Seasonality and the Effect of Advertising on Price

By

David Genesove
The Hebrew University of Jerusalem and C.E.P.R.

and

Avi Simhon
The Hebrew University of Jerusalem

Abstract

This paper lays out an econometric strategy for estimating the effect of advertising on prices, by exploiting seasonal demand and imperfect targeting. We present two simple models of duopoly where firms choose prices and advertising. In times of high demand for the product, a larger fraction of consumers who obtain an advertisement are interested in the product, and so the effectiveness of advertising is greater, and firms advertise more. We use this to justify IV estimation of price on log advertising (and trend), in which monthly dummies are used as instruments. Using Israeli data we find a sufficiently large degree of advertising seasonality to justify estimation by the LIML or Fuller-k method. Among those industries, only a few exhibit a significant response of price to advertising.

The interpretation of these results depends on the nature of the marginal cost curve: under constant returns to scale a negative response is consistent with informative advertising, and a positive with brand enhancing advertising. Under sufficiently increasing returns to scale, informative advertising will lead to a price increase, yet for some of the products we are able choose among these two types of advertising based on knowledge of the likely cost structure of the industry. Nevertheless, in almost all cases, significant and insignificant, the magnitude of the measured response is very small. Finally, the results are coincident with a large number of studies that have shown many goods to have prices that are unchanged over a year or more.