Separate Markets for Externalities: Regional versus State-by-State Regulation of a Global Pollutant

Jose Miguel Abito Christopher R. Knittel
Konstantinos Metaxoglou Andre Trindade *

March 20, 2017

PRELIMINARY & INCOMPLETE—PLEASE DO NOT CITE

Abstract

How inefficient are separate markets for an environmental externality compared to a single market? We show that the inefficiencies associated with separate markets for carbon dioxide emissions are mitigated by the fact that firms that own plants across these markets participate in a single market for electricity, and will optimally make their output and investment decisions taking into account the distribution of emission permit prices. Despite lacking the "invisible hand" of a single emissions market, profit-maximizing firms implicitly coordinate across separate markets.

Keywords: Incomplete regulation, Investment, Emissions, Energy, Externalities.

JEL codes: L1, L5, L9, Q4, Q5.

*Abito: Business Economics and Public Policy Department, Wharton School, University of Pennsylvania abito@wharton.upenn.edu. Knittel: Shultz Professor of Applied Economics, Sloan School of Management, Director of the Center for Energy and Environmental Policy Research, MIT and NBER, knittel@mit.edu. Metaxoglou: Carleton University, konstantinos.metaxoglou@carleton.ca. Trindade: Getulio Vargas Foundation Graduate School of Economics, andre.trindade@fgv.br. We thank seminar participants at Cornell, Michigan, Northwestern, NYU-Stern, World Bank, AEA 2017, AEA 2016, IIOC 2016, EARIE 2016, EEA 2016, and the "LCM Workshop" for useful comments. We also thank Erin Mansur for providing some of the data used in the paper, and Mushin Abdurrahman from PJM for sharing details about PJM's studies of the Clean Power Plan that helped us significantly improve the paper. Abito received funding for this project from the Kleinman Center for Energy Policy and from the Dean's Research Fund, at the University of Pennsylvania. The usual disclaimer applies.