Voluntary Standards in International Trade: A Heterogeneous Firms Approach

William McGuire
University of Washington Tacoma

Ian Sheldon
The Ohio State University

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Motivation

- Widespread concern over negative environmental/labor/safety consequences of trade liberalization

- WTO does not allow restraint of trade based on process standards
  - Voluntary industry standards (e.g. ISO 9001, ISO 14001, “Fair Trade”) may fill this gap
Objectives

- Develop formal theoretical framework describing export participation and adoption of voluntary standards

- Characterize link between liberalization and adoption of voluntary standards
Model Framework

- Employ heterogeneous firms and trade framework (Podhorsky, 2012; Melitz, 2003)

- Monopolistically competitive firms choose export and voluntary certification status to maximize profit
  - Differentiated by productivity, indexing effective costs of exporting/certification
Model Framework

- Firms choose among four possible strategies:

<table>
<thead>
<tr>
<th></th>
<th>No Certification</th>
<th>Certification</th>
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<tbody>
<tr>
<td>No Exports</td>
<td>“LN”</td>
<td>“HN”</td>
</tr>
<tr>
<td>Exports</td>
<td>“LE”</td>
<td>“HE”</td>
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- “LE” and “HN” cannot coexist in equilibrium
Model Equilibrium

\[ \pi \]

\[ \theta \]

\[ \theta^A \]

\[ \theta^B \]
Comparative Statics

- How do productivity cut-offs change with trade policy parameters?

- Effect may depend on policy instrument in question
  - Fixed export costs (non-tariff barriers)
  - Transportation costs (tariffs)
Comparative Statics: Fixed Trade Costs

LN/LE/HE Case

<table>
<thead>
<tr>
<th>% Change from Baseline</th>
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<tbody>
<tr>
<td>$\theta^A$</td>
</tr>
<tr>
<td>$\theta^B$</td>
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<td>TQ</td>
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<td>P</td>
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Comparative Statics:
Transportation Costs

- LN/LE/HE Case

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<tr>
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<th>% Change from Baseline</th>
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<tbody>
<tr>
<td>$\theta^A$</td>
<td>+ 53%</td>
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<tr>
<td>$\theta^B$</td>
<td>+ 9%</td>
</tr>
<tr>
<td>TQ</td>
<td>- 3%</td>
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<tr>
<td>P</td>
<td>+ 23%</td>
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Conclusions

- Lowering fixed trade costs always decreases participation in the voluntary standard
  - Driven by competitiveness effect

- Lowering transportation costs may increase participation in the voluntary standard
  - If revenue effect dominates

- Raising trade barriers always reduces total quality and consumer welfare
Future Work

- Relax simplifying assumptions in model
  - Allow for trade between asymmetric countries
  - Allow for export status to affect certification costs and vice-versa

- Specify external damage function to expand welfare analysis
Thank you!