

# TRADE AND CLIMATE CHANGE MODELLING WORKSHOP

Overview of research topics, insights, challenges, and  
takeaways of workshop with inputs from WTO, IMF, OECD, WB  
and UNCTAD

22-23 February 2022

# Research topics

1. Climate change mitigation policies.
  - Choice of instruments: pricing policies, regulations, subsidies
  - Measuring carbon and greenhouse gases embodied in trade (relevant for BCA discussions)
  - Measuring effective carbon taxes; considering regulations and how (relevant for BCA discussions)
2. Modelling net zero scenarios
  - New technologies: uncertainty and impact on trade patterns
  - Impact of new technologies and choice of instruments on trade patterns and trade policies
3. Impact of climate change
  - Bottom-up (model all shocks) versus top-down (aggregate loss functions)
  - Shifting trade patterns
4. Climate change adaptation
  - Role of trade in adapting to climate change
5. Role of trade policies
  - Tariffs clean/dirty goods
  - Environmental goods and services trade

# Takeaways from the workshop: insights

1. Carbon pricing at a global level is economically and environmentally best but difficult to achieve
  - International carbon price floor (ICPF) is concrete proposal to introduce global carbon pricing. However:
    - If only high income countries impose it, carbon leakage may persist.
    - There would still be need for a redistributive mechanism to follow common but differentiated responsibility (CBDR).
  - Also other policies might be needed: regulatory measures; green subsidies; phasing-out fossil fuel subsidies; direct interventions
2. Calculating effective carbon prices is complicated, because of implicit policies
  - Explicit carbon pricing: Carbon tax, emissions trading scheme (ETS), “feebates”
  - Implicit carbon pricing: Fuel and commodity taxes/subsidies, tradeable performance standards

## Takeaways from the workshop: insights

3. Well-designed border carbon adjustment policies can tackle carbon leakage and loss of competitiveness
4. Mitigation policies can have large impact on trade patterns
  - Mitigation policies will shift the composition of trade and GVCs towards greener goods where developed economies have a comparative advantage.
  - BCAs could lead to new opportunities for countries that are relatively carbon efficient in key tasks along the GVCs; in sectors like electronics and motor vehicles.

# Takeaways: challenges

1. Need for more knowledge on impact non-pricing policies:
  - Standardized approaches to model such policies
  - Impact on trade of different types of measures
  - Calculation of carbon pricing equivalents of regulations
2. Model net zero scenarios and impact on trade
3. Need for more knowledge on role of environmental goods and services (EGS) trade in climate change mitigation
4. BCA comes with many challenges:
  - They fail to incentivize carbon pricing in partner countries sufficiently.
  - They distort the terms of trade in favour of the high income countries.
  - Not clear how to account for non-price based regulations in other regions.

## Key Takeaways: concluding remarks

1. Climate change will feature prominently in the research agendas of the participatory institutions.
2. There is scope for cooperation between the research teams of different institutions
  - To exploit synergies
  - To enable harmonized messaging
3. There are many challenges and open research questions in modelling of trade and climate change nexus
  - Impact of net zero on trade flows
  - Impact of different policies (pricing versus regulation) on trade flows
  - Comparison of pricing and command-and-control measures
  - Impact of environmental goods trade

# Published Work

1. Some presentations made references to already published work:
  1. Parry, Ian. "Proposal for an international carbon price floor among large emitters." IMF Climate Notes 2021.001 (2021).
  2. Cosbey, Aaron, et al. "Developing guidance for implementing border carbon adjustments: lessons, cautions, and research needs from the literature." Review of Environmental Economics and Policy (2020).
  3. Böhringer, Christoph, et al. "Potential impacts and challenges of border carbon adjustments." Nature Climate Change (2022): 1-8.
  4. Vernon, Nate, Ian Parry, and Simon Black. "Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies." (2021).
  5. United Nations Conference on Trade and Development (2021) A European Union Carbon Border Adjustment Mechanism: Implications for developing countries, UNCTAD, Geneva.
  6. Chepeliev, Maksym, et al. "Pandemic, Climate Mitigation, and Reshoring." (2022).