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Gas demand in times of crisis: energy savings by consumer group in Germany

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Supplementary information

Table S1: Overview of surveys among German households on saving energy in response to the current crisis.

Survey	Summary
Bitkom	<p>Method: Interviews via telephone during March 2022 with 1,003 respondents, asking the following questions related to reductions in natural gas consumption:</p> <ol style="list-style-type: none">1. Has your personal approach to the issues of electricity and energy consumption in your household changed against the background of the Russian war of aggression on Ukraine, i.e., do you, for example, consciously use less electricity, consciously heat less, or have switched to green electricity?2. Which of the following applications or measures to save electricity and energy do you use considering the Russian war of aggression on Ukraine? Among others, the investigated measures included saving hot water, e.g., through showing instead of taking a bath; use public transport instead of individual cars, reduce space heating) <p>Responses:</p> <ol style="list-style-type: none">1. Significant changes were reported by 16% and small changes were reported by 32% of the respondents. Meanwhile, 47% of the respondents reported no changes.2. Of those that consciously use less energy, 40% reported to reduce warm water and 22% report to reduce space heating.
YouGov	<p>Method: Online survey conducted from 14 to 31 March 2022 across ten European countries with about 12,000 respondents (2,111 in Germany), asking the following question related to reductions in natural gas consumption:</p> <ol style="list-style-type: none">1. In which concrete ways, if any, has the increase in prices for electricity, gas, and heating affected you so far? Among others, the options from which respondents could choose included “I use less heating” and “I changed my habits to save energy”. <p>Responses:</p> <ol style="list-style-type: none">1. Both items (“I use less heating” and “I changed my habits to save energy”) were selected by 31% of the respondents (across all countries; individual results for Germany are not available).
Tado	<p>Method: 2,500 customers of tado°, a company offering intelligent heating thermostats, asking the following two questions:</p> <ol style="list-style-type: none">1. Has your heating and energy consumption changed since the start of the war in Ukraine?2. If so, why are you saving more energy now? <p>Responses:</p> <ol style="list-style-type: none">1. 55% of the respondents reported to save more energy.2. The reported reasons were saving money (55%), reducing dependency on Russian gas (27%), and protecting the environment (18%).

Table S2: Main specification OLS regression results for the following model specifications: small consumers (left), large consumers (center), power sector (right).

Note that the unit of crisis response dummies is (TWh/month) and the 95% confidence intervals are reported in brackets. Finally, the significance levels are reported as *** for 0.001 ** for 0.01, and * for 0.05.

	Small consumers	Industrial consumers	Power sector	
Adjusted R ²	0.998	0.985	0.850	
Crisis response dummies	Sep 2021	0.4619* [0.099, 0.824]	-1.1925*** [-1.774, -0.611]	-2.6412** [-4.164, -1.118]
	Oct 2021	-1.1297* [-2.155, -0.104]	-2.2707*** [-3.004, -1.537]	-3.7804*** [-5.271, -2.290]
	Nov 2021	-0.8727*** [-1.349, -0.397]	-1.0956* [-1.953, -0.238]	-1.0370 [-2.092, 0.018]
	Dec 2021	-0.2504 [-1.041, 0.540]	-1.9165*** [-2.450, -1.383]	0.3157 [1.625, 2.256]
	Jan 2022	-0.5793 [-1.392, 0.233]	-2.6283*** [-3.035, -2.221]	-2.1795* [-4.048, -0.311]
	Feb 2022	-0.3283 [-2.453, 1.797]	-2.1320*** [-3.052, -1.212]	-4.2776*** [-6.400, -2.155]
	Mar 2022	-5.2205*** [-6.263, -4.178]	-2.6596*** [-3.392, -1.927]	-0.7474 [-2.756, 1.261]
	Apr 2022	-0.6683 [-1.896, 0.560]	-1.5368* [-2.934, -0.140]	-1.5716 [-3.372, 0.229]
	May 2022	-2.7428*** [-3.849, -1.637]	-2.7898*** [-4.258, -1.321]	-2.0387** [-3.424, -0.654]
	Jun 2022	-1.3121*** [-1.760, -0.864]	-2.9587*** [-4.147, -1.770]	-3.2147*** [-4.918, -1.512]
	Jul 2022	-1.5547*** [-2.089, -1.020]	-4.8662*** [-5.916, -3.817]	-4.5394*** [-6.821, -2.257]
	Aug 2022	-1.9791*** [-2.490, -1.468]	-5.7478*** [-6.550, -4.945]	-3.2780* [-6.025, -0.531]
	Sep 2022	-6.0879*** [-6.571, -5.604]	-6.3296*** [-7.159, -5.500]	-5.7414 *** [-7.541, -3.941]
	Simulated heating profiles	25.6497*** [23.677, 27.623]	6.7963*** [5.529, 8.063]	-
Linear time trend	0.0287** [0.012, 0.046]	-0.0088 [-0.033, 0.015]	0.0391* [0.006, 0.072]	
Time*heating interaction	0.0024 [-0.012, 0.017]	0.0137* [0.001, 0.026]	-	
Month	Dummies	Dummies	Dummies	