

Firm-Level Mechanisms for Export Price Determination

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How do firms choose their prices and quality for their export destinations?

- Linder Hypothesis
- Shipping the good apples out
- Data aggregated to product-destination-level

Theories on Firm Quality choices

- 1 Firm specific products
- 2 Firm specific quality
- 3 Destination specific quality
- 4 Relatively more product firms have larger market penetration

Sources

- Chilean transaction-level dataset for 2009
 - Unit Value: Free-on-board
- World Bank's World Development Indicators: GDP and GDP per Capita (GDPc)
- CEPII: Foreign Countries' Distances

Created Variables

- Firm Size
- Firm Type: Single vs Multi
- Firm's Product Quality: Low vs. High
- Manufactured Products

$$\begin{aligned} \log(\text{UnitValue}_{p,d,f}) = & \beta_1 \log(\text{GDP}_d) + \beta_2 \log(\text{GDP}_{c_d}) + \beta_3 \log(\text{Distance}_d) \\ & + \beta_4 \log(\text{Size}_f) + \sum_{p=1}^P \alpha_p \text{Product}_p + \epsilon_{p,d,f} \end{aligned} \quad (1)$$

p - product
d - destination
f - firm

Model Results: Export Destination Characteristic Analysis

Model: $\log(\text{Unit Value}) = \text{Covariates} + \text{Product Dummies}$

Covariates	(1) Agg.	(2) S,L	(3) S,H	(4) M,L	(5) M,H
log(GDP)	-0.0179*** (0.0017)	-0.0528+ (0.0286)	0.0975 (0.0723)	-0.0177*** (0.0033)	-0.0617*** (0.0076)
log(GDPc)	0.07902*** (0.0034)	0.1139* (0.0563)	-0.1042 (0.1518)	0.0632*** (0.0064)	0.0992*** (0.0144)
log(Distance)	0.0371*** (0.0038)	0.0007 (0.0623)	-0.0854 (0.1482)	0.0804*** (0.0068)	0.0265+ (0.0159)
log(Firm Size)		0.0630*** (0.0182)	0.0435 (0.0631)	0.0411*** (0.0026)	-0.0485*** (0.0071)
Type	N/A	Single	Single	Multi	Multi
Quality	N/A	Low	High	Low	High
Firms		942	324	2,013	1,189
Destinations	137	54	45	114	97
Products	3372	568	243	2,521	1,413
Observations	19,796	2,144	545	83,313	25,672

Significance Level: *** < 0.001, ** < 0.01, * < 0.05, + < 0.1

(1): Aggregated to product-destination level. (2): Single and low quality type firms. (3): Single and high quality type firms. (4): Multiple and low quality type firms. (5): Multiple and high quality type firms.

Model: Export Destination Likelihood Analysis

$$\begin{aligned} Pr(\text{Destination}_{p,d,f}) &= \beta_1 \log(\text{GDP}_d) + \beta_2 \log(\text{GDP}_{c_d}) + \beta_3 \log(\text{Distance}_d) \\ &+ \sum_{p=1}^P \alpha_p \text{Product}_p + \epsilon_{p,d,f} \end{aligned} \quad (2)$$

p - product
d - destination
f - firm

Model Results: Export Destination Likelihood Analysis

Model: Pr(Destination) = Covariates + Product Dummies					
Covariates	(1) All	(2) S,L	(3) S,H	(4) M,L	(5) M,H
log(GDP)	0.0152*** (0.0004)	0.0119*** (0.0017)	0.0148*** (0.0025)	0.0141*** (0.0006)	0.01778*** (0.0010)
log(GDPc)	-0.0110*** (0.0007)	-0.0173*** (0.0030)	-0.0007 (0.0048)	-0.0156*** (0.0011)	-0.0067*** (0.0018)
log(Distance)	-0.0544*** (0.0008)	-0.0311*** (0.0040)	-0.0112 ⁺ (0.0061)	-0.0583*** (0.0014)	-0.0483*** (0.0023)
Type	N/A	Single	Single	Multi	Multi
Quality	All	Low	High	Low	High
Firms	4,893	942	324	2,013	1,189
Destinations	137	129	116	137	137
Products	3372	568	243	2,521	1,413
Observations	339,211	11,585	4,708	113,101	42,787

Significance Level: *** < 0.001, ** < 0.01, * < 0.05, + < 0.1

(1): All firms. (2): Single and low quality type firms. (3): Single and high quality type firms. (4): Multiple and low quality type firms. (5): Multiple and high quality type firms.

Models: Firm Characteristic Analysis

$$\begin{aligned} \log(\text{UnitValue}_{p,d,f}) &= \beta_1 \log(\text{GDP}_d) + \beta_2 \log(\text{GDPc}_d) + \beta_3 \log(\text{Distance}_d) \\ &+ \beta_4 \text{Single} + \beta_5 \log(\text{GDP}_d) * \text{Single}_f + \beta_6 \log(\text{GDPc}_d) * \text{Single}_f \\ &+ \beta_7 \log(\text{distance}_d) * \text{Single}_f + \sum_{p=1}^P \alpha_p \text{Product}_p + \epsilon_{p,d,f} \quad (1.s) \end{aligned}$$

$$\begin{aligned} \text{Pr}(\text{Destination}_{p,d,f}) &= \beta_1 \log(\text{GDP}_d) + \beta_2 \log(\text{GDPc}_d) + \beta_3 \log(\text{Distance}_d) \\ &+ \beta_4 \text{Single} + \beta_5 \log(\text{GDP}_d) * \text{Single}_f + \beta_6 \log(\text{GDPc}_d) * \text{Single}_f \\ &+ \beta_7 \log(\text{distance}_d) * \text{Single}_f + \sum_{p=1}^P \alpha_p \text{Product}_p + \epsilon_{p,d,f} \quad (2.s) \end{aligned}$$

p - product
d - destination
f - firm

Model Results: Firm Characteristic Analysis

Covariates	(1) log(Unit Value)	(2) Pr(Destination)	
log(GDP)	-0.0176*** (0.0017)	0.0155*** (0.0004)	
log(GDPc)	0.0753*** (0.0034)	-0.0113*** (0.0006)	
log(Distance)	0.036*** (0.0038)	-0.0565*** (0.0009)	
Single	-1.4039*** (0.2227)	-0.2003*** (0.0258)	
log(GDP)*Single	-0.0297* (0.0142)	-0.0030* (0.0012)	Model: (1): log(Unit Values) = covariates + product dummies
log(GDPc)*Single	0.2555*** (0.0278)	0.0035 (0.0022)	(2): Pr(Destination) = covariates + product dummies
log(Distance)*Single	-0.0205 (0.0286)	0.0238*** (0.0027)	
Firms	4,893	4,893	Significance Level: *** < 0.001, ** < 0.01, * < 0.05, + < 0.1
Destinations	137	137	
Products	3,372	3,372	
Observations	354,678	339,211	

Findings

- Firms cater to their destination
 - Firm and quality type matter
- Firms are more likely to export to destinations where they have to discount
- Single-type firms have lower quality
- Single-type firms are less sensitive to destination characteristics