

Dynamic pricing of electricity: money on the table?

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Abstract

Information technology enables dynamic pricing of electricity but its impact on final demand has been puzzlingly slow. We use 160 million bids to quantitatively assess the potential efficiency gains and distributional effects from upscaling consumer responsiveness to prices across three major electricity markets: California, Nordics, and Spain. Dynamic pricing leads to efficiency gains but the final consumer surplus can increase or decline. We develop a concept from the actual bid structures that governs the change in the consumer surplus: daily excess demand. In the Nordics, the excess demand is typically convex in prices, and consumers gain from dynamic pricing. In California, the excess demand is systematically concave, and the consumer surplus falls.

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