Brazilian biofuels policies and impacts on world agricultural trade

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**Introduction**

Since end of 1980’s, there has been a reduction in governmental intervention in sugarcane production and distribution chain in Brazil. Currently, there is a mandate for blending anhydrous ethanol with gasoline, which relates to inflation control’s policy. Government establishes the blend of ethanol in gasoline according to gasoline prices and ethanol supply conditions. Since 2004, because of flex-fuel technology there has been an increasing demand for hydrated ethanol, which is used as a substitute for gasoline in Brazil; and a surge in investments (BNDES and FDI) to sugarcane processing plants. Ethanol exports are increasing, however their performance is jeopardized by trade barriers in importing countries (Table 1).

**Methodology**

- **PEATSim** - Partial Equilibrium Agricultural Trade Simulator (Stout and Abler, 2004)
- 13 countries/regions
- 32 products, including a biofuel module (ethanol, biodiesel and DDG) – Peters et al (2009)
- Gross trade model
- Base year: 2008 and projection time path until 2017

**Contribution of this paper**

Updated elasticities to model Brazilian ethanol, and projections on ethanol production (due to recent investments in Brazil)

**Shocks:** changes in consumption mandate; in BR sugar production and in tariffs charged by major players on ethanol

**Results and Discussion**

- **Scenario 1** – No tariff liberalization or neither changes in Brazilian mandate, only gas prices increasing 5% yearly.
  - World ethanol prices increase by 0.9% with relation to baseline
  - United States becomes exporter of ethanol

- **Scenario 2** – No tariff liberalization, only gas prices increasing 5% each year and reduction on BR mandate to 20% ethanol blend (5.6% of domestic ethanol demand)
  - World ethanol prices decrease by 7.4% and sugar prices do by 0.3% 
  - Brazil increases exports by 12.3% for ethanol and 0.36 for sugar

- **Scenario 3** – Ethanol tariff liberalization – cut of 20% each year; reduction of blend in consumption mandate in BR; gas prices increasing 5% yearly.
  - Although BR sugar production increases 0.36%, exports decreases and world prices vary by 0.5% 

- **Scenario 4** – Ethanol tariff liberalization – cut of 20% each year; reduction of blend in consumption mandate in BR; gas prices increasing 5% yearly; and an addition of 23% of sugar production in Brazil (due to new investments)

**Conclusions**

Brazil has reduced its governmental intervention on sugarcane, sugar and ethanol markets. However, currently, there are still a few policies that affect them. Illustratively, there is a blend mandate of anhydrous ethanol to gasoline, which varies from 20% to 28%.

**Literature**


**Acknowledgments**

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**Table 1 – Import tariffs for biofuels in selected countries.**

<table>
<thead>
<tr>
<th>Country</th>
<th>Ethanol</th>
<th>Biodiesel</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>2.5%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Brazil</td>
<td>13.8%</td>
<td>13.8%</td>
</tr>
<tr>
<td>India</td>
<td>180%</td>
<td>180%</td>
</tr>
<tr>
<td>Canada</td>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Note:** Before Feb/2003, blend of 25%; Feb/03 (20%); June/03 (25%); Feb/06 (20%); Nov/06 (23%); June/07 (25%); Jan/10 (20%); May/10 (25%)