

A Review of the Literature on the Price Elasticity of Demand for Electricity

The results of this review are shown in three tables. Table 1 summarizes the results of several surveys of the academic literature on the price elasticity of electricity. Bohi (1981) was a particularly good early survey, while Espey and Espey (2004) have the most recent and comprehensive list of estimates. I haven't looked at all the surveys listed - a few were referred to in other papers, and I included that information in the table.

Based on a review of these surveys, the numbers that come up most often are 0.2 for the short run elasticity, and 0.7 for the long run. These come up several times, and are in the same range as other potential estimates, such as the medians from the Espey (2004) survey (0.28 and 0.81) and the results of the study preferred by Bohi (0.25 and 0.66).

These results are mostly for residential demand. There are fewer commercial and industrial studies to work with, and their results are even less consistent, so it might make sense to use the same estimates in all three sectors. There doesn't seem to be a consistent pattern as to which sectors show higher elasticities – possibly commercial elasticities could be slightly higher than residential or industrial, but it's not clear.

Since most of the studies reviewed in these surveys were old, I also looked at several recent studies, reviewed in Table 2. The results were not very consistent, and don't provide much basis for changing the conclusions from the earlier surveys.

Table 3 shows elasticities from energy models used by the EIA and other organizations. These tend to be a little lower than the averages from the academic literature. The simulation results from AEO2003 look like they could be good numbers to use, maybe an average of the results for the residential and commercial sectors: 0.15 for short run elasticity and 0.47 for long run.

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