A Dynamic Model of Price Signaling and Consumer Learning*

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Abstract

We develop a model of consumer learning and price signaling where price and quality are optimally chosen by a monopolist. In our model, consumers have beliefs about the joint distribution of price and quality for the firm's product. Prior to making a purchase, consumers do not observe the quality of the product, but make an inference about it using their beliefs. After purchase, the product's quality is revealed and consumers update their beliefs through a quasi-Bayesian learning process. In each period, a forward-looking monopolist chooses the product's price and quality, accounting for the fact that its choice will affect consumer beliefs and future profits. To characterize the firm's equilibrium policy, we simulate the model under different assumptions about the strength of consumer beliefs. Consumers with stronger beliefs update more slowly than those with weak beliefs. We find that if consumers have strong beliefs, the equilibrium choices of price and quality display a type of cycling, where the firm produces a high-priced, high quality product for a many periods to increase consumer beliefs about quality, and then drops quality while keeping price high for a some time to exploit the slowness at which consumer beliefs update. If consumers have sufficiently weak beliefs, however, the firm will always choose to produce the high quality product and charge a high price.

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