

Estimating residential electricity demand in Switzerland using household survey data: The role of appliance stock

Nina Boogen

CER-ETH, ETH Zürich

20. November, 2013

Abstract

In this study we use data from a household survey conducted in Switzerland in 2005 and 2011 to estimate the long- and short-run price elasticities of residential electricity consumption. We use the average price to estimate these price elasticities. We also construct a measure of the stock of appliances by aggregating the information on the major appliances owned by a household. This index is used in our electricity demand models to control for the effect of appliances on residential electricity demand. To account for potential endogeneity issues with the average price as well as the appliance stock index we adopt an instrumental variables approach to obtain consistent estimates of the price elasticity of electricity consumption. Our results suggest that the price elasticity is around -0.6. We conclude that Swiss households are price inelastic in electricity prices and this can be used for policy makers as well as by utility companies to design pricing instruments to modify electricity consumption.