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Proposal for a national inventory adjustment for trade in the presence of border carbon adjustment: Assessing carbon tax policy in Japan



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HIGHLIGHTS

- The inequality in GHG accounting caused by border carbon adjustment presented.
- National inventory adjustment for trade under border carbon adjustment proposed.
- Policy impacts on international competitiveness and carbon leakage assessed.
- Practical issues related to the national inventory adjustment for trade discussed.

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ABSTRACT

In this paper we pointed out a hidden inequality in accounting for trade-related emissions in the presence of border carbon adjustment. Under a domestic carbon pricing policy, producers pay for the carbon costs in exchange for the right to emit. Under border carbon adjustment, however, the exporting country pays for the carbon costs of their exports to the importing country but not be given any emission credits. As a result, export-related emissions will be remained in the national inventory of the exporting country based on the UNFCCC inventory approach. This hidden inequality is important to climate policy but has not yet been pointed out. To address this issue we propose a method of National Inventory Adjustment for Trade, by which export-related emissions will be deducted from the national inventory of the exporting country and added to the national inventory of the importing country which implements border carbon adjustment. To assess the policy impacts, we simulated a carbon tax policy with border tax adjustment for Japan using a multi-region computable general equilibrium model. The results indicate that with the National Inventory Adjustment for Trade, both Japan's national inventory and the carbon leakage effects of Japan's climate policy will be greatly different.

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1. Introduction

Border carbon adjustment (BCA) measures have been discussed intensively in domestic climate policy debates in the EU, the US, Australia and Japan to address the protection of domestic industrial competitiveness and the prevention of carbon leakage (Houser et al., 2008; Persson, 2010; Reinaud, 2005; van Asselt and Brewer, 2010). Depending on the nature of domestic carbon pricing policy, BCA measures can take two different forms. One is border tax adjustment (BTA), under which a carbon tariff will be levied on imported products. Another form is to require importers to surrender allowances under a cap-and-trade system.

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Under BCA, imported commodities are required to pay for the carbon costs, usually at the same rate as domestically produced commodities. In essence, a BCA measure can be regarded as an extension of domestic climate policy to imports. Domestically, under a carbon tax system, emitters pay the carbon tax for their emissions. Under an emissions trading system, emitters pay to buy the emission permits. In both cases, emitters pay for the carbon costs in exchange for the right to emit (see the two-directional arrows within the boundary of Country A in Fig. 1). If the same rationale is applied to BCA, the exporting country should pay for the carbon costs of their exports to the importing country and in return receive the emission credits issued by the importing country, similarly to the mechanism of CDM projects. By receiving the emission credits, the exporting country can deduct export-related emissions from its national inventory. The deducted emissions will then be added to the national inventory of the importing country. However, none of the existing BCA proposals provide such a mechanism.

Current national inventory approach of the Kyoto Protocol requires that countries report “emissions and removals taking place within national (including administered) territories and offshore areas over which the country has jurisdiction” (UNFCCC, 1998). Based on this territorial emissions approach, emissions corresponding to the exports are included in the national inventory of the exporting country. If the BCA-implementing country does not issue emission credits to the target countries, export-related emissions will remain in the national inventory of the exporting country though they paid for the carbon costs (see the one-directional arrow cross border of Country A and B in Fig. 1). Since national inventories reported to the UNFCCC are used as reference for ranking national emissions, setting national binding targets and assessing historical and accumulated contributions to global climate change, they can be considered as intangible costs to countries. Following current national inventory approach and the policy arrangement under BCA, the exporting country has to bear two kinds of carbon costs. One is the tangible carbon costs that the producers of the exporting country pay for entering into the market of the BCA-implementing country. The other one is the intangible costs of national inventory which includes the

emissions accountable for producing the goods that are exported to the BCA-implementing country (see Fig. 1).

This is a hidden but real inequality between the exporting country and the importing country. BCA on the one hand can level up the playing field for foreign producers to the same level of domestic producers; but on the other hand it will cause a new inequity for the exporting country because the BCA-implementing country charges on the carbon costs of imports but does not issue any emission credits to offset the emissions from the exporting country.

Two ways can help address this issue. First, if the exporting country also implements a comparable domestic climate policy, the exporting country should be exempted from BCA (see Fig. 2). Therefore, the producers in both countries will pay for their carbon costs to their respective countries. The playing field for producers in Country A and B therefore can be considered equivalent. When Country B exports to A, Producer b of Country B does not need to pay for the carbon costs to A. The emissions related to the exports from B to A will be included in the national inventory of Country B (i.e. 20 Kt-CO₂). Given all countries implement a comparable domestic climate policy, there is no need for

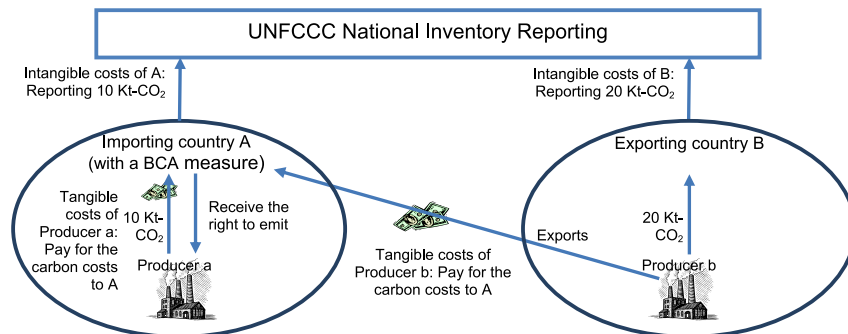


Fig. 1. Current national inventory approach in the presence of border carbon adjustment.

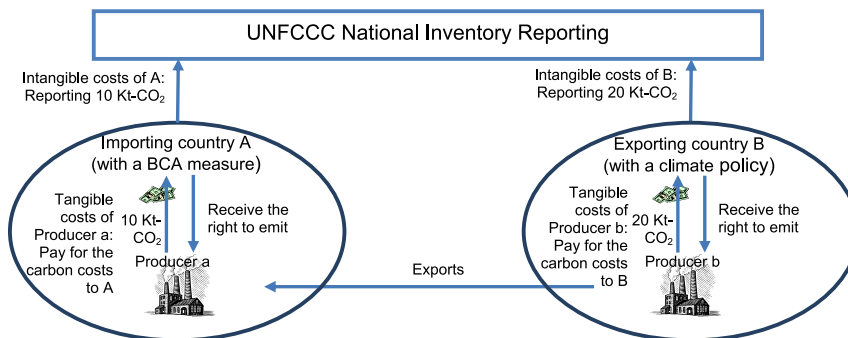


Fig. 2. Exemptions from border carbon adjustment.

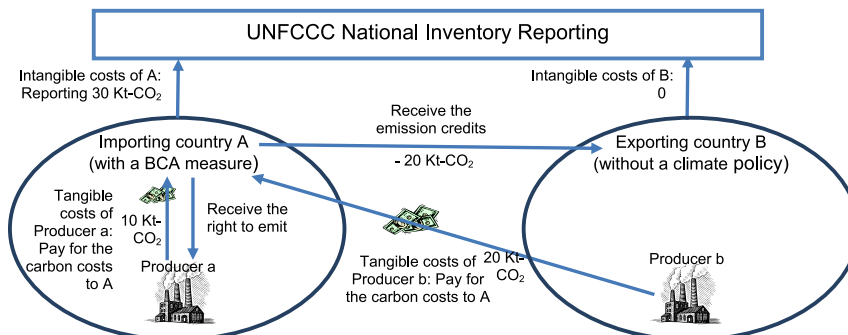


Fig. 3. National inventory adjustment for trade.

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