Welfare-optimal policy response to border carbon adjustments: An emerging economy perspective*

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Abstract

This paper develops a Melitz-style model of asymmetric countries to analyze the optimal environmental policy response when facing a trading partner's Border Carbon Adjustment (BCA). By examining how a unilateral increase in emissions taxes affects endogenous productivity cut-offs, we show that a BCA reduces the relative welfare costs of raising domestic carbon prices. The mechanism operates through a reversal of the policy's effect on the partner's export threshold, which expands imported consumption. Calibrating the model with Indian firm-level data on emissions, productivity, market structure and export performance, we quantify the magnitude of these welfare effects for India when aligning its carbon price with that of the European Union. Structural asymmetries, such as lower productivity in the BCA-affected country, reduce its incentives to raise carbon prices, while firm heterogeneity further amplifies the welfare costs of higher carbon taxes and dampens the welfare smoothing potential provided by a trading partner's BCA.

JEL codes: F18, H23, Q56, Q58
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