

A Fortative Matching of Exporter and Importer

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Today's talk : Capability Sorting of Exporter and Importer



Difficulties in Identifying Exporter-Importer Sorting

- A natural approach may be a correlation approach: calculate correlations of some measure of capability of exporters and importers across matches.
- However, this approach is not feasible/difficult for typical trade data:
 - Customs transaction data do not contain domestic sales, employment, or capital.
 - Multi-product firms: Data on product-level capability are rarely available.
 - No established method of estimating capability (e.g. TFP) when sorting exists.
 - Few to few matching: Correlations of size-related variables (e.g. trade volume) of exporters and importers could be mechanically positive.

Theory: Beer-Melitz model

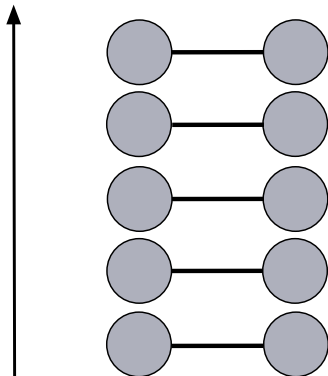
- “Becker+Melitz” matching model of suppliers (exporters) and final producers (importers)
 - Two-sided heterogeneity of suppliers and final producers à la Becker (73) and firm heterogeneity in capability à la Melitz (03).
 - Exogenous constraints on the number of trading partners (e.g. due to transaction costs) à la Becker (73).
 - Positive assortative matching (PAM) by capability due to complementarity.
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Natural Experiment

- US removed import quota under the Multifibre Arrangement (MFA) at the end of 2004.
 - Massive entry of Chinese exporters in quota-bound products.
- We compare quota-bound and other products on how US and Mexican firms switch the main partners. We find:
 - US importers switched their Mexican partners on those making greater pre-shock exports.
 - Mexican exporters switched their US partners on those making fewer pre-shock imports.
 - These switches more frequently occurs in quota-bound products.
- This pattern is consistent with PAM, but not with NAM or no sorting (under normal circumstances).

Thought xp rim nt: Pr - hoc

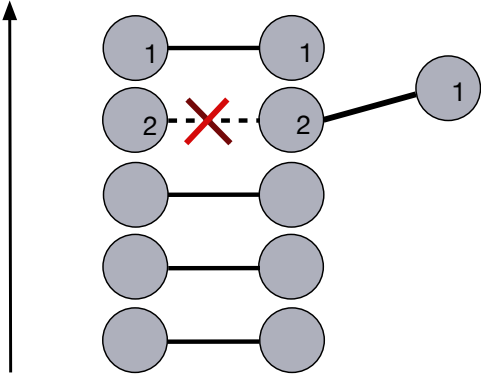
- Positive assortative matching holds.



Entry of Foreign Supplier

- Chinese firms enter and some US firms switch.

□



Existing Matching Between Unstable

- Some exporters are left without partners.

capability



Adjustment to Shoc : -matching

- Room for re-optimization for matching (re-matching).



Post-hoc : Partner Upgrading and Downgrading

- Re-matching: partner upgrading for US and partner downgrading for Mex.



Data

Data

- Mexico's customs records for textile/apparel (HS50-63).
 - The identifiers of Mexican exporters and US importers, transaction value, product code (HS 6 digit).
- Excluded:
 - Exports by individuals and courier companies (e.g. FedEx).
 - Exporters who do not report importers for more than 80% of exports (mostly duty free zone trade, Maquiladora/IMMEX).
 - Transactions from January to May since data starts from June 2004.
- US quota information.
 - Indicators on whether Chinese exports in each HS 6 product faced binding quotas by the US (created from the indicators by Brambilla et al.(10)).

Finding 1: Approximately One-to-one Matching

Main-to-Main Share

- Main-to-main match for a given product.
 - the exporter is the largest (main) seller for the importer of the product.
 - at the same time, the importer is the largest (main) buyer for the exporter of the product.
- Main-to-main share.

$$\text{Main-to-main share} = \frac{\text{Trade volume of main-to-main matches}}{\text{Aggregate trade volume}}$$

- If this main-to-main share is close to one, we call matching is approximately one-to-one.

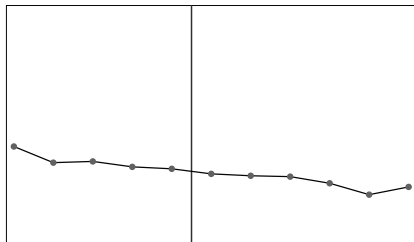
Main-to-Main Share : Aggr gat T xtil Appar l

		Main-to-Main Share			
Year	All	Processing Trade		Trade Protection	
		Maquila	Non-Maquila	MFA Quota-bound	Quota-free
004	0.77	0.77	0.78	0.78	0.80
005	0.79	0.79	0.79	0.8	0.79
006	0.80	0.80	0.83	0.81	0.8
007	0.83	0.83	0.83	0.84	0.85

Finding 2: Systematic Re-matching

The End of the Multi-Fiber Arrangement

- The US removed import quotas on certain textile/apparel products from non-NAFTA countries in January 1, 2005.
- The increase in Chinese exports reduced other countries' exports to the US (Brambilla, Handelwal and Schott 10; Harrigan and Barrows 09).



- The increase is driven by new Chinese exporters who have various capabilities (Handelwal, Schott and Fei, 13) $dM_C > 0$ in our model.

Specification

For firm i

US Import r' Partn r Chang

$$Upgrading_{igs}^{US} = \alpha_1 Binding_{gs} + \alpha_s + \epsilon^{US}$$

M x Export r' Partn r Chang

$$Upgrading_{igs}^{Mex} = Binding_{gs} + s + u_{igs}^m$$

$$Downgrading_{igs}^{Mex} = 4 Binding_{gs} + s + u_{igs}^m$$

	<i>Upgrading</i> ^{Mex} ()		<i>Downgrading</i> ^{Mex} (4)	
	Linear Prob.	Probit	Linear Prob.	Probit
	(1)	()	(3)	(4)
Binding	-0.003	-0.003	0.17***	0.150***
	(0.00)	(0.044)	(0.035)	(0.019)
HS FEs	Yes	Yes	Yes	Yes
Obs.	601	5	601	601

significance: *** 1%; ** 5%; * 10%; SE clustered at HS6

- Average probability of downgrading in sample = 0.15.

Summary

- Natures of trade data make it difficult to directly document capability sorting of exporters and importers.
- We have developed an alternative approach for identifying capability sorting: Becker-Melitz model with a natural experiment.
 - Rematching in response to a shock to increase the mass of suppliers.
- The rematching pattern of the Mexico-US apparel trade at the end of the Multi-Fibre Arrangement we have found:
 - Exporter-importer matching is positive assortative on capability.
 - This suggests that trade liberalization improves matching of firms in the world.

Implication of Our Finding

- Importance of matching for firms.
 - We confirm the premise of the literature on information frictions causing mis-matching (e.g. Casella & Rauch, 02; Rauch & Casella, 03; Rauch & Trindade, 03).
 - Investigating the roles of friction in the light of matching will be an important future research.
- “Good buyers” and “bad buyers” (e.g. Chaney, 14).
 - Every exporter prefers to trade with high capable importers, but only high capable exporters can do so.