Viscous Demand

Roy Radner
Stern School, New York University
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ABSTRACT

In many markets, demand adjusts slowly to changes in prices, i.e., demand is "viscous." For such a market, the time path of a firm's prices acquires added significance, compared with the case of instantaneous demand response. In this paper I explore some problems in strategic dynamic pricing of a service, in the presence of viscous demand, for simple models of a monopoly and a duopoly. For a monopoly, depending on the parameters of the model, the optimal pricing policy is either a *target penetration policy*, in which the price is set low until the target penetration is reached, and then raised to stabilize the market penetration, or it is a *chattering policy*, in which the price oscillates rapidly between a high and a low value. For a duopoly, I construct a family (actually, a compact continuum) of subgame-perfect Nash equilibria of the dynamic game, each characterized by a target market penetration and a pair of target market shares. These equilibria provide an explanation of the "kinked demand curve," and also show how apparently "competitive" pricing behavior can lead to outcomes that mimic those of collusion.