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Revealed preferences for dynamic electricity tariffs in Germany

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Extended Abstract

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Abstract Summary

Dynamic electricity tariffs can enhance welfare, especially in electricity markets with increasing shares of variable renewable energy sources (Borenstein and Holland, 2005; Joskow and Tirole, 2007, Gambardella et al., 2020). However, consumers may be reluctant to voluntarily adopt dynamic tariffs due to complexity and risk aversion. We examine real-world consumer choices between a dynamic tariff, which features a fixed price for the first month and then fluctuates with wholesale prices, and a fixed tariff with a 12-month price guarantee. We exploit variations in time, space, and consumer size to estimate the effect of the first-month tariff cost difference on choice probabilities. We find that consumers without electric heating are willing to pay a 19–40% premium for a fixed tariff, and that consumers with electric heating tend to prefer fixed tariffs regardless of the premium. We discuss the role of price transparency and risk management in enhancing the adoption of dynamic tariffs.

Presenting Author Biography

Oliver Ruhnau is an Assistant Professor of Energy Market Design at the University of Cologne and a Research Scientist at the affiliated Institute of Energy Economics (EWI). Through his research, he aims to contribute to understanding current trends in electricity markets—including renewable energy, battery storage, and electrification—and to designing electricity markets in ways that shape these trends to the benefit of society. He uses a variety of analytical approaches, numerical models for energy systems and markets, and empirical methods for causal inference. Previously, he was a doctoral and postdoctoral researcher at the Hertie School in Berlin.