

Price Responsiveness in the AEO2003 NEMS Residential and Commercial Buildings Sector Models

Table 2. Summary of Ranges of Residential and Commercial Elasticities from Dahl (1993)

Survey Source	Fuel	Data Type	Model Class	Short Run	Intermediate Run	Long Run	
Residential Sector							
Taylor (1977)	Electricity	Grouped	Grouped	-0.07 to -0.61	-0.34 to -1.00	-0.81 to -1.66	
	Natural Gas	Aggregate		0.00 to -0.16		0.00 to -3.00	
Bohi (1981)	Electricity	Aggregate	Static	-0.08 to -0.45		-0.48 to -1.53	
	Electricity	Aggregate	Dynamic	-0.03 to -0.49		-0.44 to -1.89	
	Electricity	Aggregate	Structural	-0.16		0.00 to -1.28	
	Electricity	Aggregate	Other	-0.18 to -0.54		-0.72 to -2.10	
	Electricity	Household	Dynamic	-0.16		-0.45	
	Electricity	Household	Static	-0.14		-0.7	
	Electricity	Household	Structural	-0.25		-0.66	
	Natural Gas	Aggregate	Static			-1.54 to -2.42	
	Natural Gas	Aggregate	Dynamic	-0.15 to -0.50		-0.48 to -1.02	
	Natural Gas	Aggregate	Structural	-0.3		-2	
	Natural Gas	Household	Dynamic	-0.28		-0.37	
Bohi & Zimmerman (1984)	Natural Gas	Household	Static			-0.17 to -0.45	
	Electricity	Aggregate	Static		0.00 to -1.57	-0.18 to -0.52	
	Electricity	Aggregate	Dynamic	0.00 to -0.35		-0.26 to -2.50	
	Electricity	Household	Structural	-0.20 to -0.76			
	Electricity	Household	Static		-0.55 to -0.71	-0.05 to -0.71	
	Electricity	Household	Structural	+0.04 to -0.67		-1.40 to -1.51	
	Natural Gas	Aggregate	Dynamic	-0.23 to -0.35		-2.79 to -3.44	
	Natural Gas	Aggregate	Dynamic	-0.03 to -0.05		-0.26 to -0.33	
	Natural Gas	Household	Static			-0.22 to -0.60	
	Dahl (1993) Prior Surveys	Fuel Oil	Grouped	Grouped	0.00 to -0.70		0.00 to -1.50
	Dahl (1993) New Studies	Electricity	Aggregate	Grouped	+0.57 to -0.80	-0.11 to -1.11	+0.77 to -2.20
Electricity		Household	Grouped	-0.02 to -0.97	-0.05 to -0.97	-0.38 to -1.40	
Natural Gas		Aggregate	Grouped	+0.02 to -0.35	1.86 to -2.41	1.56 to -3.44	
Natural Gas		Household	Grouped	-0.63 to -0.88	-0.08 to -1.80	-1.09 to -1.49	
Fuel Oil		Aggregate	Grouped	-0.10 to -0.59	-0.77 to -1.22	-1.85 to -3.5	
Fuel Oil		Household	Grouped	-0.18 to -0.19	-1.09 to -1.56	-0.62 to -0.67	
Commercial Sector							
Taylor (1977)	Electricity	Aggregate	Grouped	-0.24 to -0.54		-0.85 to -1.22	
	Natural Gas	Aggregate		-0.38		-1.45	
Bohi (1981)	Electricity	Aggregate	Dynamic	-0.17 to -1.18		-0.56 to -1.60	
	Natural Gas	Disaggregate	Static			-1.04	
Bohi & Zimmerman (1984)	Electricity	Disaggregate	Grouped		0.00 to -4.56	0.00 to -1.05	
	Natural Gas	Aggregate	Dynamic	0.00 to -0.37		0.00 to -2.27	
Dahl (1993) Prior Surveys	Fuel Oil	Grouped	Grouped	-0.30 to -0.61		-0.55 to -0.70	
Dahl (1993) New Studies	Electricity	Aggregate	Grouped	0.00 to -0.82	-0.59 to -0.98	3.36 to -4.74	
	Natural Gas	Aggregate	Grouped	-0.16 to -0.37	1.92 to -2.68	0.06 to -2.27	
	Fuel Oil	Aggregate	Grouped	-0.07 to -0.19	-0.3	-0.40 to -3.50	

Notes: Single entries imply only one model/data combination in the category. Blanks denote no model/data combinations in the category. Static models do not include multi-period adjustments to prices. Dynamic models include lagged adjustments and distinguish short-run from long-run responses. Structural models include appliance stock data. Aggregate data usually are national or State-level data. Household data are observations on individual households. Grouped classifications denote ranges over multiple data types or model classes, or where a range of results is reported in Dahl (1993). Fuel oil elasticities from prior surveys include Taylor (1977) Bohi (1981), and Bohi and Zimmerman (1984), but the summary in Dahl (1993) aggregates across studies.

Source: C. Dahl, *A Survey of Energy Demand Elasticities in Support of the Development of the NEMS*, Contract No. DE-AP01-93EI23499 (Washington, DC, October 1993).