

Trade, Strategic Environmental Policy, and Global Pollution

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Abstract

This paper examines effects of international trade in a model with global pollution that accumulates over time due to production emissions in each country. If countries cooperatively determine their emission tax rates and if there are no trade costs, free trade has no effect on global pollution and welfare: under free trade, cooperation of environmental policy results in the same unique and stable steady state as under autarky. If environmental policies are determined noncooperatively, there may be multiple equilibria, depending on the initial stock of pollution and governments' strategies for emission tax rates. This means that, in the policy game equilibrium, free trade may or may not reduce the global pollution. Focusing on the lower and the upper bound of pollution stock, however, free trade increases each of them and there can be gains from trade.

Key Words: Intraindustry trade; Global pollution; Environmental policy; Differential game

JEL classification: F18; H23; C73