

Comments on "A Theory for Pricing Nonfeatured Products in Supermarkets"

Little and Shapiro (this issue) raise a number of provocative points in their paper, "A Theory for Pricing Nonfeatured Products in Supermarkets," which illustrate some of the commonalities between marketing and economics. Economists preach the principles of profit maximization and marginal cost–marginal revenue pricing, yet these concepts are often not reflected in marketing analyses of applied real-life problems. It is heartening, therefore, to see a marketing paper heavily dosed with economics.

In the traditional role of a discussant, let me first briefly try to describe what I see as the central message of the Little-Shapiro paper. Their theoretical treatise addresses the problem of a supermarket manager faced with the task of setting prices for upwards of 6,000 products. They argue that although stores could take temporary advantage of their customers, their long-term success depends on building customer loyalty. Assuming a traditional well-behaved customer utility function, they derive the store pricing rule which maximizes store profits for a given level of customer utility. They also show that solving the dual to this problem—maximizing customer utility holding store profits constant—as expected yields the same pricing rule. Thus, in effect, the store's pricing problem can be reduced to two steps. First, for any given level of customer utility, find the price vector (not necessarily unique) which makes the store best off. Then, assuming the store knows how customer utility maps into patronage, select that level of utility which maximizes total store profits.

These results are neither surprising nor new. Indeed, the analysis is similar to what I would expect if this problem were given to most economists. A far more interesting problem, and unfortunately one not pursued as fully by Little and Shapiro, is how in fact stores should (or do) implement a pricing policy. They argue that the incredible quantity of information needed for their kind of pricing rules has made it virtu-

ally impossible to implement them in practice. They suggest, however, that universal product-code scanning equipment may now make it possible for stores to easily monitor the sales of individual products and thus measure demand response to price changes. To support this contention, they present results of an experiment which showed promise in using scanning equipment to measure customer response to short-term changes in prices. They suggest that the results of this experiment could be used directly in setting product prices.

I applaud the general drift of this paper. There is an obvious need to demonstrate how economic principles can be applied to practical real-life decisions. I have concerns, however, about several points which bear some comment. First, one should be very careful to distinguish between relative and absolute prices. The pricing problem is basically divided into two parts: (1) for any given level of customer utility, setting relative product prices to maximize store profits without making customers worse off, and (2) setting absolute prices by adjusting customer utility to maximize long-term profits. The determination of absolute prices requires knowledge of the long-term customer response to general store pricing. The kind of procedure advocated by Little and Shapiro is basically designed to measure customer response to short-term relative price changes between products. This is useful primarily in the first part of the process, but not sufficient to set absolute prices. Yet, Little and Shapiro draw general conclusions, that is, ". . . the store was pricing the products too low for maximum profits" from their experimental data.

A second point concerns the feasibility of the scanning-equipment procedure. As Little and Shapiro point out, the ability to easily and cheaply measure sales of individual products offers stores the opportunity to vary price and measure customer response. This could be used to check prices of individual items, special sales, and the like, but is it feasible to use for all 6,000 store items? The answer, I would think, is no. It would still be prohibitively expensive to manipulate prices to gather the information necessary for pricing 6,000 items. Thus, while the Little and Shapiro proposal is theoretically appealing, it still appears to have limited use as a general store pricing mechanism.

In thinking about the Little-Shapiro model, it becomes more and more apparent that the real question is not how in a world of costless information stores should price their products. Rather, the interesting question is how to set prices in a world of limited and costly information. As argued above, scanning equipment may take information gathering somewhat cheaper. However, I do not think that the fundamental store pricing problem will be made substantially easier. Little and Shapiro argue that the typical store pricing scheme consists of assigning prices by percentage markups, adjusted for competitive conditions. They suggest that this kind of procedure is inefficient and

inconsistent with the theory they propose. But is it? Retail prices are set in a complex environment where retailers must deal both with customers and manufacturers. Retail store pricing obviously depends on the actions of manufacturers. But, manufacturers' wholesale prices similarly depend on the actions of retailers. Thus, to model the retail pricing problem properly one must contend with the characteristics of the retail and wholesale markets (i.e., one is monopolistic, the other competitive, etc.).

I have not formalized a model of the process (although similar problems have been modeled), but consider the following intuitive argument. Assume that manufacturers and retailers operate in competitive markets. If retailers mark up a constant percentage, it implies that relative retail product prices will be identical to relative wholesale prices. Thus, by adopting this pricing mechanism, retail stores would in effect function as brokers, passing on relative prices set by wholesalers. Are there circumstances when stores would want to alter this practice? If the retailer had information that his market differed in taste from the national market, this might imply local price adjustment. Similarly, previous economic literature suggests that when the retail and wholesale markets have different degrees of competition, relative prices may differ (see Machlup and Taber 1960). As a first cut, however, the strategy of percentage price markup seems quite reasonable. In effect, retailers let manufacturers (with significantly better aggregate sales and price data) determine relative product prices. Retailers merely pass these on with a brokerage fee reflecting the kind of store services (hours, location, etc.) that they offer.

I do not suggest this model as an alternative to that presented by Little and Shapiro. Indeed, with better monitoring devices, stores should be able to adjust some of their prices to suit their particular market. I think, however, that before we discard some of the simpler, less costly pricing schemes, we should be aware of the reasons why they might have been developed.

Reference

- Machlup, F., and Taber, M. 1960. Bilateral monopoly, successive monopoly and vertical integration. *Economica* 27 (May): 101-19.

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