

INCREASING BLOCK RATE ELECTRICITY PRICING AND PROPENSITY TO PURCHASE ELECTRIC APPLIANCES: EVIDENCE FROM A NATURAL EXPERIMENT

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Overview

Characterizing how consumers respond to energy prices is an important avenue of research for the last 50 years. In particular, the extent to which the consumers invest in energy-efficient appliances following the changes in energy pricing policies has important implications in carbon mitigating policies.

This paper provides empirical evidence on the relationship between increasing-block-rate (IBR) pricing of electricity and the propensity of households to buy major electric appliances.

Methods

In this study, I combine the Russian Longitudinal Monitoring Survey (RLMS-HSE), a household-level panel data, with a variation in electricity tariff that results from a natural experiment in Russia. Using difference-in-differences specification I estimate the relationship between increasing-block-rate (IBR) pricing and the propensity of consumers to purchase major electric appliances.

Results

I find that households that face the IBR pricing are more than 25 percent (2 percentage points) more likely to purchase major electric appliances. Although I do not observe any energy efficiency indicators for the appliances, taking into account the robust trend of newer appliances becoming more energy-efficient, it is possible to propose that consumers purchasing new electric appliances are also purchasing more energy-efficient appliances.

Conclusions

To the best of my knowledge, this is the first study that combines household-level panel data, with variation resulting from a natural experiment to estimate the relationship between IBR pricing and the propensity of households to purchase electric appliances. Therefore, this paper can potentially close an important gap in the literature. The results of this paper also can potentially suggest that price-based energy policies are an effective tool not only in shaping the household's behavior but also in shaping the behavior towards higher energy efficiency, which is considered one of the lowest-cost opportunities for reducing carbon emissions.

Acknowledgements

The financial support was provided by the Grant Agency of Charles University (grant number 454120) and the European Union's H2020-MSCA-RISE project GEMCLIME-2020 under GA 681228 (secondments). Responsibility for any errors remains with the authors.