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Shopping Behavior and Consumer Preference for Store Price Format: Why “Large Basket” Shoppers Prefer EDLP

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Abstract

In recent years, the supermarket industry has become increasingly competitive. One outcome has been the proliferation of a variety of pricing formats, and considerable debate among academics and practitioners about how these formats affect consumers' store choice behavior. This paper advances the idea that consumer shopping behavior (as defined by average size of the shopping basket and the frequency of store visits) is an important determinant of the store choice decision when stores offer different price formats. A recent *Wall Street Journal* article that summarized the result of Bruno's management switching the chain from EDLP to HILO illustrates the importance of this issue: “The company's price-conscious customers, used to shopping for a fixed basket of goods, stayed away in droves.” Thus, the audience for this paper includes practitioners and academics who wish to understand store choices or predict how a change in price format might affect store profitability and the mix of clientele that shop there.

This paper attempts to understand the relationship between grocery shopping behavior, retail price format, and store choice by posing and answering the following questions. First, after controlling for other factors (e.g., distance to the store, prior experience in the store, advertised specials), do consumer expectations about prices for a basket of grocery products (“expected basket attractiveness”) influence the store choice decision? This is a fairly straightforward test of the effect of price expectations on store choice. Second, are different pricing formats (EDLP or HILO) more or less attractive to different types of shoppers? To adequately answer the second question, we must link consumers' category purchase decisions, which collectively define the market basket, and the store choice decision.

We study the research questions using two complementary approaches. First, we develop a stylized theory of consumer shopping behavior under price uncertainty. The principal features and results from the stylized model can be summarized as follows. Shoppers are defined (in a relative sense) as either large or small basket shoppers. Thus, we abstract from the vicissitudes of individual shopping trips and focus on meaningful differences across shoppers in terms of the expected basket size per trip. The shoppers make category purchase incidence decisions and can choose to shop in

either an EDLP or a HILO store. Large basket shoppers are shoppers who have a relatively high probability of purchase for any given category, and as such they are more captive to prices across many different categories. The first two propositions summarize the price responsiveness of shoppers. In particular, the large basket shoppers are *less* responsive to price in their individual category purchase incidence decisions; this makes them *more* responsive to the expected basket price in their store choice decisions. This key structural implication of the model highlights an asymmetry between response at the category level and response at the store level. The result is quite intuitive; a (large basket) shopper with less ability to respond to prices in individual product categories will be more sensitive to the expected cost of the overall portfolio (the market basket) when choosing a store. The final proposition derives the price at which a given shopper will be indifferent between an EDLP and a HILO store. The key insight is that as a shopper increases his or her tendency to become a large basket shopper, the EDLP store can increase its (constant) price closer and closer to the *average* price in the HILO store. Conversely, as the shopper becomes more of a small basket shopper, the EDLP store must lower its price closer to the deal price in the HILO store. Thus, we have the interesting result that small basket shoppers prefer HILO stores, *even at higher average prices*.

The empirical testing mirrors the development of the consumer theory. We test the implications of the propositions using a market basket scanner panel database. The database includes two years of shopping data for 1,042 households in two separate market areas. We first use household-level grocery expenditures to model the probability that a household is a large or small basket shopper. Subsequently, we estimate purchase incidence and store choice models. We find that after controlling for important factors such as household distance to the store, previous experience in the store, and advertised specials, price expectations for the basket influence store choice. Furthermore, EDLP stores get a greater than expected share of business from large basket shoppers; HILO stores get a greater than expected share from small basket shoppers. Consistent with the implications of the propositions, large basket shoppers are relatively price inelastic in their category purchase incidence decisions and price elastic in their store choice decisions.

(Shopping Behavior; Choice Models; Pricing; Market Basket)