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The Category-Demand Effects of Price Promotions

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Abstract

Although price promotions have increased in both commercial use and quantity of academic research over the last decade, most of the attention has been focused on their effects on brand choice and brand sales. By contrast, little is known about the conditions under which price promotions expand short-run and long-run category demand, even though the benefits of category expansion can be substantial to manufacturers and retailers alike.

This paper studies the category-demand effects of consumer price promotions across 560 consumer product categories over a 4-year period. The data describe national sales in Dutch supermarkets and cover virtually the entire marketing mix, i.e., prices, promotions, advertising, distribution, and new-product activity. We focus on the estimation of main effects (i.e., the dynamic category expansive impact of price promotions) as well as the moderating effects of marketing intensity and competition (both conduct and structure) on short- and long-run promotional effectiveness.

The research design uses modern multivariate time-series analysis to disentangle short-run and long-run effects. First, we conduct a series of unit-root tests to determine whether or not category demand is stationary or evolving over time. The results are incorporated in the specification of vector-autoregressive models with exogenous variables (VARX models). The impulse-response functions derived from these VARX models provide estimates of the short- and long-term effects of price promotions on category demand. These estimates, in turn, are used as dependent variables in a series of second-stage regressions that assess the explanatory power of marketing intensity and competition. Several model validation tests support the robustness of the empirical findings.

We present our results in the form of empirical generalizations on the main effects of price promotions on category demand in the short and the long run and through statistical

tests on how these effects change with marketing intensity and competition. The findings generate an overall picture of the power and limitations of consumer price promotions in expanding category demand, as follows.

Category demand is found to be predominantly stationary, either around a fixed mean or a deterministic trend. Although the total net short-term effects of price promotions are generally strong, with an average elasticity of 2.21 and a more conservative median elasticity of 1.75, they rarely exhibit persistent effects. Instead, the effects dissipate over a time period lasting approximately 10 weeks on average, and their long-term impact is essentially zero. By contrast, the successful introduction of new products into a category is more frequently associated with a permanent category-demand increase.

Several moderating effects on price-promotion effectiveness exist. More frequent promotions increase their effectiveness, but only in the short run. The use of nonprice advertising reduces the category-demand effects of price promotions, both in the short run and in the long run. Competitive structure matters as well: The less oligopolistic the category, the smaller the short-run effectiveness of price promotions. At the same time, we find that the dominant form of competitive reaction, either in price promotion or in advertising, is no reaction. Short-run category-demand effectiveness of price promotions is lower in categories experiencing major new-product introductions. Finally, both the short- and long-run price promotion effectiveness is higher in perishable product categories.

The paper discusses several managerial implications of these empirical findings and suggests various avenues for future research. Overall, we conclude that the power of price promotions lies primarily in the preservation of the status quo in the category.

(Category Demand; Empirical Generalizations; Long-Term Promotion Effects; Competitive Strategy; Marketing Mix; Econometric Models; Time-Series Analysis)