Do Consumers Respond to Marginal or Average Price? Evidence from Nonlinear Electricity Pricing

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Environmental Reading Group session 32

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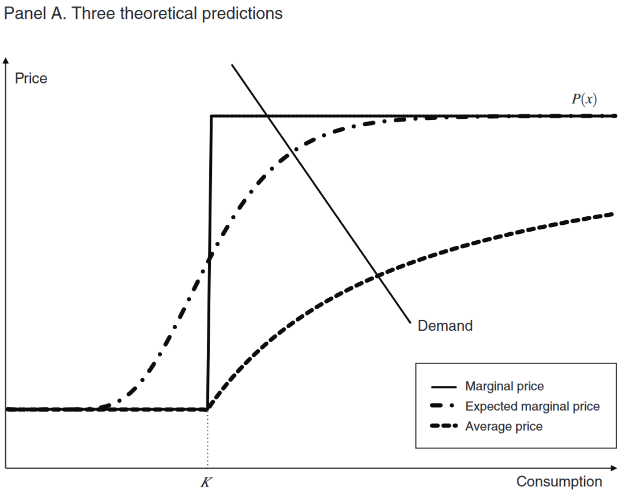
Objective

Q: what is the consumer's perceived price on a linear price schedule?

- **Marginal price:** the price of the last unit consumed.
- **Average price:** the total bill divided by the total consumption.
- **Expected Marginal Price:** the expected price of the last unit consumed because of demand uncertainty.

Graphic Representation



Model

consumption uncertainty: $x+\varepsilon$, where x is the expected consumption and ε is the random error. The perceived price is:

$$\tilde{p}(x) = \int p(x+\varepsilon)w(\varepsilon)d\varepsilon \qquad (1)$$

where $\int w(\varepsilon)d\varepsilon = 1$.

- Marginal: $w(\varepsilon) = 1, \varepsilon = 0$, so $\tilde{p}(x) = p(x)$.
- Expected Marginal: $w(\varepsilon) \sim \Phi[x, \sigma]$.
- Average: $w(\varepsilon) \sim U[0, x]$.

References

Ito, K. (2014). Do consumers respond to marginal or average price? Evidence from nonlinear electricity pricing. American Economic Review, 104(2), 537-563.