

Trading Apparel: Developing Countries in 2005

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How will 2005 affect exporting countries' shares of US imports?

Our Hypotheses:

☐ **QRs matter.**

Relatively restricted countries will see their shares rise.

☐ **Costs matter.**

Countries with relatively lower production costs will see their shares rise.

☐ **Qualitative factors matter.**

Companies will source more from countries with better infrastructure, political stability, trade and investment policies, etc.

Our Approach

- Estimate the determinants of exporting countries' shares of US imports, using data from 9 countries and 106 apparel products in 2002
 - Incorporate export tax equivalents of QRs
 - Incorporate qualitative factors identified by CEOs at 14 major companies as critical to their sourcing decisions
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Conceptual Framework (1)

□ US demand function

- differentiated goods; CES utility

$$C_i = \left(\frac{P_i}{P}\right)^{-s} Y, \quad P = \left[\sum_{j=1}^N (P_j)^{1-s}\right]^{-1/s}$$

□ Supplier i 's profit in the United States

- small suppliers; QR modeled as export tax

$$\Pi_i = \frac{P_i x_i}{(1+t_i)(1+e_i)(1+r_i)} - a.W_i - b.W_i.x_i$$

Conceptual Framework (2)

□ Equilibrium share of U.S. imports

$$s_i = \frac{C_i}{\sum_{j=1}^N C_j} = \frac{P_i^{-s}}{\sum_{j=1}^N P_j^{-s}} = \frac{[b_i \cdot W_i \cdot (1+t_i)(1+e_i)(1+r_i)]^{-s}}{\tilde{P}}$$

Export tax equivalent of QRs

- License prices collected for nine exporters: Bangladesh, Cambodia, China, Hong Kong, India, Indonesia, Macau, Pakistan, and Taiwan
- Converted to an annual U.S. dollar price per square meter equivalent (SME)
- Export tax equivalent (ETE):

$$e_{ij} = L_{ij} / (UV_{ij}^{fob} - L_{ij})$$

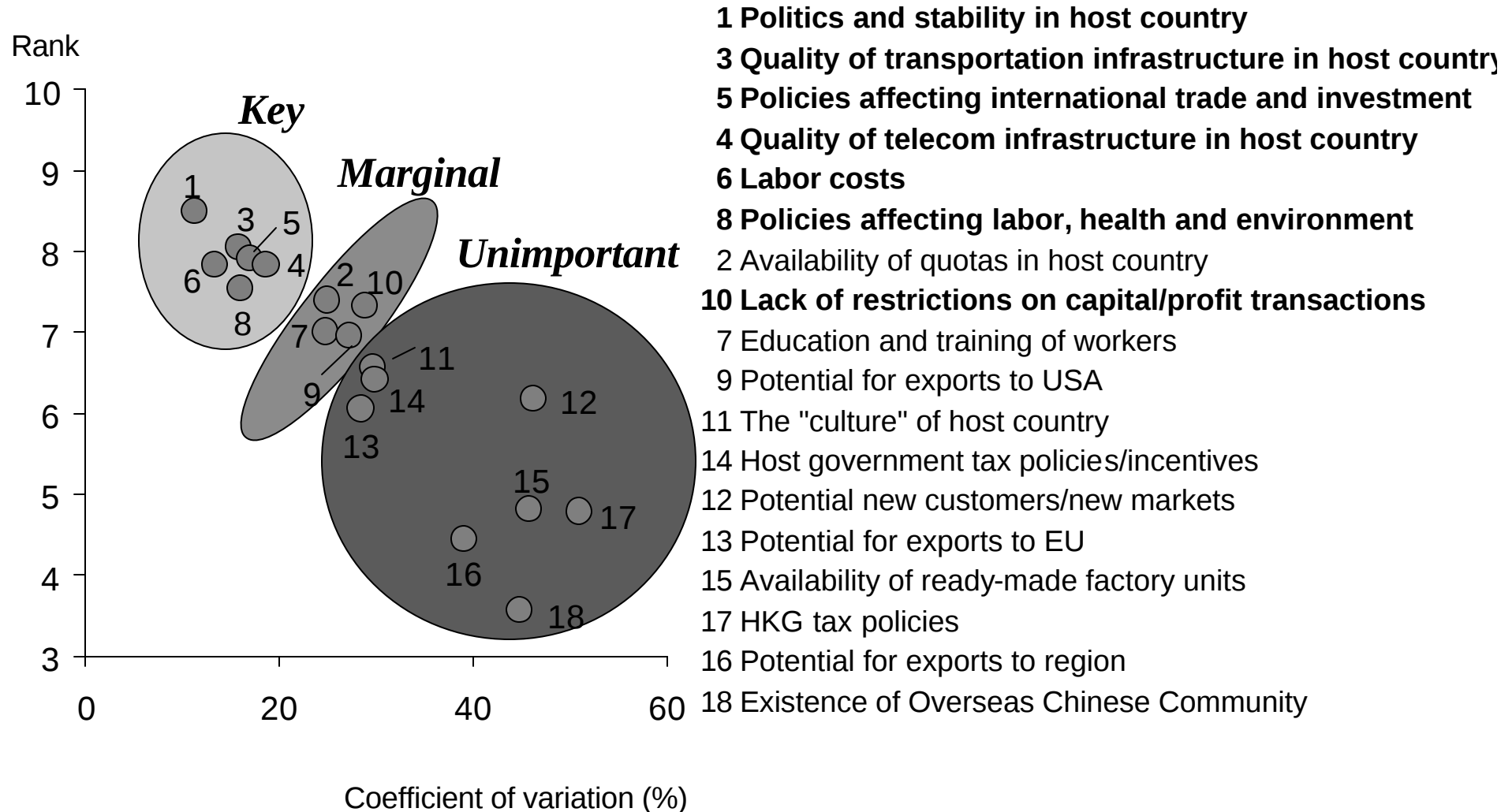
Average Textile and Apparel ETEs, 2002

Supplier	Average Apparel ETEs <i>Percent</i>	Average Textiles ETEs <i>Percent</i>
Bangladesh ¹	21.56	0
China	19.74	9.74
Hong Kong	18.62	1.46
India	12.48	18.42
Pakistan	11.26	11.91
Macau ¹	9.81	0
Indonesia¹	5.41	0
Cambodia¹	3.87	0
Taiwan	0.7	1.38

Qualitative Factors

- ❑ CEOs at 14 companies were asked to rank 18 factors influencing their decisions to purchase textiles & apparel or establish production facilities
 - ❑ Each factor was ranked between 10 (very important) and 1 (very unimportant)
 - ❑ These companies had activities throughout Asia and around the world
 - ❑ The same companies and the same CEOs were surveyed in 2000 & 2003
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Average Ranking of Factors Influencing Investment Decisions (2000, 2003)



Qualitative factors (indices)

<i>Supplier</i>	Trade/Inv. Policies	Lbr/Hlth/ Env. Pol.	Telecom. Infra.	Transport Infra.	Capital Restrictions
Bangladesh	52	52	68	76	2.23
China	49	36	58	54	1.83
Hong Kong	21	19	5	6	9.7
India	47	63	56	56	1.33
Indonesia	64	63	64	61	6.53
Taiwan	27	14	18	22	7.53

- Sources: Global Competitiveness Report; Economic Freedom of the World Report.

Estimation

$$\ln(s_i) = a_1 + a_1 \ln(b_i . W) + a_2 \ln(1 + t_i) \\ + a_3 \ln(1 + e_i) + a_4 \ln(1 + r_i) + a_5 \ln(\tilde{P})$$

- Pooled Data: cross-country, over products
 - GLS, cross-section heteroskedasticity correction
 - 2 specifications: with and without qualitative factors
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Descriptive Statistics: Averages, 2002

<i>Supplier</i>	Shares of US Apparel Imports (percent)	Cost per unit (\$/SME)	Average Tariff, Import Weighted (percent)	Shipping Time ¹ (days)	Shipping Distance ¹ (nautical miles)
Bangladesh	7.91	2.89	15.47	27.1	9123
Cambodia	5.14	4.47	15.96	22.6	8438
China	39.16	6.27	9.87	15.0	6404
Hong Kong	10.02	7.26	16.44	14.9	6335
India	9.93	5.43	15.35	25.0	10053
Indonesia	6.46	4.68	17.69	22.5	8135
Macau	2.55	6.22	18.33	27.2	6370
Pakistan	4.83	4.93	16.27	26.0	10513
Taiwan	7.14	3.95	21.39	14.3	6094

The Impact of QRs on Exporters' Shares of U.S. Imports

	(1)		(2)	
<i>Variable</i>	<i>Coeff</i>	<i>t-Stat</i>	<i>Coeff</i>	<i>t-Stat</i>
Constant	-5.64	-27.19	-5.58	-24.59
Cotton Dummy	-0.85	-6.02	-0.51	-3.88
Wool Dummy	-0.23	-1.47	-0.26	-1.84
MM Fiber Dummy	-0.67	-4.08	-0.58	-3.93
Log Costs per unit	-0.99	-14.08	-1.08	-15.25
Log ETE	-1.97	-4.93	-3.90	-10.67
Log Tariff	-4.19	-4.53	-1.66	-1.95
Log World Price	0.83	8.69	0.89	10.00
Log Days ³ per Dollar Shipped	-0.61	-38.54	-0.54	-33.22
<i>Country Dummies</i>	no		yes	
R-squared	0.69		0.78	
Adjusted R-squared	0.69		0.77	
F-statistic	203.25		158.23	
Prob(F -statistic)	0.00		0.00	
Durbin-Watson stat	1.47		1.67	
Observations	730		730	

The Impact of QRs and Qualitative Factors on Exporters' Shares of U.S. Imports

<i>Variable</i>	<i>Coeff</i>	<i>t-Stat</i>	<i>Variable</i>	<i>Coeff</i>	<i>t-Stat</i>
Constant	-13.74	-5.57	Trade/Inv. Policies ⁵	8.87	6.18
Cotton Dummy	-0.58	-3.80	Lbr/Hlth/Env. Pol. ⁵	-2.40	-7.75
Wool Dummy	-0.22	-1.28	Telecom. Infra. ⁵	-1.35	-0.89
MM Fiber Dummy	-0.55	-3.22	Capital Restrictions ⁶	-0.47	-8.04
Log Costs per unit	-1.17	-14.22	Transport Infra. ⁵	-2.26	-1.99
Log ETE	-3.85	-10.01			
Log Tariff	-2.29	-2.20			
Log World Price	0.99	9.46			
Log Days ³ per Dollar Shipped	-0.52	-28.49			
R-squared	0.76				
Adjusted R-squared	0.76				
F-statistic	128.31				
Prob	0.00				
DW stat	1.68				
Observations	532				

Conclusions

- ❑ Shares of US imports are highly responsive to the restrictiveness of the existing QRs.
 - ❑ Lower tariffs and lower production costs significantly increase import share.
 - ❑ Import shares respond strongly (though inelastically) to shorter transport time.
 - ❑ Import shares respond strongly to better transportation infrastructure and better policies on health, labor, & environment.
 - ❑ Better measures are needed to capture differences in political stability, trade/investment policies, telecom, and other key factors.
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