

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

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Abstract

While the cap-and-trade program was originally proposed as a static regulation, its implementation introduces dynamic incentives such as saving (banking) of emissions permits. I examine the performance of the program by accounting for dynamic regulatory design and firms' incentives in the context of the US Acid Rain Program. I develop and estimate a dynamic equilibrium model of abatement investment and permit trading and banking, subject to transaction costs. Simulations reveal that although permit banking improves the cost-efficiency, the aggregate level of banking is excess due to transaction costs. Distribution of emissions would be more dispersed in the first best.

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

JEL Code: D22, L94, Q52, Q58

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