“Tackling Carbon Emissions: Some Key Policy Issues”

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Carbon Taxes vs. Cap and Trade

- Economists see carbon emissions as a “missing-market” problem
- Debate over carbon taxes vs. cap and trade is about how best to mimic market solution, i.e., *prices vs. quantities*
- **Carbon taxes**: if firms want to emit CO₂, they are directly charged “price” set by policymaker
- **Cap and Trade**: policymaker sets total cap on CO₂, and firms required to have emissions permits - key issue is distribution of permits, i.e., auction vs. free allocation with trading
Carbon Taxes vs. Cap and Trade

- In principle, both policies generate same price of carbon, i.e., carbon tax equals traded/auctioned permit price
- Firms have incentive to reduce abatement costs under both
- Distributional implications:
  - cost of complying with cap and trade lower for firms
  - tax generates revenue, while cap and trade only generates revenue if some/all permits are auctioned
- Taxes and permit auctions may generate “double-dividend”
Carbon Taxes vs. Cap and Trade

- Choice driven by information requirements: i.e., level of uncertainty over social costs of emissions vs. abatement costs
  - Cap and trade should be used if social costs are uncertain, i.e., avoids getting price wrong
  - Taxes should be used if abatement costs are uncertain

- Common view: better to get quantities rather than prices wrong
- Also, more complex than just choice of prices – rate at which future damages from climate change are discounted is critical
## Estimates of Social Cost of Emissions

**Social Cost of CO$_2$ (2007 $ per metric ton of CO$_2$)**

<table>
<thead>
<tr>
<th>Discount Rate</th>
<th>5.0%</th>
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<td>11</td>
<td>37</td>
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<td>2050</td>
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Unilateral Climate Policies

- Failure to reach international agreement on reduction of carbon emissions – increased focus on unilateral climate policy
- Carbon taxes applied in Australia, tradable permits adopted in EU and recently Québec
- Unilateral policies often include some type of border measure targeted at energy-intensive imports, i.e., “carbon tariffs”
- Logic of border measures: carbon leakage and loss of competitiveness
Would “Carbon Tariffs” be WTO-Legal?

- Unilateral climate policy should be accompanied by “carbon tariffs” against free-riding countries, i.e., influence international terms of trade – but concern over WTO-legality
- If treated as border tax adjustments (BTAs) for domestic taxes, fit principle of a destination-based taxation system
- WTO rules do allow for BTAs as long as they are neutral in terms of their effects on trade
- Electricity typically a non-traded good, but downstream energy-intensive goods are traded – would BTAs still be WTO-compliant?
Possible Impact of BTAs

- BTAs would likely only be applied to small set of energy-intensive imports, i.e., steel, aluminum, paper, cement and chemicals
- Trade-neutrality implies maintaining pre-policy import volume of energy-intensive goods, i.e., cannot be used in discriminatory fashion against foreign producers with higher carbon emissions
- WTO-compliant BTAs solve leakage problem, but do not necessarily restore industry competitiveness
- BTAs may have unintended consequence of “facilitating collusion” in concentrated, energy-intensive sectors such as aluminum