

Climate Policies, Macroprudential Regulation, and the Welfare Cost of Business Cycles*

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Abstract

We study the performance of alternative climate policies in a dynamic stochastic general equilibrium model that includes an environmental externality and agency problems associated with financial intermediation. Polluting producers, who finance their capital acquisition by combining their own resources with loans from banks, are subject to environmental regulation, are hit by idiosyncratic shocks, and can default. The welfare analysis suggests that a quantity restriction on emissions entails substantially lower costs of the business cycle than a carbon tax as long as firm leverage is high, agents are sufficiently risk-averse, and the available abatement cost function is not too convex. Simple macroprudential policy rules can go a long way in reining in business cycle fluctuations so to align the performance of price and quantity pollution policies and reduce the uncertainty inherent to the chosen climate policy tool.

JEL classification: Q58; E32.

Keywords: Carbon Tax; Cap-and-Trade; Business Cycle; Dynamic Stochastic General Equilibrium Model.

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