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## Abstract

In the “Post-Kyoto” Era, climate change has become a serious worldwide concern, though the international community has not yet identified a cooperative solution that satisfies all parties. The carbon tariffs, which proposed by some developed countries to address competitiveness concerns and carbon leakage from unilateral reduction measures, may impose significant hardships on developing countries. This paper tries to design a global cooperation scheme against the carbon tariffs. A differentiated carbon taxation scheme is introduced based on the principle of ability to pay (CTAP). An advanced forecasting system named the energy version of the global trade analysis model (GTAP-E) was used to compare the different impacts of carbon tariffs and the CTAP scheme. The results show that CTAP is better than carbon tariffs in terms of global GDP, welfare, and emissions reduction. The CTAP scheme could yield less welfare deterioration for developing regions than the carbon tariffs, and also lessens the competitive concerns of developed countries. The proposed CTAP scheme provides new ideas for international cooperative strategies to address climate change.

**Keywords:** [Differentiated carbon tax scheme](#) ▪ [carbon tariffs](#) ▪ [energy version of global trade analysis model](#) ▪ [ability to pay](#)

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