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Catching up and falling behind: Cross-country evidence on the impact of the EU ETS on productivity growth

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ABSTRACT

This paper identifies the impact of the European Union Emissions Trading System (EU ETS) on firm productivity. We estimate a stylized version of the neo-Schumpeterian model, which incorporates innovation and productivity catch-up as two potential sources of firm's productivity growth, while at the same time accounting for persistent productivity dispersion within industries. This dynamic model allows us to differentiate the potential effects of the EU ETS on total factor productivity (TFP) growth depending on the level of firms' technological advancement. The identification is based on a difference-in-difference approach exploiting the incomplete participation requirements of the EU ETS and the rich panel structure of firm-level data for 8 EU countries from 2002 to 2012. We find evidence that the policy effects on TFP growth are highly heterogeneous and depend on the distance to the technological frontier, measured as the highest TFP in each year-industry. Productivity effects are positive for firms that are close to the frontier, but they turn negative for firms operating far behind the frontier.