

Abstract

Despite a plethora of empirical research on electricity demand, results regarding estimated price elasticities persist to be inconclusive. Our meta-analysis synthesizes 4521 estimates from 413 studies to explore the presence of publication and endogeneity bias. We code for over 100 variables to quantify the response of electricity consumers to price shifts. The price elasticity of electricity is inelastic and the short-run elasticity sample average of -0.231 is double (in magnitude) the short-run elasticity corrected for publication bias, which is -0.116. The long-run elasticity adjusted for publication bias is -0.303. We conclude that experimental studies, while also suffering from publication bias, report unbiased elasticities of -0.07. Our thesis also confirms a significant occurrence of p-hacking across multiple specifications. By employing Bayesian model averaging, we explore the heterogeneity among reported elasticities, finding that factors such as decreasing tariffs, demographics and fuel usage controls, daylight hours and number of citations critically influence the variability in findings. The average and marginal price of electricity and time of use tariffs play a negligible role in explaining the differences in estimated elasticities.

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