	-0.181*** (0.033)	-0.161*** (0.031)	in.all.stores	-0.169*** (0.035)	-0.175*** (0.035)	-0.140*** (0.033)
in.one.store	0.052 (0.052)	0.047 (0.052)	-0.017 (0.034)	in.one.store	0.071 (0.064)	0.052 (0.065)	-0.027 (0.067)
mail.local	-0.069*** (0.026)	-0.065** (0.027)	-0.054*** (0.020)	mail.local	-0.083*** (0.029)	-0.082*** (0.029)	-0.070*** (0.018)
home.pick.up	-0.033 (0.037)	-0.046 (0.045)	0.027 (0.025)	home.pick.up	-0.057 (0.053)	-0.056 (0.058)	0.007 (0.022)
landlocked	-0.094*** (0.026)	-0.099*** (0.027)	-0.069*** (0.024)	landlocked	-0.106*** (0.026)	-0.112*** (0.026)	-0.075*** (0.020)
island	-0.005 (0.031)	0.006 (0.028)	0.026 (0.026)	island	0.001 (0.032)	0.005 (0.030)	0.056* (0.033)
rta	-0.190 (0.160)	-0.222 (0.167)	0.060 (0.147)	rta	-0.223*** (0.072)	-0.226*** (0.076)	-0.100** (0.050)
distance	-43.867*** (15.246)	-47.680*** (14.699)	-37.342*** (11.777)	region 1	0.471*** (0.123)	0.475*** (0.126)	0.231** (0.091)
distance <sup>2</sup>	5.473*** (1.881)	5.969*** (1.816)	4.526*** (1.448)	region 2	0.358*** (0.120)	0.338*** (0.118)	-0.031 (0.133)
distance <sup>3</sup>	-0.227*** (0.077)	-0.249*** (0.074)	-0.182*** (0.059)	region 3	0.330*** (0.125)	0.304** (0.125)	-0.075 (0.142)
within $R^2$	0.691	0.689	0.703		0.689	0.689	0.713

The regressand is the price of an item sold by Mango in one of 28 markets, measured relative to the price of the same item sold in Spain, in logs. Regressors and expected signs of coefficients are described in Sections 4.2.1, 4.2.3.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors clustered by country in parentheses.

Observations: 6860. Fixed Effects: 244 (relative to good 1). Distance interval 4 is numéraire.

Table 17: PC GNI and Gravity Measure of Trade Barriers: One-Item Purchase, 29 Countries

	Distance Polynomial			Distance Regions			
	Market Share Measure			Market Share Measure			
	tr.shr.ICP	tr.shr.GO	population	tr.shr.ICP	tr.shr.GO	population	
pc.cons	0.221*** (0.026)	0.214*** (0.029)	0.195*** (0.033)	pc.cons	0.220*** (0.034)	0.206*** (0.032)	0.163*** (0.031)
dhl	0.525*** (0.050)	0.510*** (0.052)	0.471*** (0.064)	dhl	0.467*** (0.053)	0.476*** (0.056)	0.342*** (0.050)
market.shr	0.009 (0.007)	0.000 (0.005)	-0.012 (0.008)	market.shr	0.010 (0.008)	0.010* (0.006)	-0.028*** (0.008)
tax/tariff	0.050 (0.509)	-0.181 (0.436)	0.224 (0.512)	tax/tariff	-0.188 (0.644)	-0.101 (0.641)	0.708 (0.599)
gini	-0.043 (0.092)	-0.069 (0.089)	-0.030 (0.085)	gini	-0.094 (0.123)	-0.120 (0.120)	-0.035 (0.097)
euro	-0.183*** (0.031)	-0.186*** (0.030)	-0.185*** (0.031)	euro	-0.178*** (0.030)	-0.172*** (0.030)	-0.169*** (0.026)
in.all.stores	-0.169*** (0.030)	-0.178*** (0.028)	-0.169*** (0.027)	in.all.stores	-0.163*** (0.028)	-0.168*** (0.028)	-0.143*** (0.025)
in.one.store	-0.058 (0.035)	-0.063 (0.036)	-0.070** (0.032)	in.one.store	-0.049 (0.065)	-0.073 (0.071)	-0.082 (0.062)
mail.local	-0.077*** (0.022)	-0.074*** (0.022)	-0.069*** (0.019)	mail.local	-0.095*** (0.026)	-0.093*** (0.024)	-0.084*** (0.018)
home.pick.up	-0.022 (0.025)	-0.029 (0.027)	0.002 (0.030)	home.pick.up	-0.062** (0.026)	-0.054* (0.028)	-0.015 (0.021)
landlocked	-0.070*** (0.023)	-0.074*** (0.025)	-0.063*** (0.024)	landlocked	-0.086*** (0.022)	-0.092*** (0.020)	-0.070*** (0.017)
island	0.060*** (0.023)	0.065*** (0.022)	0.069*** (0.022)	island	0.071*** (0.027)	0.065** (0.028)	0.094*** (0.027)
rta	-0.077 (0.135)	-0.099 (0.134)	0.009 (0.146)	rta	-0.181*** (0.047)	-0.175*** (0.048)	-0.112*** (0.040)
distance	-47.055*** (11.571)	-48.755*** (11.550)	-45.234*** (11.355)	region 1	0.473*** (0.086)	0.451*** (0.088)	0.305*** (0.085)
distance <sup>2</sup>	5.810*** (1.426)	6.035*** (1.419)	5.536*** (1.407)	region 2	0.284*** (0.107)	0.238** (0.115)	0.020 (0.121)
distance <sup>3</sup>	-0.238*** (0.058)	-0.248*** (0.058)	-0.225*** (0.058)	region 3	0.244** (0.114)	0.189 (0.125)	-0.027 (0.130)
within $R^2$	0.702	0.701	0.703		0.706	0.707	0.715

The regressand is the price of an item sold by Mango in one of 28 markets, measured relative to the price of the same item sold in Spain, in logs. Regressors and expected signs of coefficients are described in Sections 4.2.1, 4.2.3.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors clustered by country in parentheses.

Observations: 6860. Fixed Effects: 244 (relative to good 1). Distance interval 4 is numéraire.

Table 18: PC GNI Atlas and Gravity Measure of Trade Barriers: One-Item Purchase, 29 Countries

	Distance Polynomial			Distance Regions			
	Market Share Measure			Market Share Measure			
	tr.shr.ICP	tr.shr.GO	population	tr.shr.ICP	tr.shr.GO	population	
pc.cons	0.199*** (0.031)	0.196*** (0.035)	0.171*** (0.035)	pc.cons	0.203*** (0.042)	0.190*** (0.039)	0.150*** (0.033)
dhl	0.488*** (0.063)	0.471*** (0.066)	0.428*** (0.068)	dhl	0.428*** (0.068)	0.433*** (0.071)	0.309*** (0.052)
market.shr	0.007 (0.009)	-0.002 (0.006)	-0.016* (0.009)	market.shr	0.008 (0.009)	0.008 (0.006)	-0.033*** (0.008)
tax/tariff	-0.062 (0.567)	-0.304 (0.515)	0.333 (0.594)	tax/tariff	-0.315 (0.705)	-0.264 (0.676)	0.879 (0.639)
gini	-0.092 (0.115)	-0.112 (0.117)	-0.051 (0.103)	gini	-0.149 (0.144)	-0.173 (0.139)	-0.044 (0.108)
euro	-0.190*** (0.034)	-0.193*** (0.033)	-0.190*** (0.033)	euro	-0.185*** (0.033)	-0.180*** (0.033)	-0.169*** (0.026)
in.all.stores	-0.172*** (0.033)	-0.180*** (0.031)	-0.166*** (0.030)	in.all.stores	-0.168*** (0.030)	-0.171*** (0.030)	-0.142*** (0.025)
in.one.store	-0.023 (0.041)	-0.025 (0.044)	-0.043 (0.037)	in.one.store	-0.016 (0.068)	-0.034 (0.073)	-0.067 (0.066)
mail.local	-0.091*** (0.025)	-0.088*** (0.025)	-0.080*** (0.021)	mail.local	-0.108*** (0.028)	-0.106*** (0.026)	-0.093*** (0.020)
home.pick.up	-0.027 (0.030)	-0.037 (0.034)	0.011 (0.033)	home.pick.up	-0.072** (0.035)	-0.065* (0.037)	-0.014 (0.022)
landlocked	-0.075*** (0.028)	-0.078*** (0.029)	-0.063** (0.026)	landlocked	-0.093*** (0.024)	-0.097*** (0.022)	-0.070*** (0.017)
island	0.033 (0.028)	0.040 (0.028)	0.046 (0.028)	island	0.046 (0.030)	0.042 (0.031)	0.080*** (0.029)
rta	-0.087 (0.155)	-0.112 (0.153)	0.047 (0.163)	rta	-0.198*** (0.056)	-0.194*** (0.057)	-0.108** (0.043)
distance	-43.657*** (14.468)	-46.534*** (14.328)	-40.582*** (13.894)	region 1	0.471*** (0.096)	0.454*** (0.096)	0.270*** (0.086)
distance <sup>2</sup>	5.357*** (1.782)	5.734*** (1.762)	4.905*** (1.718)	region 2	0.260** (0.112)	0.225* (0.114)	-0.046 (0.123)
distance <sup>3</sup>	-0.218*** (0.073)	-0.235*** (0.072)	-0.197*** (0.071)	region 3	0.205* (0.120)	0.164 (0.124)	-0.106 (0.131)
within $R^2$	0.692	0.692	0.696		0.699	0.700	0.714

The regressand is the price of an item sold by Mango in one of 28 markets, measured relative to the price of the same item sold in Spain, in logs. Regressors and expected signs of coefficients are described in Sections 4.2.1, 4.2.3.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors clustered by country in parentheses.

Observations: 6860. Fixed Effects: 244 (relative to good 1). Distance interval 4 is numéraire.

Table 19: PC PPP GDP and Gravity Measure of Trade Barriers: One-Item Purchase, 29 Countries

	Distance Polynomial			Distance Regions			
	Market Share Measure			Market Share Measure			
	tr.shr.ICP	tr.shr.GO	population	tr.shr.ICP	tr.shr.GO	population	
pc.cons	0.179*** (0.061)	0.222*** (0.072)	0.108 (0.082)	pc.cons	0.291*** (0.055)	0.294*** (0.064)	0.187*** (0.067)
dhl	0.334*** (0.086)	0.328*** (0.078)	0.262** (0.106)	dhl	0.368*** (0.070)	0.364*** (0.064)	0.257*** (0.078)
market.shr	-0.011 (0.009)	-0.014 (0.010)	-0.016 (0.014)	market.shr	-0.011 (0.008)	-0.004 (0.008)	-0.025* (0.013)
tax/tariff	-0.894 (0.909)	-0.820 (0.846)	-0.406 (0.891)	tax/tariff	0.305 (0.712)	0.434 (0.724)	1.020 (0.726)
gini	-0.355** (0.173)	-0.318* (0.172)	-0.321** (0.158)	gini	-0.210 (0.140)	-0.197 (0.145)	-0.159 (0.122)
euro	-0.211*** (0.042)	-0.216*** (0.040)	-0.213*** (0.042)	euro	-0.161*** (0.035)	-0.162*** (0.035)	-0.160*** (0.032)
in.all.stores	-0.192*** (0.034)	-0.189*** (0.034)	-0.162*** (0.035)	in.all.stores	-0.181*** (0.028)	-0.171*** (0.030)	-0.139*** (0.032)
in.one.store	0.043 (0.068)	0.060 (0.068)	0.067 (0.073)	in.one.store	-0.076 (0.064)	-0.055 (0.063)	-0.051 (0.066)
mail.local	-0.070** (0.033)	-0.071** (0.031)	-0.072** (0.031)	mail.local	-0.086*** (0.028)	-0.089*** (0.027)	-0.086*** (0.023)
home.pick.up	0.001 (0.050)	-0.013 (0.049)	0.046 (0.049)	home.pick.up	-0.074* (0.037)	-0.070* (0.039)	-0.014 (0.039)
landlocked	-0.102*** (0.034)	-0.099*** (0.033)	-0.080** (0.036)	landlocked	-0.124*** (0.029)	-0.119*** (0.029)	-0.093*** (0.032)
island	0.041 (0.033)	0.054 (0.036)	0.035 (0.034)	island	0.087*** (0.030)	0.084** (0.034)	0.087** (0.034)
rta	-0.028 (0.210)	-0.010 (0.204)	0.084 (0.212)	rta	-0.130** (0.064)	-0.129** (0.063)	-0.094 (0.058)
distance	-58.214*** (20.561)	-66.074*** (21.969)	-49.493** (20.465)	region 1	0.535*** (0.100)	0.518*** (0.103)	0.318** (0.128)
distance <sup>2</sup>	7.170*** (2.510)	8.160*** (2.692)	6.010** (2.497)	region 2	0.125 (0.108)	0.111 (0.113)	-0.110 (0.146)
distance <sup>3</sup>	-0.293*** (0.102)	-0.335*** (0.109)	-0.242** (0.101)	region 3	0.090 (0.110)	0.081 (0.117)	-0.146 (0.147)
within $R^2$	0.670	0.672	0.670		0.698	0.696	0.702

The regressand is the price of an item sold by Mango in one of 28 markets, measured relative to the price of the same item sold in Spain, in logs. Regressors and expected signs of coefficients are described in Sections 4.2.1, 4.2.3.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors clustered by country in parentheses.

Observations: 6860. Fixed Effects: 244 (relative to good 1). Distance interval 4 is numéraire.

## Robust Specification: Shipping-Cost Minimizers

Table 20: Alternative Measures of Per-capita Income: Shipping-Cost Minimizers, 29 Countries

	(i) No Gravity Controls			(ii) Distance Polynomial			(iii) Distance Regions		
mkt.shr	tr.shr.ICP	tr.shr.GO	populat.	tr.shr.ICP	tr.shr.GO	populat.	tr.shr.ICP	tr.shr.GO	populat.
cons	0.240*** (0.066)	0.222*** (0.056)	0.206*** (0.051)	0.163*** (0.052)	0.154*** (0.048)	0.140*** (0.048)	0.185*** (0.053)	0.178*** (0.046)	0.156*** (0.046)
$R^2$	0.402	0.409	0.434	0.471	0.477	0.498	0.474	0.475	0.489
hh.cons	0.222*** (0.071)	0.209*** (0.061)	0.205*** (0.055)	0.141*** (0.053)	0.133*** (0.050)	0.132*** (0.047)	0.171*** (0.058)	0.164*** (0.050)	0.148*** (0.049)
$R^2$	0.389	0.396	0.432	0.465	0.471	0.498	0.469	0.470	0.488
gni	0.221*** (0.062)	0.216*** (0.057)	0.178*** (0.052)	0.189*** (0.045)	0.184*** (0.046)	0.144*** (0.051)	0.192*** (0.044)	0.188*** (0.043)	0.154*** (0.049)
$R^2$	0.395	0.410	0.414	0.481	0.488	0.495	0.477	0.481	0.484
gni.atl	0.209*** (0.061)	0.203*** (0.060)	0.175*** (0.058)	0.169*** (0.045)	0.162** (0.044)	0.128*** (0.048)	0.161*** (0.050)	0.156*** (0.049)	0.123** (0.052)
$R^2$	0.386	0.394	0.407	0.473	0.478	0.491	0.466	0.468	0.478
ppp.gdp	0.273*** (0.071)	0.272*** (0.072)	0.238*** (0.080)	0.266*** (0.045)	0.257*** (0.063)	0.167** (0.080)	0.279*** (0.066)	0.257*** (0.077)	0.182* (0.093)
$R^2$	0.392	0.392	0.397	0.488	0.479	0.483	0.478	0.469	0.473

The regressand is the price of an item sold by Mango in one of 28 markets, measured relative to the price of the same item sold in Spain, in logs. Regressors for specifications (i), (ii), (iii) are described in Sections 4.2.1, 4.2.3. \*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors clustered by country in parentheses. Observations: 6860. Fixed Effects: 244 (relative to good 1).

## Supplementary Appendix IV: DHL

Table 21: DHL Pricing Rule, 29 Countries

	pc.gdp	population	dist	dist <sup>2</sup>	dist <sup>3</sup>	landlocked	island	rta	cons.	$R^2$
(i)	-0.290*** (0.048)	-0.060*** (0.022)	0.356*** (0.133)			0.215** (0.083)	0.139* (0.080)	-0.009 (0.230)	-0.989 (1.219)	0.824
(ii)	-0.296*** (0.048)	-0.058*** (0.021)	29.796 (42.776)	-3.832 (5.217)	0.166 (0.211)	0.188** (0.079)	0.101 (0.078)	0.313 (0.385)	-76.358 (115.997)	0.859

Regressand: DHL shipping price per market, relative to price in Spain, in logs. Observations: 28.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors in parentheses.

DHL prices all shipments according to regions made up of one or more countries. To obtain an understanding of DHL's pricing policy, I collect price quotes for one-time identical shipments to all the destinations in the sample from the Spanish DHL website. In Table 21, row (i), I regress the logged shipping price quotes (relative to shipping within Spain) on logged relative per-capita incomes and population sizes of destinations, a constant, and gravity variables: logged distance between Spain and the destination (in km) and indicator variables if the destination has a trade

agreement with Spain, if it is landlocked, or if it is an island. In row (ii), I repeat the exercise using a third degree polynomial for distance to capture non-linearities in the pricing rule with respect to distance.

The high  $R$ -squared statistic suggests that per-capita income, market size, and the gravity variables account for the majority of the variation in DHL shipping charges. DHL charges higher prices to ship to more distant and landlocked countries, and there is weak evidence that prices are higher on islands. While there is some evidence of a pricing rule that is concave in distance, the coefficients are not estimated precisely. More importantly, DHL charges lower prices to ship to both richer (in per-capita terms) and larger markets. Shipping prices are likely falling in market (population) size due to economies of scale as well as due to competition. In addition, shipping prices to richer destinations are likely lower due to better infrastructure and higher efficiency in transportation there, as well as due to higher competition particularly among air carriers as Cristea et al. (2012) argue. These results are in line with Hummels et al. (2009) who find similar patterns in the shipping prices to the US and Latin American markets.

### **Supplementary Appendix V: Web-Listed Prices**

In this section, I repeat all the exercises using prices as listed on Mango's website. The key finding is that per-capita income differences account for a third of observed price differences across countries. In addition, Eurozone membership and Mango's return policy, rather than shipping costs, shape web-listed prices.

Table 22 repeats the benchmark exercise using prices as listed on Mango's website. The coefficient estimates on per-capita income are similar to the ones obtained for shipping-cost minimizers. Similarly, Eurozone membership has a negative effect on prices of identical goods as does the option to return items in all physical stores. Variance decomposition exercises suggest that per-capita income differences account for 28%-34% of observed price variations; Eurozone membership and the ability to return items at local stores account for up to 8% each, while DHL shipping costs contribute to only 2% of the price differences.

The message is similar from the robustness exercises that include gravity proxies for trade barriers (Table 23). Per-capita income differences, Eurozone membership, and the option to return items in physical stores remain the key determinants of price variations across countries. As in the exercises that used prices paid by shipping-cost minimizers, prices are lower in landlocked countries and those that share a free trade agreement with Spain. Similarly, the coefficients on the island indicator and the distance variables are not very precisely estimated.

Table 24 reports the results from the main specification as well as the robustness exercise that includes gravity measures of trade barriers using web-listed prices and the five alternative measures of per-capita income.<sup>47</sup> The mean and median estimates of the elasticity of price with

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<sup>47</sup>Due to space constraints, I only report the estimates and associated standard errors of the elasticity of price

respect to per-capita income across the 45 different regressions are 0.17 and all, but two, estimates are statistically significant. The minimum estimate is 0.10 and the maximum is 0.24. Thus, per-capita income differences remain the main determinant of observed price variation.

Table 22: Robustness Results—Web-Listed Prices, 29 Countries

	Market Share Measure		
	trade shr (ICP)	trade shr (GO)	population
pc.gdp	0.188*** (0.051)	0.187*** (0.051)	0.170*** (0.055)
dhl	0.088 (0.110)	0.103 (0.108)	0.059 (0.094)
market.shr	0.000 (0.016)	0.004 (0.008)	-0.013 (0.014)
tax/tariff	-0.155 (0.659)	-0.121 (0.618)	-0.105 (0.608)
gini	0.085 (0.148)	0.087 (0.149)	0.096 (0.141)
euro	-0.120*** (0.039)	-0.119*** (0.039)	-0.128*** (0.036)
in.all.stores	-0.133** (0.063)	-0.135** (0.058)	-0.128** (0.057)
in.one.store	-0.043 (0.087)	-0.049 (0.083)	-0.017 (0.096)
mail.local	0.011 (0.032)	0.015 (0.033)	0.025 (0.032)
home.pick.up	0.029 (0.046)	0.037 (0.049)	0.054 (0.055)
within $R^2$	0.415	0.416	0.420

The regressand is the price of an item sold by Mango in one of 28 destinations, measured relative to the price of the same item sold in Spain, in logs. Regressors and expected signs of coefficients are described in Section 4.2.1.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level, respectively.

Standard errors clustered by country in parentheses.

Observations: 6860. Fixed Effects: 244 (relative to good 1).

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with respect to per-capita income under the five alternative measures as well as the  $R^2$  of each regression. The estimates of the remaining coefficients are similar to the ones in Tables 22 and 23 and are available upon request.

Table 23: Additional Measures of Trade Barriers: Web-Listed Prices, 29 Countries

	Distance Polynomial			Distance Regions			
	Market Share Measure			Market Share Measure			
	tr.shr.ICP	tr.shr.GO	population	tr.shr.ICP	tr.shr.GO	population	
pc.gdp	0.152*** (0.030)	0.156*** (0.035)	0.116** (0.047)	pc.gdp	0.151*** (0.036)	0.154*** (0.039)	0.112** (0.051)
dhl	0.039 (0.061)	0.048 (0.063)	-0.021 (0.088)	dhl	-0.019 (0.061)	-0.011 (0.066)	-0.089 (0.094)
market.shr	-0.015 (0.010)	-0.002 (0.008)	-0.017 (0.012)	market.shr	-0.016 (0.011)	-0.002 (0.010)	-0.019 (0.014)
tax/tariff	-1.085 (0.668)	-0.795 (0.657)	-0.316 (0.686)	tax/tariff	-2.054*** (0.736)	-1.726** (0.804)	-1.067 (0.927)
gini	-0.214 (0.159)	-0.192 (0.161)	-0.169 (0.144)	gini	-0.333* (0.167)	-0.308* (0.174)	-0.273 (0.170)
euro	-0.156*** (0.035)	-0.155*** (0.035)	-0.157*** (0.033)	euro	-0.182*** (0.038)	-0.179*** (0.040)	-0.173*** (0.039)
in.all.stores	-0.214*** (0.031)	-0.198*** (0.029)	-0.181*** (0.031)	in.all.stores	-0.233*** (0.034)	-0.215*** (0.033)	-0.192*** (0.040)
in.one.store	-0.153** (0.063)	-0.133* (0.071)	-0.126* (0.072)	in.one.store	-0.096 (0.085)	-0.073 (0.095)	-0.076 (0.099)
mail.local	0.003 (0.034)	-0.004 (0.032)	0.000 (0.030)	mail.local	0.000 (0.036)	-0.006 (0.035)	-0.003 (0.032)
home.pick.up	-0.040 (0.031)	-0.029 (0.037)	0.015 (0.047)	home.pick.up	-0.046 (0.034)	-0.033 (0.038)	0.004 (0.046)
landlocked	-0.088*** (0.033)	-0.082** (0.033)	-0.066* (0.037)	landlocked	-0.099*** (0.033)	-0.091*** (0.035)	-0.076* (0.041)
island	0.076** (0.031)	0.068* (0.034)	0.069* (0.036)	island	0.073* (0.037)	0.064 (0.043)	0.073 (0.046)
rta	-0.384** (0.158)	-0.353** (0.168)	-0.211 (0.209)	rta	-0.351*** (0.061)	-0.343*** (0.065)	-0.305*** (0.074)
distance	-24.920* (14.443)	-22.955 (16.064)	-18.127 (14.087)	region 1	0.427*** (0.093)	0.380*** (0.113)	0.249 (0.164)
distance <sup>2</sup>	3.100* (1.769)	2.836 (1.973)	2.150 (1.713)	region 2	0.426*** (0.119)	0.376** (0.152)	0.189 (0.217)
distance <sup>3</sup>	-0.129* (0.072)	-0.117 (0.080)	-0.085 (0.069)	region 3	0.366*** (0.124)	0.319** (0.158)	0.130 (0.212)
within $R^2$	0.496	0.493	0.496		0.492	0.488	0.493

The regressand is the price of an item sold by Mango in one of 28 markets, measured relative to the price of the same item sold in Spain, in logs. Regressors and expected signs of coefficients are described in Sections 4.2.1, 4.2.3.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors clustered by country in parentheses.

Observations: 6860. Fixed Effects: 244 (relative to good 1). Distance interval 4 is numéraire.



Table 24: Alternative Measures of Per-capita Income: Web-Listed Prices, 29 Countries

	(i) No Gravity Controls			(ii) Distance Polynomial			(iii) Distance Regions		
mkt.shr	tr.shr.ICP	tr.shr.GO	populat.	tr.shr.ICP	tr.shr.GO	populat.	tr.shr.ICP	tr.shr.GO	populat.
cons	0.231*** (0.063)	0.214*** (0.053)	0.203*** (0.049)	0.146*** (0.044)	0.146*** (0.042)	0.130*** (0.042)	0.160*** (0.046)	0.162*** (0.041)	0.136*** (0.043)
$R^2$	0.420	0.420	0.441	0.489	0.489	0.505	0.490	0.489	0.502
hh.cons	0.216*** (0.066)	0.204*** (0.057)	0.202*** (0.052)	0.129*** (0.046)	0.130*** (0.044)	0.124*** (0.042)	0.148*** (0.051)	0.152*** (0.044)	0.129*** (0.045)
$R^2$	0.409	0.410	0.439	0.485	0.485	0.505	0.486	0.486	0.501
gni	0.215*** (0.062)	0.208*** (0.056)	0.181*** (0.052)	0.172*** (0.038)	0.174*** (0.039)	0.144*** (0.046)	0.175*** (0.038)	0.177*** (0.037)	0.146*** (0.046)
$R^2$	0.415	0.420	0.425	0.498	0.499	0.505	0.496	0.496	0.501
gni.atl	0.202*** (0.061)	0.197*** (0.059)	0.176*** (0.058)	0.149*** (0.037)	0.151*** (0.038)	0.120*** (0.044)	0.145*** (0.044)	0.147*** (0.043)	0.114** (0.049)
$R^2$	0.405	0.407	0.417	0.490	0.490	0.499	0.486	0.485	0.494
ppp.gdp	0.236*** (0.070)	0.244*** (0.073)	0.213*** (0.080)	0.195*** (0.036)	0.211*** (0.060)	0.096 (0.081)	0.224*** (0.054)	0.223*** (0.070)	0.121 (0.087)
$R^2$	0.394	0.393	0.397	0.490	0.484	0.487	0.489	0.481	0.486

The regressand is the price of an item sold by Mango in one of 28 markets, measured relative to the price of the same item sold in Spain, in logs. Regressors for specifications (i), (ii), (iii) are described in Sections 4.2.1, 4.2.3. \*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors clustered by country in parentheses. Observations: 6860. Fixed Effects: 244 (relative to good 1).

## Supplementary Appendix VI: Shipping Fees and Prices

In this section, I document additional details about Mango’s shipping and handling policy summarized in Table 2. Figure 3 plots the shipping fee, as a percent of the minimum shipping threshold, for each destination. The top figure plot the fees incurred for purchases above the threshold. This variable corresponds to the (ad-valorem) wedge by which web-listed prices are adjusted in order to arrive at the price paid by shipping-cost minimizers. Notice that two thirds of the observations are clustered at zero with the max being 10%. For comparison purposes, the bottom figure repeats the plot using fees for purchases below the threshold. The median fee is 8%, and it ranges from 4% to 16%.

The majority of items would incur the higher shipping fee if purchased alone since most prices are below the threshold. The first row of Table 25 shows that 93% of items’ prices are below the threshold. The second row of Table 26 shows moments from the distribution of the shipping fee as a percent of the item’s price for items whose prices are below the threshold. The median amounts to 35%, which is sizable. The second and third row of Table 25 take a closer look at the two sets of countries: those with zero and those with positive shipping fees above the threshold. For countries that incur a positive fee, the price-to-threshold ratio is lower. In addition, for these countries, the median fee above the threshold is 16% of the item’s price, and does not exceed 76%.

Table 25: Price of Item as % of Threshold

Sample	Min	10%	Median	Mean	90%	$\% \leq 1$	Max	N.Obs.
All Countries	0.023	0.100	0.265	0.428	0.933	93%	3.666	7105
Fee Above Min = 0	0.023	0.100	0.306	0.471	1.000	92%	3.333	4900
Fee Above Min > 0	0.047	0.087	0.171	0.332	0.667	95%	3.666	2205

Table 26: Fee as % of Item Price

Sample	Min	10%	Median	Mean	90%	Max	N.Obs.
Fee Above Min > 0	0.024	0.058	0.158	0.170	0.304	0.760	2205
Fee Below Min, All	0.067	0.133	0.346	0.418	0.799	2.007	6609

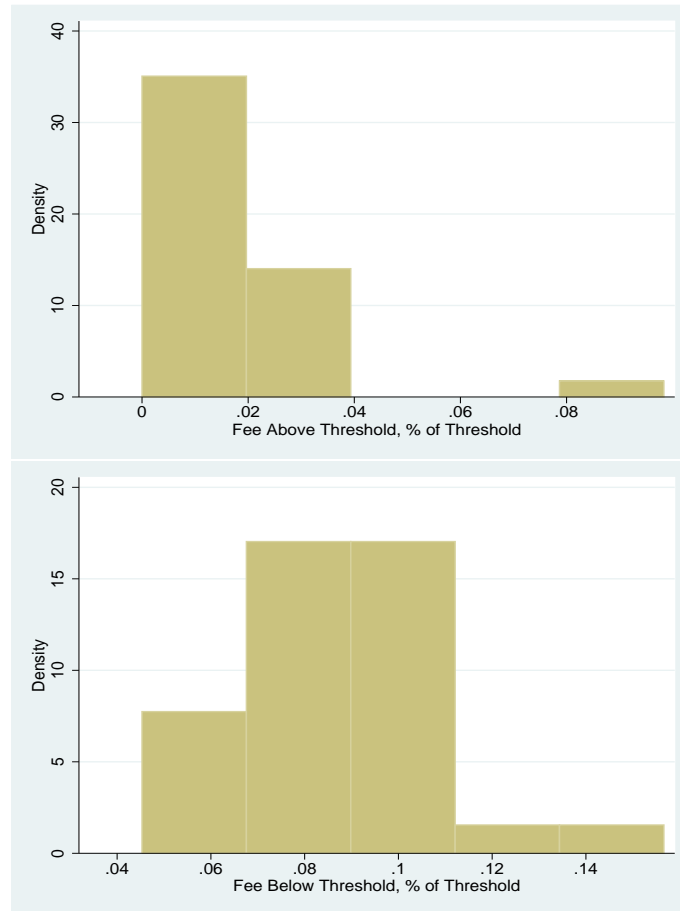


Figure 3: Shipping Fee, % of Threshold

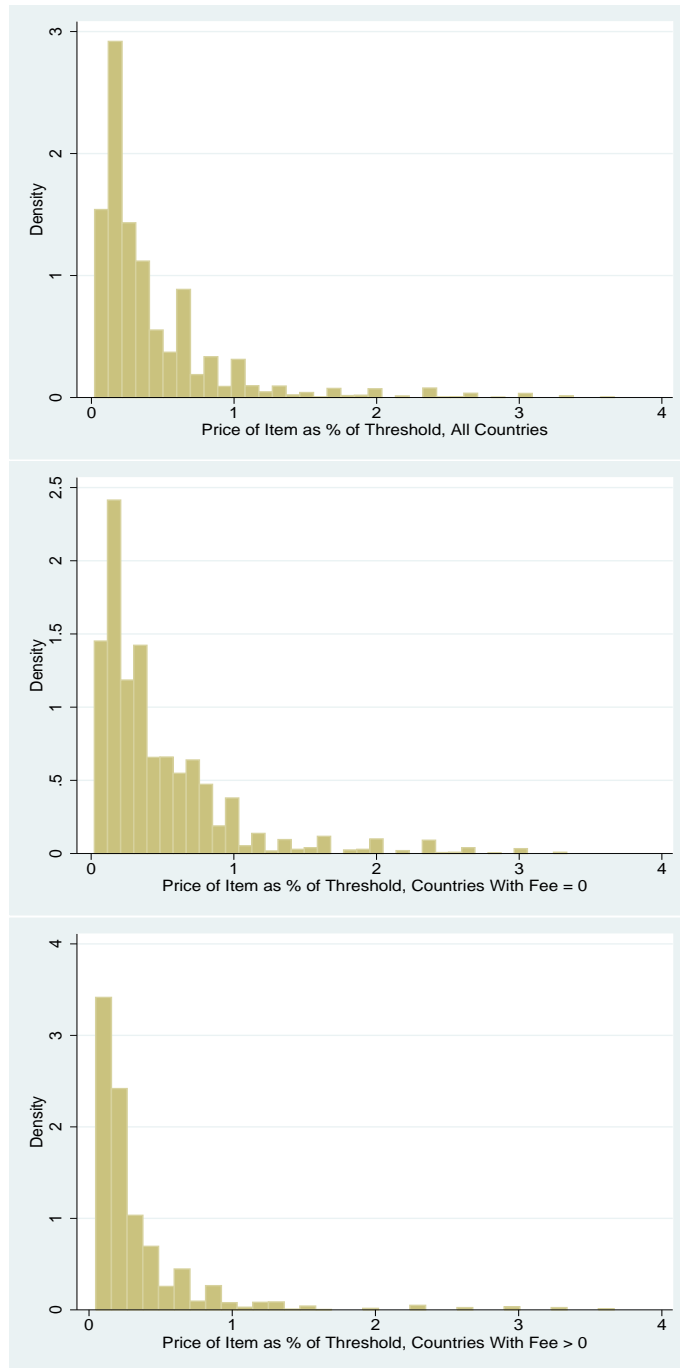


Figure 4: Price of Item as % of Threshold

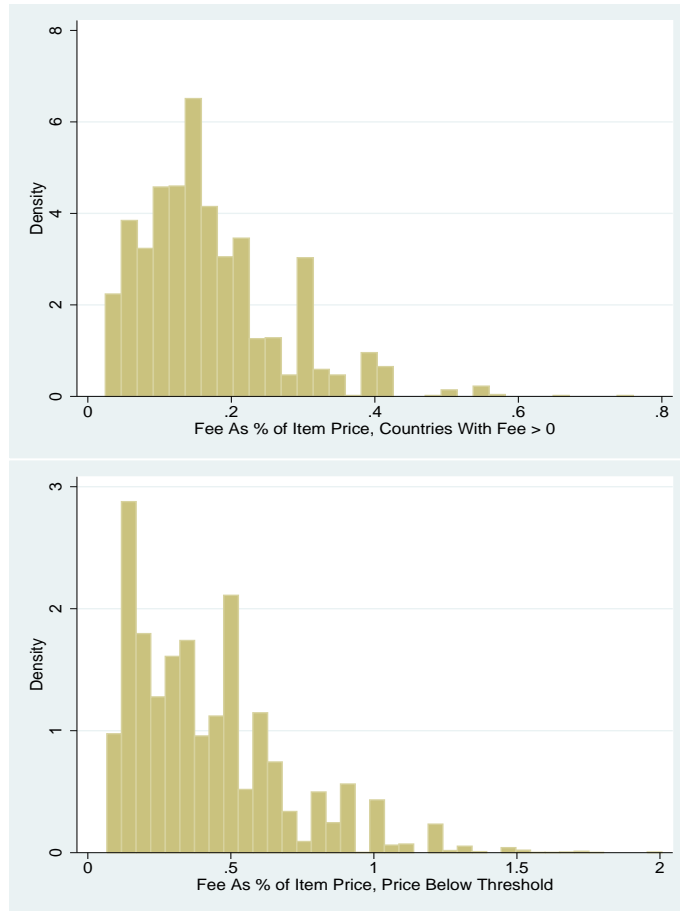


Figure 5: Shipping Fees as % of Item Price

## Supplementary Appendix VII: Additional Results, ICP Data

Table 27: Per-Capita Income and Price of Tradables, ICP 2005, 54 Countries, No Sales Tax

	<u>All Tradable Basic Headings</u>							$R^2$
	pc.income	pop	tariff	euro	landlocked	island	gini	
gdp	0.165*** (0.029)	-0.002 (0.013)	0.584 (0.760)	0.019 (0.042)	0.013 (0.070)	0.081* (0.047)	-0.072 (0.082)	0.356
cons	0.179*** (0.029)	-0.007 (0.012)	0.686 (0.709)	0.010 (0.043)	0.026 (0.068)	0.083* (0.044)	-0.033 (0.078)	0.363
hh.cons	0.177*** (0.031)	-0.007 (0.013)	0.492 (0.711)	0.013 (0.044)	0.028 (0.069)	0.077 (0.047)	-0.048 (0.086)	0.356
gni	0.165*** (0.028)	-0.003 (0.013)	0.623 (0.758)	0.020 (0.042)	0.020 (0.068)	0.086* (0.046)	-0.061 (0.082)	0.358
gni.atl	0.160*** (0.028)	-0.003 (0.013)	0.482 (0.780)	0.025 (0.042)	0.023 (0.068)	0.087 (0.048)	-0.071 (0.087)	0.355
ppp.gdp	0.185*** (0.056)	0.007 (0.017)	-0.382 (0.995)	0.059 (0.049)	0.006 (0.077)	0.089 (0.071)	-0.149 (0.109)	0.299

	<u>Apparel and Footwear Basic Headings</u>							$R^2$
	pc.income	pop	tariff	euro	landlocked	island	gini	
gdp	0.163*** (0.041)	-0.016 (0.024)	-1.014 (1.233)	-0.025 (0.043)	0.009 (0.060)	-0.053 (0.087)	-0.115 (0.134)	0.645
cons	0.187*** (0.041)	-0.023 (0.021)	-0.666 (1.165)	-0.039 (0.041)	0.027 (0.060)	-0.053 (0.078)	-0.068 (0.127)	0.674
hh.cons	0.186*** (0.044)	-0.023 (0.022)	-0.844 (1.171)	-0.036 (0.041)	0.029 (0.060)	-0.059 (0.081)	-0.083 (0.130)	0.666
gni	0.162*** (0.041)	-0.018 (0.024)	-0.342 (1.242)	-1.007 (0.042)	-0.024 (0.053)	0.015 (0.086)	-0.106 (0.136)	0.645
gni.atl	0.153*** (0.041)	-0.017 (0.024)	-1.237 (1.248)	-0.017 (0.042)	0.018 (0.058)	-0.046 (0.089)	-0.118 (0.141)	0.633
ppp.gdp	0.182*** (0.072)	-0.008 (0.027)	-1.971 (1.448)	0.015 (0.042)	0.003 (0.058)	-0.045 (0.111)	-0.192 (0.147)	0.573

Regressand: Price level of Basic Heading in each country, relative to price level in Spain, in logs.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors clustered by country in parentheses.

All Tradable BHs: N. Obs 3286 (Spain is numéraire), Fixed Effects 61 (relative to BH 1).

Apparel/Footwear BHs: N. Obs 159 (Spain is numéraire), Fixed Effects 2 (relative to BH 1).

Table 28: Per-Capita Income and Price of Tradables, ICP 2005, 29 Countries, No Sales Tax

All Tradable Basic Headings								
	pc.income	pop	tariff	euro	landlocked	island	gini	$R^2$
gdp	0.251*** (0.022)	0.006 (0.012)	3.013*** (0.940)	-0.061 (0.042)	-0.077** (0.035)	0.118** (0.056)	-0.257*** (0.065)	0.438
cons	0.282*** (0.023)	-0.008 (0.012)	2.905*** (1.022)	-0.073* (0.040)	-0.065** (0.029)	0.096 (0.059)	-0.169*** (0.059)	0.440
hh.cons	0.292*** (0.022)	-0.009 (0.012)	2.575*** (0.810)	-0.078** (0.039)	-0.074*** (0.026)	0.086 (0.061)	-0.226*** (0.060)	0.442
gni	0.249*** (0.021)	0.002 (0.012)	3.051*** (0.923)	-0.059 (0.042)	-0.071** (0.031)	0.124** (0.056)	-0.256*** (0.062)	0.440
gni.atl	0.244*** (0.020)	0.002 (0.012)	3.366*** (0.897)	-0.053 (0.041)	-0.067** (0.031)	0.124** (0.055)	-0.299*** (0.064)	0.441
ppp.gdp	0.363*** (0.050)	0.027 (0.017)	2.408** (1.119)	-0.039 (0.052)	-0.087 (0.059)	0.167** (0.069)	-0.460*** (0.113)	0.387

Apparel and Footwear Basic Headings								
	pc.income	pop	tariff	euro	landlocked	island	gini	$R^2$
gdp	0.117*** (0.034)	0.018 (0.018)	0.245 (1.633)	-0.047 (0.049)	-0.038 (0.055)	0.081 (0.076)	-0.475*** (0.116)	0.588
cons	0.135*** (0.038)	0.012 (0.021)	0.269 (1.646)	-0.053 (0.048)	-0.032 (0.054)	0.070 (0.076)	-0.432*** (0.116)	0.596
hh.cons	0.140*** (0.038)	0.011 (0.019)	0.107 (1.577)	-0.056 (0.048)	-0.036 (0.054)	0.065 (0.077)	-0.459*** (0.115)	0.598
gni	0.117*** (0.034)	0.017 (0.019)	0.264 (1.665)	-0.046 (0.049)	-0.035 (0.055)	0.084 (0.075)	-0.475*** (0.116)	0.590
gni.atl	0.115*** (0.034)	0.017 (0.019)	0.413 (1.700)	-0.043 (0.049)	-0.033 (0.055)	0.084 (0.074)	-0.495*** (0.117)	0.591
ppp.gdp	0.165*** (0.061)	0.028 (0.020)	-0.131 (1.590)	-0.035 (0.053)	-0.042 (0.062)	0.104 (0.082)	-0.570*** (0.119)	0.552

Regressand: Price level of Basic Heading in each country, relative to price level in Spain, in logs.

\*, \*\*, \*\*\* indicates significance at 10%, 5%-level, 1%-level. Standard errors clustered by country in parentheses.

All Tradable BHs: N. Obs 1736 (Spain is numéraire), Fixed Effects 61 (relative to BH 1).

Apparel/Footwear BHs: N. Obs 84 (Spain is numéraire), Fixed Effects 2 (relative to BH 1).

## Supplementary Appendix VIII: List of Countries

Country	Tax sample?	Country	Tax sample?	Country	Tax sample?
Armenia		Guinea		New Zealand	Y
Australia	Y	Hong Kong	Y	Nigeria	
Austria	Y	Hungary	Y	Norway	Y
Azerbaijan		Iceland		Pakistan	Y
Bangladesh		India		Paraguay	Y
Belarus		Indonesia	Y	Peru	Y
Belgium	Y	Iran		Philippines	
Benin		Ireland	Y	Poland	Y
Bolivia		Israel		Portugal	Y
Botswana	Y	Italy	Y	Romania	Y
Brazil	Y	Japan	Y	Russia	Y
Bulgaria	Y	Jordan		Rwanda	
Burkina Faso		Kazakhstan		Senegal	
Burundi		Kenya	Y	Singapore	Y
Cambodia		Korea, Rep.		Slovak Rep.	Y
Cameroon		Lao PDR		Slovenia	Y
Canada	Y	Latvia	Y	South Africa	Y
Central Afr. Rep.		Lesotho		Sri Lanka	
Chile	Y	Lithuania	Y	Swaziland	
China		Luxembourg	Y	Sweden	Y
Colombia	Y	Macao	Y	Switzerland	Y
Cote d'Ivoire		Macedonia		Tajikistan	
Croatia		Madagascar		Tanzania	
Cyprus	Y	Malawi		Thailand	
Czech Rep.	Y	Malaysia	Y	Tunisia	
Denmark	Y	Mali		Turkey	Y
Ecuador	Y	Malta	Y	Uganda	
Egypt		Mauritania		Ukraine	
Estonia	Y	Mauritius		United Kingdom	Y
Ethiopia		Mexico	Y	United States	Y
Finland	Y	Mongolia		Uruguay	Y
France	Y	Morocco		Venezuela	
Gambia		Mozambique		Vietnam	
Germany	Y	Namibia		Zambia	Y
Ghana		Nepal		Spain (numéraire)	Y
Greece	Y	Netherlands	Y		