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# The Decomposition of Promotional Response: An Empirical Generalization

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## Abstract

Price promotions are used extensively in marketing for one simple reason—consumers respond. The sales increase for a brand on promotion could be due to consumers accelerating their purchases (i.e., buying earlier than usual and/or buying more than usual) and/or consumers switching their choice from other brands. Purchase acceleration and brand switching relate to the primary demand and secondary demand effects of a promotion. Gupta (1988) captures these effects in a single model and decomposes a brand's total price elasticity into these components. He reports, for the coffee product category, that the main impact of a price promotion is on brand choice (84%), and that there is a smaller impact on purchase incidence (14%) and stockpiling (2%). In other words, the majority of the effect of a promotion is at the secondary level (84%) and there is a relatively small primary demand effect (16%).

This paper reports the decomposition of total price elasticity for 173 brands across 13 different product categories. On average, we find that 25% of the elasticity is due to primary demand expansion (i.e., purchase acceleration) and 75% to secondary demand effects or brand switching. Thus, while Gupta's finding that the majority of promotional response stems from brand switching is supported, the average magnitude of the effect appears to be smaller than first thought. More important, there is ample evidence that promotions have a significant primary demand effect.

The relative emphasis on purchase acceleration and brand switching varies systematically across categories, and the second goal of the paper is to explain this variation as a function of exogenous covariates. In doing this, we recognize that promotional response is the consumer's reaction to a price promotion, and therefore develop a framework for understanding variability in promotional response that is based on the consumer's perspective of the benefits from a price promotion. These benefits are posited to be a function of: (i) category-specific factors, (ii) brand-specific factors, and (iii)

consumer characteristics. The framework is formalized as a generalized least squares meta-analysis in which the brand's price elasticity is the dependent variable. Several interesting results emerge from this analysis.

- Category-specific factors, brand-specific factors, and consumer demographics explain a significant amount of the variance in promotional response for a brand at both the primary and secondary demand levels.
- Category-specific factors have greater influence on variability in promotional response and its decomposition than do brand-specific factors.
- There are several instances where exogenous variables do not affect total elasticities yet significantly affect individual components of total elasticity. In fact, the lack of a significant relationship between the variables and total elasticity is often due to offsetting effects within two or more of the three behavioral components of elasticity. This is particularly true for brand-specific factors, which typically have no effect on total elasticity, yet have important effects on the individual behaviors.
- There is some evidence to suggest that not all promotion-related increases in primary demand are due to forward-buying—in some cases promotions appear to increase consumption.

We use these results to illustrate how category- and brand-specific factors work to drive primary and secondary demand elasticities in different directions.

In short, this paper offers an empirical generalization of a key finding on promotional response—how elasticities decompose across brand choice, purchase incidence, and stockpiling—and new insights into factors that explain variance in promotional response. These findings are likely to be of interest to researchers who are concerned with theory development and the generalizability of marketing phenomena, and to managers who plan promotion campaigns.

*(Price Elasticity; Promotion; Brand Choice; Purchase Incidence; Stockpiling; Primary Demand; Secondary Demand; Meta-Analysis)*