Firm Incentives for Environmental R&D under Non-cooperative and Cooperative Policies

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Abstract

This paper investigates firm incentives for developing environmentally clean technologies in a simple two-country model with international oligopoly, and compares them under price and quantity regulations with and without policy cooperation between governments. It is shown that under any policy regime firm incentives are either excessive or insufficient from a welfare point of view, depending on the marginal environmental damage and the degree of emission spillovers. In addition, if the marginal damage is relatively large, a quantity instrument encourages innovation more than a price instrument. Further, under either regime of price and quantity regulations, policy cooperation (harmonization) necessarily enhances welfare in each country, but it does not necessarily increase firms' innovation incentives.

Keywords Technology innovation; International oligopoly ; Environmental policy; Policy harmonization

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