Mexico’s Carbon Tax

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The rationale for environmental taxes

- Choice of instruments: Environmental taxes (Prices) vs Cap&Trade (Quantities)

<table>
<thead>
<tr>
<th></th>
<th>Taxes</th>
<th>Cap &amp; Trade</th>
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<tbody>
<tr>
<td>Higher certainty</td>
<td>higher certainty on costs,</td>
<td>Higher uncertainty on costs,</td>
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<tr>
<td>on costs,</td>
<td>higher uncertainty on outcomes</td>
<td>higher certainty on outcomes</td>
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<tr>
<td>Collection</td>
<td>Collection is easier as it can rely on existing capacities and institutions</td>
<td>Developing deep and liquid markets is a challenge</td>
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<td>General application</td>
<td></td>
<td>Issues of initial, and subsequent, allocations</td>
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- In practice, environmental taxes seem to be the most attractive choice for most emerging markets.
The rationale for environmental taxes.

1. Strategic complement for environmental policy.
2. *Green* revenue (better to tax bads than to tax goods)

- **Policy choice of instruments: correcting prices**
  - Prices (environmental taxes) give *certainty* to *costs, outcomes* depend on firms adoption of technology, substitutes, price elasticies..
  - Descentralized incentives: *wider reaching* than large emittors’ regulation or markets, plus lower implementation costs.

- **Fiscal policy: raise revenue with *minimum welfare loss***.
  - Ramsey rule: Low elasticity goods and services.
  - Double dividend: Reduce negative externalities, and less DWL in others.
The Carbon Tax in Mexico

• Part of a broad fiscal reform that was sent to Congress in 2013:
  
  o A fixed amount per ton of CO₂ content, for all fossil fuels.
  
  o The tax was set at US$ 5.7 per ton of CO₂ (average of most relevant carbon markets: EU-ETS, California, New Zealand).
  
  o Rates are adjusted annually for general inflation.
The Carbon Tax in Mexico

- Tax administration would be straightforward:
  - The carbon tax is paid at the production or import stages and can be credited, except for the final sale (similar mechanics to a VAT).
  - Collection and auditing is done by the revenue collection agency (SAT), on the same terms as other excise taxes.
The Carbon Tax in Mexico

• Well received in Congress, it was approved with some changes:
  
  o Lower average carbon pricing (US$3.7 per ton of CO₂).
  
  o Natural gas was taxed at zero. Argument: cleanest fossil fuel.
  
  o Only coal used as fuel is subject to the tax.
  
  o The tax can be paid with internationally-recognized certificates of emission reductions, at market values.

• To comply with international aviation treaties, jet fuel is also taxed at zero (through Executive decree).
## Carbon tax’s performance in Mexico

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<tbody>
<tr>
<td></td>
<td>MX cents per unidad</td>
<td>US$ per Ton CO₂</td>
<td>MX per unit</td>
</tr>
<tr>
<td>Gasolinas</td>
<td>10.4 per liter</td>
<td>3.44</td>
<td>10.8 per liter</td>
</tr>
<tr>
<td>Diesel</td>
<td>12.6 per liter</td>
<td>3.56</td>
<td>13.1 per liter</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>0.0 per m³</td>
<td>0.0</td>
<td>0.0 per m³</td>
</tr>
<tr>
<td>LPG</td>
<td>5.9 - 7.7 per liter</td>
<td>3.01</td>
<td>6.1 - 8.0 per liter</td>
</tr>
<tr>
<td>Aviation fuel</td>
<td>(12.4 per liter)</td>
<td>--</td>
<td>(12.9 per liter)</td>
</tr>
<tr>
<td>Fuel oil</td>
<td>13.5 per liter</td>
<td>3.57</td>
<td>14.0 per liter</td>
</tr>
<tr>
<td>Cokes</td>
<td>15.6 per Kg</td>
<td>1.09</td>
<td>16.2 per kg</td>
</tr>
<tr>
<td>Coal</td>
<td>23.9 per Kg</td>
<td>1.11</td>
<td>28.7 per kg</td>
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<tr>
<td><strong>Total (+otros)</strong></td>
<td></td>
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*Average exchange rate= 14.58
Additional Considerations

• Support from domestic think tanks and NGOs was important in media and policy discussions.

• Build on previous success. Mexican Congress had approved its Climate Change Law in 2012, where carbon taxes were mentioned as potential instruments.

• Having the “greenest” option (natural gas) taxed at zero increases political acceptance (similar to the tax for pesticides, part of the same bill).

• Neighbors matter: lower fuel taxes in some neighboring countries reduced maneuvering room.
Effect of Carbon taxes

• Counterfactual.
  – Previous price level, subsidies level, percentage?
  – Price elasticity.  Gasoline: -0.8, Diesel: -0.35, LPG:-0.22
  – Increase in price 1.3%, reduction of 1% emissions.
  – Aprox 1.8 million tons CO\textsubscript{2} per year.

• Cross-price elasticities:
  – Renewables & natural gas vs fuel oil and coal
  – Logistics, EEcapital, Biofuels vs gasolines & diesel.
  – Requires measurement.  Double effect?
Fossil fuel subsidies

- Mexico, fossil fuel subsidies 1% of GDP. Not OECD trend.
- Pattern similar to Indonesia, Iran, Nigeria, not quite Venezuela.
- G20 commitment.

Fuel tax revenue as % of GDP (2012)
Fossil fuel subsidies phase-out

- Slow and steady real price increases allowed us to reduce fossil-fuel subsidies, even before the recent fall in oil prices.
- From subsidies 1% of GDP, to taxes of 1% of GDP in 6 years.
- Currently diesel & gasolines tax > US$75 per ton of CO₂

Gasoline real prices in Mexico and the US, 1990 – 2015
(base: May 2015)
Mexico’s carbon tax 2016 challenges: Develop links with international carbon markets.

• Possibility of paying in value of CERs; government as aggregator.

• Heterogeneous linkages to carbon markets.

• From mexican consumers/firms to international differentiated responsibility players.

• Not a budget allocation.

• Double effect: price signal and whoever purchases de additional reductions. Not double counted.

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