

The demand for bioenergy in the Swedish manufacturing industry

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Extended Abstract

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Abstract Summary

The increasing use of bioenergy as an alternative to traditional fossil-based resources has become a focal point in global efforts to mitigate greenhouse gas emissions, improve energy security, and facilitate the transition to a sustainable economy. In the EU context, several policies and directives have been put in place to support, monitor, and potentially enhance the transition to, and development of, bioenergy. Relatively many firms still report zero use of bioenergy, indicating a potentially more complex demand structure than for other energy sources. This paper estimates industrial demand for bioenergy at both the extensive and intensive margins, using unique firm-level data from Swedish manufacturing and applying shift-share instruments to address endogenous prices. Our analysis reveals that higher fossil energy prices are associated with lower bioenergy use at the intensive margin, consistent with fossil energy and bioenergy behaving as complements in use. In contrast, higher electricity prices increase the probability of adopting bioenergy, suggesting substitution at the extensive margin, while conditional bioenergy demand responds positively to electricity prices, indicating complementarity in use at the intensive margin. More broadly, the findings highlight the importance of accounting for both margins in policy design. Failing to consider the extensive margin would lead to an underestimation of the effects of bioenergy and electricity prices on total bioenergy demand.

Presenting Author Biography

Associate professor in economics at Umeå university with particular research interest in environmental economics, electricity market and non-market valuation. My research has to a large extent been centered around non-market valuation in different contexts ranging from energy- and electricity markets to water quality and recreational fishing. Among other things, one main theme has been to better understand preferences for behavioral changes in the transition to renewable and intermittent energy sources.