Electricity Taxation, Firm Production and Competitiveness: Evidence from German Manufacturing [*]

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Abstract

Electricity taxes have strongly gained in importance over the past years. Intended as a corrective carbon tax or as an instrument to finance renewable energy sources (RES), electricity taxes can represent an important cost factor for the industry with potential negative implications for firm competitiveness. Based on comprehensive data from the German Manufacturing Census, this paper investigates the causal impact of an exemption from the RES levy, accounting for roughly 30% of the average industry electricity price, on plant-level electricity consumption, fuel input choices, and competitiveness indicators. Employing a matching difference-in-differences estimator, we find that plants increase electricity consumption by about 5-7.5% in response to the exemption. We show that exempt plants substitute electricity for gas and reduce own electricity generation capacities. By contrast, we do not find evidence that the exemption had an impact on competitiveness indicators. Investigating response heterogeneity, we find that electricity-intensive plants adjust energy inputs more strongly in response to an exemption. Export-oriented firms respond less, which contrasts the policy objective to foster the competitiveness of exporters in international markets.

Keywords: renewable energy; electricity tariff; manufacturing industry; energy policy.
JEL classification codes: D22; H23; Q41; L60.

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