Asymmetric Tobacco Regulations and the Disease Haven Hypothesis

By Aaron Olanie, Gregmar Galinato, and Jonathan Yoder


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The Problem

• The World Health Organization (WHO) estimates tobacco use kills 5 million people annually worldwide
• The burden is heaviest in developing countries. More than 80% of the world’s smokers live in low- and middle-income countries
• Developing countries tend to be less regulated

The “Disease Haven” Hypothesis

• Asymmetric tobacco regulations between trading partners may result in a skewed flow of tobacco trade towards countries with less stringent regulations.
• Investigate the impact of tobacco regulations on the flow of tobacco trade

Objective

We employ a gravity equation to study the effect of asymmetric tobacco regulations between trading partners on the flow of tobacco trade.

Methods

• We estimate the gravity equation using a PPML estimator

Results using individual country regulation indices (unrestricted model)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exporter Marketing regulation index</td>
<td>2.3714***</td>
</tr>
<tr>
<td>Exporter Counter-advertising regulation index</td>
<td>3.6626***</td>
</tr>
<tr>
<td>Exporter Age regulation index</td>
<td>-1.4753***</td>
</tr>
<tr>
<td>Exporter Spatial regulation index</td>
<td>-1.8902***</td>
</tr>
<tr>
<td>Importer Marketing regulation index</td>
<td>1.7371***</td>
</tr>
<tr>
<td>Importer Counter-advertising regulation index</td>
<td>3.0286***</td>
</tr>
<tr>
<td>Importer Age regulation index</td>
<td>-1.0661***</td>
</tr>
<tr>
<td>Importer Spatial regulation index</td>
<td>-1.1405***</td>
</tr>
</tbody>
</table>

*** Indicates significance at the 1% level
** Indicates significance at the 5% level
* Indicates significance at the 10% level

Discussion

• Regulations appear to have different effects.
• Mixed results for both restricted and unrestricted model.
  • The restricted model suggests harmonizing counter-advertising and marketing regulations may reduce tobacco trade, while the negative age and spatial coefficients conflict with our hypothesis. The data does not support the restricted model.
  • The unrestricted results suggest counter-advertising and marketing regulations are effective in reducing exports but not imports, while age and spatial regulations reduce the flow of tobacco regardless of trade direction.
  • The negative exporter age and spatial coefficients may be explained if elasticity of supply and demand is such that a strict regulation reduces the equilibrium world price enough to reduce exports.

Conclusions

We have conflicting results. Both the restricted and unrestricted models partially support the disease haven hypothesis. The most noteworthy result may be that these regulations have different effects. Future research might attempt to explain the difference between the mechanism of the marketing and counter-advertising regulation and the age and spatial regulations.