Being a New Entrant or an Incumbent Matters: Emissions Abatement and EU ETS

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Abstract

Do environmental regulations provide incentives towards cleaner production? This key question explores whether environmental policies drive technological innovation among incumbents or if greener practices emerge through new market entrants. This study examines the role of different agents using Italian industrial plant data from the European Emission Trading System (ETS). The 2013 shock in free allowances (FA) allocation provides a natural experiment to assess the effects of stricter regulations. The findings show that a large share of FA lowers entry costs, allowing dirtier firms to enter, while FA reductions encourage the entry of cleaner, more efficient producers. Incumbents, however, largely maintain existing technologies, showing limited adaptation to regulatory changes. To explain these mechanisms, the study develops a partial equilibrium model with incumbents and new entrants facing a carbon tax and heterogeneous abatement costs. Unlike existing models, it introduces FA heterogeneity, showing that reducing FA raises entry costs and selects for cleaner firms. A key result is that while incumbents have little incentive to upgrade their technologies, probably due to high costs, new entrants adopt cleaner practices. The model also highlights how entry barriers interact with regulatory design, shaping industry composition. These theoretical insights align with the empirical findings, highlighting that environmental policies structured to phase out FA can drive cleaner production by influencing entry dynamics rather than directly altering the behavior of existing firms.