

Research Project

Can cap-and-trade be beneficial for firm cost efficiency?

Project funded by own resources

Project title Can cap-and-trade be beneficial for firm cost efficiency?

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Organisation / Research unit

Departement Wirtschaftswissenschaften / Public Economics / Public Finance (Hintermann)

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A persistent concern in the literature on climate policy is that the emissions abatement, which is achieved via environmental regulation, has potentially adverse effects on firms' economic performance. I investigate this issue in the context of the European Union Emissions Trading Scheme (EU ETS) and the German manufacturing sector. My investigation uses confidential data from an administrative firm-level production census. As a measure of the economic performance, I estimate cost efficiencies and their determinants for narrowly defined industries with a stochastic cost frontier (SCF) analysis. In order to directly compare cost efficiencies across treatment groups, I use a stochastic meta frontier (SMF) analysis. I provide additional evidence of the causal impact of the EU ETS on various types of firms' costs with a difference-in-differences (DD) framework. My results indicate that the EU ETS regulation has resulted in a small but significant increase in costs across the German manufacturing sector. This increase is driven mostly by an increase in energy and capital costs. I demonstrate that the potential to increase cost efficiency exists for most industries in the German manufacturing sector. The analysis of the drivers of cost efficiency confirms that in most industries, exporting firms are more cost efficient than their counterparts. In contrast, the results show that innovating firms and firms that are regulated by the EU ETS are less cost efficient than unregulated firms.

Keywords SFA, EU ETS, stochastic frontier, climate change, efficiency

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Published results

4607307, Zarkovic, Maja, Cap-and-trade and produce at least cost? Investigating firm behaviour in the EU ETS, Publication: Discussion paper / Internet publication

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