Dynamic Incentives and Permit Market Equilibrium in Cap-and-Trade Regulation*

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Abstract

I evaluate the welfare consequences of cap-and-trade regulation by accounting for the dynamic nature of regulation and firm's behavior. I develop a heterogeneous-firm dynamic equilibrium model of abatement investment, permit trading with transaction costs, and permit banking. I estimate the model using data from the US Acid Rain Program, one of the first large-scale cap-and-trade systems. Simulations reveal that although the permit banking system leads to lower abatement costs, the aggregate level of banking is excess due to transaction costs. Equilibrium distribution of emissions is more dispersed across firms in the outcome with the least abatement costs.

Key words: *cap-and-trade regulation, dynamic equilibrium model, gains from trade, permit banking, transaction costs, electricity industry.*
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