NECCESSITY OR LUXURY GOOD? HOUSEHOLD ENERGY SPENDING AND INCOME IN BRITAIN 1991-2007

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Overview

The residential demand for energy has been growing steadily and this trend is expected to continue for the foreseeable future. Household spending on energy services tends to increase with income while changes in energy prices can affect low-income consumers disproportionally. We explore household total energy spending as well as electricity and gas spending separately. We use an extensive British household panel data with more than 77,000 observations for the 1991-2007 period to explore the drivers of energy spending. We analyse income as a main driver of energy spending and draw Engel spending curves for energy. The results show that Engel spending curves are S-shaped. They also indicate U-shaped income elasticities for energy spending, though these never reach unity and energy remains a necessity for households. A common shortcoming in the availability of energy prices at the household level is overcome by a new modelling approach to reflect within and between regional differences in energy prices. Long run changes in energy spending of households are approximated by exploring unit effects. Results suggest that income elasticity of energy spending are higher in the long run.

Method

This study is based on an econometric analysis of household panel data. Using empirical approaches for panel data analysis like fixed effects models we explore household energy spending. In this analysis we apply a conditional demand approach (see e.g. Baker et al., 1989; Meier and Rehdanz, 2010) but focus on the link between spending on different fuels and income. We control for a third-order function of income in order to detect inflexion points and discuss Engel curves for energy spending. We control for a set of drivers of energy spending such as building types, access to gas as well as a range of socio-economic characteristics such as household income. Further we control for impacts of energy prices taking into account within and between differences of energy prices for households.

Results

Our results show that Engel spending curves for energy are slightly s-shaped. Income elasticities of energy spending first decrease in income until an inflexion point is reached. If income rises beyond this point income elasticity for energy spending increases again.

Conclusions

The study a shows a dynamic link between energy spending and income changes. According to this result, policy measures of fixing budget threshold where basic needs are met seem infeasible.. Hence, we suggest more flexible policy approaches enabling households to find their individual utility-maximizing energy spending levels.

References

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