RECORD

PUBLIC

Court File No. CT-2002-004

THE COMPETITION TRIBUNAL

IN THE MATTER OF THE COMPETITION ACT, R.S.C. 1985, c. C-34, as amended;

AND IN THE MATTER OF an inquiry pursuant to subsection 10(1)(b)(ii) of the Competition Act relating to certain marketing practices of Sears Canada Inc.;

AND IN THE MATTER OF an Application by the Commissioner of Competition for an order pursuant to section 74.10 of the Competition Act;

AND IN THE MATTER OF Sears Canada Inc.'s opposition to the Application and Sears Canada Inc.'s request for certain relief from the Competition Tribunal.

BETWEEN:

THE COMMISSIONER OF COMPETITION

Applicant

- and -

SEARS CANADA INC.

Respondent

AFFIDAVIT OF JOHN O. WINTER
SWORN SEPTEMBER 19, 2003

I, JOHN O. WINTER, consultant, of the City of Toronto, in the Province of Ontario, SWEAR THAT:

INTRODUCTION

1. I am a retail consultant with expertise in advising retailers, institutions and governmental bodies on retail, development and commercial strategies. I have been qualified as an expert in these areas and have testified before numerous tribunals, regulatory bodies and the Ontario Courts. A copy of my Curriculum Vitae is attached hereto as Exhibit "A".

2. I have been retained by counsel to the respondent Sears Canada Inc. ("Sears") to address certain issues in respect of the Commissioner of Competition's Application pursuant to Section 74.01(3) of the *Competition Act*. Specifically, I have been asked to describe pricing strategies in the retail industry and their application to the retailing of passenger tires by Sears in 1999 in Canada.

3. In preparing this report, I reviewed the following materials which were provided to me: the Commissioner's Notice of Application; Sears Responding Statement of Grounds and Material Facts; Sears Draft Fresh As Amended Response; the Commissioner's Reply; Redacted transcripts of examinations of William F. McMahon, P. Cathcart and M. Torgal, pursuant to Section 11(1)(a) of the *Competition Act*; and the documents referenced in the Disclosure Statement of the Respondent and Disclosure Statement of the Applicant in this matter.

4. My report is divided into the following three sections:

(a) Promotional Pricing and Everyday Low Prices;

(b) The Retailing of Tires in Canada; and

(c) Conclusions.

(a) PROMOTIONAL PRICING AND EVERYDAY LOW PRICES

5. There are two generic pricing frameworks: Everyday Low Prices (EDLP), which imply no temporary price promotions; and Promotional Pricing, also known as off-pricing or high-low pricing (frequently abbreviated to Hi-Lo, HLP or Hi-Low Pricing), which is in theory the offering of products at higher prices interspersed with event-driven deep discount specials. A more detailed description of these two frameworks follows.

EDLP

6. The EDLP retailer typically charges a constant everyday price for its merchandise, with few or no items temporarily discounted. Stable everyday prices eliminate week-to-week price uncertainties and represent a contrast to the variable pricing of promotion-oriented competitors.

7. The EDLP price is typically somewhere between the higher regular price and the lower promotional price of the Hi-Lo retailer. It is almost certain that the price offered by an EDLP retailer will not be the lowest price available in the market.

8. Led notably by Wal-Mart, the EDLP price wave revolution in Canada emerged in the mid-1990's and successfully encroached on the market of full-line, full-service department stores and full-line, full-service supermarkets and drug stores, by advertising that their everyday prices are "always" the lowest to be found. Home Depot (and its imitators) in the home improvement sector, membership warehouse clubs (such as Costco and Sam's) in the limited service/limited assortment categories, along with non-retail industries, such as some discount airlines and one car subsidiary, have adopted the central ideas of EDLP, primarily to build traffic and compete with the alternative formats.

Promotional Hi-Lo Pricing

9. Promotional pricing involves a high regular price and temporary price discounts. The Hi-Lo retailer typically charges higher prices than an EDLP competitor on an everyday basis but then runs reasonably frequent promotions on selected items in which prices are temporarily lowered below the EDLP level.

10. Each pricing framework has its own advantages and disadvantages as outlined below.

Advantages of EDLP

11. The following are the advantages of EDLP:

- Easy to Communicate The concept is easy to explain: the lowest possible prices, day-in, day-out, which are consistent with normal business conditions, including profits.

- Possibility of Lower Operating Costs In theory, some costs (the "unnecessary" costs) are eliminated or minimized: less employee time spent on re-ticketing sale and post-sale prices (due to less frequent price changes); in theory, fewer merchandise returns; inventory linked to need, and thus reduced (with lower carrying and interest costs); and lower advertizing expenses, particularly fewer flyers.

- Accurate Forecasting As demand is not artificially affected by promotions, a relatively stable and seasonal demand can be anticipated and planned for. This may result in a smoother flow of goods through the distribution system (a smoother supply pipeline leading to a streamlined distribution system) and a better in-stock position (compared to a Hi-Lo retailer where a very popular promotion can clear the shelves). Because consumers do not have to wait for a discounted promotional price, the artificial swings in the demand curve are evened out. A stable volume of sales may result in lower prices, higher demand, simplified store operations, and ultimately, higher profits.

- Trust in the Format Once the customer is convinced that the store format produces consistently lower prices on easily-identifiable, known items (such as toothpaste on a pallet display or on an endcap), the customer may be likely to trust the prices on larger and less-frequently purchased items, for which the price range may not be as well-known. For time-constrained consumers, the time spent shopping (and cross-shopping) is theoretically reduced.

- Everyday Low Costs from the Manufacturer Some suppliers have integrated their supply, ordering, computer and distribution systems with major retailers to gain further

efficiencies, and thus lower costs (Manning *et al.*, "Development of a Theory of Retailer Response to Manufacturers' Everyday Low Cost Programs," *Journal of Retailing*, Vol. 74(1), 1998. A copy of this article is attached hereto as Exhibit "B"). Co-operative ventures with the manufacturer on promotions, encouraging selective forward buying, may be translated into lower base prices overall.

- EDLP May Lead to a "Virtuous Circle" Some leading EDLP retailers have translated lower operating costs into lower prices, which has stimulated demand, providing more efficiencies, and even lower prices. Higher volumes can result in lower operating margins. The success of EDLP retailers, particularly in the discount sector, has boosted the popularity of the format.

Disadvantages of EDLP

12. The following are the disadvantages of EDLP:

- There Is No Pure EDLP All retailers hold various sales and promotions, although they may be explained as "end-of-lines" or "special buys". Plus, all major chains claim they will match a competitor's price, so that when pressed, an EDLP retailer may meet the promotional price of the Hi-Lo retailer when they have identical merchandise. (Troy, "Sales could undercut Wal-Mart's EDLP image," *Discount Store News*, November 3, 1997. A copy of this article is attached hereto as Exhibit "C".)

- Volume Gains have to Outweigh Margin Reductions For a retailer switching to EDLP, to compensate for thinner overall margins, there has to be a considerable boost in volume to maintain consistent profit levels. A simple example: a retailer buys from the manufacturer at $100, applies a keystone mark-up, and sells 100 units for $200 each for a gross profit of $10,000. On a theoretical EDLP: a retailer buys from a manufacturer at $90 and sells, with all the efficiencies, etc., for $160. To maintain the same gross profit level, some 143 units have to be sold. The price elasticity of this good may not permit such gains to be made. Note in the real world, this example would be complicated by

manufacturers' special pricing and occasional promotional discounting under the first example. Some commentators have suggested that the sales gains from EDLP may not be matched by sufficient volume gains. (Shankar *et al.*, "Relating Price Sensitivity to Retailer Promotional Variables and Pricing Policy: An Empirical Analysis," *Journal of Retailing*, Vol.72(3), 1996, indicates: "an EDLP policy is associated with a higher level of regular price elasticity, whereas a Hi-Lo policy is related to a lower level of regular price elasticity". A copy of this article is attached hereto as Exhibit "D".)

- Consumers Love Promotional Events There is the danger of the retailer losing some real-world competitive edge by the virtual elimination of sales promotions.

- EDLP May Not Work With Some Merchandise The more perishable the merchandise, the more fashion-oriented, the more luxury it represents, or the more premium the brands, the less suitable the merchandise may be for price-driven or price-sensitive treatments.

Advantages of Promotional Hi-Lo Pricing

13. The following are the advantages of Promotional Pricing:

- It Creates an Exciting Retail Environment Promotions create traffic, and traffic generates interest. More people walking through the store creates opportunities for impulse purchases not related to the prime reason for visiting. By making a big splash through variable pricing, the retailer can leverage other benefits. It is always advantageous for a retailer to have something special, an "event" or "feature" to attract consumers. Many types of shopping are mundane; promotions are one way to liven up the store.

- There are Always One-Off Deals or Special Buys Available from Various Manufacturers Through sensible buying, arbitrage (the buying and selling of product to take advantage of varying prices in different markets), diversion (grey market) and stockpiling, the retailer may create opportunities for profit. If all retailers were equally efficient and could source at the same price, then retailing would become a game of marketing. Some

retailers, however, are confronted by higher operating costs (they may, for instance, be located in a high-cost enclosed mall environment, rather than in low-cost arterial locations) and thus promotions provide opportunities to (a) maintain margins, and (b) attract consumers.

Disadvantages of Promotional Hi-Lo Pricing

14. The following are the disadvantages of Promotional Pricing:

- It May Lead to "Surges and Slumps" If the EDLP and the Hi-Lo retailer are sourcing the same merchandise at the same cost, then in theory the Hi-Lo retailer has to maintain higher average prices to maintain a similar profit level and to compensate for the promotional events. Therefore, the consumer of the Hi-Lo retailer may be encouraged to wait for the promotional price, and then stockpile. Thus the Hi-Lo retailer may be characterized by "surges and slumps", paralleling the promotional activity. If for any reason consumers do not respond to a specific promotion, then overall sales are likely to be depressed for the period of that promotion. The prime pitfalls of Hi-Lo are the potential effect on the supply chain (stockpiling, unstable demand, less control and sale-outs) and the deleterious impact on the consumer (sold out stock, scepticism of ordinary prices).

- Higher Advertising Costs With the need to disseminate information on the latest promotion, to remind and entice consumers to visit, higher overall advertising costs may be incurred.

- Pricing Wars Promotional pricing tends to attract price-sensitive consumers and by its uniqueness, is orientated to attracting customers who usually shop at other retailers. Although promotions may also generate incremental sales by grabbing consumers' attention within the store rather than by motivating competitive store customers to come to the store on a particular occasion, (Urbany *et al.*, "Insights Into Cross- and Within-Store Price Search: Retailer Estimates Vs. Consumer Self-Reports," *Journal of Retailing*,

Vol. 76(2), 2000. A copy of this article is attached hereto as Exhibit "E"). The short-term, one-off sale is an endemic, permanent feature of the Hi-Lo retailer, relying to a great extent on traffic and sales being generated by a succession of special offers. Other programmes, such as loyalty schemes, may also be necessary to enhance and maintain the customer experience.

Comments on EDLP and Promotional Pricing

15. Given the advantages and disadvantages of the pricing frameworks discussed above, it is not surprising that both frameworks continue to be used.

16. Neither approach is a panacea for a retail business. Indeed, in an era where all major players claim to match or beat competing prices, there are no "pure" examples of EDLP.

17. Differentiation of approach is a key factor to a retailer's success. The presence of significant EDLP retailers in one's market is no reason for every retailer to adopt (rather than adapt to) EDLP. An identity as a promotional leader may be as important to one retailer as being an EDLP retailer is to another. Variety and choice are important both to the consumer and to the retailer. Retail diversity is a reality.

18. Repositioning as an EDLP retailer is more than just lowering prices. Price is an important message, but it needs to be supported by the whole store environment, the corporate culture and the entire cost structure of the business. "Price is not a defensible point of differentiation for a firm unless it already has the appropriate operating cost structure in place" (Hoch *et al.*, "EDLP, Hi-Lo, and Margin Arithmetic," *Journal of Marketing*, October 1994. A copy of this article is attached hereto as Exhibit "F"). The sudden commitment to EDLP in the United States by the discount department store, K-Mart, was seen as one cause of its decline into bankruptcy protection. (Troy, "K-Mart: 2. Drop EDLP-continue promoting the value message," *DSN Retailing Today*, March 11, 2002. A copy of this article is attached hereto as Exhibit "G".)

19. A retailer's primary goal is to "say who they are, say it well, and say it always". What has not been successful is a limited application of EDLP, as attempted by Eaton's in the early 1990's. "What you don't see is someone successful at EDLP and successful at high-low at the same time" (Nunnari, "You can't be EDLP and high-low," *Drug Store News*, February 2003. A copy of this article is attached hereto as Exhibit "H"). Indeed, full-line, full-service department stores, with their emphasis on fashion and fashion merchandise, have not been very successful in a limited application of the EDLP concept. EDLP may dilute their image of exclusivity. Various technical reports have shown that on a category-by-category basis, EDLP has not been particularly successful. (Voss *et al.*, "Exploring the effect of retail sector and firm characteristics on retail price promotion strategy," *Journal of Retailing*, Vol. 79, 2003). A copy of this article is attached hereto as Exhibit "I".) Sears Roebuck, the parent of Sears, did not succeed with a limited venture into EDLP in the United States. (Goldberg, "Everyday prices," *Sporting Goods Business*, February 1995. A copy of this article is attached hereto as Exhibit "J".) A retailer needs a consistent approach across all of its departments and merchandise lines. A retailer should not be sending mixed messages, or else the consumer may become confused.

(b) THE RETAILING OF TIRES IN CANADA

20. The entire automotive retail sector in general, and the auto aftermarket in particular, is highly competitive.

At least 14,000 Outlets in Canada May Sell Automotive Tires

21. Attached hereto as Exhibit "K" is a chart showing my estimate of the number of outlets selling tires in Canada in 1999. In all urban areas, the consumer had a wide choice of vendors, from the independent service station or tire dealer, through the large specialty tire outlet (Goodyear/Fountain, Firestone, KAL, OK, etc.) of manufacturers and chains, to smaller regional chains (Service de Pneus Ctre Ltd.), to the national chains such as the Home and Auto Supply Dealer, Canadian Tire, the department stores (Sears and Wal-Mart) and the membership warehouse clubs. This indicates a highly competitive market.

22. The sector remains competitive and a new everyday low cost retailer, Sam's Club (a division of Wal-Mart), is currently entering the Toronto market (for an opening in the fall of 2003).

23. According to the DesRosiers Automotive Consultants Tire Market Study for the Rubber Association of Canada, released August 1996 (*Sears Disclosure Statement, document 31*) among consumers who had purchased tires in the previous 12 months (excluding sales to fleets and businesses), the retail outlets with the largest share of the replacement tire market were as follows:

Specialty Tire Stores	35 percent	(Note: survey data has an error of estimate)
Canadian Tire	16 percent	
Department Stores	11 percent	
Independent Repair Shops	11 percent	
New Car Dealers	6 percent	
Service Stations	6 percent	

24. In terms of individual retailers, the 1996 survey showed market shares as follows:

Canadian Tire	16 percent	(Note: survey data has an error of estimate)
Goodyear/Fountain	7 percent	
Sears Auto Centre	7 percent	
Price Club/Costco	4 percent	

25. According to Sears internal estimates, by 1999 Wal-Mart's national share of the tire market may have risen to five percent (*Sears Disclosure Statement, document 121*).

26. In the late 1990's no chain and no retail type was "dominant" in the tire aftermarket. "Dominant" is a word used by the Commissioner of Competition when describing Canadian Tire "the dominant retailer in the private label tire market in Canada". A share of 16 percent is not "dominant". Even if private tires were half the market and this chain's share was about ± 32 percent, it would not still be "dominant" (defined in *Merriam Webster's Collegiate Dictionary,*

Tenth Edition, as "commanding, controlling or prevailing over all others". A copy of this excerpt is attached hereto as Exhibit "M"). Booksellers have a dominant retailer; tire sellers do not.

Pricing Frameworks

27. Not only did consumers in 1999 have, and exercise, a wide choice among retailers for the purchase of tires, the retailers fell into three distinct categories in terms of the pricing frameworks discussed above:

EDLP: Membership Warehouse Clubs (PriceClub/Costco), where the prices are never advertised (at least, not in Canada. Contemporary *Costco* US lists prices in US dollars) and the prospective purchaser has to visit the store and select from among the displayed tires. Any prospective purchaser has had to pay an annual fee to shop the membership warehouse club.

Wal-Mart, where the prices are shown in in-store pamphlets and the prospective purchaser has to visit the store to obtain tire prices. Opening price points are extremely low.

Modified EDLP: Canadian Tire, where the prices do not frequently fluctuate, or if they do, they do not fluctuate considerably. Tire prices are not listed on the Internet.

Hi-Lo: Independent Tire Stores and Repair Shops, compared to the EDLP and Modified EDLP shops, the independents have somewhat more leeway in making deals with the customer.

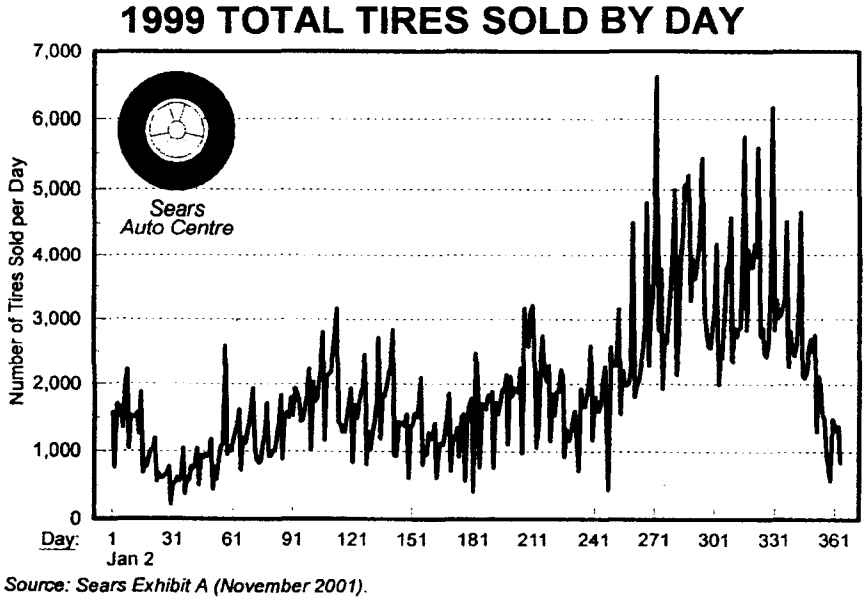
Sears Auto Centre, described by Sears personnel as "off-price", with a significant portion of their business driven by substantial reductions from the regular price.

28. Sears personnel describe their pricing position as day-in, day-out Canadian Tire beating Sears on selling price (for roughly similar articles; price comparisons are complicated by the prominence of private brands in both chains) (*Redacted Transcript of William McMahon, March 1, 2002, Pg. 396, ll. 6-8.*). Sears planning documents from 1999 suggest that Sears set their promotional prices lower than Canadian Tire EDLP prices (*Redacted Transcript of William McMahon, March 1, 2002, Pg. 385, ll. 20-22.*).

Seasonal Pattern

29. Tire sales in Canada, both by Sears and tire retailers generally, show a distinctive seasonal pattern, with a single, definite peak in the fall. This conclusion is drawn in part from an analysis of the retail daily tire sales information contained in Exhibit A to the Affidavit of William McMahon, sworn November 29, 2001 (*Sears Disclosure Statement, document 112*). I have summarized this data in tabular format, the results of which are attached hereto as Exhibit "M". The same data is presented graphically in Figure 1 "1999 Total Tires Sold by Day", below.

Figure 1

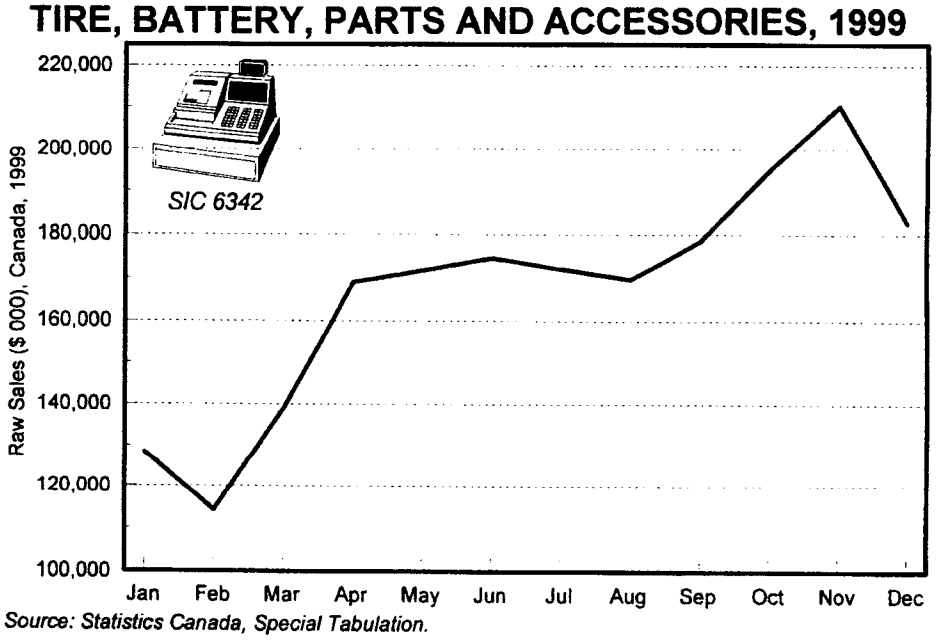


Source: Sears Exhibit A (November 2001).

30. The same single-peak, seasonal pattern is evident from the retail sales figures of stores whose primary business is retailing of tires. As noted in paragraph 23 above, this type of store

(described therein as "Specialty Tire Stores") had a 35% share of the consumer market in 1996. In preparing this opinion, I obtained a monthly retail trade survey from Statistics Canada for their Standard Industrial Classification code 6342 – "Tire, Battery, Parts and Accessories Stores". Code 6342 concerns "Establishments primarily engaged in retail dealing in new or used tires, tubes, batteries and other automobile parts and accessories separately or in combination. These establishments may be secondarily engaged in tire installation and repair as well as in automobile repair." The Monthly Retail Trade Survey data for SIC 6342, together with information downloaded from the Statistics Canada website giving details of the Standard Industrial Classifications, is attached hereto as Exhibit "N". For ease of understanding, the 1999 monthly retail sales data obtained from Statistics Canada for these tire-retailing establishments is presented below in Figure 2.

Figure 2



Source: Statistics Canada, Special Tabulation.

(c) CONCLUSIONS

31. Sears Auto Centres used Promotional Hi-Lo Pricing in retailing tires in Canada in 1999. Promotional Hi-Lo Pricing is a well recognized and legitimate pricing framework which was and

continues to be used extensively by Canadian retailers. There are several rationales, both internal and market-driven, for adopting a Promotional Hi-Lo Pricing strategy.

32. Sears Auto Centres competed within a highly competitive and highly promotional Canadian tire market in 1999, which included a variety of pricing frameworks in which no single pricing framework or competitor dominated the market.

33. Sears Auto Centres, in common with other tire retailers, sold far more tires in the Fall of 1999 than at any other time of the year.

SWORN BEFORE ME at the City)
)
of Toronto, on September 19, 2003.)
)
)
)

Commissioner for Taking Affidavits
PAUL RAND

JOHN O. WINTER

JOHN O. WINTER

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This is Exhibit "A" referred to in the affidavit of JOHN O. WINTER sworn before me, this 19th day of SEPTEMBER 2003.

A COMMISSIONER FOR TAKING AFFIDAVITS

EDUCATION

B.A., The Queen's University of Belfast, 1964.

M.A., University of Toronto, 1965.

PROFESSIONAL AFFILIATIONS

Association of Ontario Land Economists (Council Member between 1982 and 1986).

Canadian Institute of Planners.

Institute of Management Consultants (Honour Roll for standing in the top two in the annual entrance examinations).

Lambda Alpha International, Society of Land Economists, 1991-1997.

Professional Marketing Research Society.

WORK EXPERIENCE

Established John Winter Associates Limited in 1988.

Previous employment included:

- Clayton Research Associates (five years, as Senior Associate and then Vice-President);
- Paterson Planning and Research (ten years, as Senior Consultant);
- Ontario Ministry of Social and Community Services (one year, as instructor);
- Urbanismo e Desenvolvimento S.A., Rio de Janeiro (three years, as consultant);
- Nipissing College (summer course, as instructor); and,
- Ryerson Polytechnical Institute (one year, as instructor).

OTHER EXPERIENCE

Vice-Chairman, Board of Management, Beaches Business Improvement Area, 1989 to 1993.

Listed in the 1985-2001 editions of *Canadian Who's Who* (published by the University of Toronto Press).

EXPERTISE

Retail Commercial Analysis (Shopping Centre and Strip Mall Feasibility, Remerchandising Studies, Tenant Mix for Specialty Centres, Downtown Revitalization, Marketing and Business Advice to Retailers);

Office Development Studies (Office Building and Office Park Feasibility);

Industrial Growth Strategies (Industrial Land Potential, Industrial Park Planning);

Leisure and Entertainment Complexes (Hotel Commercial and Conference Centre Potential, Restaurant Studies, Theme Park Development);

Merchandising and Marketing Studies, and Advice;

Housing Studies;

Municipal Finance and Economic Impact Analysis;

Development Planning and Finance (Independent Real Estate Advice and Investment Evaluations of Markets and Sites);

Economic Base and Demographic Studies;

Survey Design, Data Collection and Analysis;

Presentations to Senior Management on Economic and Development Issues and Prospects;

Preparation of Submissions for Government, Industry and Investors; and,

Representation as an Expert Witness before Administrative and Regulatory Bodies (Ontario Municipal Board, Lease Arbitrations, Court Cases, etc.).

GUEST SPEAKER

Regularly speaks on retailing trends and issues to industry, retail, professional and investor groups.

MEDIA

Widely consulted and interviewed by major national and international media on commercial matters.

SELECTED CLIENT LIST

Financial Institutions/Investment Funds

Citibank
MD Realty Inc.
Midland Walwyn Capital Inc.
Policy Evaluation Service Inc.
Royal Bank of Canada
UPS Securities, New York

Government Clients

City of Cambridge
City of Etobicoke
City of Kanata
City of Oshawa
City of Ottawa
City of St. Catharines
City of Thunder Bay
City of Toronto
City of Vaughan
City of Waterloo
City of Welland
City of Windsor
Region of Ottawa-Carleton
Region of Peel
Region of Waterloo
Region of York
Town of Aurora
Town of Brockville
Town of Cobourg

Government Clients (Continued)

Town of Fort Frances
Town of Georgina
Town of Hawkesbury
Town of Lindsay
Town of Markham
Town of Oakville
Town of Wiarton
Township of Cumberland
Village of Picton
Heritage Canada
National Capital Commission
Ontario Human Rights Commission
Ontario Ministry of Government Services
Public Works and Government Services Canada

Retail Developer Clients

6 & 7 Developments Limited
Barber Greene Business Park
Blue Mountain Resorts Limited
Braywolf Investments Ltd.
Brian Barton Building Corporation
Burnac Corporation
Cambridge Shopping Centres
Campeau Corporation
Canadian National
Citicom Inc.
CBC Broadcast Centre
Devan Properties Limited
Enterprise Property Group
First Plazas Inc.
First Professional Management Inc.
Fram Construction Limited
Glengate Mississauga Developments
Ivanhoe Inc.
J.S. Realty and Investment Corporation
Lakeshore Down Developments Limited
Landawn Shopping Centres
Laing Properties
Metrus Properties Limited
Michael Stuart Group
Minto Developments

Retail Developer Clients (Continued)

Orillia Gateway Power Centre Inc.
PenEquity Corporation
Premier Plaza Developments Inc.
Richcon Construction
Richmond Hill Centre Inc.
RGL Developments Ltd.
Sevenbridge Developments Limited
Times Square Limited
The Cadillac Fairview Corporation Limited
Trilea Centres Inc.
West Alliston Commercial Complex
Winess Land Developments Limited
York Hannover
York Lanes
Zand Development Corporation

Retailer Clients

Au Printemps
Bedo Retail Stores Inc.
Dylex Limited
Freshmart Inc.
Home Depot
HomeWorld
Imperial Garden Centre
Levi Strauss & Co. (Canada) Inc.
Loeb Inc.
Miracle Food Mart
Parthenon Jewellery & Gifts
Royal Bank of Canada
Safeway Canada Limited
Shoppers Drug Mart Corporation
Sobey's Inc.
The Barn
The Great Atlantic and Pacific Company of Canada Limited
The Oshawa Group
The T. Eaton Company Ltd.
Valencia Foods
Wal-Mart Stores Inc.
Westfair Foods Inc.
York University Bookstore

Development of a Theory of Retailer Response to Manufacturers' Everyday Low Cost Programs

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Manufacturers' everyday low cost (EDLC) programs have been prescribed as a means of eliminating inefficiencies associated with trade deals. However, the long-term success of EDLC programs is largely dependent upon favorable responses from retailers. In an effort to investigate retailer response to manufacturers' EDLC programs, in-depth interviews were conducted with executives of retail and manufacturing firms. Data analysis was guided by Glaser and Strauss' grounded theory approach. These efforts resulted in theory detailing antecedents and consequences of the focal construct, "retailer attitude toward the EDLC program." Research findings indicate that retailers' attitudes toward EDLC programs are based on an assessment of the compatibility between the program and their marketing environment. Several factors including retailer characteristics (e.g., perceived weakness in buying power, commitment to forward buying) and program characteristics (e.g., whether program is optional, product storage costs) were found to influence retailers' assessments of program/environment compatibility and in turn their attitudes toward EDLC programs. Whether retailers' attitudes toward EDLC programs led to supportive, nonsupportive, or adaptive behaviors was found to be contingent upon the relative dependence existing within the channel relationship. The implications of these findings on the development and diffusion of pricing/promotion initiatives are discussed.

Kenneth C. Manning is Assistant Professor of Marketing, Gonzaga University, School of Business Administration, Spokane, WA 99258, 509-323-3408; William O. Bearden is Professor of Marketing, College of Business Administration, University of South Carolina, Columbia, SC 29208, 803-777-4914; Randall L. Rose is Associate Professor of Marketing, University of South Carolina, Columbia, SC 29208, 803-777-4915.

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An important issue facing the packaged goods industry is a shift in manufacturer trade policies to lower list prices, with less reliance on trade deals (i.e., temporary discounts). This pricing strategy has been referred to as everyday low price (EDLP), everyday low purchase price (EDLPP), everyday low cost (EDLC), and value pricing. The everyday low price (EDLP) label has been used in reference to both manufacturer and retailer pricing strategies. To avoid confusion, we refer to the manufacturer (to retailer) pricing strategy as everyday low cost (EDLC) and the retailer (to consumer) pricing strategy as everyday low price (EDLP).

Implementing EDLC has the effect of reducing variability in manufacturers' selling prices to retailers. As an example, using a traditional trade deal pricing approach, a hypothetical manufacturer may have established a list price of $1.00 per unit, and offered $.20 trade deals for six weeks once every four months. Changing to an EDLC strategy could entail reducing the list price to $.88 and ceasing to offer trade deals to retailers. Manufacturers have developed different variations of EDLC. For example, rather than establishing a new lower list price, a reduced trade deal may be offered indefinitely. Whatever its form, EDLC involves relatively stable pricing. Thus, EDLC is defined here as a manufacturer pricing strategy which minimizes variability in the selling price of a brand to channel members and establishes a list price which is lower than the list (i.e., non-deal) price would be if a trade deal pricing strategy was implemented.

Buzzell, Quelch, and Salmon (1990) first advocated a form of EDLC which they referred to as "everyday low purchase price." With this strategy, "a retailer arranges to buy a particular product from a manufacturer on an as-needed basis at a weighted average price reflecting both the proportion of merchandise recently bought on a deal basis and the proportion bought at the regular price" (p. 147). Buzzell et al. (1990) argued that EDLC has three primary benefits: (1) it avoids manufacturer and distributor inventory costs associated with forward buying, (2) reduces manufacturers' and retailers' administrative expenses associated with negotiating and monitoring trade deals, and (3) improves retailer and manufacturer relationships through a long-term collaborative effort. The initial enthusiasm for EDLC gained momentum when Procter & Gamble began its transition to EDLC (which the company referred to as value pricing) in 1991. Academics and industry experts speculated that stabilized manufacturer pricing would benefit manufacturers, retailers, and consumers. For example, it was suggested that EDLC would increase the value obtained by consumers through price reductions (Lawrence 1993), facilitate stronger manufacturer brands through a reallocating promotional moneys from trade deals to brand equity building efforts (Price, 1992), and allow retailers to focus on improving merchandising and customer satisfaction (Hoch, Drèze, and Purk, 1994).

RESEARCH CONTEXT

Within the packaged goods industry, expenditures on trade deals more than tripled between 1981 and 1991. In 1991, trade deal expenditures reached $36.5 billion, and for the first time, spending on trade deals surpassed advertising (Reitman, 1992). This expansion in

trade deal spending has been attributed to declining U.S. population growth, waning managerial faith in advertising, increasing consumer price sensitivity, and an influx of new line extension and imitation products (Buzzell et al., 1990). As these forces intensified competition, manufacturers are believed to have turned to trade deals as a more certain means of building market share.

Problems with Trade Deals

Although manufacturers now devote a large portion of their marketing expenditures to trade deals, the profitability of these promotions (i.e., ability to generate incremental consumer sales) is being brought into question (Blattberg and Levin, 1987; Buzzell et al., 1990; Quelch, 1983). The effectiveness of trade deals in generating incremental consumer sales is, in part, dependent upon retailers responding to them with merchandising support (e.g., temporary retail price cuts, displays, and advertising). However, research has revealed that trade deals often do not elicit such support (Chevalier and Curhan, 1976; Curhan and Kopp, 1986; Walters, 1989). Blattberg and Levin (1987) also found that manufacturers' trade deals may merely shift the timing of retailers' purchases rather than leading to increased consumer sales.

Collectively, these findings showed that a predominant retailer response to trade deals has been to forward buy (i.e., deal-to-deal purchasing). When this practice is employed, retailers buy large quantities of product at the end of the promotional period for inventory. By doing so, they are able to minimize the amount of product purchased at list price. This practice can be profitable as long as the discount received from the trade deal exceeds the costs associated with storing the inventory (Blattberg and Neslin 1991). Not only do retailers sometimes buy at the deal price for future sales at their own regional stores, they may also buy "on-deal" for other members of the chain (not offered the deal), or resell product purchased at the deal price to stores not related to them in any way. Such practices have been termed "diverting" (Struse, 1987). Many packaged goods retailers have relied on forward buying and diverting for a substantial portion of their net income (Gavigan and Price, 1992).

Forward buying and diverting result in large swings in retail demand for manufacturers' products. And, unstable retail demand leads to increases in manufacturers' production and inventory costs (Blattberg and Levin, 1987; Buzzell et al., 1990). Forward buying and diverting also lead to a loss in manufacturers' control over pricing, promotion, and distribution strategies (Buzzell et al., 1990; Quelch, 1983).

The EDLC Alternative

By adopting an EDLC strategy, manufacturers may be able to reduce the negative impact of forward buying and diverting. They can then allocate savings from decreases in on-deal sales, and from production, shipping, and inventory cost reductions toward lowering list prices, increasing profits, and building brand loyalty through increasing advertising expen-

ditures. Motivation for implementing EDLC may also stem from manufacturers' desires to adjust their selling practices to meet better the needs of large EDLP retailers. Furthermore, manufacturers may have turned to EDLC in an attempt to lower retail prices and combat the market share gains achieved by retailers' private label programs (Lowy, 1993). A competitive advantage may be gained if, through EDLC, a manufacturer can achieve a lower regular retail price (i.e., non-sale price) than competition (Rajendran and Tellis, 1994). In such cases, the higher regular retail prices assigned to competitors' brands creates a favorable contextual reference point for the EDLC brand.

Significant variation in retailers' attitudes and reactions toward EDLC programs has been reported in the trade literature (e.g., Partch, 1995). While some retailers have praised EDLC programs for reducing their inventory costs, others have responded by removing EDLC brands from their shelves. By eliminating the need to forward buy, EDLC offers retailers: (1) the potential for reducing inventory costs, and (2) the opportunity to offer consumers lower regular prices (Buzzell et al., 1990). However, these benefits may not be salient to some retailers, or in some cases may be outweighed by the perceived costs of EDLC, such as its elimination of forward buying opportunities.

OBJECTIVES AND SCOPE

Survey research conducted by Progressive Grocer (1993) indicates that retailers are less favorably disposed toward EDLC programs than manufacturers. Furthermore, reports in the trade literature suggest considerable variance in retailers' attitudes and behaviors toward EDLC programs (e.g., Berry, 1993; Mussey, 1997; Partch, 1992, 1995; Saporito, 1994). However, research addressing this issue is limited. With the intent of narrowing this gap in the literature, the objective of the present research is to formulate concepts and their interrelation into a set of propositions addressing the determinants of retailer response to EDLC programs. In doing so, the research is intended to address several questions, including:

- How do retailers form attitudes toward manufacturers' pricing strategies, such as EDLC?
- Why do some retailers favorably evaluate EDLC programs while others are reluctant to accept this pricing approach?
- What factors determine the likely success of an EDLC program?
- How are retailers responding to EDLC programs?
- What factors have impeded the diffusion of the EDLC pricing strategy?

This research focuses on packaged goods manufacturers and retailers. In the US, this industry includes some 30,000 mass merchandisers and drug stores and more than 35,000 supermarkets. The supermarkets alone account for approximately $315 billion in annual sales (*Directory of Supermarket, Grocery, and Convenience Stores*, 1993).

METHODS

The methods used in developing the ensuing propositions regarding retailer response to EDLC programs involved five primary operations: (1) sampling; (2) data collection; (3) coding data; (4) generating memos identifying relations and processes; and (5) conducting confirmability audits. The first four of these operations were ongoing throughout the project, while the confirmability audit took place during the final stage of analysis. These five theory development operations are discussed in greater detail in Table 1.

Precedent for using field interviews in studies of marketer behavior and attitudes has been established by Kohli and Jaworski (1990), Low and Mohr (1993), and Parasuraman, Zeithaml, and Berry (1985). The sampling procedure was dynamic in that the sample evolved over the course of the research as informants were selected on the basis of certain retailer characteristics that initial interviews revealed to be important determinants of retailer response to EDLC. Also, to ensure that the theory was not restricted to any subgroup of packaged goods retailers, efforts were made to sample a cross-section of retailers operating supermarket, discount, wholesale/club, and drug stores. These comparison groups were selected with the intention of generating new conceptual ideas, and verifying previously developed propositions in diverse contexts (Glaser and Strauss, 1965; Wallendorf and Belk, 1989). Table 2 profiles each of the 25 retail organizations interviewed.

Interviews were conducted in a nondirective fashion (McCracken, 1988; Merton and Kendall, 1946; Thompson, Locander, and Pollio, 1989). Adopting a loosely structured interviewing approach has the advantages of allowing subtleties which shape retailer response to EDLC programs to emerge from retailers' discussions of their experiences and preventing the interviewers' biases from influencing responses. An interview guide that contained nondirective questions, probes, and areas of inquiry was used (McCracken, 1988; Weiss, 1994).

Each interview recording was first transcribed and then coded. During this coding stage, categories and concepts were specified through close inspection of the data (Strauss and Corbin, 1990). Applying Glaser and Strauss' (1967) constant comparative method, each incident was compared to existing codes as part of the process of slowly building up a set of categories and concepts and possible relationships between categories and concepts (i.e., theoretical propositions). If a theoretical code was supported by the data, then it became a proposition and was subject to scrutiny as additional data were obtained. Theoretical codes were used to specify propositions such as: dimensions of a category; covariance among concepts; causal relationships; moderating relationships; contextual influences; and process. As the coding of categories and concepts proceeded, memos were developed that specified category and concept definitions and included commentary regarding the relationships between concepts (Glaser, 1978). The memos also identified supporting data and referred to relevant literature.

The set of memos were used in formalizing propositions and writing-up the findings. Diagrams graphically depicting the relationships between concepts were developed in tandem with the written memos (Miles and Huberman, 1984; Strauss, 1987). As explained by Strauss and Corbin (1990, p. 199): "Memos and diagrams help you to gain analytical dis-

TABLE 1

Summary of Research Methods

Operations	*Description*
Sampling	*Sampling Frame:* Over 2000 grocery stroes, convenience stores, drug stores, hypermarkets, wholesale clubs, general merchandisers, and deep discount drug retailers drawn from the *Directory of Supermarket, Grocery, & Convenience Store Chains* (1993) and the *Directory of Mass Merchandisers* (1993). *Sample:* Twenty-seven interviews with executives representing 27 firms. Two informants represented the manufacturer's perspective while the remaining 25 were retailers. Sixty-percent of the executives contacted by letter agreed to participate. *Purposive Sampling:* The sample was dynamic in that, as data revealed interesting associations between retailer characteristics and response to EDLC programs, an attempt was made to sample retailers who varied on these characteristics (e.g., buying power or promotional strategy). In addition, a cross-section of retailers was sampled to avoid restricting theory to any subgroup.
Data Collection	Fourteen in-person interviews and 13 telephone interviews over a 19-month period. Face-to-face interviews ranged from 30 minutes to 2 hours in length while the phone interviews were 20 to 40 minutes in length. Data collection ended when new data revealed primarily redundant information. *Interview Structure:* Informants were told that the focus of the research was on pricing and promotion issues within the packaged good industry and were assured of the anonymity of their responses. Permission to tape-record the interviews was requested and granted in each case. The interviews were nondirective and iterative with the primary aim of obtaining first-person descriptions of experience.
Coding Data	One hundred and fifty pages of single-spaced data were available for coding after transcription. Individual concepts within the data were identified and then categorized with like concepts. A "constant comparative method" was used in that each new incident was compared to existing categories and either incorporated or assigned to a new category and emergent theoretical propositions representing relationships among conceptual categories were developed as revealed by the data.
Generating Memos	Memos were used to link the emerging theory to existing theory and as a guide to writing up the findings. Final conceptualization was realized once all theoretical diagrams were consistent with all memos, in one sense assuring that the theoretical propositions "fit the data."
Confirmability Audit	Three independent auditors with Ph.D. degrees in marketing and expertise in qualitative data anlysis who are faculty at three different institutions evaluated the degree to which the theory was 'grounded' in the data. Eight instances of conceptual or theoretical ambiguity were identified as needing reassessment.

TABLE 2

Type of Stores[a]
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TABLE 2

Profiles of Retail Respondents

Type of Stores[a]	*Respondent's Position*	*Trading Area*	*Number of Stores*	*Price Promotion Activity*[c]
Supermarket	Mgr. Pricing	FL, GA, KY, NC, SC	131	high
Supermarket	Mgr. Grocery Sales	CO, SD, WY	36	moderate
Supermarket[b]	Buyer, Gen. Mdsg.	MA, RI	44	moderate
Supermarket[b]	VP, Grocery Mdsg.	TX	49	moderate
Supermarket and Convenience	VP, Marketing	FL	55	low
Drug	VP, Marketing	AL, FL, GA, MS, TN	350	high
Super and Supermarket	Dir. Grocery Mdsg.	GA, NC, SC	184	low/moderate
Super and Warehouse	Dir. Grocery Mdsg.	AL, FL, GA, MS, TN	258	low
Supermarket	Dir. Grocery Mdsg.	AL, FL, LA, MS	118	moderate
Gourmet Supermarket[b]	Mgr. Marketing	GA, NC, SC, TN	19	low
Supermarket	Msder, Grocery	IN	29	store dependent (low and high)
Supermarket	VP, Buying, Grocery	TN	14	low
Drug	Msder	AL, FL, LA, MS, TN, TX	177	high
Warehouse	Mgr. Retail Opers.	CO	7	low
Super	Dir. Gen. Mds., Groc.	CO	69	moderate/high
Supermarket	Mdser, Grocery	AL, GA, SC	122	high
Supermarket	Mdser, Grocery	AL, KY, TN	68	high
Supermarket and Convenience	Buyer, Grocery	MA, NY, PA, VT	87	low/moderate
Drug	VP, Marketing Res.	24 states	2,607	low
Supermarket	VP, Marketing	CO, NE, NM, SD, WY	112	high
Drug/Discount	President	AL, GA, NC, TN	23	low/moderate
Warehouse and Supermarket	VP, Buying, Mdsg.	CO	33	moderate
Supermarket and Convenience[b]	Mgr. Marketing	TX	10	high
Supermarkets[b]	Mgr. Mdsg.	MI	10	moderate
Supermarkets	Mdser, Grocery	NC, SC, TN	97	low

Notes. a. Super Stores have 30,000+ sq. ft. and annual sales volume of at least $10 million.
b. Majority of retailer's merchandise purchased through a distributor(s).
c. Price promotion activity estimates based on interviewees' perceptions of their price promotion activity relative to their competition.

tance from materials. They assist your movement away from the data to abstract thinking, then in returning to the data to ground these abstractions in reality." The memoing and diagramming began at the inception of the research and continued until the final write-up of the results. Finally, and as summarized in Table 1, during the last stages of theory development, independent research auditors assessed the correspondence between the data and the theoretical memos that eventually formed the final set of propositions (Wallendorf and Belk, 1989).

RESULTS

Theoretical networks generally include three ingredients: (1) a focal construct; (2) antecedents or causes of the focal construct; and (3) consequences or results of the focal construct (Bagozzi, 1984). The focal construct (also referred to as the core category) is important to grounded theory because it is this concept that accounts for the variation in a pattern of behavior that is relevant and problematic to those involved or interested in the substantive area (Strauss, 1987). In addition, the focal construct serves to unify the theory into a dense nomological network as the other constructs discovered are related to it. The theoretical framework described here centers around the focal construct, "retailer attitude toward the EDLC program" (A_{EDLC}).

Retailer Attitude Toward the EDLC Program (A_{EDLC})

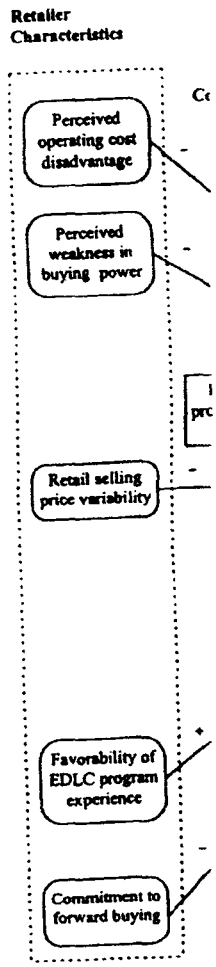
Following Petty and Cacioppo's (1981) definition of an attitude, A_{EDLC} is defined as a retail organization's enduring positive or negative feeling toward a manufacturer's EDLC program. The designation of this construct as focal to the theory was determined by its prominence within the data collected (Glaser and Strauss, 1967). During the course of the interviews, informants consistently made statements such as "we don't like (EDLC program) because they...," "we are not crazy about (EDLC program)...," "we like (EDLC program)...," "we don't like these strategies at all...," and "I like EDLC programs that..."

While attitudes are typically associated with an individual, marketing researchers have recognized the appropriateness of the attitude construct in organizational contexts. For example, researchers have recently investigated attitudes of reseller organizations toward trade programs in general (Frazier and Sheth, 1985; Frazier and Stewart, 1989), pioneer (and "me-too follower") brands (Alpert, Kamins, and Graham, 1992), and conflict resolution (Frazier and Rody, 1991). Furthermore, literature on organizational learning has long recognized that members of organizations share information and create organizational memory in the form of shared beliefs, attitudes, assumptions, and norms (Argyris and Schön, 1978).

Antecedents of A_{EDLC}

Antecedents of A_{EDLC} are shown in Figure 1. This figure illustrates that the antecedents discovered include:

1. Retailer characteristics—attributes of retail firms found to influence A_{EDLC}.
2. Contingency factors—those concepts found to affect the strength of the relationships between retailer characteristics and A_{EDLC}.
3. Program/environment compatibility—a retail organization's perceptions of the compatibility between an EDLC program and its marketing environment. This mediating construct represents the "generative mechanism" through which retailer characteristics influence A_{EDLC} (Baron and Kenny, 1986).



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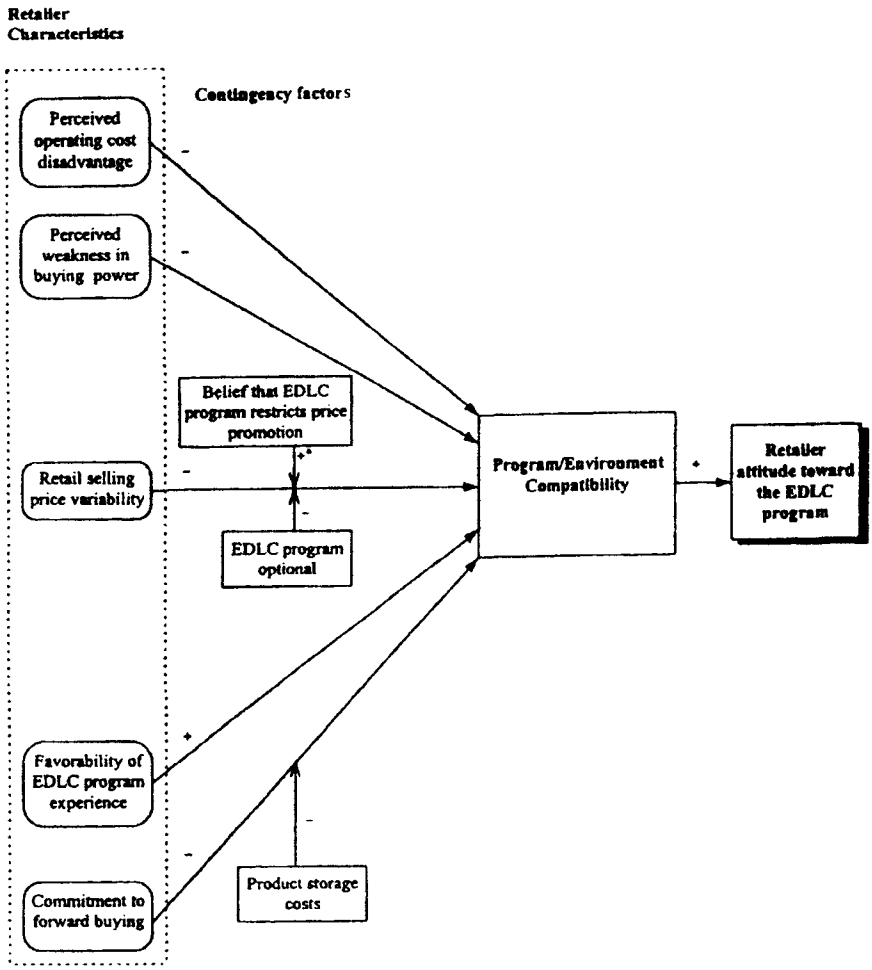

Note: a. This positive sign indicates that the more strongly held the belief that EDLC restricts price promotion, the stronger the negative effect of RSPV on EDLC Program/Environment Compatibility.

FIGURE 1

Antecedents of Retailer Attitude toward the EDLC Program

As shown in the figure, five retailer characteristics (i.e., "perceived operating cost disadvantage," "perceived weakness in buying power," "perceived retail selling price variability," "EDLC program experience," and "commitment to forward buying,") were found to affect A_{EDLC}. The influence of these concepts on A_{EDLC} was discovered to be mediated by program/environment compatibility. This mediating category is critical to the theory

because it explains how and why the retailer characteristics influence A_{EDLC}. In addition, the contingency factors (i.e., product storage costs, belief that the EDLC program restricts price promotion, EDLC program option) provide an indication of when retail selling price variability and commitment to forward buying are likely to influence A_{EDLC}. Following a discussion of the mediating category, "program/environment compatibility," the retailer characteristics and their effects on A_{EDLC} are described.

Program/Environment Compatibility

In evaluating trade programs, a key concern of retailers is the effect of the program on profits. However, rather than a strict focus on profit, retailers' explanations for their attitudes toward EDLC programs involved assessments of the compatibility between the EDLC program under consideration and one or more dimensions of their marketing environment (Etgar, 1979; Frazier and Rody, 1991). That is, the reasons retailers gave for liking or disliking an EDLC program were based on whether they perceived the program to be compatible with various aspects of their marketing environment. These reasons or explanations were categorized into four dimensions of program/environment compatibility.

The first dimension, called "retailer environment compatibility," represents the extent to which an EDLC program is perceived to be (in)consistent with company strategy. Retailers explained that the programs did or did not fit with their pricing, promotional, or buying strategies. Expressions of retailer environment compatibility, such as "(the EDLC program) works well with our buying goals" or "their program doesn't allow us to promote the way we would like" were prominent in the interviews.

A second category of program environment compatibility is "competitive environment compatibility." This dimension refers to the extent to which an EDLC program is perceived to present a competitive (dis)advantage. Retail informants often claimed that EDLC programs presented them with a cost and/or selling price (dis)advantage over competitors. For example, some retailers viewed EDLC as a competitive threat and indicated that the pricing strategy would level the playing field and not allow them to continue to offer lower prices lower than their competitors.

The third dimension, "consumer environment compatibility" refers to the extent to which an EDLC program is perceived to be (in)consistent with consumer behavior. This compatibility dimension was reflected in retailers' judgments of consistency between an EDLC program and consumer search behavior or consumer pricing preferences. Retail informants' comments reflecting consumer environment compatibility included statements such as "the program brings us closer to what the consumer really needs" and "(the EDLC program) doesn't allow us to have the special prices that customers want."

The fourth dimension, "channel environment compatibility," refers to the extend to which an EDLC program is perceived to benefit (or harm) retailer/manufacturer relations. In some cases, retailers argued that they liked an EDLC program because it would improve their relationship with manufacturers implementing this strategy, while in other cases, retail informants noted that EDLC programs are disliked because they put their organizations at odds with EDLC implementing manufacturers.

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Although four compatibility dimensions were discovered, each informant did not reveal consideration of the fit between EDLC programs and each of the marketing environments (i.e., retailer, competitive, customer, and channel). While data collected from some informants indicated a thorough assessment of compatibility involving all four environments, other informant data revealed compatibility assessments involving only one or two environments (Day and Nedungadi, 1994). For sake of parsimony, the subsequent discussion of the effects of retailer characteristics and contingency factors on A_{EDLC} does not independently examine the mediating role of each compatibility dimension, rather, as shown in Figure 1, "program/environment compatibility" is treated as a general mediating category representing the four compatibility dimensions discussed above.[1]

Perceived Operating Cost Disadvantage

A retailer's perception of its operating costs relative to the operating costs of its competition was found to affect program/environment compatibility, and, in turn, A_{EDLC}. Several of the retailers interviewed suggested that by reducing the funds available for use in implementing price promotions, EDLC programs had the effect of stabilizing their prices. These informants revealed that in forming evaluations of EDLC programs, they considered how the stabilizing of retail prices (following EDLC implementation) affected their competitiveness.

Informants who perceived their operating costs to be high relative to their competitors expressed the belief that it would be difficult for them to achieve profits with competitive, stable prices. Thus, as shown in Figure 1, perceived operating cost disadvantage is proposed to have a negative impact on program/environment compatibility. One respondent noted:

> (Competitor's) cost structure is going down, their gross margin can go down, and they can maintain and even improve their bottom line. You can sell it to me for ten bucks, sell it to (competitor) for ten bucks, they can sell it for twenty cents cheaper than I do and still make more money at it because their inside costs are lower. And all of the sudden, if you're selling this (without offering trade deals), you've taken all of my strength away.

A similar view is evident from the following interview excerpt:

> I have a clerk out there making $12 an hour. (Competitor) has a clerk making $6 an hour. So even if you level everything off for me as far as cost, I still cannot give the same price to the consumer. That is why we have to capitalize on our high-low (price promotion) strategy.

The perception that an operating cost disadvantage will be of greater consequence when manufacturers implement EDLC pricing is quite interesting. Of course, an operating cost disadvantage does not disappear with traditional trade deal pricing. However, the retail managers (of firms with an operating cost disadvantage) reason that trade deals provide a means for them to offer low prices on at least a temporary basis, while still maintaining profit margins. Ironically, while EDLC may lower the operating costs of retailers that per-

ceive their operating costs to be relatively high, these retailers were likely to have unfavorable perceptions of EDLC programs. One informant, clearly aware of the potential inventory cost reducing benefits of EDLC stated:

> For us, ideally it would help to smooth things out at our end as well, we would pay the same price at any time and we wouldn't have to load up on inventory. However, sometimes we want to (load up on inventory) because we want to be out there and we want to mass out a product and have a low ball price on it. Then, we place the product in our newspaper ad and we have something to draw in some people.

From this perspective, a viable medium or long-term strategy for "high cost" retailers may be to forward buy and price promote even though these strategies may lead to higher costs than more stable purchasing and pricing practices.[2]

Perceived Weakness in Buying Power

A_{EDLC} was also found to be influenced by perceived weaknesses in buying power. Perceived buying power has been defined as "the buyer's perception of the firm's negotiating strength in a particular buying situation" (Bunn, 1993, p. 45). The size of a firm is one indicator of its buying power (Slater and Narver, 1994). Some of the relatively small retail firms sampled suggested that, in comparison to traditional trade deal programs, EDLC programs provide larger firms that have greater buying power an increased ability to obtain favorable prices from manufacturers. (Noteworthy, informants from larger firms did not volunteer statements to the effect that they have a buying power advantage with EDLC programs.) As illustrated in Figure 1, perceived weakness in buying power is proposed to have a negative effect on the perceived compatibility between EDLC programs and retailers' environments. The fear that quantity discounts associated with EDLC programs will result in a competitive disadvantage for small retailers is evident from the following interview excerpt:

> Those who have greater buying power (may have an advantage with EDLC)... There may be a mass merchandiser price level, and you may have an independent guy that buys twenty cases a month, and represents nothing to a huge manufacturer, and he may have to pay a premium. But yet, it will be presented as an EDLC price.... Before, if a deal was out there, we were generally able to buy the deal as well as anyone else, because they had one deal. I'm afraid that we are going to have multi-level every day low prices.

For this concern to be an actual threat, manufacturers would have to offer quantity discounts with EDLC programs, but not with traditional trade deal programs, or offer larger quantity discounts with EDLC programs. Given that research has yet to address the issue of the actual quantity discounts associated with EDLC and traditional trade deal programs, it is not possible to conclude whether this concern (of low buying power retailers) is justi-

fied. Whether rational or not, the data provided convincing evidence that retailers with low perceived buying power fear that EDLC programs may harm their ability to compete.

Perceived Retail Selling Price Variability

Packaged goods retailers are frequently categorized according to their pricing/promotion practices as high-low or EDLP operators (Hoch et al., 1994). The high-low strategy is characterized by relatively high normal retail prices and deep price promotions. This strategy is thought to allow retailers to discriminate between segments of consumers that vary in terms of price sensitivity.

In contrast to the high-low strategy, an EDLP pricing strategy is characterized by relatively low prices and no (or little) retail price promotion activity. This approach to pricing has been initiated by discounters like Wal-Mart, as well as by some club, grocery, and drug stores. Rationale for this pricing strategy has been provided by claims that consumers' confidence in retailers' regular prices has been eroded by heavy price promotion, and that consumers do not want to have to study ads and shop for a good price (Ortmeyer, Quelch, and Salmon, 1991). It has also been suggested that EDLP is easy for consumers to understand, and that it allays consumers' fears that following a purchase, the product will be discounted by the retailer or competitor. In addition, it has been suggested that EDLP offers retailers cost savings due to its simplicity (Ortmeyer et al., 1991).

As noted by Hoch et al. (1994), research conducted by the Food Marketing Institute has revealed that retailers actually vary in the degree to which they have adopted an EDLP or high-low strategy across their product assortments. That is, some firms that are primarily high-low operators have adopted EDLP for a portion of their products, and other retailers that emphasize an EDLP position offer occasional price promotions. In addition, some high-low operators offer deep price promotions, while others offer consumers relatively smaller discounts off the regular price. For these reasons, it is more appropriate to think of the EDLP and high-low strategies as representing a continuum. This continuum is denoted by the construct titled perceived retail selling price variability (RSPV), defined as a retail manager's perception of the extent to which the firm's prices (across all products) vary over time. A retailer's perception that its prices are stable over its entire product assortment would be characterized as low RSPV, while a retailer's perception that it offers frequent deep price promotions across its product mix would represent high RSPV.

As shown in Figure 1, RSPV was found to influence the compatibility between EDLC programs and informants' marketing environments. Consistent with this finding, explanations offered in the trade literature for retailers' attitudes and behaviors toward EDLC programs have frequently centered on retail formats. Specifically, it has been suggested that EDLC is most widely supported by mass merchandisers that are practicing an EDLP strategy, and EDLC is least supported by supermarkets and drug stores that have traditionally adopted high-low pricing strategies (e.g., Lawrence, 1993; Schiller, 1992).

The findings of the current study suggest that type of retail format (e.g., grocery vs. mass merchandiser or EDLP vs. high-low) is not a consistent indicator of EDLC program evaluations. The interview data suggests that, on average, low RSPV retailers may be more favorably disposed toward EDLC than high RSPV retailers. However, as shown in Figure

1, two contingency factors were found to moderate the negative relationship between perceived RSPV and the compatibility dimensions. One of these contingency factors (i.e., belief that the EDLC program restricts price promotion) was found to influence high RSPV retailers' evaluations of EDLC programs, and the other contingency factor (i.e., EDLC option programs) had its primary impact on low RSPV retailers' evaluations.

High RSPV retailers' perceptions of compatibility between an EDLC program and their marketing environments were dependent upon the extent to which they believed that an EDLC program would restrict their ability to price promote. In its purest form, EDLC could be implemented without any promotional funds available to the retailer. However, in practice, accrual funds typically accompany EDLC programs. These funds normally involve an account in which a percentage of the total dollar sales purchased by the retailer is set aside for the retailer to use in promoting the manufacturer's product.

The high RSPV retailers varied in terms of whether they believed these funds were sufficient in pursuing their price promotion strategy. Some believed the funds were large enough to facilitate the desired price promotion activity, while others did not. The former were found to judge EDLC programs to be more compatible with their marketing environment than the latter. The belief that EDLC programs restrict price promotion is evident in the following interview excerpt.

> We are not crazy about (EDLC program). Because traditionally we have been a high-low pricing strategy company. And, we enjoyed those deals and found that we could differentiate ourselves by exploiting those through our price promotion strategy. With (EDLC program), its out there, everybody has it and they have it at the same time and there is very little to be done with it.

Sentiments such as these imply that by removing funds available for price promotions, EDLC prohibits the firm from practicing its preferred retail strategy (i.e., price promotion). In addition, these retailers claim that EDLC limits their ability to differentiate themselves from competition on the basis of price and to use price promotions as a means of injecting excitement into their store environments.

The other contingency factor, whether the EDLC program is optional, was found to alter low RSPV informants' perceptions of program/environment compatibility. Frequently, manufacturers allow retailers to choose between purchasing product on the basis of an EDLC program or a traditional trade deal program. Retailers using a low selling price variability strategy were found to evaluate EDLC programs less favorably when the program was offered as an option to a trade deal program. A manufacturer interviewed explained his experience offering an EDLC option to a low RSPV retailer:

> (Retailer) is looking for every day low prices, and we figure that this would be the perfect strategy for (Retailer) to really get on the ball with us. Well, they said, 'now wait a minute, you're telling me that I'll only have (a constant allowance of) $0.96, while (Competitor) across the street will have $1.20, and you want me to buy this program. I can't tell you that I am very excited about it. Plus they are going to buy out so they will not only have the six week window, but they will have another six weeks, so over

> twelve weeks they will have $1.20 in their warehouse, and we'll have $0.96. I don't think that is the kind of program that I want to be with.'

This perspective was echoed by several of the low RSPV retailers interviewed. For example, one executive stated:

> We like their EDLC program. We are aligning ourselves with manufacturers to drive costs out of the system, and we think that EDLC does that.... It would be difficult, however, if they continued to do high-low with other retailers and EDLC with us. We may not be as competitive as we would like to be.

EDLC Program Experience

Some of the respondents indicated that their firm had limited experience with EDLC programs, and suggested that their evaluations would be dependent in part on how well EDLC programs work for them. This 'wait and see' mentality may also reflect retailers' desire to gather additional market information related to the likely success of EDLC programs prior to forming an evaluation (Anand and Stern, 1987). For example, when one retailer was asked how his firm felt about an EDLC program that a manufacturer had recently introduced, he responded:

> We don't know—we don't know. We've taken a look at their program. We're going to see what the test of time does with that. We are taking down the retail price on those items, maintaining our gross profit, not gross percent, and we're going to give it the test of time.

In contrast, other informants' evaluations of EDLC programs were found to be held with greater confidence. It became apparent that direct and vicarious experiences with EDLC programs played a part in the evaluation of these programs. (See Figure 1.) For example, one executive stated:

> We sit down with a lot of these companies and say that we need to get on these EDLC programs because we have tested this with a major supplier ... from that we learned what happened to our turns, what happened to the cash flows, what happened to the gross profit, and then more importantly what happened to the outside storage costs was significant.

Informants also detailed less favorable experiences. One executive stated:

> Some suppliers are changing to everyday low cost and expecting us to change to everyday low retail. And that all sounds good, but when we change to everyday low prices, basically we didn't get a response from the customers in terms of an increase in sales to offset the decrease in margins.

Whether leading to positive or negative outcomes, these past experiences with EDLC programs are likely to play an important role in shaping compatibility assessments of more recently introduced programs. For example, if a retailer had accepted an EDLC program in the past and found that its subsequent retail pricing was not competitive, then this past experience is likely to have a negative impact on perceptions of program/environment compatibility for similar programs.

Commitment to Forward Buying

Forward buying systems include warehouse space to store product purchased on deal, computer systems to provide information on economic levels of forward buying, and employees to facilitate all stages of forward buying. Commitment to forward buying is defined as the degree to which a retailer has forward buying systems in place and believes that the use of these systems is beneficial to the firm. As previously noted, EDLC programs largely eliminate forward buying opportunities. From this perspective, it follows that retailers' level of commitment to forward buying was found to relate to their assessments of EDLC programs. In addition, the influence of forward buying was discovered to be contingent upon the storage costs associated with the product. (See Figure 1.) Product storage costs refer to financial outlays required to hold the product in inventory and transport the product to and from storage facilities. Higher storage costs are typically incurred for products which are relatively bulky, expensive, or perishable.

Regardless of product storage costs, informants with a low commitment to forward buying tended to evaluate favorably the compatibility of EDLC programs. These retailers in many cases did not have systems in place to facilitate deal-to-deal purchasing and/or felt that forward buying was a nuisance. For example, one executive stated:

> We have got to find ways to eliminate forward buying costs out of our system ... and there ought to be a better way to sell that product without having to do all of this. A deal ends, you got a hot deal, a $2.00 deal, it's going to end and your next deal is going to be $1.00, so I have a chance to forward buy and make that additional dollar on the inventory that I am going to carry, then I plug it into my forward buy formula and see how far I buy out before that additional dollar starts costing me or before its starts impacting my return on inventory investment. So we calculate all of that, and we still say that there has got to be a better way, it is still not the way that we need to run our business... With EDLC we get the product right in and turn it—we eliminate the forward buy.

By removing forward buying costs, informants with a low commitment to forward buying felt that EDLC programs were compatible with their retail environments.

Respondents with a high commitment to forward buying tended to perceive EDLC programs for products with high storage costs as being more compatible with their marketing environments than EDLC programs for products with low storage costs. Since EDLC programs inhibit forward buying, informants that had established forward buying systems perceived EDLC programs (for products that do not have relatively high storage costs) as

lacking compatibility with their marketing environment. Such an instance is illustrated by the following interview excerpt:

> One of the things you have to understand is that our system is based on forward buying allowances. (EDLC programs) are a drastic change to that philosophy. We have a very sophisticated computer setup, which facilitates the forward buying process. We've had that for years. It tells us, based on the current cost of money, and the cost of the item, and how much room there is left in the warehouse, how much to forward buy—what is our most economical forward buy based on a minimum rate of return, which we have pre-set in the system.

With forward buying systems such as these in place, retailers highly committed to forward buying displayed a reluctance to change to a new method of buying that would render these systems useless. This finding is consistent with the sunk cost effect which is "manifested in a greater tendency to continue an endeavor once an investment in money, effort, or time has been made" (Arkes and Blumer, 1985, p. 124). Objectively, the past investment should not influence the present decision (i.e., evaluation of the EDLC program). Explanations for the sunk cost effect center on individual desires to not appear wasteful (Arkes and Blumer, 1985) and to avoid losses (Thaler, 1980).

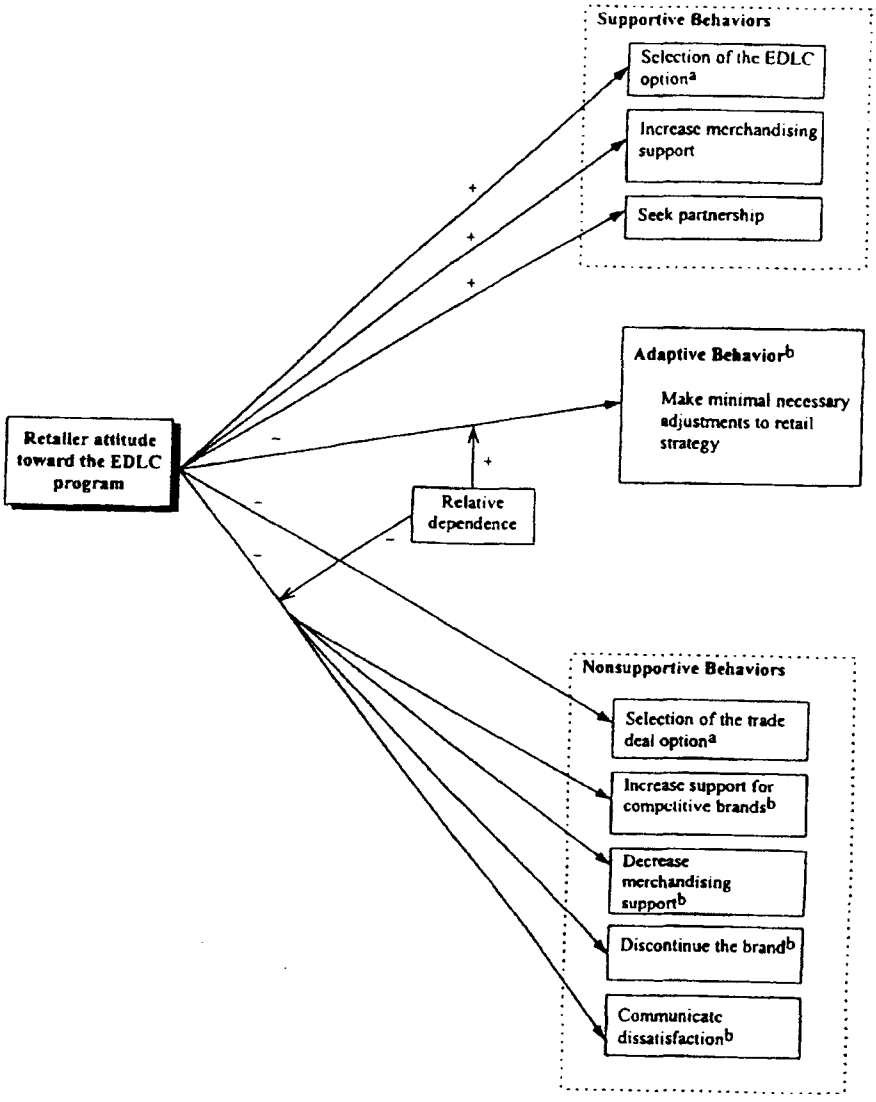
Several informants who reflected a high level of commitment to forward buying also expressed the belief that forward buying provides them with a competitive advantage. This advantage was perceived to be gained through obtaining product at a lower cost than competitors. For example, one retailer explained:

> I prefer deal pricing rather than EDLC because what I tend to do is buy deal to deal and try to be more competitive than some of the others who buy product once every month or once every two weeks whether its on deal or not.... We're just better off going deal to deal.

Retailers that are more proficient than their competitors in taking advantage of forward buying opportunities may actually not achieve a cost advantage over competitors. A cost advantage will result only if the discount received from the trade deal exceeds the costs associated with storing the inventory (Blattberg and Neslin, 1991). As such, informants highly committed to forward buying typically acknowledged that, in some cases, due to high storage and handling costs, forward buying would not offer a competitive advantage.

Consequences of A_{EDLC}

Figure 2 presents a graphical overview of the consequences of retailer attitude toward the EDLC program. As shown in the figure, A_{EDLC} was found to influence whether retailers responded to an EDLC with supportive or nonsupportive behaviors. The more favorable a retailer's attitude toward an EDLC program, the greater the likelihood that the response to



Notes: a. Pertains to EDLC option programs only.
b. Found to be a response to only non-optional EDLC programs.

FIGURE 2

Consequences of Retailer Attitude toward the EDLC Program

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the program was supportive (i.e., selection of the EDLC option, increasing merchandising support, seeking a partnership). On the other hand, we found that the more unfavorable a retailer's evaluation of an EDLC program, the greater the likelihood of nonsupportive behaviors occurring (i.e., selection of the trade deal option, supporting competitive brands, decreasing merchandising support for the brand, discontinuing the brand, communicating dissatisfaction). As such, in Figure 2, A_{EDLC} is shown to have a negative effect on nonsupportive behaviors. Importantly, however, the relationships between A_{EDLC} and four of the nonsupportive responses (i.e., supporting competitive brands, decreasing merchandising support for the brand, discontinuing the brand, communicating dissatisfaction) were found to be contingent upon a retailer's relative dependence on the supplier. The nature of this interaction was found to be such that the likelihood of unfavorable attitudes toward the EDLC program leading to these four nonsupportive responses decreased as relative dependence increased. Rather, in instances of high relative dependence, retailers were found to respond to the EDLC program by making the minimal necessary changes to their pricing and merchandising of the brand (i.e., adaptive behavior).

Selecting/Rejecting the EDLC Option

As previously noted, rather than making participation in an EDLC program mandatory, manufacturers frequently allow retailers to choose between continuing with a traditional trade deal program or changing to an EDLC program. When an option between an EDLC program and a traditional trade deal program is offered by a manufacturer, the valence of A_{EDLC} was found to determine selection/rejection of the EDLC alternative.

Supportive Responses

In addition to accepting EDLC option programs, some evidence was found that retailers also support optional and mandatory EDLC programs by increasing merchandising support for the brand and/or by seeking a partnership with the supplier. (See Figure 2.) Retailers can play a large role in determining the success of a brand within the category through their merchandising activity. Providing a brand with a favorable shelf position and featuring the brand in the retailer's advertising can help the retailer to align itself with a brand that is believed to provide favorable profit potential within the category. Retailers frequently stock several brands that are quite similar to each other. If a retailer has formed a favorable attitude toward an EDLC program, traditional trade deal programs for other brands within the product category may be seen as less compatible with the firm's environment and evaluated less favorably. Thus, retailers' desires to align themselves with EDLC brands may lead to their responding to EDLC programs by increasing merchandising support. For example, one of the manufacturers interviewed noted such support stating that:

> After we present the program, in the good cases, retailers come back to us and say 'this looks tremendous. And, in fact we are going to work closely with you.' So we have got-

> ten drop-ships from retailers that have never ran a drop ship before.... And they have stated that they will merchandise our product more because of our EDLC program.

Retailers may also respond to EDLC programs by attempting to form partnerships with suppliers offering these programs. Buzzell and Ortmeyer (1994, p. 4) define a channel partnership as "an ongoing, nonexclusive relationship between a retailer and an independent supplier, in which the parties agree on objectives, policies, and procedures for ordering and physically distributing the supplier's products." Consistent with this definition, EDLC programs may provide the initial impetus for retailer efforts to improve supplier-retailer coordination in order processing and replenishment of retail stocks. For example, retailers with favorable attitudes toward an EDLC program may proceed to work with the supplier in developing electronic data interchange (EDI) systems to facilitate continuous replenishment of retail inventory. The desire to form such partnerships was reflected in statements such as "we are aligning ourselves with manufacturers offering EDLC programs." And, reflecting on his company's success with an EDLC program, one retailer stated that:

> It has kind of been a joint effort—I would like to see if we (the retailer and supplier) can manage our businesses in the same way because, guess what, we both can make more money if we work together to operate this way.

Nonsupportive Responses

When an EDLC program is offered as an option to a traditional trade deal program, retailers with unfavorable attitudes toward the EDLC program can simply continue to buy according to the terms of the trade deal program. However, in the case of non-optional EDLC programs, retailers with unfavorable attitudes toward the program were found to respond by (1) increasing merchandising support of competing brands; (2) decreasing merchandising support of the EDLC brand; (3) discontinuing the EDLC brand; and (4) communicating dissatisfaction with the EDLC program.

By enhancing support for competing brands and/or removing merchandising support from EDLC brands, a retailer can align itself with brands using price/promotion programs perceived to be more compatible with the firm's marketing environment. Such responses may also provide a means of expressing dissatisfaction with the supplier for using a pricing strategy which the retailer perceived to be incompatible with its marketing environment. As a less aggressive measure, some retail executives were found to respond to EDLC programs by communicating their dissatisfaction with the program to the manufacturer. Finally, some of the retail informants indicated that in response to EDLC programs they had discontinued brands.

Importantly, the likelihood of A_{EDLC} having a negative effect on nonsupportive behaviors was found to be contingent upon a retailer's relative dependence on the supplier. Anderson and Narus (1990, p. 43) have defined relative dependence as "a firm's perceived difference between its own and its partner firm's dependence on the working partnership." In the context of this study, a retailer's relative dependence is likely to be determined by the market share of the brand, the category's market size, and the retailer's share of the

market, and the size of its market. For example, if a supplier's brand commands a large portion of the market, and the retailer has a small share of a small retail market, then the retailer's relative dependence is high.

The importance of relative dependence in determining response behavior is evident in this executive's statement:

> No, I don't like their EDLC program. But what I am getting at is that we can't walk away from the kind of shares that they have in some of the categories, so we have to work with them and we can't afford not to promote their products.

Similarly, when asked about his firm's response to an EDLC program, another executive stated:

> It depends on who it is. The alternatives I have would be of course to discontinue his item. Put pressure on him that way. In some cases we have done this. Also, we can promote different brands, that haven't (gone to EDLC), if they are not willing to work with us. And you know, if his product, by doing that, is not going to turn the volume ... we can always discontinue the brand, if we don't need it. In some cases there is not a lot we can do; it depends on the strength of the brand.

As suggested by these statements, the greater retailers' relative dependence on EDLC suppliers, the lower the likelihood that unfavorable attitudes toward EDLC programs will result in nonsupportive behaviors.

Adaptive Behavior

Rather than responding to EDLC programs with what have been categorized as supportive and nonsupportive behaviors, several informants indicated that they were responding by only making *minimal* changes to the pricing and merchandising of EDLC brands. These responses, which are indicative of an attempt by retailers to adjust to the supplier's pricing program, have been categorized as "adaptive behaviors." As shown in Figure 2, the likelihood of retailers responding to an EDLC program with adaptive behavior was found to depend on A_{EDLC} and the retailer's relative dependence on the supplier.

Retailers with unfavorable attitudes toward an EDLC program and high relative dependence on the supplier were found to respond with adaptive behavior. For example, after expressing dissatisfaction with EDLC programs, an executive of a small grocery chain responded to the question of what can be done by stating:

> We just kind of go with wherever the market goes, we don't have that much clout, we are just a small player. We certainly didn't start it, and we won't have any influence on how it comes out either.... It is something that we are going to have to look at the first of the year, we might have to go to a higher base markup strategy with those brands. Holding the markup and paying a lower cost is costing us profits. And, we are not making the money forward buying either—that is costing us too. We are just going to have to look at it because it is really becoming a concern of ours.

The finding that high relative dependence retailers are adapting to EDLC is consistent with conceptual and empirical evidence that a firm adapts to the degree that it is dependent on that counterpart (e.g., Anderson and Narus, 1990; Johanson, Hallén, and Seyed-Mohamed, 1991).

DISCUSSION

This theory development effort resulted in a detailed, "grounded" account of retailer response to EDLC programs. Attitude toward the EDLC program emerged from the data as the focal construct. Informants were found to form these attitudes through an assessment of the compatibility between the EDLC program in question and key aspects of their marketing environments (i.e., retailer, competitive, consumer, and channel). Perceptions of program/environment compatibility were found to be dependent upon several retailer and program characteristics. While program/environment compatibility was found to have a direct positive effect on A_{EDLC}, the relationship between A_{EDLC} and response behaviors (i.e., supportive, non-supportive, adaptive) was found to be contingent upon relative dependence.

Marketing scholars (Buzzell et al., 1990; Hoch et al., 1994) have reasoned that EDLC programs may represent win-win opportunities for manufacturers and retailers because both can eliminate unnecessary costs associated with forward buying and retailers can focus their time and resources on merchandising. Industry observers have generally concurred that EDLC programs are good for all involved. However, as evident from the current study, *all* retailers are far from perceiving *all* EDLC programs as win-win propositions. This research revealed several barriers that manufacturers face in gaining retailer approval of EDLC programs. For example:

- Some high RSPV retailers believe that, even when accrual funds are available, EDLC programs restrict their ability to price promote. These retailers feel that price promotion is instrumental in attracting customers and gaining a competitive advantage.
- Retailers committed to forward buying indicated several formidable impediments to the implementation of EDLC programs in the form of people, purchasing systems, resources, corporate culture, knowledge bases, and even paperwork dedicated to forward buying. These retailers are likely to view EDLC programs as incompatible with their marketing environment and, therefore, may not value or believe in the potential benefits of EDLC.
- Informants perceiving that their firm was at an operating cost disadvantage relative to the competition indicated that introducing variability into their pricing is essential to their competitiveness. Evidently, the high-low pricing approach implemented by these retailers, in tandem with imperfect consumer information, allows these retailers to compete against retailers with more favorable cost structures. Accordingly, retailers competing at an operating cost disadvantage look unfavorably upon strategies, such as EDLC, which may restrict their ability to price promote.
- Many of the EDLC programs offered by manufacturers are optional. Gaining retailer acceptance of EDLC options was revealed to be problematic for two reasons: (1)

many high RSPV retailers perceiving EDLC programs to be incompatible with their marketing environment and, therefore, opting for traditional trade deal programs which can be used to introduce variability into their pricing; and (2) low RSPV retailers concerns that their pricing will appear noncompetitive if their competition selects the traditional trade deal alternative.

General Implications for Channel Management

Suppliers frequently propose policy changes, referred to as trade programs, which require retailer participation in order to make them a success (Frazier and Stewart, 1989). Examples include trade promotion programs, inventory management programs, and training programs. As shown in Figure 3, general components of the theory developed herein are expected to generalize to the domain of retailer response to trade programs.

Perhaps the most important implication of this model is that retailers' evaluations of trade programs are likely to be based on a process in which the compatibility between the proposed program and key marketing environments is considered. As such, the manufacturer initiating the trade program can anticipate retailers judging the program on the basis of:

- *Retailer environment compatibility*—the extent to which an the trade program is perceived to be (in)consistent with company strategy.
- *Competitive environment compatibility*—the extent to which the trade program is perceived to present a competitive (dis)advantage.
- *Consumer environment compatibility*—the extent to which the trade program is perceived to be (in)consistent with consumer behavior.
- *Channel environment compatibility*—the extent to which the trade program is perceived to benefit (or harm) retailer/manufacturer relations.

Prior to introducing a new trade program, manufacturers can conduct research to determine retailers' perceptions of fit on these key dimensions. If the program is perceived as lacking fit, it can be modified, prior to introduction, in order to improve retailers' compatibility assessments, and in turn their attitudes and responses toward the program. Alternatively, on the basis of market research findings, it may be possible to identify retailer characteristics which affect compatibility assessments and then target the program exclusively toward those retailers who are most likely to perceive the program to be compatible with their marketing environment.

The Diffusion of EDLC

Widespread unfavorable attitudes and responses toward EDLC programs have likely slowed manufacturers' adoption of the EDLC approach. This slow rate of diffusion is reflected in *Cox Direct's* (1997) finding that the proportion of packaged goods manufacturers' promotional dollars allocated to trade promotions has remained quite steady between

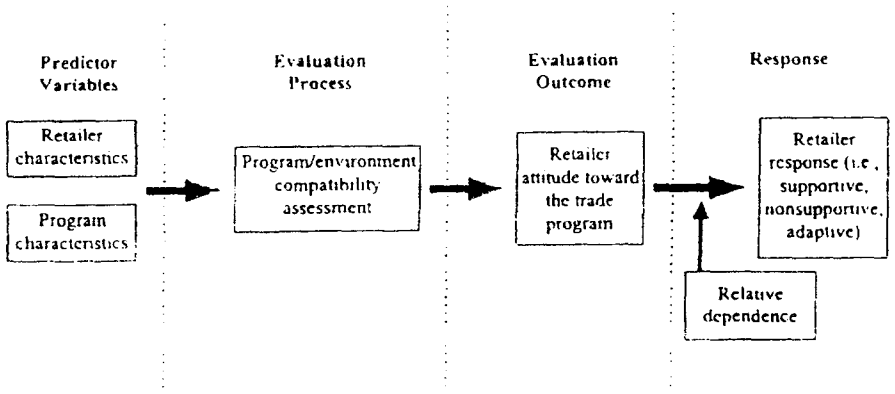

FIGURE 3

A General Model of Retailer Response to Trade Programs

1991 and 1996 at just under 50%. In addressing why diffusion of EDLC has been slow, and to speculate on the future of EDLC, we draw from the present research findings, as well as related literature.

Rogers (1983) provides evidence that the rate of diffusion of innovations, such as EDLC, is positively related to the compatibility of the innovation, as perceived by members of a social system. It has also been suggested that the more homogeneous a social system, the faster the rate of diffusion and the higher the maximum penetration level (Gatignon and Robertson, 1985). Accordingly, the considerable heterogeneity found to exist between retailers on key dimensions which affect perceptions of program/environment compatibility is likely to hinder the diffusion of EDLC. For example, retailers are heterogeneous with regards to operating costs, and those who perceive their firms as having an operating cost disadvantage were found to view EDLC as incompatible with their marketing environments. As such, the potential for favorable perceptions is reduced to a subset of retailers that do not perceive their firms to be at an operating cost disadvantage. This remaining pool of retailers, that may view EDLC favorably, is further reduced as other important determinants such as RSPV or commitment to forward buying are considered. Hence, heterogeneity in a retail population, on the characteristics identified as determinants of program/environment compatibility, is likely to act as an important factor affecting diffusion. With this heterogeneity, the substantial cost savings associated with EDLC (Buzzell et al., 1990) are unlikely to be fully realized.

The results of the current research suggest that the slow diffusion of EDLC may also be a result of manufacturers failing to consider and adjust to retailers' concerns about the compatibility between EDLC programs and their marketing environments. Greater acceptance of EDLC programs is likely to be largely dependent upon manufacturers' success in

persuading retailers of the benefits of EDLC, as well as their abilities to develop modified EDLC programs which address perceived incompatibilities between EDLC programs and retailers' marketing environments. Retailers committed to forward buying will have to be persuaded that the inventory efficiencies associated with EDLC programs outweigh the benefits gained through forward buying. Fear that EDLC will exacerbate competitive problems encountered by retailers perceiving weaknesses in buying power or an operating cost disadvantage must be addressed. Also, concerns about EDLC reducing the ability of retailers to introduce variability into their retail prices may have to be addressed through modified EDLC programs which include "pay-for-performance" trade deals or substantial accrual funds (from which retailers can draw in order to implement price promotions).

Interestingly, retailer responses in North America are now being replicated in Europe as firms such as P&G and the Italian pasta giant Barilla have recently initiated EDLC programs there (Mussey, 1997). Similar to experiences on our side of the Atlantic, both P&G and Barilla have experienced market share losses in the year since EDLC strategies were introduced. In an apparent attempt to improve judgments of program/environment compatibility, P&G has been trying to convince retailers that price promotions are not very effective on fixed-consumption items such as detergents and, therefore, that EDLC makes more sense for these product categories.

In providing a comprehensive view of the packaged goods industry, Kahn and McAlister (1997) suggest that packaged goods manufacturers have recently encountered many changes which present an assortment of challenges. In addition to the previously noted problems associated with trade deals, broader changes include increased global competition, the spread of information technology, an increasingly diverse and value-oriented consumer market, higher advertising media costs, the proliferation of "me-too" products, and the consolidation of wholesale and retail trade. Kahn and McAlister's overview of the industry suggests that manufacturers are encountering painful changes as they attempt to become more flexible and responsive to challenges they face. Furthermore, years of power struggles, distrust, and other forms of conflict between trading partners have created a less than ideal environment for initiating a change, such as EDLC. Given these market conditions, it may take additional time for EDLC to achieve its potential. One informant, who was asked about the future of EDLC programs, stated:

> I don't think there is any doubt in anybody's mind that eventually we're going to have to get to it. I mean it just doesn't make sense to create extra costs in the system. But, we're going to have to learn how to manage it, and that is just one of our concerns as a retailer. You just don't jump into something...the change needs to be more gradual so we have a chance to look at it and figure out how to make it work.

Support for this perspective is also provided by a recent survey of the industry which revealed increasing levels of support for EDLC (*Cox Direct*, 1997).

Slow diffusion of EDLC may also be a sign that trade deals and subsequent forward buying behavior are more beneficial to manufacturers than previously believed. Given the well documented problems associated with manufacturers' trade deals (e.g., highly variable production schedules, stockpiling inventories throughout the channel, high product dam-

[illegible] forward buying [illegible] pass-through rates). A commonly held belief is that trade deals and forward buying hurt manufacturers. However, the notion that manufacturers would continue to offer trade promotions, if they are indeed unprofitable, runs counter to the profit maximization assumption. Lal, Little, and Villa-Boas (1996) create a model which illustrates that (given certain assumptions) manufacturers' profits are greater when trade deals are offered and forward buying is allowed than under conditions in which forward buying is not permitted. These authors illustrate that forward buying benefits manufacturers by decreasing the intensity of competition. They also note that trade deals may be necessary to sell to warehouse stores which typically only buy products when they are on deal. While Lal et al. (1996) do not directly model EDLC pricing versus traditional trade deal pricing, the benefits of forward buying illustrated in their results provides insight into why manufacturers may be reluctant to switch to EDLC programs (and forego the decrease [illegible] created by forward buying).

Future Research

The present research is among the first to investigate the substantive issue of retailer response to EDLC programs; accordingly, many opportunities are available for extending this investigation. First, quantitative data could be gathered to test the theoretical propositions advanced in this paper and summarized in the Appendix A. Additional empirical research is also needed to assess the generalizability of the findings to a variety of trade programs (as illustrated in Figure 3).

Another avenue for future research is to investigate the link between channel pricing and consumer behavior. The current research provides evidence that manufacturers and retailers are commonly at odds in their perceptions of consumer behavior. Manufacturers and retailers that introduce high levels of variability into their pricing, as well as those that use stable pricing, both frequently expressed that their pricing methods are consistent with predominant consumer desires. The extent to which manufacturers' and retailers' theories of consumer promotional behavior are accurate could be investigated by comparing executives' estimates of consumer promotional desires and search behaviors with data collected to represent actual consumer preferences and behaviors (cf. Urbany, Dickson, and Kalapurakal, 1996; Urbany, Dickson, and Key, 1990). Another option for assessing the accuracy of managers' beliefs regarding consumer response to variability in retail pricing is to evaluate whether retailers with low RSPV (i.e., EDLP retailers) are gaining market share relative to those with high RSPV (i.e., high-low retailers). This research may help in identifying the sources of bias that enter into managers' decision making. Managers that introduce high (low) levels of variability into their pricing may overestimate (underestimate) the extent to which consumers shop for deals and gain utility from finding reduced prices. As suggested by the findings of current research, significant differences in manufacturers' and retailers' theories of consumer promotion sensitivity are likely to result in disagreements regarding trade promotion/pricing policies. Everyday low cost programs would likely be much more successful in the future if substantial segments of consumers are shown to actually prefer low levels of variability in retail pricing.

Future research may also benefit from considering the effect of market structure on A_{EDLC}. A lack of compatibility between an EDLC program and a retailer's competitive environment was revealed to be an obstacle for EDLC. As such, the intensity of market competition may serve as a predictor of the acceptance of EDLC programs. In certain markets where there is a lower concentration among food retailers, there may be less resistance to EDLC as concerns regarding the fit between an EDLC program and firms' competitive environments are less likely to surface. The level of market heterogeneity on key retailer characteristics related to the evaluation of EDLC programs may also serve as a predictors of acceptance of EDLC programs (Gatignon and Robertson, 1985). For example, the level of market heterogeneity in buying power and operating costs may be predictive of a particular market's acceptance of EDLC programs. As implied by the proposed framework, relatively high levels of disparity among retailers on these dimensions may lead to perceptions of a lack of program/environment compatibility, and consequently limit the expansion of this approach.

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APPENDIX A

Summary of Research Propositions

P1:	Retailers' perceptions of program/environment compatibility have a positive effect on A_{EDLC}
P2:	Perceived operating cost disadvantage has a negative effect on program/environment compatibility.
P3:	Perceived weakness in buying power has a negative influence on program/environment compatibility
P4:	(a) Perceived retail selling price variability has a negative influence on program/environment compatibility. (b) The stronger the retailer's belief that the EDLC program restricts price promotion, the stronger the negative influence of perceived retail selling price variability on program/environment compatibility. (c) The negative influence of retail selling price variability on program/environment compatibility is greater when the EDLC program is not optional than when the EDLC program is optional.
P5:	The favorability of EDLC program experience has a positive influence on program/environment compatibility.
P6:	(a) Commitment to forward buying has a negative influence on program/environment compatibility. (b) The higher the level of product storage costs, the weaker the negative influence of commitment to forward buying on program/environment compatibility.
P7:	*In the case of optional EDLC programs*, the more (less) favorable A_{EDLC}, the greater the likelihood that the retailer will select the EDLC (trade deal) alternative.
P8:	The more favorable A_{EDLC}, the greater the likelihood that the retailer: (a) will increase merchandising support for the brand. (b) seek out a partnership with the manufacturer.

(continued)

Appendix A (Continued)

P9: The less favorable A_{EDLC}, the greater the likelihood that the retailer will:
- (a) decrease its merchandising support for the brand.
- (b) increase its merchandising support for competitive brands.
- (c) discontinue the brand.
- (d) communicate its dissatisfaction with the EDLC program.

P10: The higher the retailer's level of relative dependence, the weaker the negative influence of A_{EDLC} on the likelihood that the retailer will
- (a) decrease its merchandising support for the brand.
- (b) increase its merchandising support for competitive brands.
- (c) discontinue the brand.
- (d) communicate its dissatisfaction with the EDLC program.

P11: The higher the retailer's level of relative dependence, the stronger the negative influence of A_{EDLC} on the likelihood that the retailer will respond to the EDLC program with adaptive behavior.

NOTES

1. A more detailed version of the paper wherein each program/environment compatibility dimension is examined independently is available from the authors.
2. We thank the Editor for bringing this point to our attention.

REFERENCES

Alpert, Frank H., Michael A. Kamins, and John L. Graham. (1992). "An Examination of Reseller Buyer Attitudes Toward Order of Brand Entry," *Journal of Marketing*, **56** (July): 25-37.

Anand, Punam and Louis Stern. (1987). "A Sociopsychological Explanation for Why Marketing Channel Members Relinquish Control," *Journal of Marketing Research*, **22** (November): 365-376.

Anderson, James C. and James A. Narus. (1990). "A Model of Distributor Firm and Manufacturer Firm Working Partnerships," *Journal of Marketing*, **54** (January): 42-58.

Argyris, Chris and Donald A. Schön. (1978). *Organizational Learning. A Theory of Action Perspective*. Reading, MA. Addison-Wesley.

Arkes, Hal R. and Catherine Blumer. (1985). "The Psychology of Sunk Cost," *Organizational Behavior and Human Decision Processes*, **35**: 124-140.

Bagozzi, Richard P. (1984). "A Prospectus for Theory Construction in Marketing," *Journal of Marketing*, **48** (Winter): 11-29.

Baron, Reuben M. and David A. Kenny. (1986). "The Moderator-Mediator Variable Distinction in Social Psychological Research. Conceptual, Strategic, and Statistical Considerations," *Journal of Personality and Social Psychology*, **51** (6): 1173-1182.

Berry, Jon. (1993). "You Want Reality?" *Brandweek*, (May 10): 19-24.

Blattberg, Robert C. and Alan Levin. (1987). "Modeling the Effectiveness and Profitability of Trade Promotions," *Marketing Science*, **6** (Spring): 124-146.

Blattberg, Robert C. and Scott A. Neslin. (1991). "Sales Promotion Models." In Johoshua Eliashberg and Gary L. Lilien (Eds.), *Handbooks in Operation Research and Management Science*.

Bunn, Michele D. (1993). "Taxonomy of Buying Decision Approaches," *Journal of Marketing*, **57** (January): 38-56.

Buzzell, Robert D. and Gwen Ortmeyer. (1994). "Channel Partnerships. A New Approach to Streamlining Distribution," Cambridge, MA. Marketing Science Institute, Report No. 94-104.

Buzzell, Robert D., John A. Quelch, and Walter J. Salmon (1990). "The Costly Bargain of Trade Promotion," *Harvard Business Review*, 68 (March-April): 141-149.

Chevalier, Michel and Ronald C. Curhan. (1976). "Retail Promotions as a Function of Trade Promotions. A Descriptive Analysis," *Sloan Management Review*, **18** (Fall): 19-32.

Cox Direct 19th Annual Survey of Promotional Practices. (1997). Largo, FL. Cox Direct.

Curhan, Ronald C. and Robert J. Kopp. (1987). "Obtaining Retailer Support for Trade Deals. Key Success Factors," *Journal of Advertising Research*, **27** (December): 51-60.

Day, George S. and Prakash Nedungadi. (1994). "Managerial Representations of Competitive Advantage," *Journal of Marketing*, **58** (April): 31-44.

Directory of Mass Merchandisers. (1993). Stamford, CT. Trade Dimensions.

Directory of Supermarket, Grocery & Convenience Store Chains. (1993). Tampa, FL. Business Guides Inc.

Etgar, Michael. (1979). "Sources and Types of Intrachannel Conflict," *Journal of Retailing*, **55** (Spring): 61-78.

Frazier, Gary L. and Raymond C. Rody. (1991). "The Use of Influence Strategies in Interfirm Relationships in Industrial Product Channels," *Journal of Marketing*, **55** (January): 52-69.

Frazier, Gary L. and Jagdish N. Sheth. (1985). "An Attitude-Behavior Framework for Distribution Channel Management," *Journal of Marketing*, **49** (Summer): 38-48.

Frazier, Gary L. and David W. Stewart. (1989). "Channel Member Response to Trade Programs," Cambridge, MA. Marketing Science Institute, Report No. 89-119.

Gatignon, , Hubert and Thomas S. Robertson. (1985). "A Propositional Inventory for New Diffusion Research," *Journal of Consumer Research*, **11** (March): 849-867.

Gavigan, Avery and Kevin Price. (1992). "The Meaning of EDLP," *Food & Beverage Marketing*, (May): 28-29.

Glaser, Barney G. (1978). *Theoretical Sensitivity. Advances in the Methodology of Grounded Theory*. Mill Valley, CA. The Sociology Press.

Glaser, Barney G. and Anselm L. Strauss. (1965). "Discovery of Substantive Theory. A Basic Strategy Underlying Qualitative Research," *American Behavioral Scientist*, **8** (6): 5-12.

_____. (1967). *The Discovery of Grounded Theory. Strategies for Qualitative Research*. New York: Aldine Publishing Company.

Hoch, Stephen J., Xavier Drèze, and Mary E. Purk. (1994). "EDLP, Hi-Lo, and Margin Arithmetic," *Journal of Marketing*, **58** (October): 16-27.

Johanson, Jan, Lars Hallén, and Nazeem Seyed-Mohamad. (1991). "Interfirm Adaptation in Business Relationships," *Journal of Marketing*, **55** (April): 29-37.

Kahn, Barbara E. and Leigh McAlister. (1997). *Grocery Revolution. The New Focus on the Consumer*. Reading, MA: Addison-Wesley Educational Publishers.

Kohli, Ajay K. and Bernard J. Jaworski. (1990). "Market Orientation. The Construct, Research Propositions, and Managerial Implications," *Journal of Marketing*, **54** (April): 1-18.

Lal, Rajiv, John D. C. Little, and J. Miguel Villa-Boas. (1996). "A Theory of Forward Buying, Merchandising, and Trade Deals," *Marketing Science*, **15** (1): 21-37.

Lawrence, Jennifer. (1993). "Supermarket Tug of War. Will P&G's Pricing Policy Pull Retailers Over to its Side?" *Advertising Age*, (April 19): 1, 42-43.

Low, George S. and Jakki J. Mohr. (1993). "The Advertising-Sales Promotion Trade Off. Theory and Practice," Cambridge, MA. Marketing Science Institute, Report No. 92-127.

Levy, Gabriel D. (1993), "Every-Day-Low-Pricing—Cost Reduction Strategy for the Future: Implications and Risks," Oppenheimer and Co., Inc.

McCracken, Grant (1988), *The Long Interview*, Newbury Park, CA: Sage Publications.

Merton, Robert K. and Patricia L. Kendall (1946), "The Focused Interview," *The American Journal of Sociology*, 51 (6): 541-557.

Miles, Mathew B. and A. Michael Huberman (1984), *Qualitative Data Analysis*, Beverly Hills, CA: Sage Publications.

Mussey, Dagmar (1997), "Heat's on Value Pricing," *Advertising Age*, (January 13): i21-i22.

Ortmeyer, Gwen, John A. Quelch, and Walter Salmon, (1991), "Restoring Credibility to Retail Pricing," *Sloan Management Review*, (Fall), 55-66.

Parasuraman, A., Valarie A. Zeithaml, and Leonard L. Berry (1985), "A Conceptual Model of Service Quality and Its Implications for Future Research," *Journal of Marketing*, **49** (Fall): 41-50.

Parker, Ken (1995), "Trade Promotions Inch Toward Sanity," *Supermarket Business*, (May): 10-20.

_____ (1997), "EDLPP Survey: Questions You've Been Dying to Ask!," *Supermarket Business*, (November): 33-37.

Petty, Richard E. and John T. Cacioppo (1981), *Attitudes and Persuasion: Classic and Contemporary Approaches*, Dubuque, IA: Wm. C. Brown Company.

Price, Kevin (1992), "Why You Must Join the EDLP Revolution," *Food & Beverage Marketing*, (June): 20-21, 55.

Progressive Grocer, (1993), "The Changing Face of Competition," (April), 66-74.

Quelch, John A. (1983), "It's Time to Make Trade Promotion More Productive," *Harvard Business Review*, 61 (May/June): 130-136.

Rajendran, K. N. and Gerard J. Tellis, (1994), "Contextual and Temporal Components of Reference Price," *Journal of Marketing*, 58 (January): 22-34.

Reitman, Valarie, (1992), "Eliminating Discounts on P&G Goods Annoy Many Who Sell Them," *Wall Street Journal*, (August 11): A1, A11.

Rogers, Everett M. (1982), *Diffusion of Innovations, Third Edition*, New York: The Free Press.

Saporito, Bill, (1994), "Behind the Tumult at P&G," *Fortune*, (March 7): 74-82.

Schiller, Zachary, (1992), "Not Everyone Loves A Supermarket Special," *Business Week*, (February 17): 64-68.

Slater, Stanley F. and John C. Narver, (1994), "Does Competitive Environment Moderate the Market Orientation Performance Relationship?," *Journal of Marketing*, **58** (January): 46-55.

Strauss, Anselm L. (1987), *Qualitative Analysis for Social Scientists*, New York: Cambridge University Press.

Strauss, Anselm L. and Juliet M. Corbin, (1990), *Basics of Qualitative Research, Grounded Theory Procedures and Techniques*, Newbury Park, CA: Sage Publications.

Struse, Rudolph W., III, (1987), "Approaches to Promotion Evaluation, A Practitioner's Viewpoint," *Marketing Science*, 6 (Spring): 150-151.

Thaler, Richard, (1980), "Toward A Positive Theory of Consumer Choice," *Journal of Economic Behavior and Organization*, 1 (March): 39-60.

Thompson, Craig J., William B. Locander, and Howard R. Pollio, (1989), "Putting Consumer Experience Back into Consumer Research: The Philosophy and Method of Existential-Phenomenology," *Journal of Consumer Research*, 16 (September): 133-146.

Urbany, Joel E., Peter R. Dickson, and R. Key, (1990), "Actual and Perceived Consumer Vigilance in the Retail Grocery Industry," *Marketing Letters*, 2 (1): 15-25.

Urbany, Joel E., Peter R. Dickson, and Rosemary Kalpurakal, (1996), "Price Search in the Retail Grocery Market," *Journal of Marketing*, 60 (April): 91-104.

Weiss, Robert S. (1994), *Learning From Strangers, The Art of Qualitative Interview Studies*, New York: The Free Press.

Wallendorf, Melanie and Russell W. Belk. (1989). "Assessing Trustworthiness in Naturalistic Consumer Research." Pp. 69-84 in Elizabeth C. Hirschman (Ed). *Interpretive Consumer Research*. Provo, UT: Association for Consumer Research.

Walters, Rockney G. (1989). "An Empirical Investigation into Retailer Response to Manufacturer Trade Promotions." *Journal of Retailing*, **65** (Summer): 253-272.

'Sales' could undercut ⓘWal-Mart's EDLP image

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Abstract:
ⓘWal-Mart *is undercutting its image as an every day low price retailer with its latest round of advertising circulars. The September and October circulars are full of special buys, one time offers, rollbacks and even sales. Using pricing gimmicks erodes the integrity of the* ***EDLP*** *image and confuses loyal shoppers.*

Full Text:

ⓘWal-Mart is undercutting its vaunted image as an every day low price retailer with its latest round of advertising circulars. The September and October circulars are full of special buys, one time offers, rollbacks and even sales! Urgency-inducing euphemisms such as "for a limited time" and "available while supplies last" can even be found in the circular's glossary.

It should be a misdemeanor to even mention "sale" within earshot of the Bentonville home office. So EDLP purists must have cringed when they saw the October circular commemorating the retailer's 35th anniversary. There nearly 80 times in red and blue is the word "sale!" That's enough for felony charges. To make matters worse, October isn't even the retailer's 35th anniversary. Technically, the first ⓘWal-Mart opened July 1962. Only in retailing is it acceptable to celebrate an anniversary three months late.

Pricing gimmicks and manufactured anniversary sales belong on the used car lot, not in the direct mail circulars of the retailer credited with teaching American consumers the meaning of a new acronym. The company's success is built on the foundation of EDLP, and that's why having a sale, rolling back prices and plastering

"special buy" all over a circular is so objectionable. It's a practice that should be reserved for other retailers, those that haven't cultivated an image that sales aren't needed because prices are always low.

Ⓘ Wal-Mart must be aware that all sales do is attract cherry-picking, wait-until-it's-on sale, drive-all-over-town coupon clippers. Using pricing gimmicks erodes the integrity of the EDLP image and confuses loyal customers.

For example, three great ways to save were promoted in September, and then in October Ⓘ Wal-Mart shoppers got four great ways to save. Will there be five great ways to save in November? For customers, choosing among these "deals" is like figuring out whether deluxe, premium or luxury is top of the line.

Occasionally promoting a special buy, rolling back prices or having a sale won't adversely affect or even hurt Ⓘ Wal-Mart's short-term results. The 60 million people Ⓘ Wal-Mart says visit its stores each week will spend about $10 billion this month, and when the fiscal year ends in January 1998 sales will be well above last year's $105 billion.

The real danger in using pricing gimmicks, especially for Ⓘ Wal-Mart, isn't that sales will suffer-such promotions actually build sales. But they lead to even more promotions, and eventually a tolerance is built up. It's like an Olympic athlete looking for a competitive edge who resorts to steroids. They may do wonders for short term performance, but eventually the effect wears off and an even higher dosage is needed to exceed past performance.

Ⓘ Wal-Mart has spent 35 years building an unrivaled low price image. However, reputations are easier to lose than they are to build, and the quickest way for Ⓘ Wal-Mart to lose its EDLP image is to persist with sales and other pricing gimmicks. If special terms are obtained from a vendor, build it into prices for the coming 12 months and make it transparent to the customer. Doing so will keep the promotion monkey on the back of competitors and allow for an untarnished EDLP image. To do otherwise means running the risk of becoming the same as a lot of its competitors. And that's where the real danger lies.

Relating Price Sensitivity to Retailer Promotional Variables and Pricing Policy: An Empirical Analysis

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There is substantial evidence for variation in price sensitivity of products across stores and chains. Understanding the relationships between price sensitivity and promotional variables (such as price cut, feature advertising, and display), and between price sensitivity and pricing policy (Everyday Low Pricing [EDLP] and High Low Pricing [HLP]) is particularly important to retailers. We develop hypotheses on the relationships between regular price elasticity and retailer promotional variables, and between regular price elasticity and retailer pricing policy. We test these hypotheses by analyzing the variation of regular price elasticity of a frequently purchased consumer packaged brand across stores, both within and across chains, through a multistage regression analysis. In the first stage of our analysis, we use a mixed double-log model to estimate the sales response function for the brand in each store using time series data. In the second stage, we explain the differences in the estimated regular price elasticities across stores within a chain by a process function model. In the final stage, the differences across all stores and chains are explained through an aggregate process function model. We extend the literature by separating regular (long-run) price elasticity from promotional (short-run) elasticity, and by studying the influence of both strategic and tactical retailer variables on regular price elasticity in a single framework within and across chains. Our results for the brand analyzed show that a higher level of display and feature advertising together is associated with a lower level of regular price elasticity in EDLP stores and that an EDLP policy is associated with a higher level of regular price elasticity, whereas an HLP policy is related to a lower level of regular price elasticity.

INTRODUCTION

Price sensitivity varies across brands, stores, chains, and markets for most consumer packaged goods (Blattberg and Neslin, 1990). In addition, price sensitivities for such products are often intertwined with sensitivities to promotional variables such as price cut, feature

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advertising, and display. A clearer understanding of the variation in price sensitivity will help manufacturers and retailers formulate better promotional and pricing decisions.

Understanding the relationships between price sensitivity and promotional decisions and between price sensitivity and pricing decisions is particularly important to retailers. Decisions facing retailers can be viewed as strategic or tactical. Strategic decisions are decisions on product mix, pricing policy and the like. Of these decisions, the pricing policy decision is particularly significant. Typically, retailers are faced with two alternative pricing policies, an Everyday Low Pricing (EDLP) policy or a High-Low Pricing (HLP) policy. Tactical decisions include decisions on retailer promotional variables such as price cut, feature advertising, and display.

In this paper, we study the influence of retailer pricing policy as well as the influence of retailer tactical variables such as price cut, feature advertising and display, on regular price elasticity. We develop hypotheses on the relationships between regular price elasticity and retailer promotional variables, and between regular price elasticity and retailer pricing policy. We test these hypotheses by investigating the variation of regular price elasticity of a frequently purchased consumer packaged brand across stores, both within and across chains, through a multistage regression analysis. In the first stage of our analysis, we use a mixed double-log model to estimate the sales response function for the brand in each store using time series data. In the second stage, we use a process function model to explain the differences in the estimated regular price elasticities across stores within a chain. In the final stage, we explain the differences across all stores and chains through an aggregate process function model.

We extend prior research on the variation in price sensitivity in three ways. First, prior research on the relationship between price elasticity and promotional variables has produced conflicting results. While Bolton (1989a) found that increased feature advertising in the category is related to a higher level of price elasticity, Allenby and Ginter (1995), Bucklin and Lattin (1991) and Lattin and Bucklin (1989) found a negative relationship between brand feature advertising and price elasticity. These studies essentially treated regular price (long-run) and price cut (short-run) effects together under price elasticity, although there are strong theoretical reasons in favor of separating their effects (Blattberg and Neslin, 1989). We separate regular price elasticity from price cut (deal) response and analyze the relationship between regular price elasticity and promotional variables.

Second, previous research did not examine the relationship between retailer pricing policy (in terms of EDLP or HLP) and price elasticity, which we do in our paper. By analyzing both the relationships together in a single framework, we can better understand the appropriate influence of both strategic and tactical decisions of the retailer on regular price elasticity. Third, prior research on price elasticity variation has restricted its focus to variation across stores or geographical territories (Bolton, 1989a; Wittink, 1977). Price elasticities of brands, however, have been found to vary among stores within a chain, as well as across different chains (Blattberg and George, 1991). We study the systematic variation of regular price elasticity both within and across chains, providing additional insights.

Our analysis shows two important results for one brand in a particular category. First, we find that a higher level of display and feature advertising together is associated with a lower level of regular price elasticity in stores that follow an EDLP policy. Second, we show that

an EDLP policy is associated with a higher level of regular price elasticity, whereas an HLP policy is related to a lower level of regular price elasticity.

The rest of the paper is organized as follows. The next section reviews the literature on the relationship between price sensitivity and advertising. In section three, we develop hypotheses on the relationship between price sensitivity and retailer promotional variables, and between price sensitivity and retailer pricing policy. Sections four and five describe the data and the model formulation respectively. The model estimation and results are presented in section six. The paper ends with a section on discussion, managerial implications, limitations, and future research.

ADVERTISING-PRICE SENSITIVITY RELATIONSHIP

We first examine the relationship between advertising and price sensitivity and will apply the theoretical reasoning in the advertising-price sensitivity literature to examine the influence of tactical variables such as feature advertising and display on regular price sensitivity in the retail context. Although factors such as availability of close substitutes, and availability of information about brands and their prices may also influence price sensitivity in addition to advertising, we focus on advertising because it is a key decision variable of managerial interest in our context. The advertising-price sensitivity relationship has been explored by many researchers in different settings (for a detailed review, please see Kaul and Wittink, 1995).

Two theories are used to explain the effects of advertising on price elasticity. The first theory, *the market power theory of advertising*, postulates that advertising reduces price elasticity primarily by increasing brand loyalty (Comanor and Wilson, 1979). The second theory, *the information theory of advertising*, contends that advertising increases price elasticity by exposing consumers to information about alternative brands (Nelson, 1974, 1975).

A number of marketing studies on the effects of advertising on price sensitivity are summarized in Table 1. Our interest is in the generalizability of the results in these studies to the retailing context of our study. We highlight certain key aspects of these studies that may be relevant to our context.

From Table 1, we can see that some studies support the market power theory, while others are consistent with the information theory. Although it appears that the effect of *price* advertising on price sensitivity may support information theory and that of *nonprice* advertising may support market power theory (Kaul and Wittink, 1995), this does not explain the results of Prasad and Ring (1976) and Eskin and Baron (1977), who found the effect of nonprice advertising to support the information theory. It is difficult to draw a general conclusion from the studies because of several significant differences among the studies. First, the dependent variable is different in nearly every study. Second, the price measure also varies across the studies. For example, although Krishnamurthi and Raj (1985), Prasad and Ring (1976), and Wittink (1977) use relative price as the price measure, it is operationalized differently in their studies. Third, the level of data aggregation is different across the studies, varying from household level data as in Kanetkar, Weinberg and Weiss (1992) and Krishnamurthi and Raj (1985), to store level data as in Eskin and Baron (1977), and territory

TABLE 1

Effect of Advertising on Price Sensitivity

Authors	*Dependent Variable*	*Experiment*	*Product Category*	*Type of Advertising*	*Results*	*Explanation*
Prasad & Ring (1976)	Weekly panel market share	Yes; TV advertising; experimental & control panel	Grocery, food item	Non-price; product class TV advertising	Price sensitivity higher in high advertising condition than low advertising	Supports "information theory"
Lambin (1976)	Brand price elasticity	No; data on European markets	Variety of consumer packaged goods	TV, radio and newspaper advertising	Brands with high advertising intensities have low price elasticities	Supports "market power theory"
Eskin & Baron (1977)	Monthly unit retail sales	Yes; store-level; price and advertising changed	3 food, 1 non-food; all new products	Non-price; attribute oriented TV adv.	Negative advertising price interaction	Supports "information theory"
Wittink (1977)	Brand price elasticity	No; data from sales territories	Unspecified; major frequently purchased national brand	Unspecified but TV advertising	Price elasticity higher in territories with high advertising levels	Supports "information theory"
Sawyer et al. (1979)	Product choice	Lab experiment; 5 price levels; with or without product information	Maple syrup	Non-price information	Higher purchase prob. at high price levels when information is provided	Supports "market power theory"
Gatignon (1984)	Price sensitivity	No; data on airline routes	Air travel	Unspecified; TV and print advertising	Price sensitivity higher under high adv. levels and high comp. reactions	Supports "information theory"

Krishnamurthi & Raj (1985)	Household weekly purchase	Yes; split cable TV advertising experiment; experimental and control groups	Unspecified; dominant established brand in frequently purchased category	Non-price mood oriented TV advertising	Price elasticity unchanged in ctl. panel, decreased when advertising was increased in exp. panel	Supports "market power theory"
Popkowski & Rao (1990)	Brand price elasticity	No; supermarket data	Unspecified; mature consumer packaged good	Local and national advertising; print and TV	Local advertising increases price elasticity; national adv. decreases it	Supports both theories
Kanetkar et al. (1992)	Household brand choice	No; single source Nielsen scanner data	Aluminum foil, dry dog food	Unspecified TV advertising	Higher choice price sensitivity with increased advertising exposures	Supports "information theory"
Mitra & Lynch (1995)	Price elasticity	Yes: lab experiments	Candy bars	Unspecified	Advertising increases price elasticity in memory based environment; decreases elasticity in stimulus based environment	Supports both theories
Kalra & Goodstein (1995)	Price sensitivity	Yes; 3 types; value, celebrity, comparative	High involvement categories	Print	Value advertising increases brand price sensitivity; unique attribute and differentiation advertising lower price sensitivity	Supports both theories

level data as in Wittink (1977). Fourth, six of the eleven studies summarized in the table use experimental data, whereas the others use archival data. Fifth, the type of advertising is different in different studies, e.g., TV vs. print, national vs. local, and price vs. nonprice. Sixth, all the studies investigated established products except for Eskin and Baron (1977) who studied new products. Some of these differences could have contributed to the support for both the theories on advertising-price sensitivity relationship.

Some studies attempt to reconcile both the theories (Gatignon, 1984; Kalra and Goodstein, 1995; Mitra and Lynch, 1995; Popkowski and Rao, 1990). Gatignon (1984) suggests that the relationship between advertising and price elasticity may be moderated by competitive reactions in the market. Kalra and Goodstein (1995) show that the advertising-price sensitivity relationship depends on brand positioning strategies.

Mitra and Lynch (1995) suggest that the effect of advertising on price sensitivity is mediated by two constructs, namely, size of the consideration set and relative strength of preference. If advertising increases (decreases) the consideration set size it may lead to a higher (lower) price sensitivity. At the same time, advertising could increase the relative strength of preference for the brand, resulting in a lower price sensitivity. The observed result of the impact of advertising on price sensitivity would thus be a net result of the effects of these two mediating constructs.

Popkowski and Rao (1990) find that local advertising increases price elasticity whereas national advertising decreases it. Local advertising is typically price oriented advertising whereas national or manufacturer advertising is typically nonprice advertising.

Our study shares the following operational details with some of the studies in Table 1: it focuses on the retail environment as in Eskin and Baron (1977), examines feature advertising in newspapers and display advertising in stores as in Popkowski and Rao (1990), evaluates price elasticity of a leading brand as in Krishnamurthi and Raj (1985), and follows the multistage modeling approach first adopted by Wittink (1977). Our study, however, does not consider manufacturer advertising because our focus is on retailer decisions and because our data are at the retailer level.

CONCEPTUAL DEVELOPMENT AND HYPOTHESES

We now examine the relationship between price elasticity and retailer tactical variables such as feature advertising, display and price cut, and the link between price elasticity and a retailer strategic variable such as pricing policy.

Price Elasticity and Retailer Promotional Variables

Consider first, the relationship between price sensitivity and feature advertising and display. The results from studies relating feature advertising and display to price sensitivity are mixed. Some studies support the information theory, while the others are consistent with the market power theory.

In an extensive study of four product categories, Bolton (1989a) examined the promotional price elasticity of a brand as a function of the frequency with which the brand and its category were featured and were on display. She found that brands with high *category* feature frequency had a higher price elasticity than those with low category frequency, supporting the information theory for the impact of category feature activity. Interestingly, *brand* feature advertising activity did not have any significant effect on price elasticity. In contrast, display frequency (category and brand) had the opposite effect on price elasticity, consistent with the market power theory, although at a lower statistical significance level than category feature frequency. An explanation for the opposite effects of feature and display may lie in the differential nature of exposure to feature and display. Frequent exposure to *category* feature advertising (which is typically local in scope) occurs at home, and such advertising can induce consumers to compare prices of brands within the category and increase their price sensitivity, consistent with the findings of Popkowski and Rao (1990). In contrast, repeated exposure to displays which occurs in the store, may influence consumers to focus more on the displayed brand, lowering their price sensitivity.[1]

Bucklin and Lattin (1991) and Lattin and Bucklin (1989) found a positive interaction between price and promotion (defined as feature advertising *or* display) while studying markets for crackers and ground coffee respectively. This interaction implies that the effect of price is less substantial in the presence of feature or display, i.e., feature or display tends to be associated with lower price elasticity. Allenby and Ginter (1995), in an analysis of canned tuna, also found that brand level in-store display and feature activities serve to decrease household price sensitivity. These results support market power theory, which differs from Bolton's (1989a) findings with regard to the influence of category feature on price sensitivity.

Three possible explanations can be offered for the different findings. They are based on (1) level of feature activity (category or brand); (2) the treatment of the feature advertising and the display variables; and (3) the type of price elasticity analyzed. First, Bolton's (1989a) result is based on *category* feature activity, whereas the results of the other studies are based on *brand* feature activity. Category feature activity will likely induce more price comparison than brand feature activity. Second, Bolton (1989a) treated feature and display separately, whereas both Bucklin and Lattin (1991) and Lattin and Bucklin (1989) combined the two into a single variable. The use of a combined variable would reflect the net impact of both feature and display which could be positive or negative depending on the separate influences of feature and display. Third, Bolton (1989a) studied quantity elasticity, while Allenby and Ginter (1995), Bucklin and Lattin (1991), and Lattin and Bucklin (1989) examined choice elasticity. There is empirical evidence to show that the direction of change in these two types of elasticities may not be the same (Krishnamurthi and Raj, 1988).

These studies used actual/promoted price as the price measure, and did not treat the effects of regular price and price cut separately. This failure to separate regular price and price cut effects on sales response may have confounded the impact of price and promotion in the existing literature. There are strong theoretical reasons to expect consumers to behave differently to changes in regular price and price cuts, that underscore the need to separate the effects of regular price and price cuts (Blattberg and Neslin, 1989). First, changes in regular price typically lasts for a longer period of time than temporary price cuts. This difference implies different consumer transactional utilities for price cuts vis-a-vis regular

price changes. Second, consumers may stockpile on price cuts/deals, but not on regular price reduction because price cuts last for a much shorter duration than regular price reduction. Third, a change in regular price, may not be signaled, but may have to be inferred by consumers, unlike a price cut which could be accompanied by feature advertising and/or display. Therefore, there is less anticipatory consumer response to regular price changes, unlike the case of price cuts. Furthermore, several price-promotion models include regular price and price cut as separate independent variables (Blattberg and George, 1991; Guadagni and Little, 1983). Therefore, it is important to separate the effects of regular price and price cut on brand sales in studying variation in price sensitivity.

We study quantity elasticity, operationalize feature and display separately, separate the effects of changes in regular price from that of price cuts, and focus our investigation on the variation of *regular* price elasticity. In a managerial sense, regular price elasticity can be viewed as the long-run price elasticity, whereas price cut/deal elasticity can be regarded as the short-term price elasticity. Promotional price elasticity includes the effect of price cuts, which are temporary, and, is therefore, more representative of short-run price elasticity. From a managerial standpoint, regular price elasticity is a better indicator of the *long term* strength of the brand than either price cut or promotional price elasticity.

The relationship between feature or display and regular price elasticity could be explained in terms of whether they highlight brand salience or price salience. If feature and display increase brand salience more than price salience, they tend to differentiate the brand from the rest of the brands in the category. By increasing the salience of the brand, feature and display may serve to increase the relative preference of the brand over other brands. Increased relative preference of the brand will likely lead to a lower regular price elasticity (Mitra and Lynch, 1995).

If feature and display increase brand salience, they could also reduce the consideration set or the number of alternatives that consumers are likely to process. Typically, consumers choose brands based either on their memory or on marketing stimuli or both. Mitra and Lynch (1995) argue that information from stimuli such as feature and display strongly control the size of the consideration set in a stimulus-based environment such as that for consumer packaged goods. When feature and display increase brand salience, the consideration set size is reduced. A decrease in consideration set size will, in turn, reduce price comparisons of the featured and displayed brand with other brands in the category, resulting in a lower regular price elasticity for the displayed and featured brand, consistent with market power theory.

Essentially, by serving as credible signals of brand differentiation and of reduction in consideration set size, higher levels of feature and display may obviate the need for the consumer to compare brand prices.[2] By decreasing the price comparisons they make, consumers are more likely to choose the highlighted brand, resulting in a lower regular price elasticity for the brand.

On the other hand, if feature and display increase price salience more than brand salience, they tend to induce the consumers to compare prices of different brands within the category. Frequent price comparisons could heighten consumers' sensitivity to prices. Consequently, one would expect a higher regular price elasticity to be associated with higher levels of feature and display, consistent with information theory.

Brand feature and display could increase brand or price salience depending on the level of consumer involvement in the category. The signaling power of brand feature and display in differentiating the brand and in making it more salient, may be particularly high in relatively low involvement product categories (Allenby and Ginter, 1995). In such categories, increased levels of brand feature and display may serve to reduce cognitive efforts involved in brand choice. This enables the featured and displayed brand to be perceived as differentiated from the rest of the brands, leading to a lower regular price elasticity. Conversely, brand feature and display may serve to increase regular price elasticity in high involvement categories.

Summarizing from the above discussion, we can formulate the following hypothesis.

H1: *Low involvement brands at stores with higher incidence of feature and display are expected to have lower regular price elasticity, regardless of whether they are EDLP stores or HLP stores, all else equal.*

For high involvement brands, on the other hand, the predicted relationship in **H1** will likely be in the opposite direction.

Consider next the relationship between regular price elasticity and the average depth of price cut in the store. This relationship is important from a retailer's standpoint because average depth of price cut may have an important bearing on the timing of consumer purchases. If a store offers deep price cuts on average, its customers may stockpile or accelerate their purchases by buying primarily when there are deep price cuts. Over a period of time, they may become conditioned to expect deep price cuts, and buy predominantly when such price cuts are offered. Frequent or deep price cuts may also result in a lower reference price for the brand (Blattberg and Neslin, 1989). Because regular price is closely related to consumer reference price, this situation implies a lower perceived regular price. Consequently, consumers may tend not to respond much when regular price is actually reduced. This reasoning suggests that stores with deeper average level of price cut are likely to exhibit lower regular price elasticities. As in the case of **H1**, we expect this to be the case, regardless of the pricing policy of the store. This leads us to the following hypothesis.

H2: *Brands at stores with higher average depth of price cut are expected to have lower regular price elasticity, regardless of whether they are EDLP or HLP stores, all else equal.*

Price Elasticity and Retailer Pricing Policy

The relationship between regular price elasticity and retailer pricing policy can be predicted on the basis of consumer self-selection.

Consumer Self-Selection of Stores

A store's pricing strategy serves to draw a certain type of customer to that store. Different stores have different customer profiles. Heterogeneity exists not only in consumer demo-

graphics, but also in consumers' response to a strategic marketing variable such as the pricing policy of a store or chain. A price conscious consumer will likely choose an EDLP store over an HLP store because he/she can be relatively certain that, on average, he/she will find lower prices for a basket of items. It has been documented that the incidence of regular price of a brand at an EDLP store being equal to or greater than that in an HLP store is very rare (regular prices in EDLP stores were on average about 11% below those in HLP stores; see Hoch, Dreze and Purk, 1994). Although the actual price for any one item at an EDLP store may not be lower than that for a corresponding item at an HLP store in any given week, the *effective* price for a basket of items at an EDLP store is likely to be lower than that at an HLP store, if one were to include search costs of locating the store with the lowest actual price for each item in the consumer's shopping basket. One would expect the search cost of identifying stores with the lowest actual price for each item in the consumer's basket to be high, especially for time sensitive consumers.[3] Since an EDLP store offers the assurance of lower average regular prices on a basket of items, price sensitive consumers can hedge their search costs by leaning more toward purchase in an EDLP store. Thus, an EDLP store is most likely to draw consumers with high regular price sensitivity. In contrast, HLP stores will likely appeal to consumers who respond more to price cuts than they do to changes in regular price.

These arguments are summarized by the following hypothesis.

H3: *Regular price elasticity is expected to be higher for brands in EDLP stores than in HLP stores, all else equal.*

DATA

We test the hypotheses using store level data from A.C. Nielsen for a leading brand-size of mouthwash, a relatively low involvement supermarket product category, for a single metropolitan market. The dataset represents a maximum of 104 weekly observations per store on store-level variables such as sales, regular price,[4] and promotional variables such as price cut, feature, and display. Price cut, also known as temporary price reduction, is the difference between regular price and actual price for a given week. Regular price, actual price, and price cut are available directly from the data.[5]

The brand-size selected for investigation was the most widely sold brand-size across all stores and chains. Other brand-sizes were not sold in a significant number of stores in the market. Furthermore, among all the brand-sizes in the category, the selected brand-size also had the highest variability in regular price and promotional variables that could permit a detailed analysis of regular price variation. Therefore, the leading brand-size was chosen for analysis. Among twelve chains that the product category was sold in, two chains collectively generated about 70% of the unit sales for the brand-size. Other chains were made up of only two to four stores. Therefore, only the top two chains were chosen for further analysis. Chain 1 comprised 20 stores and chain 2 was composed of 18 stores.

Chain 1 was classified as an EDLP chain and chain 2 an HLP chain by the data provider based on knowledge of these chains in that metro market. To verify this notion for the prod-

uct category analyzed by us, we computed the means and the variances of regular price and price cut of the selected brand-size for each store within each chain and compared the two chains. Our analysis of the two chains provides two important results, supporting the notion that chain 1 is indeed more of an EDLP chain and chain 2 is more of an HLP chain. First, the mean of the average regular prices of stores in chain 1 (304.9) is significantly lower ($p < 0.01$) than that in chain 2 (322.9). This is consistent with the finding reported in Hoch et al. (1994, p. 17) that EDLP store prices are, on average, lower than HLP store prices on an everyday basis.

Second, chain 1 is characterized by higher variance in regular prices relative to the variance in price cuts, when compared to chain 2. This is consistent with one's expectation that an EDLP store will have a greater variation in its regular price compared to an HLP store, which tends to have a more stable regular price, but has greater variation in price cuts. A summary of the means and standard deviations of regular price and price cut variables, and the ratio of the standard deviation of price cut to that of regular price (relative standard deviation) is provided in Table 2. The relative standard deviation is less than one for most stores in chain 1. In chain 2, on the other hand, it is greater than one for all stores, and is greater than two in most stores.

Stores in chain 1 offer promotions in the form of price cut, feature, and display. Although this observation may run counter to the popular belief that EDLP stores do not offer promotions, it supports Hoch et al. (1994)'s assertion that EDLP is best seen as a continuum. Hoch et al. (1994, p. 17) argue "that a pure EDLP strategy characterized by constant prices (no temporary price cuts) is apparently not pursued widely in practice. Even Food Lion, an acknowledged EDLP limited assortment chain with over 1000 outlets, offers hundreds of temporary price reductions each week." Therefore, we conclude that chain 1 is more of an EDLP chain, whereas chain 2 is more of an HLP chain in the pricing policy continuum.

Feature and display levels varied across the stores in chain 1, suggesting that some stores make independent promotional decisions, consistent with the practice of zone promotions found in many chains (see Blattberg and George, 1991). In contrast, the feature levels did not vary as much across the stores in chain 2 as in chain 1. There were no incidence of displays in the stores in chain 2. The relative levels of display are consistent with the finding of Information Resources, Inc. (IRI)'s report (1993) that EDLP stores use displays more often than HLP stores.

MODEL FORMULATION

To test the hypotheses, we develop the models in three stages. First, we estimate regular price elasticity for each store using an appropriate sales response model. Second, we formulate a model relating regular price elasticity with retailer level strategic and tactical variables across stores *within* each chain. Third, we develop a similar model linking regular price elasticity *across* chains.

For the sales response model, we selected unit sales as the dependent variable and regular price (which is the focal variable), price cut, feature, display, highest competitive price cut,

TABLE 2

Means and Variances of Regular Price and Price Cut

	Mean Regular Price (cents)			SD Regular Price			Meance Price Cut (cents)			SD Price Cut			Relative SD		
Chain	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
1	301.1	322.4	304.9	12.0	14.4	13.1	9.9	20.1	12.6	6.7	16.9	9.7	0.6	1.2	0.8
2	314.1	340.5	322.9	6.4	19.2	9.2	9.3	31.8	23.1	16.3	30.2	23.1	1.2	4.2	2.8

and lagged dependent variable, as the explanatory variables. Unit sales is most commonly used in sales response models for store level scanner data (Blattberg and George, 1991). Market share does not appear to be an appropriate choice for the dependent variable when weekly data are used because of the dramatic expansion and contraction of category volume due to promotions. The operationalization of regular price and promotional variables is consistent with the operationalizations used by Guadagni and Little (1983), Gupta (1988), and Neslin, Henderson and Quelch (1985).

To model the response function, a mixed double-log model was selected. The model is double-log with respect to regular price, price cut, and competitive price cut. It is semi-log with respect to the indicator variables such as feature, display and feature and display together. Although alternative models such as linear and semi-log models were also tried, the mixed double-log model was selected because: (1) regular price elasticity is directly provided by the estimated parameters, consistent with a well accepted behavioral explanation that consumers respond to percentage changes in price; (2) it provided better fits in terms of lowest sum of squared error for a greater number of stores; and (3) overstatement of elasticity estimates if any, is lowest for the double-log form when compared to linear and semi-log forms (Bolton, 1989b).

Thus, the following model is used for the sales response function for each store in the first stage of analysis.

$$LS_{ijt} = \beta_{0ij} + \beta_{1ij}LPR_{ijt} + \beta_{2ij}LPCR_{ijt} + \beta_{3ij}FT_{ijt} + \beta_{4ij}DP_{ijt} + \beta_{5ij}FTDP_{ijt} + \beta_{6ij}LCPC_{ijt} + \beta_{7ij}LS_{ij(t-1)} + \varepsilon_{ijt} \quad (1)$$

where $i = 1, 2, \ldots n_j$ denotes the store, $j = 1, 2$ the chain, t the week of observation, and

LS_{ijt} = Logarithm of unit sales
LPR_{ijt} = Logarithm of regular price in cents
$LPCR_{ijt}$ = Logarithm of price cut ratio
= log $(1 + PCR_{ijt})$
PCR_{ijt} = (Price Cut/Regular Price)
FT_{ijt} = Presence or absence of feature advertising only
= 0 (absence)
= 1 (presence)
DP_{ijt} = Presence or absence of display only
= 0 (absence)
= 1 (presence)
$FTDP_{ijt}$ = Presence or absence of display and feature together
= 0 (absence)
= 1 (presence)
$LCPC_{ijt}$ = Logarithm of highest price cut ratio of competitive brands
= log $(1 + CPC_{ijt})$
CPC_{ijt} = Highest price cut ratio among competitive brand-sizes
β_{0ij} = Intercept term
β_{1ij} = Regular price elasticity of the brand in store i, chain j

$\beta_{2ij}, \ldots \beta_{7ij}$ = Coefficients of other variables in store i, chain j

ε_{ijt} = Stochastic disturbance term assumed to be independent and identically distributed normal with mean 0 and variance $\sigma^2_{\varepsilon ij}$.

The effect of price cut is captured through the price cut ratio variable ($1 + PCR_{ijt}$). We use this variable, and not magnitude of price cut, because of the following reasons. The price cut ratio variable (PCR_{ijt}) captures consumer behavior better than the magnitude of price cut since consumers typically respond more to price cuts relative to the original price, than they do to the absolute magnitude of price reductions. For example, a price cut of 20 cents on product A with a regular price of $1 is more attractive than a price reduction of 30 cents on product B with a regular price of $3, although the price cut on product A is less than that on product B in magnitude. We modify the price cut ratio by adding one to it to mitigate the problem that may arise in estimation of a double log model when price cut ratio is zero. Our operationalization of price cut is consistent with that used by Blattberg and Wisnewski (1988).

The competitive promotional effect is captured through the variable $LCPC_{ijt}$. This operationalization recognizes that the competitive brand-size with the highest price cut ratio (CPC_{ijt}) during any given week should have the maximum competitive impact on the brand-size studied.[6] The modified competitive price cut is consistent with the operationalization of own price cut ratio.

In addition to having feature and display as independent variables, an interaction variable was also chosen consistent with prior studies. Since display is an in-store promotional vehicle for the brand, the joint effect of display and feature should serve as a reinforcement for those consumers already exposed to the feature advertisement, thereby increasing their likelihood of purchase. We operationalize display, feature, and the joint effect of feature and display as three separate variables representing *display only, feature only, and feature and display together.*

The lagged dependent variable $LS_{ij(t-1)}$ is included to capture the dynamics of sales response and to eliminate residual serial correlation (see Blattberg and George, 1991).

In the second stage of analysis, we formulate a process function model to explain variation in price elasticity across stores *within* a chain. The regular price elasticity becomes the dependent variable in this stage of analysis. The possible factors influencing cross-sectional variability in price elasticity include marketing variables, consumer characteristics and environmental variables (Wittink, 1977). Because we want to relate retailer promotional variables to regular price elasticity and we do not have data on consumer characteristics or environmental variables, we choose the following variables as the independent variables for this stage of analysis: average depth of price cut, and proportions of incidence of feature advertising only, display only, and feature and display together.

The following process model is formulated separately at the chain level.

$$\beta_{1ij} = \gamma_{0j} + \gamma_{1j} MPC_{ij} + \gamma_{2j} PFT_{ij} + \gamma_{3j} PDP_{ij} + \gamma_{4j} PFTDP_{ij} + u_{ij} \quad (2)$$

Notice that we have included an error term u_{ij} in Equation 2 to allow for unexplained cross-sectional variation in β_{1ij}. Regular price elasticity estimated from Equation 1 is given by:

$$\hat{\beta}_{1ij} = \beta_{1ij} + \omega_{ij} \tag{3}$$

From Equations 2 and 3, we get:

$$\hat{\beta}_{1ij} = \gamma_{0j} + \gamma_{1j}MPC_{ij} + \gamma_{2j}PFT_{ij} + \gamma_{3j}PDP_{ij} + \gamma_{4j}PFTDP_{ij} + e_{ij} \tag{4}$$

where $\hat{\beta}_{1ij}$ is the estimated regular price elasticity for store i in chain j, and

MPC_{ij} = Mean price cut in cents
PFT_{ij} = Proportion of weeks with feature advertising only
PDP_{ij} = Proportion of weeks with display only
$PFTDP_{ij}$ = Proportion of weeks with both display and feature
$\gamma_{1j}, \ldots \gamma_{4j}$ = Coefficients of the above variables
γ_{0j} = Intercept term
e_{ij} = Mixed heteroscedastic error consisting of a homoscedastic error u_{ij}, i.i.d. normal with mean 0 and variance σ_u^2, and a heteroscedastic error ω_{ij} from the estimated $\hat{\beta}_{1ij}$ with variance $\sigma_{\omega ij}^2$.

To examine the significance of the effect of retail pricing policy on price elasticity, we use a final stage model in which the estimated regular price elasticity is pooled for all stores across chains. In the final stage, we express estimated regular price elasticity of each store as a linear function of the mean levels of the promotional variables as in the second stage. In addition, we make the intercept and the coefficients of the mean level of promotional variables a linear function of a chain dummy variable, to reflect the impact of the type of pricing policy (EDLP or HLP) on regular price elasticity with chain 1 as the base model. The process model for the final stage is as follows:

$$\hat{\beta}_{1ij} = \delta_0 + \delta_1 MPC_{ij} + \delta_2 PFT_{ij} + \delta_3 PDP_{ij} + \delta_4 PFTDP_{ij} + v_{ij} \tag{5}$$

where:

$$\delta_k = \delta_{k1} + \delta_{k2} * DUM, \qquad k = 0, \ldots, 4 \tag{6}$$

DUM = Dummy variable for chain 2
= 1 (for chain 2 stores)
= 0 (otherwise)
δ_{01}, δ_{02} = Intercept term and incremental intercept for chain 2
$\delta_{11}, \ldots \delta_{42}$ = Coefficients of the explanatory variables
v_{ij} = Error with the same properties as e_{ij}, but with different variance

ESTIMATION AND RESULTS

Estimation

We estimate the models in three stages. First, we estimate regular price elasticity in the sales response Model 1. Second, we estimate Model 4, and finally Model 5. We estimate

the models in multiple stages rather than in a single stage to account for the *mixed heteroscedasticity* in the error terms of Models 4 and 6, consistent with the approach of Wittink (1977). In the second and final stage models, the estimate of regular price elasticity obtained from the first stage serves as the dependent variable. This variable is subject to a mixed heteroscedastic error (a combination of homoscedastic and heteroscedastic components) and the estimation procedure should capture this stochastic uncertainty. It can be shown that Ordinary Least Squares (OLS) estimates for the second and final stage models will not be efficient, although they will still be unbiased. By using information about the estimated variance of the sampling error (ω_{ij}) in the dependent variable from Equation 3, it is possible to obtain more efficient parameter estimates than those of OLS, using a multistep estimation process (Hanushek, 1974). Because the homoscedastic error (u_{ij}) from Equation 2, unlike the error (ω_{ij}) in Equation 3, is unknown and cannot be directly estimated, we cannot efficiently estimate the regular price elasticity (β_1) in a single stage, without making restrictive assumptions on the estimates of the error component u_{ij}. We, therefore, use the multi-stage analysis to estimate the second stage and final stage process models (for details, see Hahn, Park, Krishnamurthi and Zoltner, 1994; Wittink, 1977).

We estimate the first stage model for each store using OLS. We examined the correlation matrix of independent variables for each store to check for any problems of multicollinearity. There were only three instances of high correlation (above 0.6) among the independent variables in Equation 1. Therefore, the correlations were not seriously high enough to warrant further analysis of multicollinearity.

Results

The results of the first stage of analysis are provided in Table 3. Table 3 shows the estimated regular price elasticities for different stores classified under their respective chains, together with the response coefficients of the promotional variables.

The first stage model fits the data well for most stores in chain 1 (17 out of 20 stores have R^2 of 0.5 and above). The signs of regular price elasticity and own promotional variables, where significant, are also intuitive. Regular price is significant in 90% of the stores in chain 1 (18 out of 20). Price cut is significant in 75% of the stores (15 out of 20). Feature advertising only is significant in 25% of the stores and display only is significant in 45% of the stores. On the other hand, the joint effect of feature and display is significant in all stores, where present. A major reason for this finding is that the average frequency of feature and display together is greater than the average frequency of either feature only or display only in chain 1. Competitive price cut is insignificant in all but one of the stores. Lagged dependent variable is significant only in 20% of the stores. Analysis of Durbin *h*-statistic for test of serial correlation in the presence of a lagged dependent variable (Johnston, 1984, p. 318) showed that serial correlation is not a serious problem in the data.[7]

The results of the first stage model for chain 2 are broadly similar to those for chain 1. Regular price is negative and significant in 94% of the stores (17 out of 18), price cut is significant in 83% of the stores (15 out of 18), feature advertising only is significant in 17% of the stores (3 out of 18), and competitive price cut is significant in only one store. The

TABLE 3

Summary of Estimated Slope Parameters for Store-Level Models

Store	Regular Price	Price Cut	Feature Only	Display Only	Feature and Display	Competitive Price Cut	Lagged Dependent Variable	R^2	Number of Weeks#
					Chain 1 (EDLP)				
1	−4.24**	1.20*	−0.01	0.13	1.39**	−0.24	0.25**	0.62	104
2	−5.10**	0.04	0.30	0.31*	1.43**	−0.31	0.31**	0.60	104
3	−3.45**	1.43**	0.57*	0.61	1.74*	0.21	−0.00	0.75	82
4	−4.05**	0.99*	0.00	0.32	1.44**	−0.21	0.03	0.67	104
5	−6.24**	0.18	0.84**	—	—	0.22	0.31**	0.54	66
6	−7.93**	1.87**	−0.01	0.48**	1.19**	0.49	−0.05	0.77	103
7	−3.40**	1.97**	0.29	0.09	1.75**	0.23	0.08	0.68	104
8	−5.26**	1.53*	0.56**	0.11	1.51**	0.57	0.15	0.52	104
9	−1.03	1.84**	−0.08	0.43	1.61**	0.70	0.02	0.60	104
10	−6.45**	0.91*	0.00	0.39**	1.29**	−0.05	0.01	0.76	104
11	−5.46**	1.51**	0.23	0.48**	1.59**	0.44	0.05	0.70	104
12	−3.20**	0.39	0.58*	0.09	0.87**	−0.10	0.44**	0.51	104
13	−5.82**	1.44**	−0.23	−0.09	0.95**	−0.44	0.10	0.67	104
14	−6.94**	1.01	0.81**	0.35**	1.45**	0.43	0.07	0.46	104
15	−6.10**	2.77**	0.48	−0.27	1.20**	0.28	0.17	0.48	90
16	−1.26	1.73**	0.02	0.28*	1.30**	−0.03	−0.05	0.51	104
17	−6.49**	1.54*	0.30	0.46**	1.11**	−0.46	0.17	0.53	104
18	−4.54**	0.86	−0.07	0.15	1.28**	−0.37	0.14	0.65	104
19	−3.71**	1.70**	0.24	0.39*	1.10**	0.44	−0.05	0.47	93
20	−5.81**	1.67**	−0.05	0.23*	0.92**	−0.73*	0.12	0.70	104
					Chain 2 (HLP)				
1	−3.59**	1.37*	0.31	—	—	−0.35	0.28**	0.54	104
2	−3.76**	3.40**	–	—	—	0.77	0.02	0.36	92
3	−5.15**	2.49**	0.21	—	—	0.05	0.23**	0.76	104
4	−4.45**	1.17	0.32	—	—	−0.67	−0.07	0.28	103
5	−2.15**	3.83**	0.01	—	—	0.62	0.08	0.45	104
6	−3.59**	4.17**	—	—	—	0.73	0.32**	0.46	103
7	−4.18**	2.92**	−0.01	—	—	−0.05	0.23**	0.46	104
8	−4.69**	2.90**	0.20	—	—	0.41	0.06	0.60	104
9	−4.05	5.11**	−0.41	—	—	−1.15	0.05	0.32	58
10	−1.00*	1.46	0.62**	—	—	0.25	0.36**	0.50	104
11	−5.13**	3.23**	0.12	—	—	−0.06	0.08	0.58	104
12	−7.83**	2.93**	—	—	—	−0.51	0.19*	0.60	90
13	−3.25**	1.77*	0.30	—	—	−0.21	0.23*	0.63	104
14	−8.37**	4.19**	−0.09	—	—	0.72	0.09	0.53	89
15	−3.77**	3.06**	0.10	—	—	0.26	0.35**	0.61	104
16	−3.54**	3.08**	0.10	—	—	−0.05	0.10	0.54	104
17	−0.85*	1.63*	0.55**	—	—	0.11	0.40**	0.53	104
18	−1.62*	1.43	0.55*	—	—	1.05*	0.16	0.31	100

Notes: *Significant at 0.05 level.
** Significant at 0.01 level.
— Indicates absence of the variable.
Stores with number of weeks less than 104 either did not stock the brand during certain weeks, or were not included in the data.

differences are that the fit of the models in chain 2 are worse than in chain 1 with only 11 out of 18 stores having an R^2 of 0.5 and above. The lagged dependent variable is significant in a greater number of stores (50% vs. 20%). Unlike chain 1, where feature and display together had a significant positive effect on sales, in chain 2, there were no instances of the brand being featured and displayed together. The key differences are that the average price cut (deal) response parameter is about twice as large in the HLP chain 2 than in the EDLP chain 1 (2.72 vs. 1.33) and the average magnitude of the regular price elasticity is lower in the HLP chain 2 than in the EDLP chain 1 (3.94 vs. 4.83).

Before proceeding with the second and final stages of regression analysis, we tested for homogeneity of regular price elasticity across the stores using the Chow test (Chow, 1960). The null hypothesis that regular price elasticity is equal across the stores was rejected separately in chain 1 ($p < 0.001$) and in chain 2 ($p < 0.001$). We, therefore, concluded that the regular price elasticity is indeed different across stores within each chain.

The significance and signs of the parameters in Models 4, 5 and 6 are of central interest to us in testing the hypotheses. To test **H1**, we examine the parameters of feature only, display only, and feature and display in the process models for chains 1 and 2, and in the final stage model, as appropriate. To test **H2**, we check the parameter for mean price cut in the second stage and the final stage models. Finally, to test **H3**, we examine the incremental intercept parameter in the final stage model.

Table 4 shows the results of the estimated process model for chain 1. From table 4, we observe that feature and display together is a significant determinant of regular price elasticity ($p < 0.01$). Feature advertising only is also significant, although at a lower significance level ($p < 0.05$). Display only, however, is not significant. The results imply that higher levels of feature and display together and feature alone are associated with a lower regular price elasticity. Because mouthwash is a relatively low involvement product cate-

TABLE 4

Second Stage Process Model of Regular Price Elasticity[a] in Chain 1 (Adjusted R^2 = 0.47; RMSE = 4.71; df = 15)

Parameter	*Value (Std. Error)*
Intercept (γ_{01})	25.12**
	(6.39)
Price cut parameter (γ_{11})	−0.20
	(0.18)
Feature only parameter (γ_{21})[b]	−223.71*
	(110.75)
Display only parameter (γ_{31})	14.36
	(15.36)
Feature and Display parameter (γ_{41})	−215.18**
	(63.10)

Notes: a. For ease of interpretation, the dependent variable in the second stage regression is the absolute value of the regular price elasticity.

b. It may be noted that feature only, display only and feature and display together are measured in proportion of weeks.

** Significant at 0.01 level.

* Significant at 0.05 level.

gory, our result supports **H1**. With respect to **H2**, depth of price cut is not a significant determinant of regular price elasticity. Thus, **H2** is not supported for chain 1.

No store in chain 2 had any instance of display only or display and feature together during the period of data. Therefore, **H1** could only be partially tested (for the relationship of regular price elasticity with feature only). The absence of these variables and the lack of adequate variance in the other two promotional variables, viz., price cut and feature advertising, across stores within chain 2 resulted in the process model for chain 2 to be insignificant. This precluded explanation of variation in regular price elasticity for chain 2. Thus, both **H1** and **H2** are not supported for chain 2.

To test **H3**, the third stage regression was done by pooling the stores under chains 1 and 2 after including an incremental intercept and incremental parameters for the promotional variables as shown in Equation 6.[8] Incremental parameters were not included for display only and feature and display together because these variables were absent in chain 2. Results of the third stage are shown in Table 5. The incremental intercept of chain 2 is negative (−19.83) and significant ($p < 0.05$), indicating that stores in chain 2 (an HLP chain) tend to have lower regular price elasticities on average than stores in chain 1 (an EDLP chain), all else equal, supporting **H3**.[9]

The results in Table 5 also support the results from the second stage models. Neither price cut nor display only is a significant determinant of regular price elasticity, as in the second stage model. Although the feature only parameter for chain 1 is negative (−202.51) and significant ($p < 0.05$), the incremental feature only parameter for chain 2 is positive (243.14)

TABLE 5

Final Stage Process Model of Regular Price Elasticity[a]
(Adjusted R^2 = 0.57; RMSE = 3.83; df = 30)

Parameter	*Value (Std. Error)*
Intercept (δ_{01})	24.32**
	(7.01)
Price cut parameter (δ_{11})	−0.18
	(0.15)
Feature only parameter (δ_{21})	−202.51*
	(96.54)
Display only parameter (δ_3)	12.71
	(13.24)
Feature and display parameter (δ_4)	−204.41*
	(58.07)
Incremental intercept of chain 2 (δ_{02})	−19.83*
	(9.36)
Incremental price cut parameter of chain 2 (δ_{12})	0.05
	(0.11)
Incremental feature only parameter of chain 2 (δ_{22})	243.14**
	(110.89)

Notes: a. Again, as in Table 3, for ease of interpretation, the absolute magnitude of the regular price elasticity is used as the dependent variable.
** Significant at 0.01 level.
* Significant at 0.05 level.

and significant ($p < 0.05$) indicating that higher incidence of feature advertising only is related to a lower level of regular price elasticity, only in stores of chain 1. Similarly, the coefficient of feature and display together is negative (−204.41) and significant ($p < 0.01$), consistent with the result of the second stage model.

DISCUSSION, MANAGERIAL IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

The result on the joint effect of display and feature on regular price elasticity in EDLP stores is consistent with **H1** and the market power theory. This relationship, however, could not be verified in the case of HLP stores.

The result on the effect of brand feature and display can be explained by the dominance of brand salience over price salience as noted in section three. Frequent incidence of feature and display of a brand serve to narrow the consideration set of the consumers and direct their attention to the featured or displayed brand. Frequent incidence of feature and display of a brand may indeed lead to an automatic inclusion of the brand in the consumer's consideration set, and to a lesser focus on its regular price. Over a period of time, brand feature and display may serve more as a signal of differentiation of the brand from the rest of the brands, rather than increase consumer attention to price. Reduced consideration set and increased brand differentiation may help create a greater relative preference for the featured and displayed brand, resulting in lower regular price elasticity (Mitra and Lynch, 1995).

Brand salience could also be high in cases where consumers use an elimination-by-aspects model to choose their brands (Fader and McAlister, 1990). By eliminating certain brands that are not featured or displayed, consumers reduce the size of their consideration sets. Repeated exposures to featured and displayed brands may serve to restrict their consideration set, lowering their price sensitivity.

While *brand* feature and display serve to decrease regular price elasticity, *category* feature and display, on the other hand, may have an opposite effect. Higher incidence of category feature and display may serve to highlight multiple brands over different weeks. This may lead to an increase in size of the consumer's consideration set, making the consumer compare brands. Promotional activities such as feature and display can expand consideration set to include displayed and featured brands (Siddarth, Bucklin and Morrison, 1995). If multiple brands are featured or displayed over time, increased consideration set size could contribute to an increase in regular price elasticity (Mitra and Lynch, 1995). This reasoning may explain why Bolton (1989a) found that category feature increased price sensitivity, whereas she did not find the same for brand feature advertising.

Although average depth of price cut was hypothesized to be negatively related to regular price elasticity, it did not turn out to be a significant determinant of regular price elasticity for both types of stores. A possible reason is the lack of adequate variance in average depth of price cut across stores within each chain. If a chain adopts price cuts that exhibit greater variance across its different stores on a weekly basis, perhaps we can study the relationship between price cut and regular price elasticity in greater detail.

The results on the relationship between regular price elasticity and retailer pricing policy are consistent with **H3**. An EDLP chain attracts more price sensitive consumers, contributing to the higher level of regular price elasticity in the chain. In contrast, an HLP chain draws consumers who are not as price sensitive as those of the EDLP chain. Therefore, we find lower regular price elasticities in HLP stores. On the other hand, based on the results from the first stage model, HLP stores are likely to attract more deal-sensitive consumers, some of whom may be "cherry pickers," actively searching for the lowest actual prices in several items on their shopping lists.

Our results have two interesting managerial implications. First, they can help managers better allocate resources among the different promotional variables (price cuts vs. feature and display) at the retail level. The relationship between regular price elasticity and feature and display, and the link between regular price elasticity and average depth of price cuts can enable a retailer fine tune her/his mix among promotional variables. A retailer could be interested in maintaining a low regular price elasticity for most brands because of the ability to extract price premiums that may improve her/his profitability in the long run. For the brand analyzed in our study, if an EDLP retailer's objective is to maintain a low regular price elasticity, the results suggest that the retailer can achieve this by allocating more expenditure to feature advertising and display than by allocating more to deeper price cuts. In addition, the significant effect of feature and display together on regular price elasticity suggests that a retailer may achieve a low regular price elasticity by running feature and display together rather than by running them separately.

Second, the results also reflect manufacturers' dependence on retailers who can influence the price elasticity for manufacturers' brands with their pricing policies. For instance, if the manufacturer of the brand analyzed in the study seeks a lower regular price elasticity, she/he can better achieve her/his objective through HLP retailers than EDLP retailers. The manufacturer, however, may find higher response to price cuts in HLP stores. From the retailer's standpoint, on the other hand, an EDLP policy may not be optimal. For instance, Hoch, Dreze and Purk (1994) found that an HLP strategy was more profitable for a retailer than an EDLP strategy.

Methodologically, our study builds on the research of Bolton (1989a) and Wittink (1977) in two ways. First, while Bolton (1989a) and Wittink's (1977) studies analyzed price elasticity variation in two stages, we analyze regular price elasticity variation in three stages that include a final stage at the chain level. Second, unlike Bolton's (1989a) study of cross-sectional variation of price elasticity across stores, we allow for mixed heteroscedastic errors in the estimated regular price elasticities in the higher stages of regression analysis.

Our study has certain limitations which can be addressed by future research. First, due to data limitations, our study focused on one brand-size in a single product category. Another limitation in our data is the absence of display in the HLP chain. With additional data, our study could be extended to multiple brands across multiple product categories with greater variation in promotional variables. Second, our analysis has been confined to variation in regular price elasticity. With additional promotional data, it would also be interesting to understand the variation in promotional elasticities. Third, disaggregate consumer panel data for the same set of stores and chains on which aggregate data are available, would enhance our understanding of consumer store choice and purchase behavior. Fourth, we could relax our assumption that regular price and price cut decisions are exog-

enous, adding to the complexity of analysis. Fifth, we have not addressed the issue of zone pricing. A store located in a highly competitive geographical market may have a pricing policy that is different from that of its parent chain. Hoch, Kim, Montgomery and Rossi (1995) found that competitive characteristics were significant in the variation of price elasticity. With availability of store location data, we can include zone pricing in our analysis of retail competition.

Acknowledgments: We thank Nielsen Marketing Research for providing the data used in this research. We also thank the editor, three anonymous reviewers, Amiya Basu, Robert C. Blattberg, Richard Briesch, Ruth Bolton, Richard Durand, Sachin Gupta, Ronald Goodstein, Jeffrey Inman, and Janet Wagner for their helpful comments on an earlier version of this paper.

NOTES

1. We thank an anonymous reviewer for this explanation.
2. We recognize that feature and display together could actually serve to heighten response to price cuts because they may remind consumers to seek bargains.
3. We thank an anonymous reviewer for this explanation.
4. Regular price is the depromoted price (shelf price) that is made available in the Nielsen dataset. According to the data provider, this measure of regular price is reliable and has been successfully used by them for analyzing many categories. It is consistent with the definitions used by Guadagni and Little (1983) and Gupta (1988).
5. Actual price does not include the effect of coupons because coupon data were unavailable.
6. We tested for the possibility that the brand studied could have competed only with a subset of all the brands due to the competitive market structure prevalent in mouthwash. We tested an unrestricted version of our model that included as independent variables, the price cut of each brand separately with different parameters. The parameters were not significant in most stores, suggesting that it is unlikely that different competing brands may have different effects on the brand studied.
7. Test of Durbin h-statistic was not significant for 18 out of 20 stores in chain 1 and 15 out of 18 stores in chain 2.
8. It must be noted that a test of pooling across chains (homogeneity of slopes and intercepts, Chow, 1960) would not be very insightful because Model 4 did not turn out to be significant for chain 2. We, however, allow for differences between chains by including incremental parameters for chain 2 as in Model 6.
9. A simple t test of the difference between the regular price elasticity of chain 2 and chain 1 (-3.94 vs. -4.83) provides a t value of 1.43 which is significant at $p < 0.08$ (one-tailed).

REFERENCES

Allenby, Greg, M. and James L. Ginter. (1995). "The Effect of In-store Displays and Feature Advertising on Consideration Sets," *International Journal of Research in Marketing*: 67-80.

Blattberg, Robert C. and Edward I. George. (1991). "Shrinkage Estimation of Price and Promotional Elasticities: Seemingly Unrelated Equations," *Journal of American Statistical Association*, **86**(414): 304-315.

Blattberg, Robert C. and Scott Neslin. (1989). "Sales Promotions: The Long and Short of It," *Marketing Letters*, **1**(1): 81-97.

_____. (1990). *Sales Promotions*. Englewood Cliffs, NJ: Prentice Hall.

Blattberg Robert C. and Kenneth Wisnewski. (1988). *Issues in Modeling Store Level Scanner Data*. Working paper, University of Chicago.

Bolton, Ruth N. (1989a). "Relationship Between Market Characteristics and Promotional Price Elasticities," *Marketing Science*, **8**(2): 153-169.

_____. (1989b). "Robustness of Retail-Level Price Elasticity Estimates," *Journal of Retailing*, **65**(2): 193-219.

Bucklin, Randolph E. and James Lattin. (1991). "A Two-State Model of Purchase Incidence and Brand Choice," *Marketing Science*, **10**(1): 24-39.

Chow, Gregory C. (1960). "Tests of Equality Between Sets of Coefficients in Two Linear Regressions," *Econometrica*, **28**: 591-605.

Comanor, William S. and Thomas A. Wilson. (1979). "The Effects of Advertising on Competition: A Survey," *Journal of Economic Literature*, **17**(June): 453-476.

Eskin, Gerald J. and Penny H. Baron. (1977). "Effects of Price and Advertising in Test-Market Experiments," *Journal of Marketing Research*, **14**(November): 499-508.

Fader, Peter S. and Lehigh McAlister. (1990). "An Elimination by Aspects Model of Consumer Response to Promotion Calibrated on UPC Scanner Data," *Journal of Marketing Research*, **27**(August): 322-332.

Gatignon, Hubert. (1984). "Competition as a Moderator of the Effect of Advertising on Sales", *Journal of Marketing Research*, **21**(November): 387-398.

Guadagni, Peter M. and John D.C. Little. (1983). "A Logit Model of Brand Choice Calibrated on Scanner Data," *Marketing Science*, **2**(Summer): 327-351.

Gupta, Sunil. (1988). "The Impact of Sales Promotion on When, What and How much to Buy," *Journal of Marketing Research*, **25**(November): 342-355.

Hahn, Minhi, Sehoon Park, Lakshman Krishnamurthi and Andris A. Zoltners. (1994). "Analysis of New Product Diffusion Using a Four-segment Trial-repeat Model," *Marketing Science*, **13**(3): 224-247.

Hanushek, Eric, A. (1974). "Efficient Estimators for Regressing Regression Coefficients," *American Statistician*, **28**(2): 66-67.

Hoch, Stephen J., Xavier Dreze and Mary E. Purk. (1994). "EDLP, Hi-Lo, and Margin Arithmetic," *Journal of Marketing*, **58**(October): 16-27.

Hoch, Stephen J., Byung Do Kim, Alan L. Montgomery and Peter E. Rossi. (1995). "Determinants of Store-Level Price Elasticity," *Journal of Marketing Research*, **32**(February): 17-29.

Information Resources, Inc. (1993). *Managing Your Business in an EDLP Environment*. Chicago: IRI.

Johnston, J. (1984). *Econometric Methods*, 3rd ed. New York: McGraw Hill.

Kalra, Ajay and Ronald Goodstein. (1995). *The Impact of Advertising Positioning Strategies on Consumer Price Sensitivity*. Working paper, Carnegie Mellon University.

Kanetkar, Vinay, Charles B. Weinberg and Doyle L. Weiss. (1992). "Price Sensitivity and Television Advertising Exposures: Some Empirical Findings," *Marketing Science*, **11**(4): 359-371.

Kaul, Anil and Dick R. Wittink. (1995). "Empirical Generalizations About the Impact of Advertising on Price Sensitivity," *Marketing Science*, **14**(3): G151-160.

Krishnamurthi, Lakshman and S.P. Raj. (1985). "The Effect of Advertising on Consumer Price Sensitivity," *Journal of Marketing Research*, **22**(May): 119-129.

_____. (1988). "A Model of Brand Choice and Purchase Quantity Price Sensitivities", *Marketing Science*, **7**(1): 1-20.

Lambin, Jean Jaques. (1976). *Advertising, Competition and Market Conduct in Oligopoly Over Time*. Amsterdam: North Holland.

Lattin, James E. and Randolph Bucklin. (1989). "Reference Effects of Price and Promotion on Brand Choice Behavior," *Journal of Marketing Research*, **26**(3): 299-310.

Mitra, Anushree and John G. Lynch, Jr. (1995). "Toward a Reconciliation of Market Power and Information Theories of Advertising Effects on Price Elasticity," *Journal of Consumer Research*, **3**: 263-276. Nelson, Philip. (1974). "Advertising as Information," *Journal of Political Economy*, **82**(July-August): 729-754.

_____. (1975). "The Economic Consequences of Advertising," *Journal of Business*, (April): 213-241.

Neslin, S.A., C. Henderson and John Quelch. (1985). "Consumer Promotions and the Acceleration of Product Purchases," *Marketing Science*, **4**: 147-165.

Popkowski, Peter T.L. Leszczyc and Ram C. Rao. (1990). "An Empirical Analysis of National and Local Advertising Effect on Price Elasticity," *Marketing Letters*, **1**(2): 149-160.

Prasad, Kanti V. and Winston L. Ring. (1976). "Measuring the Sales Effects of Some Marketing Mix Variables and Their Interactions," *Journal of Marketing Research*, **13**(November): 391-396.

Sawyer, Alan G., Parker M. Worthing and Paul E. Sendak. (1979). "The Role of Laboratory Experiments to Test Marketing Strategies," *Journal of Marketing*, **43**(Summer): 60-67.

Siddarth, S., Randolph E. Bucklin and Donald G. Morrison. (1995). "Making the Cut: Modeling and Analyzing Choice Set Restriction in Scanner Panel Data," *Journal of Marketing Research*, **32**(August): 255-266.

Wittink, Dick R. (1977). "Exploring Territorial Differences in the Relationship Between Marketing Variables," *Journal of Marketing Research*, **14**(May): 145-155.

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Role of Stock-Out on
224.

Insights Into Cross- and Within-Store Price Search: Retailer Estimates Vs. Consumer Self-Reports

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University of Notre Dame

PETER R. DICKSON
University of Wisconsin–Madison

ALAN G. SAWYER
University of Florida

This is Exhibit "E" referred to in the affidavit of JOHN O. WINTER sworn before me, this 19th day of SEPTEMBER 2003

A COMMISSIONER FOR TAKING AFFIDAVITS

Past research of the accuracy of retail grocers' beliefs about consumer search and patronage behavior has found that executives tend to overestimate the size of the consumer segment that regularly switches stores for price specials. With surveys of consumers and executives in a large midwestern market, we extend and replicate the earlier research. In this study, we find that executives demonstrate, on average, an accurate sense of the proportion of consumers who are primarily loyal to one store or are shoppers of multiple stores. However, they still tend to overestimate aggregate price comparison behavior and cross-store shopping. At the same time, we also find that managers simultaneously underestimate *consumer newspaper readership, in-store search for specials, and stockpiling. This new result suggests that the more loyal primary customers may account for a greater proportion of incremental promotional sales than has been recognized in the past. These results suggest a significant increase in the information value to be derived from the desegregation of sales data by shopper loyalty status.*

This study examines the accuracy of retail grocery executives' beliefs about the effects of supermarket price promotion on consumer behavior. The prevailing industry wisdom is that promotion has the primary effect of stealing traffic from competitors' stores (cf. Kahn and Schmittlein, 1992; Krishna, Harlam, and Moreau, 1996; Walters and MacKenzie,

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1988). Yet, the evidence regarding this effect is at the very best mixed, with several studies reporting weak to nonexistent store-traffic effects of promotions or pricing (Walters and Rinne, 1986; Walters, 1991; Bucklin and Lattin, 1992). Others show cross-store effects limited primarily to higher cost product categories (Grover and Srinivasan, 1992; Kumar and Leone, 1988). The belief that a large segment of consumers shop aggressively across stores in search of specials has come under criticism by some industry leaders. They have lamented both the industries' focus on price promotion and the need to update beliefs about consumer behavior:

> . . . when it comes to advertising, most (retailers) still see June Cleaver. . . going through page after page of food ads making a list of who has the best price on what (Banks, 1992).

This comment and others like it (cf. Walzer, 1987) signal discontent in the industry with a perceived overemphasis on price promotion aimed at encouraging cross-store shopping. Limited promotional resources could alternatively be spent with the goal of retaining current, more loyal customers and several trends suggest merit in considering this trade-off. Evidence suggests that the segment of consumers who regularly shop multiple grocery stores for price specials is quite small (10–15%; Bodapati and Srinivasan, 1998; Urbany, Dickson, and Key, 1991). This is not surprising in light of increasingly limited consumer time budgets and the mental and physical costs of shopping. An alternative to actively shopping price specials at multiple stores is to shop vigilantly within one's regular store; searching for, and under certain circumstances stockpiling price specials.

Recent empirical work hints at the plausibility of such a strategy. First, research on store choice models finds that consumer store loyalty dominates the explanation of store choice over pricing predictors (Bucklin and Lattin, 1992; Bell and Lattin, 1996; Bell, Ho, and Tang, 1998), suggesting a strong degree of inertia in shopping behavior (see also *Progressive Grocer* annual industry reports). Additionally, retailers have been increasingly promoting nonfeatured specials (Dréze and Hoch, 1996) and improving in-store signage in part as a function of earlier research that highlighted consumer inattention to on-shelf promotions (Dickson and Sawyer, 1990; Krishna, Currim, and Shoemaker, 1991). As such, price promotions may often generate incremental sales by grabbing consumers' attention within the store rather by motivating competitive store customers to come to the store on a particular occasion. Third, recent evidence suggests that some consumers tend to "lie-in-wait" and stock up on price specials (Jedidi, Mela, and Bowman, 1998; Mela and Urbany, 1996). If the incidence of the multiple store specials shoppers is as low as noted above, it is possible that some store-loyal consumers wait for specials at their own stores rather than actively track specials patterns at multiple stores.

If some consumers do compensate for lower between-store search with greater in-store search, this could partly account for previous research that has found that retail grocery executives substantially overestimate the degree of cross-store shopping and price promotion response (Urbany et al., 1991). The Urbany et al. study was limited, however, in that only 12 executives were interviewed and their beliefs compared to consumers' self-reports on only a small number of measures. This research presents a considerably

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more complete empirical study in the same market. The extension examines a number of factors not considered in the earlier paper, including degree of price comparison, search for price promotions both *between-* and *within-* stores, and stockpiling as a response to price promotions. An additional unique aspect of the work is that both firms involved in the study were facing a new strategic threat to their dominant positions in the market. One of the firms did, indeed, suffer a collapse in its market share and profitability. In retrospect, it seems that managers' beliefs about customer behavior were important in explaining this outcome.

EXPLAINING MANAGERIAL BELIEF DISCREPANCIES

In general, it should not be surprising that judging basic aspects of how consumers behave is not easy for managers, who often face a complex information environment and limited resources for conducting research. Several studies have observed that executives misestimate consumer preference for both price and nonprice product or service attributes (cf. Gale, 1994; Krishna et al., 1996; McClure and Ryans, 1968; Parasuraman et al., 1985). Evidence suggests as well that managers may set prices more aggressively than seems warranted given information about consumer price sensitivity (Dickson and Urbany, 1994; Leeflang and Wittink, 1996; Hoch, Dréze, and Purk, 1994; Little and Shapiro, 1980).

Why might managers tend to systematically overestimate search behavior and price sensitivity? Uncertainty in estimating consumer search may in fact lead to the conservative assumption that consumers are more attentive to market information than they truly are (Moorman, 1998). A concern in the industry has been that retailers effectively "play to" the most vigilant segment of consumers, potentially overemphasizing price promotion as a competitive weapon (O'Conner, 1986; Schuster, 1988). One possible outcome of this is that the behavior of the segment that responds to price specials may be perceived as being more representative of the larger consumer population than it truly is (cf. Borgida and Nisbett, 1977; Kahneman and Tversky, 1973; Nisbett and Ross, 1980).

RESEARCH QUESTIONS

As noted, the current study extends the Urbany et al. study in two primary ways. Here, we obtain responses from over 90 individuals in two retailers in a specific market, representing a near-census of executives and store managers in those organizations. Second, our research measures additional beliefs that may help explain discrepancies between executive estimates and consumer self-reports of shopping/search behavior. Given the complexity of purchasing a basket of goods in the retail grocery setting (and the recurring nature of the choice behavior), search behavior is not a simple construct to define. We are interested in a variety of search-related behaviors here, including reported price comparison and several behaviors related to price promotion: feature advertising readership,

seeking word-of-mouth regarding specials, in-store price search, shopping nonprimary stores for specials, and stockpiling. In particular, we address the following questions:

1. Do managers overestimate the proportion of consumers who regularly shop multiple stores (vs. shop primarily one store) or misunderstand the behavior of these two segments? Urbany et al. found that the 12 executives they sampled overestimated the proportion of the consumer market who regularly shops multiple stores. If "Multiple Store" shoppers are apt to be the most price sensitive, the above discussion would help explain a tendency for retailers to perceive more Multiple Store shoppers than actually exist.
2. Do managers overestimate the price search of consumers? Extending the logic of our discussion above, we would expect executives to overestimate how much consumers compare prices across stores and the proportion of consumers who read newspaper/flier advertising, talk to friends about price promotions, and seek information about promotions in-store.[1]
3. Do managers overestimate consumer response to price specials (reflected in the reported tendency to shop multiple stores' specials and stock up)? Past research and the discussion above lead us again to expect that managers will overestimate the proportion of consumers that travels to different stores to pick up price specials and to stock up on specials.

THE COMPETITIVE CONTEXT

The grocery market under study covered about 500,000 households served by some 100 supermarkets. At the time of the study about 95% of the market was shared between four chains: the two chains "A" and "B" (whose managers are sampled here) and two other chains "C" and "D." Thirty-seven percent of surveyed households shopped primarily at A, 35% at B, 13% at C, and 10% at D. Both A and B are established High-Low chains with some 30 to 40 stores each in the market. A is a national chain, whereas B is regional. In contrast, C and D are low-price chains that had more recently entered the market with several large stores strategically located. In particular, chain D had recently entered the market with two superstores and was intending to soon build two more (thus "four cornering" the market in terms of location convenience). The response of chain A, the market leader was to give more emphasis in its advertising to its price specials. This price promotion program was a truly integrated marketing communication campaign with the look of the advertising and the price-special tags at the point of purchase built around a cost-cutter scissors logo. Chain B attempted to position itself more strongly on quality (particularly its meats and produce) and service (speed of service and locally owned friendliness) dimensions, whereas maintaining its price competitiveness through defensive tactics such as double-couponing and frequent price specials. Both A and B also made plans to open new, larger stores in the expanding suburbs, close old stores, and refurbish others.

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Chains C and D employ an EDLP strategy. In addition, chain C took out a full-page ad featuring a meat or produce item each week. D went much further. In addition to offering every-day lower prices, chain D offered several pages of grocery specials each week attached to an advertising insert/flyer that contained several more pages of soft and hard good specials associated with the general merchandising departments within the superstore. Furthermore, the new entrant D made a great feature of the quality of its produce that was attractively displayed at the front of its store. The aggressive entry of D had created a great deal more publicity about grocery shopping in the local media and had substantially increased the total advertising-particularly the amount of advertising about price specials.

METHOD

Samples

Data were collected through a mail survey of 92 managers from the two major chains (A and B; $n = 45, 47$, respectively). These managers comprised both line (store managers) and regional headquarters' personnel (decision-makers). Matching questions about shopping behavior were asked of consumers with a telephone survey after which they were requested to participate in a mail survey of market beliefs (see Urbany, Dickson and Kalapurakal, 1996). In all, 422 consumers provided usable responses for both mail and phone surveys. The sample slightly over-represented consumers from older and higher income groups but otherwise was quite representative as judged by the latest census information. The data permit an assessment of managers' beliefs about relevant consumer behavior and differences in beliefs between managers and consumers, between managers in different chains and between managers belonging to the same chain, which are reported wherever relevant and statistically significant.

Measures

The measures used to capture both consumer self-reports and managers' estimates of consumer behavior are discussed below.[2] In all cases, the manager sample responded to measures that were worded exactly as the consumer measures had been worded. The difference was that managers were asked to estimate the proportions of consumers who fit into each category. For example, consumers reported whether or not they read grocery ads or fliers. Managers were asked what proportion of consumers they believed read grocery ads or fliers.

Consumer Patronage Behavior

There is evidence in the literature of a dichotomy in consumers' self-reported patronage behavior. Many consumers tend to shop one store predominantly, whereas others shop multiple stores in a given week (cf. annual *Progressive Grocer* surveys of consumer behavior). In our study, consumers were asked to classify their typical shopping behavior into one of three categories: 1) shopping one store all the time, 2) shopping one store almost all the time but occasionally shopping others, and 3) shopping two or more stores regularly.

Price Comparison Frequency

Because prices change almost weekly for many frequently purchased products in supermarkets, beliefs about the frequency of consumer price comparison between and within stores were measured. The consumer sample was asked to estimate the frequency with which they "compared the prices of different grocery stores" on a scale of weekly, monthly, less than monthly, and never. To simplify the distribution (because only a little more than 10% of respondents indicated "monthly" price comparison), the weekly and monthly categories were combined to form an "at least monthly" category.

Search for Price Specials

Consumers were also asked to indicate whether they engaged in a number of different search behaviors for price specials. In capturing search outside the store, we asked consumers to indicate whether they read ads and fliers and/or talked to friends about specials before shopping. We captured in-store search by asking respondents whether they scanned the grocery store shelves to see what brands were on special.

Responsiveness to Price Specials

The price of various supermarket items changes almost weekly because of the frequent use of price specials that are advertised heavily in fliers and newspapers. Because this continues to be a widely used tactic in this industry (cf. Mulhern and Leone, 1991), a reflection of consumers' sensitivity to the between-store price dispersion lies in their awareness of and responsiveness to the price specials offered by different stores. Consumers were asked to indicate whether they regularly shopped the price specials at different stores and whether they purchased larger quantities (stocked up) when they found price specials.

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Table 1 presents the proportions of consumers reporting different behaviors and managers' estimates of those consumer proportions. Column A lists the research questions and the specific behaviors examined. Columns B-D summarize the estimated proportions of the aggregate consumer market provided by managers, along with standard deviations and 95% confidence intervals. These columns capture managers' expectations. We judge the accuracy of these estimates by observing whether the actual proportions obtained from the consumer sample fall within the confidence intervals. The proportion of all consumers reporting each behavior is presented in Column E. Columns F and G report proportions for consumer segments we will define later.

First, it is worthwhile to note that the table reveals high variation in the mean percentage estimates of managers (the half-precision values for the 95% confidence intervals range from ± 7% to ± 18%). Although it is admittedly unreasonable to expect a high degree of precision in open-ended estimates, the magnitude of the standard deviations is intriguing. In fact, Table 1 makes clear that nearly *all* the responses reflect high levels of organizational uncertainty (cf. Moorman and Miner, 1998). This observed variation makes some of the results below, particularly those illustrating reasonably accurate aggregate estimation of consumer self-reports, more interesting.

Question 1: Do managers overestimate the proportion of consumers who regularly shop multiple stores (vs. shop primarily one store)?

Urbany et al. (1991) found that the 12 executives they surveyed estimated that 60% of consumers "shop several stores regularly," an estimate that was over twice the proportion of consumers who actually reported such behavior, 24%. In contrast, Table 1 indicates that the managers in the current study estimated only 25% as regular "two-store plus" shoppers. This was close to the proportion of consumers reporting such behavior in the current study (22%, which falls within the managers' expected range).[3] Table 1 also presents managers' estimates of the proportions shopping one store all the time or shopping one store mostly and occasionally another store. Our 92 executives estimated that roughly three-quarters of all shoppers shopped primarily one store, judging that 39% shop one store "all the time" and 35% shop one store and occasionally others. For each of these patronage behaviors, the actual reported consumer proportions (Column E) fall outside the range of managers' expectations (Column D). However, we combined these two categories into one to allow that the managers may not distinguish between these subtle variations of strict store loyalty. Because managers seem to recognize the general distinction between single and multiple store shopping with some degree of accuracy, we include for later comparison the separate proportions obtained from these two consumer groups. We label them "Mostly One" store shoppers (Column F) and "Multiple Store" shoppers (Column G).

Reporting results separately for these two segments allows us to examine whether the managers' estimates are biased toward either of them. For the measures reported next,

TABLE 1

Managers' Estimates vs. Consumer Proportions

A	B	C	D	F	F	G
	Managers' Estimates of the Proportion of the Market Engaging in Each Behavior			*Actual Consumer Proportions*		
Research Question/Behaviors	*Mean Estimate*	*Standard Deviation*	*95% Confidence Interval*	*All Consumers (n = 422)*	*Mostly One Store Shoppers (n = 329)*	*Multiple Store Shoppers (n = 93)*
Question 1: Do managers overestimate the proportion of consumers who regularly shop multiple stores (vs. shop primarily one store)?						
A. Shop two or more stores regularly	25	13.3	22-28	22	·	·
B. Mostly one store-shoppers						·
Shop one store always	39	18.0	35-43	29	·	·
Shop one store and occasionally others	35	16.4	32-38	49		
Total "mostly one" shoppers	74	24.4	69-79	78	·	·
Question 2: Do managers overestimate the price search of consumers?						
Compare prices at least monthly	55	26.1	50-60	42	34	71
Compare prices less often	23	16.7	20-26	21	24	12
Never compare prices	23	20.5	19-27	36	42	17
Read ads and fliers	62	21.2	58-66	80	77	89
Talk to friends about specials	16	12.4	13-19	20	18	29
Scan shelves for specials	50	22.6	45-55	79	79	79
Question 3: Do managers overestimate consumer response to price specials?						
Regularly shop price specials at multiple stores	34	20.3	30-38	19	12	43
Buy larger quantities on special	43	22.1	38-48	68	67	73

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Talk to friends about specials	16	12.4	13–19	40		16		29
Scan shelves for specials	50	22.6	45–55	79		79		79
Question 3: Do managers overestimate consumer response to price specials?								
Regularly shop price specials at multiple stores	34	20.3	30–38	19		12		43
Buy larger quantities on special	43	22.1	38–48	68		67		73

managers were asked to estimate the proportion of *all* consumers engaging in each behavior. Assume that managers estimate these aggregate proportions in a statistically unbiased and accurate manner. Because Mostly One shoppers make up the vast majority of the consumer population (and the managers know this), then the managers' aggregate estimates should be closer in value to the actual proportions for this larger group. In contrast, managers' aggregate estimates may be inaccurate in the sense that they are weighted disproportionately toward the smaller Multiple Store shopper group. Presenting results separately for the two shopper segments allows us to examine whether the managers are appropriately weighting the segments given their relative sizes.

Question 2: Do managers overestimate the price search of consumers?

Reported Price Comparison

Table 1 reports estimates of price comparison frequency in categories of comparing at least monthly, comparing less than monthly, or never comparing. Column A indicates that managers estimated that more than half of the consumer market compares prices at least monthly (95% confidence interval: 50–60%). In contrast, only 42% of consumers report such behavior. Again, this 42% aggregate figure is a composite of two shopper groups. Thirty-four percent of Mostly One shoppers report at least monthly price comparison. Multiple Store shoppers have a proportion twice as large (71%; $Z = 6.19$, $p < .01$). Note, however, that managers' mean aggregate estimate of 55% is actually closer to that of the Multiple Store shopping group than it should be, given the small size of this group. We infer that either the smaller Multiple Store group is overly salient to managers or managers greatly overestimate the price comparison activity of the individual shopper segments (particularly the larger Mostly One segment).[4]

Consistent with the former conclusion, the managers underestimated the proportion of the market that reports never comparing prices. Looking at Columns F and G, it is clear that Multiple Store shoppers are more vigilant in price comparison than are Mostly One shoppers, with a substantially larger proportion reporting that they compare prices weekly and a smaller proportion reporting never comparing prices (χ^2 2 df. = 39.09, $p < .01$). The fact that managers tend to overestimate the proportion of shoppers who frequently compare prices, whereas they underestimate the proportion who never compare prices, is added evidence that managers may not appreciate the large variance in between-store search behavior among different shopper segments.

Reported Search for Price Specials

Next we consider the proportions of consumers who report reading ads and fliers, talking to friends about specials, and scanning shelves in-store for specials. Again comparing Columns D and E, we find unexpectedly that our manager sample *underestimated* consumer search for price specials in these vehicles. Interestingly, Mostly One

Store shoppers report a substantial degree of vigilance in reading ads and fliers (77%), although an even larger proportion of Multiple Store shoppers report reading ads (89%, $Z = 2.56$, $p < .05$). Surprisingly, the managers' mean estimate of this behavior is significantly lower (62%) than the reported consumer proportions. The managers slightly underestimate the incidence of talking to friends about specials but substantially underestimate both shopper groups' tendencies to search for price special information in the stores.

Question 3: Do managers overestimate consumer response to price specials (reflected in the reported tendency to shop multiple stores for specials and stock up)?

Managers estimate on averages that 34% of all consumers regularly shop price specials at multiple stores. In contrast, 19% of the full consumer sample reports this behavior (Column E). Consistent with the findings of Urbany et al., this proportion is well below the managers' confidence interval for that estimate. Twelve percent of the Mostly One shoppers do report shopping price specials at more than one store, a significantly smaller proportion than the Multiple Store shoppers (43%; $Z = 7.00$, $p < .01$). As with the price comparison variables though, managers seem to substantially overweight the behavior of the Multiple Store shoppers in estimating cross-store shopping for specials.[5] In contrast, managers underestimated the proportion of consumers who say they forward buy when they find a special price. The sample proportions obtained for both Mostly One and Multiple Store shoppers are well above the managers' expectations, as reflected in the Column D confidence interval.

DISCUSSION

The results provide several unique insights relative to the earlier study by Urbany et al., particularly in distinguishing between inter- and intrastore search. We find a significant degree of variance among managers' estimates of consumer search/shopping behavior, but also find that managers illustrate a reasonable (if not impressive) degree of knowledge of single- versus multiple store shopping. Yet, the managers not only continue to evidence overestimation of consumers' price comparison behavior and cross-store response to price specials, they also simultaneously underestimate *in-store* search. The former replicates the findings of Urbany et al., but the latter result is new. Below, we explore why those misperceptions might occur, why it seems to matter, and what retailers might do about it.

Why Are Manager's Estimates of Consumer Behavior Varied and Inaccurate?

First of all, we have implicitly assumed that, where different, the managers are in error. It could be that consumers are less accurate in reporting their own behaviors. It is certainly

true that people are not always aware of *why* they do what they do. Further, uncertainty exists in predicting what they *will* do. Although some degree of error must exist, we are reasonably confident in the consumer responses because they were asked only to provide yes/no answers to a straight forward set of questions about their current or recent shopping behavior and simply reported what they *did*. Managers had the more difficult task of estimating the behavior of others, a task known to be fraught with potential for error (Fiske and Taylor, 1991).

One likely problem for managers who are exposed to consumer information is that they may not be exposed to the right information. Sales information is reported at the aggregate category/brand level. This provides no clear insight into cross-store search behavior. Effectively, in responding to survey questions about consumer segment proportions, managers must rely primarily on their intuition rather than data. Likely error results in widely varying report on beliefs. Consistent with this, Hoch (1988) concludes that the inability of managers to predict the attitudes and opinions of consumers is due less to projection of their own beliefs than to insufficient information. In fact, if aggregate sales results are interpreted on the basis of conventional wisdom that featured price promotions primarily generate traffic from other stores, those results will almost always "show" high-traffic effects (cf. Hoch and Deighton, 1989; Urbany and Dickson, 1999).

It is less clear why managers should underestimate in-store search and stockpiling. As noted, because of the traditional emphasis on price promotion with the aim of generating store traffic, they may not view more loyal (and stationary) customers as a significant source of incremental sales volume. Again, this is likely due less to lack of interest and more to the unavailability of data to identify the sources of incremental sales volume. There are high costs of obtaining the information needed to disaggregate the different sources of incremental sales on promotion for an individual item based upon customer shopper status and promotion awareness, as it requires observational and/or point-of-purchase research. Given that managers do not obtain feedback about consumer in-store search and stockpiling on a regular basis, the large degree of error in their estimates is not surprising.

Does it Matter?

It might be argued that managers' estimates of consumer search behavior and general price sensitivity are not critical in pricing decisions. Such decisions are based more upon individual item elasticities, profits, and criteria for category management. Perhaps retailers do not need the answers to our questions? In general, we believe that retailers do a remarkable job of managing and setting prices in a complex environment, despite difficulty in estimating the kinds of consumer behaviors we study here. Yet, consistent with the assumptions of a long line of research in information economics' literature, we think that understanding search behavior does matter.

For example, one of the stores participating in the study—Chain B—lost eight points in market share when its corporate headquarters imposed an across-the-board price reduction strategy in the face of Chain D's market share gains. This strategy eliminated

the share-stabilizing effects of local management's meat and service quality-driven promotions. This strategy had been aimed at retaining loyal customers rather than acquiring promotion-driven customers in the face of competitive entry into the market. Later, in accord with our thinking, the summer of 1998, the parent company publicly acknowledged that it had overestimated the importance of price in acquiring customers and underestimated the importance of product (meat and produce quality) to consumer loyalty. Note that their reversal of local strategy had been developed from afar without the benefit of research on customer satisfaction and between- or within-store search behavior.

In another study, Boynton et al. (1983) similarly found that overestimation of consumer awareness of, and reaction to, the published comparative store price information led to aggressive price reductions by the retailers. Ironically, this information appeared largely unnoticed by most consumers. As a consequence, we believe that the understanding of in-store search and choice behavior of loyalty prone customers would enable more effective targeting of temporary price reductions. Such targeting may increase customer retention, which Little and Shapiro (1980) theorize to be an important goal of aggressive-nonfeature pricing.

Implications for Theory

The extant theory of information economics posits that the price competitiveness and efficiency of markets depend on a critical percentage of shoppers actively searching (cf. Salop and Stiglitz, 1977; Wilde and Schwartz, 1979). Our research and the above case studies reinforce a more fundamental point: it is sellers' *perceptions* of consumer search behavior that determines market price competitiveness. The evidence here also indicates that without specific measures of the relevant search behavior, those perceptions can be inaccurate. This suggests that the theory—rather than assume that sellers have perfect information about search behavior—should accommodate variation in the beliefs that drive pricing behavior.

In addition, it is important to reconsider the mechanism by which retailers learn the relative sizes of the different search segments. It is implicit in the theory that sellers can accurately learn segment sizes by observing how sales change in response to changes in price. This is so because the model assumes two sources of sales: 1) sales coming from consumers who choose their store randomly in any given period (sales that should on average be the same from period to period) and 2) sales coming from informed consumers: those who have searched for and discovered low prices in the market (cf. Varian, 1980). As such, incremental sales due to a price cut are by definition attributable to informed consumers, who have no particular loyalty to any store. Given these assumptions, this is a rational inference about consumer search behavior.

However, traditional data do not account for store loyalty or the promotional responses of store loyal customers. Our research suggests that a large portion of incremental sales jumps due to price promotion may be attributable to more store-loyal customers seeking price information within their favored establishments rather than searching for lower prices across stores. If such behaviors could be made manifest in retailer data, it would

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Implications for Managers

The problem with inaccurate beliefs of the nature observed here is that they may lead to an overemphasis on customer *acquisition* at the expense of customer *retention* (cf. Blattberg and Deighton, 1996). Aggressive promotional efforts aimed at acquiring cross-store shopping customers are expensive, tending to focus on deep discounts of high volume items. Alternatively, promotional budgets might be allocated to promotions or investment in loyalty programs designed to retain customer patronage. As "mostly one" store shoppers may find that they can efficiently economize by careful in-store search, it is sensible for retailers to assess whether promotions can be made more profitable by targeting a high frequency of promotions toward items favored by these consumers. The more loyal and vigilant consumer segments are likely to differ demographically (e.g., Blattberg et al., 1978; Kolodinsky, 1990). As a result they will, differ in terms of products to which they are promotion-responsive.

What this requires, however, is for retailers to complement the scanner tracking information they use to make decisions about category-management with household panel data or sample surveys. A solution is to integrate market research about consumer store patronage into scanner sales reports, perhaps by using loyalty card patronage information. Reporting category or brand sales by customer patronage status (i.e., primary/loyal customer vs. multistore shopper) would provide significant insight. In particular, this would enable managers to estimate response functions separately for these groups to better understand how to retain the patronage of store loyalists. Further, this would allow a direct assessment of how different categories contribute to loyal shopper customer retention.

It is of interest to note that both the store managers and headquarters executives of chain B in our case had very good measures of year-to-year and month-to-month sales. Further, they had reasonably good measures of the effects of individual price promotions on category sales and sales of promoted SKUs within the category. But, they could not fully assess changes in buyer search and patronage behavior without explicit data. In the absence of such measures, the retailer could only react to the aggregate *consequences* of such search behavior.

The end result of this failure in decision making may lead to serious, long-term shifts in the sales and profitability of the firm. The relatively lower cost of retaining customers versus regaining lost customers; compare Blattberg and Deighton (1996), suggests a strong rationality to tracking changes in the changes in consumer search and shopping behavior. Such tracking would allow a retailer time to take action before serious, long-term shifts in store loyalty, sales, and profitability take place, as occurred with Chain B.

NOTES

1. There were no comparable measures of price search used in the Urbany et al. study.
2. The measures discussed represent a subset of the measures taken in the larger consumer study.
3. We should note that the earlier study was conducted during the time of the first major entry of a large grocery discounter in this market, which may have heightened executives' attention to advertising and consumer store-switching.
4. The 55% estimate implies that the Multiple Store group had a disproportionate weight in our managers' minds (i.e., looked bigger than it truly was) in estimating price comparison. We can impute that implied weight in the following manner. First, assume that managers actually knew with certainty the proportion of each segment that reported monthly price comparison, in this case, 35% for the Mostly One group and 71% for the Multiple Store Group. Then, apply the managers' relatively accurate segment size estimates to these proportions: (0.75 * 0.35) + (0.25 * 0.71) = 0.44. Assuming that managers could estimate accurately what proportion of each segment compares prices monthly, this indicates that their aggregate average estimate should have been 44%. To reproduce the managers' actual aggregate estimate of 55%, the respective weights on our Mostly One and Multiple Store shopper groups have to be changed from 75/25 to 44/56. It seems that managers either implicitly weighted the Multiple Store shopper group's behavior by well over twice its appropriate weight or overestimated the price comparison activity of the Mostly One, or both, segments.
5. Again, assuming that the managers knew with accuracy the proportion of each shopping segment who shop the price specials at several stores, the 75/25 weighting for the Mostly One/Multiple Store shopper groups would have to be nearly reversed (28/72) to reproduce the managers' aggregate estimate of 34%.

REFERENCES

Banks, Kenneth A. (1992). "Does Anyone See our Ads?" *Retailing Issues Newsletter*, Texas A&M Center for Retailing Studies, November.

Bell, David R., Teck-Hua Ho, and Christopher S. Tang. (1998). "Determining Where to Shop: Fixed and Variable Costs of Shopping," *Journal of Marketing Research*, **35** (August), 352–369.

Blattberg, Robert C. and John A. Deighton. (1996). "Manage Marketing by the Customer Equity Test," *Harvard Business Review*, (July/August), 136–144.

Blattberg, Robert, C., Thomas Buesing, Peter Peacock, and Subrata K. Sen. (1978). "Identifying the Deal Prone Segment," *Journal of Marketing Research*, **15** (August): 369–377.

Bodapati, Anand V. and V. Srinivasan. (1997). "The Impact of Out-of-Store Advertising on Store Sales." Working paper. Stanford University Graduate School of Business

Borgida, E. and R. E. Nisbett. (1977). The Differential Impact of Abstract vs. Concrete Information on Decisions, *Journal of Applied Psychology*, 7: 258–271.

Bucklin, Randolph E. and James M. Lattin. (1992). "A Model of Product Category Competition Among Grocery Retailers," *Journal of Retailing*, **68** (Fall): 271–293.

Dickson, Peter R. and Joel E. Urbany. (1994). "Retailer Reactions to Competitive Price Changes," *Journal of Retailing*, 70, **1**: 1–21.

Dickson, Peter R. and
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Retailing," **3** (Spring

Dickson, Peter R. and Alan G. Sawyer. (1990). "The Price Knowledge and Search of Supermarket Shoppers," *Journal of Marketing*, **54** (July): 42–53.

Dréze, Xavier, and Stephen J. Hoch. (1998). "Exploiting the Installed Base Using Cross-Merchandising and Category Destination Programs," *International Journal of Research in Marketing*, **15**: 459–471.

Fiske, Susan T. and Shelley E. Taylor. (1991). *Social Cognition* (2nd ed.). New York: McGraw-Hill.

Gale, Bradley T. (1994). *Managing Customer Value*. New York: The Free Press.

Grover, R. and V. Srinivasan. (1992). "Evaluating the Multiple Effects of Retail Promotions on Brand Loyal and Brand Switching Segments," *Journal of Marketing Research*, **24** (February): 76–89.

Hoch, Stephen J., Xavier Dréze, and Mary E. Purk. (1994). "*EDLP, Hi-Lo, and Margin Arithmetic*," *Journal of Marketing*, **58** (October): 16–27.

Hoch, Stephen J. and John Deighton. (1989). "Managing what Consumers Learn from Experience," *Journal of Marketing*, **53** (April): 1–21.

Hoch, Stephen J. (1988). "Who Do We Know: Predicting the Interests and Opinions of the American Consumer," *Journal of Consumer Research*, **15**: 3, (December), 315–324.

Kahn, Barbara E. and David C. Schmittlein. (1992). "The Relationship Between Purchases Made on Promotion and Shopping Trip Behavior," *Journal of Retailing*, **68** (Fall): 294–315.

Kahneman, Daniel and Amos Tversky. (1973). "Subjective Probability: A Judgment of Representativeness," *Journal of Cognitive Psychology*, **3**: 430–454.

Kolodinsky, Jane. (1990). "Time as a Direct Source of Utility: The Case of Price Information Search for Groceries," *Journal of Consumer Affairs*, **24** (Summer): 89–109.

Krishna, Aradhna, Bari Harlam, and Page Moreau. (1996). "The Manufacturer-Retailer-Consumer Triad: Differing Perceptions Regarding Price Promotions," Working Paper, Columbia University.

Krishna, Aradhna, Imran S. Currim, and Robert W. Shoemaker. (1991). "Consumer Perceptions of Promotional Activity," *Journal of Marketing*, **55** (April): 4–16.

Kumar, V. and Robert Leone. (1988). "Measuring the Effect of Retail Store Promotions on Brand and Store Substitution," *Journal of Marketing Research*, **25** (May): 178–85.

Leeflang, Peter S.H. and Dick R. Wittink. (1996). "Competitive Reaction versus Consumer Response: Do Managers Overreact?" *International Journal of Research in Marketing*, **13**: 103–119.

Little, J. D. C. and J. F. Shapiro. (1980). "A Theory for Pricing Nonfeatured Products in Supermarkets," *Journal of Business*, **53** (July): 199–209.

Mela, Carl F. and Joel E. Urbany. (1997). "Promotion Over Time: Exploring Expectations and Explanations," Pp. 529–535 in Merrie Brucks and Deborah J. MacInnis (Eds.), *Advances in Consumer Research*. Provo, UT: Association for Consumer Research.

McClure, Peter J. and John K. Ryans Jr. (1968). "Differences between Retailers and Consumer Perceptions," *Journal of Marketing Research*, **5** (February): 35–40.

Moorman, Christine. (1998). "Market-Level Effects of Information: Competitive Responses and Consumer Dynamics," *Journal of Marketing Research*, **35** (February): 82–98.

Moorman, Christine and Anne S. Miner. (1997). "The Impact of Organizational Memory on New Product Performance and Creativity," *Journal of Marketing Research*, **34** (February): 91–106.

Mulhern, Francis J. and Robert P. Leone. (1991). "Implicit Price Bundling of Retail Products: A Multiproduct Approach to Maximizing Store Profitability," *Journal of Marketing*, **55** (October): 63–76.

Nisbett, Richard and Lee Ross. (1980). *Human Inference: Strategies and Shortcomings of Social Judgment*. Englewood-Cliffs, NJ: Prentice-Hall.

O'Conner, Michael J. (1986). "*What is the Logic of a Price War?*" *International Trends in Retailing*," **3** (Spring): 15–21.

Parasuraman, A., Valarie Zeithaml, and Leonard Berry. (1985). "A Conceptual Model of Service Quality and Its Implications for Future Research." *Journal of Marketing*, **49** (Fall): 41–50.

Salop, S. and Joseph Stiglitz. (1977). "Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersions." *Review of Economics and Statistics*, **54**: 493–510.

Schuster, Thomas F. (1988). "A Breeze in the Face." *Harvard Business Review*, (November-December, 1987):36–41.

Urbany, Joel E. and Peter R. Dickson. (1999). "The Cross-Shopping Illusion and Market Discipline in Retail Markets," Working Paper, University of Notre Dame.

Urbany, Joel E., Peter R. Dickson, and Rosemary Kalapurakal. (1996). "Price Search in the Retail Grocery Market." *Journal of Marketing*, **60**: 2, (April), 91–104.

Urbany, Joel E. and Peter R. Dickson. (1991). "Competitive Price Cutting Momentum and Pricing Reactions." *Marketing Letters*, 2:4 (May), 393–402.

Urbany, Joel E., Peter R. Dickson, and Rosemary Key. (1991). "Actual and Perceived Consumer Vigilance in the Retail Grocery Industry." *Marketing Letters*, **2**: 1., 15–25.

Varian, Hal R. (1980). "A Model of Sales." *American Economic Review*, (September), 651–659.

Walters, Rockney G. (1991). "Assessing the Impact of Retail Price Promotions on Product Substitution, Complementary Purchase, and Interstore Sales Displacement." *Journal of Marketing*, **55** (April): 17–28.

Walters, Rockney G. and Heikki J. Rinne. (1986). "An Empirical Investigation into the Impact of Price Promotions on Retail Store Performance." *Journal of Retailing*, **62** (Fall): 237–266.

Walters, Rockney G. and Scott MacKenzie. (1988). "A Structural Equations Analysis of the Impact of Price Promotions on Store Performance." *Journal of Marketing Research*, **25** (February): 51–63.

Walzer, Ed. (1987). "A Challenge to the Conventional Wisdom." *Progressive Grocer*, (April), 4–5.

Wilde, Louis L., and Alan Schwartz. (1979). "Equilibrium Comparison Shopping." *The Review of Economic Studies*, **46** (3): 543–54.

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This is Exhibit..."F"...referred to in the

affidavit of...JOHN O. WINTER...

sworn before me, this...19th...

day of...SEPTEMBER...2003...

...

A COMMISSIONER FOR TAKING AFFIDAVITS

Stephen J. Hoch, Xavier Drèze, & Mary E. Purk

EDLP, Hi-Lo, and Margin Arithmetic

The authors examine the viability of an "everyday low price" (EDLP) strategy in the supermarket grocery industry. In two series of field experiments in 26 product categories conducted in an 86-store grocery chain, they find that a 10% EDLP category price decrease led to a 3% sales volume increase, whereas a 10% Hi-Lo price increase led to a 3% sales decrease. Because consumer demand did not respond much to changes in everyday price, they found large differences in profitability. An EDLP policy reduced profits by 18%, and Hi-Lo pricing increased profits by 15%. In a third study, the authors increase the frequency of shallow price deals in the context of higher everyday prices and find a 3% increase in unit volume and a 4% increase in profit. Finally, they draw a conceptual distinction between "value pricing" at the back door and EDLP pricing at the front door.

Retail formats come and go with changes in consumer tastes, lifestyles, and trends in demography and the economy. Recently it is the "everyday low price" (EDLP) format that has experienced rapid growth and media popularity. The prototypical description of an EDLP pricing policy is as follows: The retailer charges a constant, lower everyday price with no temporary price discounts. These constant everyday prices at the EDLP outlet eliminate week-to-week price uncertainty and represent a contrast to the "Hi-Lo" pricing of promotion-oriented competitors. The Hi-Lo retailer charges higher prices on an everyday basis but then runs frequent promotions in which prices are temporarily lowered below the EDLP level.[1] Discounters like Wal-Mart have led the EDLP wave and successfully encroached on the turf of supermarkets and department and drug stores by advertising that their everyday prices are "*always* the lowest" to be found. Warehouse club operations like Sam's, Costco, and others also have grown rapidly by pursuing limited assortment and limited service EDLP price strategies while using well-known brand names as a draw. Nonretail industries have adopted versions of EDLP, notably the airlines (Southwest) and automobile manufacturers (Saturn).

Some grocery supermarket retailers also have implemented various forms of the EDLP concept including Food Lion, Winn-Dixie, Cub Foods, and Omni, among others. There are big differences in EDLP penetration across geographical markets, EDLP being more prevalent in Southern areas (Birmingham, AL, 78%; New Orleans, 61%) and less popular in Northeastern areas (Upstate New York, <5%; Boston, 16%) (Partch 1992). Moreover, some supermarket retailers have adopted EDLP on a more limited level, what sometimes has been labeled category-level EDLP. Here, they institute EDLP on a focal category like soft drinks or diapers in an attempt to build traffic and stave off competition from alternative retail formats.

Various rationales for adopting EDLP have been advanced. First, it has been argued that heavy price promotion has eroded consumer confidence in the credibility of everyday shelf prices (Ortmeyer, Quelch, and Salmon 1991). With an EDLP approach, it may be possible to restore price credibility. Because EDLP is simple and consistent, it may be easier to communicate to consumers and therefore to increase the chances of establishing a low price image through advertising. It also reduces managerial costs because it is easy to implement by simply matching or beating the most aggressive local competition. This assumes, of course, that the retailer has an appropriate cost structure in place.

Second, EDLP often is assumed to lower operating costs. These lower costs can be achieved in three primary ways: (1) reduced service and assortment, (2) reduced inventory and warehouse handling costs due to steady and more predictable demand, and (3) lower in-store labor costs because of less frequent changeovers in special displays. Warehouse operators gain additional cost savings due to less expensive locations and nonunionized labor. Lattin and Ortmeyer (1991) argue that EDLP also can reduce advertising expenses; for example, Wal-Mart feature advertises in newspapers on a monthly basis, whereas many of their competitors do promotional advertising 52 weeks a year.

In spite of these apparent advantages, most retailers have not adopted EDLP. According to a recent survey of the top 50 U.S. retail markets, 26% of supermarket retailers are pursing some form of EDLP (Partch 1992). This means that the remaining 74% are Hi-Lo promotion-oriented operators. The question is why. The dominant theory is that retailers can price discriminate between consumers that vary in price sensitivity, one of the most basic and long-standing principles in economics (Pigou 1920). Hi-Lo pricing allows the retailer to discriminate between informed and uninformed consumers (Varian 1980). When heavy users of a product

[1]As we show subsequently, this prototype is not representative of how most food retailers actually practice EDLP.

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category also have higher inventory holding costs, retailers can use temporary price cuts to effectively charge them higher average prices (Blattberg, Eppen, and Lieberman 1981; Jeuland and Narasimhan 1985). With a Hi-Lo policy, retailers can attract price-sensitive switchers with promotions to build store traffic while store-loyal consumers buy merchandise both on deal and at higher everyday prices (Narasimhan 1988). Temporary price discounts also can lead to category expansion when consumption rates are more flexible (e.g., ready-to-eat cereal as compared with bath tissue). Many Hi-Lo retailers also believe that aggressive temporary price reductions help to sustain a low-price value image.

In this article we examine the viability of an EDLP pricing strategy in the supermarket grocery industry. The article addresses four questions:

1. *What is EDLP in practice?* A comprehensive study (Information Resources, Inc. 1993) has found that although EDLP stores maintain lower prices on an everyday basis, they sell about the same amount of product on deal as Hi-Lo operators. This suggests that the nonpromotion prototype described previously is not representative of how EDLP actually is executed in the field. Self-avowed EDLP chains do engage in promotional pricing, and in fact some engage in as much promotional activity as the Hi-Lo chains.
2. *How well does EDLP work?* We report the results of two comprehensive field experiments in which everyday prices were varied systematically on over 7500 items in 26 categories. We did not test the idealized nonpromotion EDLP prototype described at the outset but instead attempted to create test conditions that more closely matched actual practice. We found that 10% across-the-board price cuts do not drive volume sufficiently to overcome decreases in profit margins. In fact, gross profits were over 35% greater when employing a Hi-Lo versus an EDLP strategy.
3. *What does it take to make EDLP work?* We offer a simple framework for calculating the magnitude of the volume increases that EDLP would have to produce to break even profitwise. We also consider the profit implications of decreases in operating costs that might accompany a move to EDLP. This makes it easier to evaluate the likelihood that EDLP would pay out in an implementation in which competitive conditions and historical precedent might differ from the market we studied.
4. *When and how should EDLP be employed?* We consider how the size of a retailer's installed base of consumers can affect the viability of EDLP. We also distinguish between a "value pricing" strategy at the wholesale level (i.e., the "back door" of the store) and EDLP pricing at the retailer's "front door" (where consumers actually shop).

What Is EDLP in Practice?

In March 1993, Information Resources, Inc. (IRI) completed a study of EDLP pricing in supermarkets utilizing their nationwide InfoScan syndicated database. Although a pure EDLP strategy implies low everyday prices with no temporary price promotion activity, IRI found that "true" EDLP rarely exists. Instead, it takes on many forms: chainwide, storewide, and categorywide. Because there are many hybrids, EDLP is best seen as a continuum. IRI compared the extremes: the 12% most EDLP-like stores versus the 20% most promotion-oriented (Hi-Lo) operators in their geographically diverse 3000-store sample. Representative EDLP operators included Cub, Food Lion, Lucky, Omni, and Winn-Dixie. Hi-Lo operators included A&P, Dominick's, Jewel, Safeway, and Von's. Among many other findings, three interesting facts surfaced about EDLP in practice:

1. EDLP store prices are on average 9% below Hi-Lo stores. EDLP store prices were 11% below on an everyday basis and 6% below on a promotion basis.
2. EDLP stores sell just as much merchandise on deal as Hi-Lo operators. 26% of overall store volume is sold with some form of merchandising support in EDLP stores, whereas 24% of volume is sold with merchandising support in Hi-Lo stores.
3. Percentage price reductions are less deep in EDLP stores. Discounts off everyday prices offer greater savings (percentagewise) in Hi-Lo stores, about 33% more.

In our experience, these facts do not always match up with the stylized "no-promotion EDLP" prototype that many industry observers maintain, a prototype that is much more consistent with warehouse clubs than with EDLP food retailers. Game theoretic analyses (Lal and Rao 1993; Lattin and Ortmeyer 1991) also have assumed that an EDLP strategy is characterized by constant prices (no temporary price deals) that are in between the Hi-Lo operator's regular and deal prices. This "pure" EDLP strategy is an interesting concept in theory but apparently is not pursued widely in practice. Even Food Lion, an acknowledged EDLP limited assortment chain with over 1000 outlets, offers hundreds of temporary price reductions each week. We designed our empirical implementation of EDLP to match the three characteristics listed previously: lower everyday prices, the same level of promotional activity as the Hi-Lo stores, and smaller price discounts off regular price on a percentage basis. One important limitation to our studies is that we did not widely advertise the existence of lower everyday prices.

How Well Does EDLP Work?

For EDLP to increase volume substantially, a prerequisite for success given lower gross margins, the strategy must create a low-price image in the mind of the consumer. A change in price image is required to induce at least some consumers to switch stores. We partition the determinants of price image into three components: a pure price effect, a pure advertising effect, and an interaction of actual prices and image advertising (cf. Hoch and Deighton 1989). It is easy to imagine that a reduction in prices without advertising support might not be enough to change price image, at least in the short run. Moreover, any positive benefits from price advertising not backed up by lower actual prices would seem to be difficult to sustain in the long run. As such, lower everyday prices may be a necessary but not sufficient condition for EDLP success.

So how well does EDLP work? The answer to this question is that it depends. Sears Roebuck could not make EDLP work, possibly because it did not convince the American

TABLE 1
Detailed Results From the Everyday Pricing Experiments

Study 1					
		Percentage Change From Control Stores			
		Hi–Lo Stores		EDLP Stores	
Product Category	Category–Level Price Change ±[b]	Units	Profit	Units	Profit
Analgesics	10	+1	+20	+5	–55
Bath tissue	6	+1	+11	–1	–11
Beer	6	–7[a]	+10	+1	–9
Canned seafood	6	–6[a]	–5	–3	–11
Canned soup	14	–3	+70	na	na
Cereal—hot	10	–2	+30	+5	–35
Cereal—RTE	10	–1	+19	+2	–29
Cheese	8	–1	+2	+3	–11
Cigarettes	10	+3	+9	+3	–1
Crackers—snack	10	–5	+17	–1	–28
Dish detergent	6	–3	+9	+2	–20
Front-end candy	13	–3	+16	+1	–11
Frozen entrees	11	–8[a]	+1	+10	–11
Frozen juice	10	–3[a]	+11	+4	–18
Laundry soap	6	–3[a]	+18	+4	–17
Oral care	7	–3	+13	+3	–14
Paper towels	6	–7[a]	+ 1	0	–10
Refrigerated juice	8	0	+11	+3	–6
Soft drinks	24	na[a]	na	+10	–22
Averages	10%	–3%	+15%	+3%	–18%

na = not applicable
[a]unit differences between the three pricing conditions statistically significant $p < .10$.
[b]prices were increased in Hi-Lo Stores and decreased in EDLP stores.

public of its commitment to the pricing strategy after so many years of aggressive weekly promotional activity. Wal-Mart and some of the warehouse clubs, however, follow an EDLP approach and are successful. Their prices are generally lower than local competition and they are admired for their efficient logistic and operating systems. There are many factors that influence the success of any retail strategy. So we ask a different, more specific question here—how viable is it for an established grocery retailer with a substantial installed base of customers to move to an EDLP pricing strategy? Because we could not experimentally manipulate price image advertising (all stores are located in the same media market), we focus solely on the pure price effect, which will tell us how large the advertising component must be for EDLP to be a profitable strategy.

As part of a multiyear project focusing on data-driven micro-marketing, we conducted two large-scale studies to compare the performance of EDLP with Hi-Lo pricing. The Micro-Marketing project is a joint venture between the University of Chicago Graduate School of Business, Dominick's Finer Foods (which has a 20% share of metropolitan Chicago grocery sales), and 20 leading packaged goods companies. The project mission is to utilize marketing information technology to improve decision making at retail and better lever existing promotional expenditures. Micro-marketing seeks to identify the wants and needs of the local marketplace and then customize strategies at the store level to exploit trading area differences in consumers and competition. One of the objectives was to evaluate the viability of everyday pricing on the basis of micro-market differences in price elasticities (Hoch et al. 1995). In addition, a variety of promotional experiments was conducted.

In two separate series of tests we evaluated the performance of EDLP versus Hi-Lo category pricing. The relevant details follow.

Study 1

Test product categories. We used 19 product categories, accounting for about 25% of store sales, for the tests. The categories were diverse (see Table 1); there were high-volume, high-velocity categories (e.g., soft drinks) as well as slower movers (e.g., hot cereal). Some categories offered the retailer high gross profit margins (cigarettes) and others low margins (canned soup). In some categories, consumers can modulate their rate of consumption (refrigerated juice) and in others, consumption rate is fixed (bath tissue). Finally, the main retail competitor varied by category, from supermarkets (cheese) to drug stores (analgesics) to mass merchant discounters (detergents). Everyday prices were changed on over 5000 stock keeping units (SKUs). The participating retailer conducts comprehensive competitive price audits each week, so we were able to monitor the everyday prices of other retailers in the market as well. Retail competitors did not respond with corresponding price changes during the test period. Lack of competitive reaction was not unexpected because competitors would have had to execute price changes on a store-by-store basis.

Everyday pricing conditions. All 86 stores in the Dominick's chain were involved in the test. Stores were assigned randomly to three pricing conditions on a category

by category basis. In control stores, all everyday, nonpromotional prices were kept at preexisting levels. Price increases and decreases were symmetric around existing control store levels. In EDLP stores, prices of each brand in a product category were decreased by a constant factor, ranging from 6% in bath tissue to 24% in soft drinks. On average, EDLP store prices were decreased by 10% across all 19 categories. In Hi-Lo stores, prices of each brand in a category were increased by the same factor, on average a 10% increase across all the categories. These category-level increases and decreases maintained the relative price levels of brands within a category, so substitution patterns between brands were not likely to change during the test. Because the competition did not react to these price changes, this meant that Hi-Lo stores offered prices significantly above the competition, resulting in adverse price comparisons. Contemporaneously, EDLP stores benefited from more favorable price comparisons.

Although everyday prices for individual product categories varied from store to store, the price of a complete market-basket of goods across all 19 categories remained unchanged for each store during the test period. This is because for any particular store, prices were raised in some categories and lowered in others. Our rationale for this design was to ensure that we could obtain a pure read on the effect of everyday prices for each category without possible contamination due to the prices of other categories. At the point in time the study was conducted, retailers and manufacturers were very interested in better understanding the viability of EDLP on a category-by-category basis. Clearly, it is important to understand storewide price effects, a phenomenon that we investigate in Study 2 with another series of experiments, but we believe that the current design was a necessary first step to understanding everyday pricing.

Pricing test duration. The tests ran for a minimum of 16 weeks. We settled on this test length to balance out two competing concerns. First, 16 weeks provided sufficient opportunity to learn about prices through multiple (at least two) category purchases even in the less frequently purchased health and beauty aid categories. Second, because a majority of consumers cross-shop multiple retailers, they at least had the opportunity to learn of price differences. At the same time, 16 weeks is short enough so that lack of experimental control does not become a problem. We had access to 170 weeks of historical data. As a sales baseline, we computed average weekly sales and profits for each store for the 26 weeks immediately preceding the initiation of the test period. In categories with large seasonal effects (e.g,. canned soup), we utilized the same 16-week time period in the prior year.

Temporary promotional activity. Promotions occurred as they would in the normal course of business. About one-third of unit volume was sold with some form of promotional support: temporary shelf price reductions, feature advertising, and/or in-store display. The average price reduction across categories was about 15% below control store prices. This level of promotion intensity was consistent with the retailer's preexisting policy in the test categories.

Promotional prices were equivalent across everyday price conditions. That is, when an item went on deal, prices in all stores dropped down to the same price point. This policy resulted in a greater percentage of savings in Hi-Lo stores compared with EDLP stores. For example, assume that the everyday price was $1.99 in control stores, compared with $2.19 in Hi-Lo and $1.79 in EDLP stores. If the item went on deal for $1.49, this results in a 25% savings in control stores versus 32% and 17% savings in Hi-Lo and EDLP stores, respectively.

Although average everyday shelf prices were increased or decreased 10% during our tests, the fact that one-third of volume was sold at a constant dollar deal depth in all stores meant that effective out-the-door prices differed from control prices by only 7% up or down.[2]

Test implementation. Everyday and promotional price changes were made using existing scanner technology, along with shelf tags. This ensured a high-quality implementation of the pricing tests.

Does our study constitute a reasonable test of the effectiveness of EDLP versus Hi-Lo pricing at retail? There are several similarities between our operationalization of EDLP versus Hi-Lo and the IRI study previously mentioned. First, everyday prices are 20% lower in our EDLP stores compared with 11% in IRI's sample of stores. Second, the extent of promotional activity was equivalent in the Hi-Lo and EDLP stores in both our study and IRI's sample. And finally, because promotional prices in all stores in the chain went down to the same price point, deal depth in Hi-Lo stores was significantly greater than in EDLP stores on a percentage basis. This last point also mimics IRI's findings on deal depth.

The main difference between our study and EDLP in practice is that we instituted EDLP on a category-by-category basis. This precluded any additive effects of lower prices that might accumulate across categories, and it prevented broad-scale advertising of EDLP to the public.[3] These differences could be important because though consumers may not be very aware of individual product prices, they may be more likely to notice changes in their overall grocery bills. It is also the case that these findings occurred in the Chicago market, where 60% of the market is driven by Hi-Lo operators, though there are several well-known EDLP supermarket chains in the area (Cub Foods, Omni) along with KMart, Target, Wal-Mart, and several warehouse clubs. It is important to keep these similarities and differences in mind when interpreting the results. This first study therefore

[2]The calculation works as follows. Assume that one-third is sold on deal and two-thirds at regular prices. Consider the difference between EDLP and control store average prices of a product sold in control stores every day for $1.00. With an average 15% promotional price reduction off control prices and a 10% everyday price cut in the EDLP stores, the average price is a simple weighted average of deal and everyday prices. That is,

$$\frac{\text{EDLP average price}}{\text{Control average price}} = \frac{(1/3 * \$.85 + 2/3 * \$.90)}{(1/3 * \$.85 + 2/3 * \$1.00)} = \frac{.883}{.950} = .93.$$

[3]It should be pointed out, however, that in-store signage (e.g., "Check Out Our Everyday Low Prices on 6-Packs") was utilized in several categories with no appreciable differences in the results.

is viewed best as a test of the viability of category-level EDLP.

Results

For each store, we calculated performance measures for unit volume, dollar sales, and dollar profit. Percentage changes in weekly store performance were calculated as follows: (average test performance – average historical performance)/(average historical performance). All findings were indexed to the control stores, which are set to a base of 100 and then subjected to an analysis of variance (Figure 1).

Changes in unit volume. Across-the-board everyday prices were increased 10% in Hi-Lo stores and decreased 10% in EDLP stores compared with control stores. Ten percent higher Hi-Lo everyday prices led to a 3% decrease in unit volume on average. Ten percent lower EDLP prices led to a 3% increase in unit volume. This pattern of results was very consistent across categories and also held up over the entire test period (i.e., there was no suggestion of learning). Table 1 presents more detailed results for individual product categories. It shows percentage changes in unit sales and dollar profit for the Hi-Lo and EDLP stores compared with the control stores that again were indexed to 100. Changes in everyday price produced statistically significant ($p < .10$) changes in unit sales for 7 of the 19 categories. A test combining F-tests (Rosenthal 1991) across all 19 categories indicated that the ± 3% change in unit sales was statistically significant ($p < .001$). A more important issue, however, is the economic significance of these changes in unit sales.

Consumers showed little sensitivity to categorywide changes in everyday prices, an average elasticity of about –.4 (3% Δ units/ 7% Δ net prices).[4] There are several possible reasons for this, some of which we address subsequently. We do not believe, however, that the length of the test is a likely candidate. Although 16 weeks is not long term, it also is not short term. And in fact, in most of the categories the test prices remained in effect much longer. We found that the results remained unchanged over periods of more than 40 weeks and in no case did we observe a shift in the basic pattern. It is possible that store switching might take more time to emerge, but after three-quarters of a year, one would expect to detect larger effects on sales if store switching is a major factor.

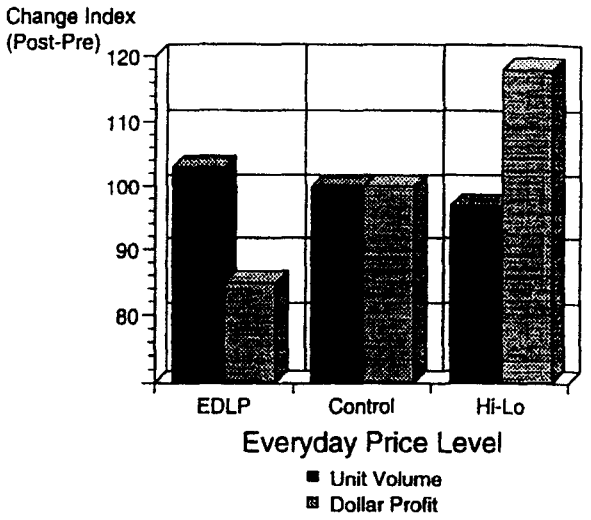
Changes in dollar profits. The gross profit results are from the retailer's perspective and are computed using the retailer's marginal costs based on an average cost accounting system. We found that 10% higher Hi-Lo prices led to a 15% increase in profitability, on average. On the other hand, 10% lower EDLP prices led to an 18% decrease in profits. Profit results were statistically significant in all 19 categories.

These results are dramatic and ex ante surprising. Consumer demand appears remarkably insensitive to changes in everyday prices: 10% changes in everyday price resulted in 3% changes in unit sales. It is possible, however, that the price changes were not large enough to be noticed by most consumers, especially in light of all the week-to-week promotional activity. Research has shown that many consumers do not possess accurate price knowledge (Dickson and Sawyer 1990). At the same time, however, the 20% price difference between Hi-Lo and EDLP stores is not trivial, at least in the eyes of the manufacturers and retailer who participated in the study and in light of the 9% difference found in the IRI study. Moreover, such price changes had a huge impact on profitability. We also found that consumers responded identically to price increases and decreases. On the basis of prior research on reference prices (e.g., Thaler 1985) and our assessment of prevailing retailer intuitions, we expected that consumers might react more strongly when faced with price increases (viewed as an out-of-pocket loss) compared with price decreases (viewed as a potential gain). We found no evidence of asymmetric response to increasing and decreasing everyday prices.

The bottom line is that EDLP did not drive volume sufficiently to compensate for lower profit margins. As shown in Table 1, EDLP led to decreased profitability in every category (18 out of 18), and a Hi-Lo pricing strategy led to increased profits in 17 out of 18 categories. There are several instances in which differences in profitability between Hi-Lo and EDLP are remarkably large, including analgesics (75%), canned soup (70%), and hot cereal (65%). In the cases of analgesics and hot cereal, the large differences in performance appear to be mainly caused by very low demand elasticities with respect to everyday price. In the case of canned soup, in which we only raised prices, the large profit effect also was driven by the fact that the category had been priced as a loss leader (meaning low retailer profit margins) prior to the test.

FIGURE 1
Pricing Experiment Results

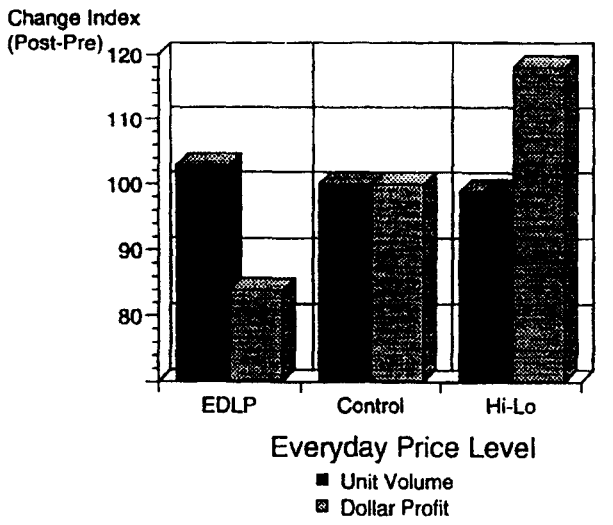
Study 1



[4]Using historical data from the same retailer and many of the same categories, Hoch and colleagues (1994) estimated an average category constant elasticity of –1.06.

FIGURE 2
Pricing Experiment Results

Study 2



Study 2

We conducted a second everyday pricing study approximately eight months later. We had two objectives: We wanted to replicate our initial study to ensure that our findings were robust; but more importantly, we wanted to address one of the limitations of the first study. With our category-by-category randomization procedure, the average price of any individual store's total market basket of goods did not differ between the pre- and post-test periods. As such, we may have limited the size of the pure price effect on overall price image, which in turn might influence store switching behavior.

Test product categories. The pricing tests were conducted in 26 product categories accounting for about one-third of store sales. Additional categories were added to those involved in the initial study. We added several large health and beauty aid categories (e.g., hair care and grooming products). Everyday prices were changed on over 7500 items. And as in the first phase, we observed no everyday price response by retail competitors.

Everyday pricing conditions. As in the first study, all 86 stores in the Dominick's chain were involved in the test. The major procedural difference in Study 2 was that we randomly assigned each store to the same everyday pricing condition consistently across categories. Of the participating stores, 29 adopted EDLP pricing in all 26 categories, 29 control stores maintained existing retail pricing, and 28 stores adopted Hi-Lo pricing. The average price change across all categories was about 9%. Because the 26 categories represent one-third of store volume, this means that storewide prices were on average 3% lower in EDLP stores and 3% higher in Hi-Lo stores during the test. Clearly, this study constitutes a stronger experimental implementation of changes in store-level everyday prices. We do acknowledge, however, that the strongest test would involve price changes on more products and consumer advertising of the store policy, both features of a real-world EDLP program that are not achievable in a controlled test.

Pricing test duration. Because of the large number of everyday price changes that the retailer had to execute, rollouts were staggered over a one-month period. For analysis purposes, we used a 16-week period after price changes had been made in all 26 categories. To control for store size and other idiosyncratic factors, we utilized the same 26-week sales baselines as in Study 1. Temporary promotional activity was similar to that during the first study, with about 30% of volume sold on deal and an average price reduction of 15%.

Results. For each store, we calculated performance measures for unit volume, dollar sales, and dollar profit in a manner similar to the first study. All findings were then indexed to the control stores, which are set to a base of 100. As can be seen in Figure 2, the bar chart appears virtually identical to the Figure 1 results for Study 1. A 9% change in everyday prices produced a 3% increase in unit sales in the EDLP stores compared with a 2% decrease in unit sales in Hi-Lo stores. Changes in unit volume were statistically different ($p < .10$) in 9 out of 26 categories. Because consumer demand was insensitive to the price changes, profits decreased by 18% with EDLP pricing, and they increased by 17% with Hi-Lo pricing. Significant differences in profits were observed in all 26 categories.

Summary of the Experiments

In both studies, changes in everyday prices had a small impact on sales volume. In contrast, these price changes produced substantial differences in category profitability. The difference in category profits between EDLP and Hi-Lo pricing were over 32% in Study 1 and over 35% in Study 2. These are not small differences. In Study 2, we went back and examined the effect of these pricing changes on two other store-level performance indicators: customer count, that is, the average number of customers visiting the store each week, and dollar sales of all remaining nontest categories. We found no significant differences between the everyday pricing conditions, and if anything Hi-Lo stores showed slightly more positive changes in customer count during the test period. Moreover, dollar sales of nontest categories were within .5% of each other, suggesting no spillover from the test categories, either positive or negative.

We do not imply that a store's overall price level is not related to the store choice decision in the long run. If we had maintained test prices for one to two years, it seems likely that price eventually would have a more noticeable impact on volume and store traffic. As an example, a retailer who raises prices across the board (our Hi-Lo condition) opens up the possibility that a competitor might begin to advertise the price disparities that exist. The more important question, however, is how large the magnitude of the price-store choice relationship must be to justify an across-the-board cut in everyday retail prices.

What Does It Take to Make EDLP Work?

To our knowledge, our two studies provide the first and only comparison of EDLP versus Hi-Lo everyday pricing utilizing tightly controlled experimental procedures. And although our design ensures high internal validity, an important question is how far (if at all) we should generalize our results. We already have mentioned the limitations of our study. In Study 1, we changed prices on a categorywide, not storewide, basis, though we remedied this limitation in Study 2 by changing one-third of the store's prices and observed identical results. We also could not advertise the EDLP price decreases to the public because of a noncontained media market, so the potential for chain-level price image effects (leading to store switching) clearly is limited. Moreover, the structure of competition in the Chicago market makes it problematic to project to other markets with different competitive structures.

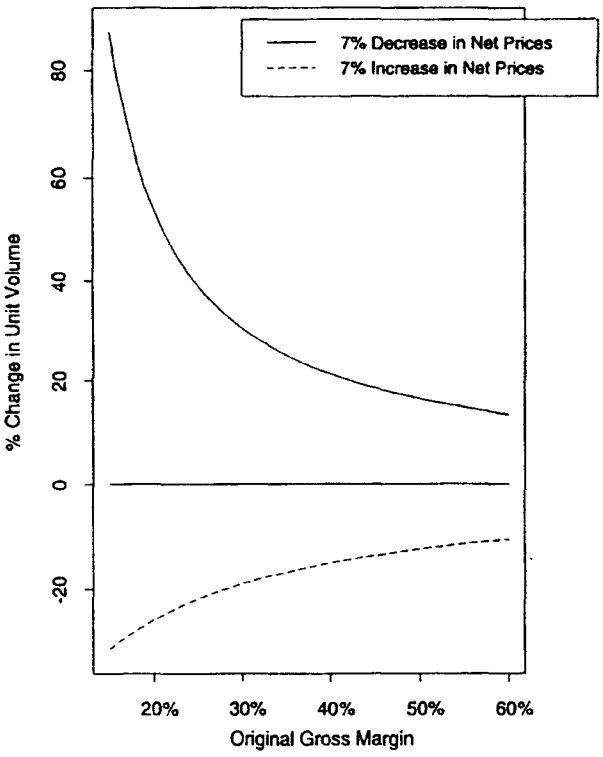
We do feel reasonably confident that our results are relevant to the decision about whether to pursue EDLP on a category-by-category basis because that is exactly what our two studies investigated. Assuming that the retailer's goal is increased profitability, it is a bad idea for a full-service supermarket to try to compete with more efficient lower-cost alternative formats by lowering their everyday prices on selected high-volume categories like detergent, soft drinks, and diapers. Lower prices on selected categories do not bring new consumers into the store (who in turn might buy other regularly priced merchandise) at a fast enough rate to compensate for the lower profit margins.[5]

We take a different approach, however, to evaluate the generalizability of our findings for store- and chain-level implementations of EDLP. We pose the following thought experiment: Imagine the best possible implementation of EDLP—a great chainwide advertising campaign, a longer time horizon for a new price image to form, and a conducive competitive environment. How much do you believe that sales would increase in this instance? Although we do not know with certainty, it is our belief that sales increases would be substantially greater under these conditions. The more important question, however, is whether these sales increases would be large enough to maintain or build dollar profits for the retailer. In other words, what kind of volume increases are needed to make EDLP work?

Margin Arithmetic

Understanding the economics of EDLP requires some very simple *margin arithmetic* to answer the question, "Given a particular change in everyday prices, what is the attendant change in volume necessary to maintain profits at the same level as before the price change?" The answer depends on two factors: (1) the retailer's original gross profit margin and (2) the level of everyday price change. The calculation is as follows:

FIGURE 3
Break-Even Volume Change Analysis for an EDLP or Hi-Lo Pricing Strategy



$$(1) \qquad \text{Breakeven Change in Volume} = \frac{-\delta}{\pi + \delta}$$

where

π = original gross profit margin (percentage) and
δ = net change in everyday prices (percentage).

(See Appendix A for derivation details). The top half of Figure 3 illustrates the needed market response for an EDLP strategy to "work" given the 7% decrease in net prices we observed in our study. The bottom half of Figure 3 provides the same market response information for the case of a 7% net Hi-Lo price increase.

Margins in the typical supermarket average around 25% (*Supermarket Business* 1993). Given an original margin of 25%, Figure 3 shows that unit sales would have to increase over 39% to make the same dollar profit after a 7% net reduction in everyday prices. Stores experienced a 2%–3% increase in our tests, an order of magnitude lower than necessary to break even profitwise. At higher margins, sales increases do not have to be so great. For example, if margins start at 40%, sales volume must increase 21%; and at 50%, sales volume must increase 16%. With the exception of a few general merchandise lines of business, there are few categories offering such high margins. At lower margins, sales

[5]It is possible that category-level EDLP might work if backed by a successful advertising campaign. We would argue, however, that it is difficult to establish and maintain a consistent price image for the chain if the retailer is sending mixed advertising messages. An exception might occur for "stand-alone" departments that are clearly separable from the rest of the store. For example, some stores appear to pursue successfully some form of EDLP only on prescription drugs for loss leader purposes.

volume must respond even more dramatically to decreases in everyday prices. For example, at 15% gross margins, typical for the high-velocity ready-to-eat breakfast cereal category and other categories viewed as loss leaders, a retailer would need to generate a volume increase of over 87% to break even with EDLP. Most retail experts find it difficult to imagine such large sales increases no matter how well EDLP is implemented.

Figure 3 also illustrates the break-even decreases in sales volume for a Hi-Lo everyday price increase. It shows that consumer demand would have to be much more price sensitive than was the case in our studies for a Hi-Lo price increase to reduce dollar profits. With an original gross margin of 25%, unit sales must decrease 22%, more than six times the amount in our study. At a 15% margin, unit sales would have to drop over 32% before the retailer begins to forgo dollar profits. Such massive store defections are possible but they seem quite unlikely, at least in the short to intermediate term.

We have found that retailers and manufacturers have asymmetric attitudes about raising and lowering prices. They express more concern about the deleterious market share effects that might accompany a price increase than they do about the potential negative implications of lower percent gross margins. In other words, retailers act as if they would rather set prices below the monopoly price than above it (Simester 1994). A natural question to ask is why retailers would choose to operate in the inelastic region of the demand curve. We have no definitive answer but can offer a few possibilities. First is lack of knowledge. Without systematic price experimentation and expertise in analyzing large scanner databases, retailers may not know exactly how price sensitive consumers really are. Moreover, with the vigilant price matching by competitors that characterizes most local markets, there are few opportunities to observe long-term store switching that does or does not take place. Second, retailers may focus more on increasing market share in the short run because of a belief (true or false) that higher market share will lead to greater profits in the long term. This story makes sense if store switching costs are fairly high because (1) it will be extremely expensive to attract back a customer who has defected and (2) the returns on investments in market share will accrue to the retailer for years in the future.

How and When Should EDLP Be Employed?

We do not argue that EDLP is not a viable retail strategy. Clearly it can be, as is evidenced by the success of Wal-Mart and others. We do believe, however, that it is important to understand when and how to use EDLP. Our pricing studies show that using EDLP on a category-by-category basis to stave off alternative format competition does not work well. If a retailer is going to make EDLP work, it probably has to be on a chainwide basis so as to benefit from overall store price image. Because the price alone does not drive volume, our results isolate how large the advertising component of EDLP must be for the retailer to gain profits—in the case at hand, a 36% increase. In executing any pricing strategy, firms must consider the likely impact on two customer sectors: their installed base of current users and nonusers who represent potential opportunity for growth.

Installed Base Versus Opportunity

For a retailer, the installed base consists of consumers already shopping at one of their locations, a particular $store_i$, either as a primary shopping outlet where they buy a majority of their groceries or as a secondary source of supply. The installed base shops a particular store because of a multitude of factors. Consumer surveys of retail patronage repeatedly have found that location/convenience is the most important factor, followed in order of mention by low prices, assortment, courteous service, good-quality merchandise, and fresh meat (Arnold, Oum, and Tigert 1983). These results show remarkable stability across time despite changes in economic conditions, suggesting that the strategic value of price should be evaluated as one part of a larger portfolio of attributes.

The main opportunity for a retailer comes from potential consumers who currently shop at a competitive chain $store_j$ but could shop at $store_i$ given the appropriate retail mix of price and other attributes. If EDLP functions as an effective economic signal, certain consumers may shift shopping outlets. The profit potential of EDLP depends in large part, however, on the ratio of installed base to new opportunity. The greater the installed base, the more difficult it will be to make EDLP pay out. Why? Because EDLP requires forgoing significant profit dollars from the installed base in search of new opportunity. In our pricing experiments described previously, we saw that an across-the-board 10% EDLP price reduction (7% net) required a 39% increase in unit volume to maintain current levels of dollar profits. One way to do this is to get the installed base to increase its consumption rate by more than one-third. This may be possible in expandable categories like snack foods but is not likely for most grocery categories. Another way to think about this is that EDLP would need to bring in new business at a rate of approximately one new customer for every three members of the installed base. If the installed base is small, which would be the case for a small firm or a firm entering a new market, this may be more easily accomplished.

Using price discounting (everyday and promotional) to attract customers is cheaper when a retailer has few loyal customers (Simester 1994). But if the Hi-Lo retailer already has substantial market share, sufficient opportunity will be much more difficult to generate no matter how effectively EDLP is communicated. Repositioning is always risky and expensive, and using price as the currency for repositioning may be even more difficult because of the direct and immediate impact on margins. Apparently, not enough consumers consider low price an important enough attribute by itself to compensate for all the other attributes that bring them into a particular retail location.

So far, we have focused solely on the revenue side in evaluating the viability of the everyday price changes accompanying a move to EDLP or Hi-Lo. Many retail observers and proponents of EDLP argue that there are important cost savings associated with moving away from a promotion-oriented merchandising strategy to EDLP. We con-

cur that retailers pursuing less promotion-intense strategies will incur lower costs because of warehouse and in-store efficiencies. It is important, however, to distinguish between the impact of EDLP on two aspects of retail operations: the "back door" and the "front door." Recent industry discussion of EDLP presents a confusing picture.

Back Door Operations

Back door operations involve a logistical partnership between manufacturer and retailer. The main goals here are (1) smoothing of the manufacturer's production process and (2) reductions in inventory, warehouse, and handling costs for both the manufacturer and the retailer. Policies that improve the efficiency of the manufacturer-retailer relationship seem to be a worthwhile investment. Recent industrywide initiatives such as efficient consumer response (ECR), which promotes greater reliance on electronic data interchange (EDI) and scanner-driven continuous replenishment, will help to take costs out of the channel.[6] Manufacturers and retailers that are not capable of instituting these logistical efficiencies will lose an important competitive advantage in the years to come because large players like Wal-Mart, KMart, and Procter & Gamble already have made major investments in information technology.

One food industry practice making it difficult to implement ECR is trade dealing. In the last decade, trade promotion has grown from about 33% of the total promotion budget to 45% in 1992, mainly at the expense of media advertising (Donnelley Marketing 1993). Buzzell, Quelch, and Salmon (1990) conducted a highly influential study of packaged goods retailing, in which they argue that the very high level of trade dealing between manufacturers, retailers, and wholesalers was adding substantial costs to the distribution system without providing tangible benefits. They calculated that trade dealing increased costs by 1.15%–2.0% of retail sales, excluding added administrative costs. Buzzell, Quelch, and Salmon maintain that these costs are eventually passed on to consumers in the form of higher retail prices.

Most of these costs are incurred from forward buying and diverting activities by large retailers and wholesalers. Armed with sophisticated buying models, retailers and wholesalers are able to arbitrage the wide fluctuations in wholesale prices that accompany periodic trade dealing, often buying anywhere from 10 to 20 times the inventory that normally could be sold. Not only does such heavy forward buying result in production discontinuities for manufacturers, especially during nationwide promotions, it also increases inventory holding costs for all parties. Moreover, it affords opportunities for retailers to offer very aggressive price deals to consumers (e.g., 50% off) in an effort to get rid of excess inventory quickly. Some manufacturers, notably P&G, believe that such steep discounting at retail can harm brand equity and decrease loyalty. Although it is difficult to imagine how aggressive sales promotion could increase loyalty, there is no definitive empirical evidence that promotion decreases loyalty; in fact, the most recent evidence suggests that promotion induces brand switching but has little effect on loyalty (Davis, Inman, and McAlister 1992; Ehrenberg 1988; Neslin and Shoemaker 1989).

Buzzell, Quelch, and Salmon (1990, p. 147) advocate a manufacturer to retailer pricing policy called "everyday low purchase price," (EDLPP), in which the "retailer arranges to buy product from the manufacturer on an as-needed basis at a weighted average price reflecting both the proportion of merchandise bought on a deal basis and the proportion bought at the regular price." This EDLPP policy is remarkably similar to P&G's current "Value Pricing" strategy to the retail trade. Although the jury is still out as to the value of this policy, it is easy to enumerate the benefits that might accrue to manufacturers and retailers by smoothing out back door prices. Manufacturers can limit massive forward buying, which in turn thwarts diverting and reduces high inventory carrying costs for both parties. Manufacturers have more control over their flow of goods and can utilize production facilities more efficiently. Moreover, value pricing combined with "pay-for-performance" promotion programs—for example, trade discounts based on scanned units or category development funds based on a percentage of annual sales volume—can produce higher pass-through of wholesale cost decreases to the ultimate consumer. It probably is beneficial to manufacturers if retailers focus on merchandising and spend less time on trying to play the forward buying arbitrage game. However, retailers and wholesalers who have been earning a substantial portion of their income from arbitrage actually may be worse off. There is some evidence that EDLPP may increase the effective cost of goods, placing greater pressure on profit margins that are already very low (Orgel 1993).

Operating cost arithmetic. Let us assume that the retailer wishes to be no worse off profitwise after the move to EDLP. How much would operating costs, that is, all costs over and above the cost of goods sold, have to decrease to maintain preexisting dollar profits? The answer depends on four other factors:

π = the original percent gross margin,

γ = per unit operating costs as a percentage of the original price,

δ = the net percent change in everyday prices, and

ϕ = the percent change in unit volume.

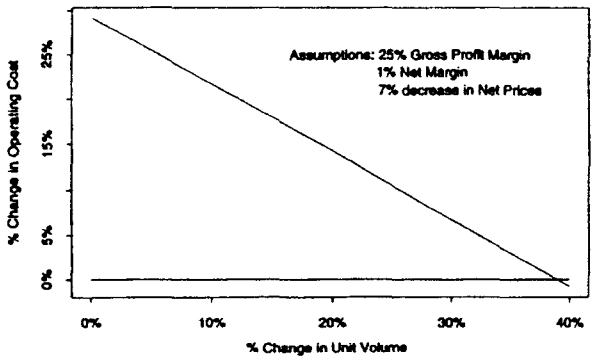
The breakeven change in operating costs is then

$$(2)\quad \text{Breakeven Change in Operating Costs} = \frac{(\pi + \delta)(1 + \phi) - \pi}{\gamma}.$$

Assuming an initial gross margin $\pi = 25\%$, operating costs as a percentage of the original price of $\gamma = 24\%$ (i.e., a net profit margin before the price change equal to 1% of sales), and a net price decrease $\delta = -7\%$, Figure 4 plots the needed change in operating costs as a function of different changes in unit volume. (The derivation is in Appendix A.) With a volume increase of 39%, no decrease in operating costs is required for an EDLP strategy to deliver breakeven profits. This 39% increase in volume exactly matches the situation laid out in Figure 3. With lower volume increases, however, costs must be reduced quite dramatically. For ex-

[6]ECR is an ambitious cooperative effort by the food industry (Food Marketing Institute) to improve, among other things, coordination between manufacturers and retailers in an effort to reduce costs and increase efficiency.

FIGURE 4
Break-Even Cost Reduction Analysis for an EDLP Pricing Strategy



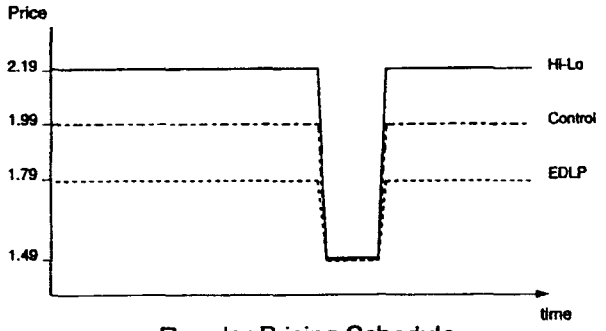
ample, with the 3% volume increase observed in our study, EDLP would need to be accompanied by a 27% decrease in operating costs. With a 20% increase in volume, operating costs need to be reduced by over 14%, not an insignificant amount, especially given the fact that only about half of a typical retailer's operating costs are fixed and half variable.

A breakdown of the typical retailer's operating costs reveals that some costs are compressible and some are not. ECR and EDLP can reduce warehouse, shipping, and inventory holding costs, but these usually make up less than 3%–4% of total revenue (and 13%–17% of operating costs). Labor costs (salary and benefits), on the other hand, are less compressible, at least in the short run. Wal-Mart is considered a state-of-the-art retailer in terms of efficient logistics and information capabilities, but its biggest cost advantage is labor. It has a nonunionized, short tenure labor force that by industry estimates is about 50% less expensive per retail dollar than their supermarket competitors (Mandel 1991). Because labor expenses make up more than 50% of a supermarket's operating costs, it is difficult to imagine how front door EDLP, even when coupled with EDLPP and ECR, could reduce costs enough to make the operating cost arithmetic pay out.

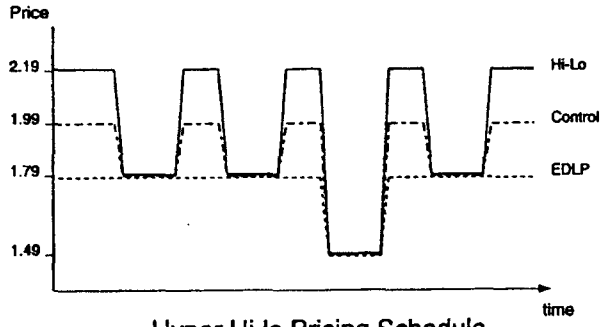
Front Door Merchandising

Our position is that value pricing at the back door does not require EDLP pricing at the front door; that is, EDLPP ≠ EDLP. And this is where confusion in the media and the trade has arisen. Most media accounts of P&G's new pricing policy have referred to it as EDLP, not value pricing or even EDLPP. As mentioned previously, however, the ratio of installed base to opportunity may not warrant a change in retailer strategy from Hi-Lo to EDLP. When a manufacturer and retailer agree on an EDLPP wholesale pricing relationship, this does not imply that a retailer necessarily should drop everyday prices at the consumer level immediately. Although lower wholesale prices would give a retailer room to reduce everyday consumer prices while protecting gross profit margins, our study suggests that it may not be in the best interests of the retailer to pass through 100% of these wholesale price cuts. In fact, they may be better off maintaining higher margins and using wholesale cost savings to

FIGURE 5
Increasing Promotion Frequency Using Hyper Hi-Lo Pricing



Regular Pricing Schedule



Hyper Hi-lo Pricing Schedule

fund more aggressive promotional activity internally, in essence a "hyper" version of Hi-Lo pricing.

This was the topic of inquiry in our third study. Here we examined the performance of stores that move to higher everyday prices and at the same time increase the frequency of shallow price deals (compare the top and bottom halves of Figure 5). The basic idea was to examine whether it was possible to utilize greater promotional activity to reduce the small market share/unit volume losses that accompanied higher everyday prices and at the same time hold onto some or all of the profit increases.

Study 3

During the everyday pricing experiments in Study 2, we added an additional promotional pricing manipulation to the basic EDLP, control, and Hi-Lo design. In half (n = 14) of the Hi-Lo stores and half (n = 14) of the control stores, we systematically increased the frequency of shallow price deals as portrayed in the bottom half of Figure 5. We called this pricing strategy "Hyper Hi-Lo." The other Hi-Lo and control stores maintained a regular (lower) level of temporary price promotion as shown in the top half of Figure 5. Random assignment to the regular or Hyper Hi-Lo condition was determined separately for each category.

Each week the responsible category manager would select one to five items to place on deal in addition to the large

number of promotions taking place across the entire chain. The items were selected so as not to be too competitive with other chainwide promotions in a category. These items then were merchandized as "Bonus Buys" (with appropriate signage) along with approximately 2000 other items that the chain regularly promotes week in and week out. Each of the individual Hyper Hi-Lo items was price promoted down to regular EDLP price levels for one week. The price course for an individual item is shown in Figure 5. During the next week, another item(s) was promoted. These items received standard bonus buy signage, which consisted of a simple 3.5-inch by 2.5-inch shelf tag, the lower half of which said "BONUS BUY" in white letters on a red background.

Results. The basic experimental design was a 2 (Hyper Hi-Lo versus regular promotion pricing) × 2 (everyday pricing condition [Hi-Lo and control]). EDLP stores were excluded from the analysis because they always had the low price. To test the effectiveness of this pricing strategy, we compared changes in total category unit volume and dollar profits in the Hyper Hi-Lo stores with those in the regular stores over a 16-week test period. The test was implemented in 18 categories. The results appear in Table 2, collapsing across the control and Hi-Lo everyday pricing conditions. Overall, Hyper Hi-Lo pricing increased unit volume by 3.2%. The magnitude of the increase was not large but it was consistent, occurring in all 18 categories with $p < .10$ in 7 of 18 individual categories. Combining across the 18 categories, this increase in volume is statistically significant ($p < .001$) and, more importantly, economically significant. To put this result in proper perspective, we should note that this Hyper Hi-Lo sales increase was larger than the corresponding 2.1% sales decrease that accompanied a move to Hi-Lo everyday pricing. Hyper Hi-Lo pricing also produced a 4.1% increase in dollar profits ($p < .001$). The effect of Hyper Hi-Lo pricing did not depend on (i.e., interact with) the everyday pricing condition in which it was implemented, which is a bit surprising because the percentage deal depth in Hi-Lo stores was twice as big as in the control stores.

These are important results because they suggest that it is possible for a retailer to retain the increased profits accruing to higher everyday prices and at the same time maintain unit sales levels and market share by systematically increasing the frequency of shallow price discounts. We do not argue that such a pricing strategy is the best alternative for all retailers but simply that it is a viable option depending on market position.

Summary. In our view, front door strategies should be designed primarily to improve in-store interactions with the consumer. This may involve attempts to increase novelty and excitement through creative weekly promotional activity. In a typical supermarket, 20%–25% of the business is driven by fresh meat and produce. The seasonal nature of these two commodity groups produces a highly variable retail environment, a condition that will remain so for the foreseeable future despite rapid advances in biotechnology. Front door merchandising and pricing in a Hi-Lo market does not necessarily sabotage the value of a net pricing back door policy. True, it is a more difficult problem to solve because the retailer and manufacturer must improve their ability to forecast a more volatile sales pattern at retail. But the promotion spikes at retail caused by consumer purchase acceleration are much smaller (3 to 5 times regular sales on average) than those induced by trade forward buying (10 to 20 times average sales) (Blattberg and Neslin 1990). A single, uniform solution of back *and* front door EDLP may not be in the best interests of either manufacturer or retailer.

TABLE 2
Detailed Results from the Hyper Hi–Lo Experiments

Product Category	Category–Level Price Change±	Percent Change Hyper Hi–Lo Compared With Regular Pricing	
		Units	Profit
Analgesics	10	+6.6[a]	+3.8
Bath tissue	8	+7.1[a]	+9.3[a]
Canned seafood	10	+4.2[a]	+3.9
Canned soup	7	.4	+2.5
Cereal—hot	10	+.9	+4.6[a]
Cereal—RTE	7	+2.7	+5.8[a]
Cheese	10	+1.6	+1.1
Cookies	10	+2.9	+8.1[a]
Crackers—snack	10	+4.3[a]	+5.4[a]
Dish detergent	7	+2.7	+4.9
Fabric softener	10	+2.3	+.9
Front-end candy	13	+4.4[a]	+5.1[a]
Frozen Entrees	10	+.6	−.1
Frozen Juice	10	+2.0	+5.9[a]
Laundry soap	10	+4.3[a]	+5.8[a]
Oral care	7	+5.0[a]	+.4
Paper towels	10	+3.2	+4.1
Refrigerated juice	10	+1.3	+1.0
Averages	9.4%	+3.2%	+4.1%

[a]unit differences between the three pricing conditions statistically significant $p < .10$.

Conclusion

Retail diversity is a reality. Although some retailers have made EDLP work, other merchants like Von's Pavilion, Fresh Fields, Smith's, and Gelson's have been successful in moving upscale, providing high-quality, full-service, value-added grocery environments. Manufacturers must learn to manage a portfolio of retail formats, each with different segments of customers. We found that EDLP gave a small (3% increase in units) win to manufacturers. At the same time, EDLP represented a big loss for the retailer (18% decrease in profits). Attempts to impose front door EDLP on all retailers is probably counterproductive because eventually the manufacturer will have to pay for retailers' lost profits. Instead, manufacturers would be better served focusing on improved back door solutions and let the retailer take care of the front door. Together these two strategies—more targeted micro-market merchandising and promotions on the front end combined with improved logistics on the back end—are defensible competitive strategies. Price is not a defensible point of differentiation for a firm unless it already has the appropriate operating cost structure in place. Major airlines like American apparently have recognized this issue, because they abandoned the idea of imitating the low-cost,

low-service strategy that has been so successful for Southwest Airlines (O'Brien 1993). Retailers can be profitable charging low prices, but only when they have low costs. Price alone will not drive a business even during tough economic times.

Appendix A

This appendix provides derivations of margin arithmetic and operating cost arithmetic. Given a change in policy, breakeven occurs when net profits are equal before and after the policy change, that is,

$$(A1) \quad (p - c)\,q - fq = [p(1 + \delta) - c)q(1 + \phi)] - fq(1 + \lambda),$$

where p = price, c = cost of goods, f = per unit operating costs, δ = % change in price, ϕ = % change in unit volume, and λ = % change in operating costs. For present purposes we assume that all operating costs are fixed, that is, no component of operating costs increases with increases in sales volume. When some operating costs actually are variable, our formulations provide conservative lower bounds on the volume increases and cost decreases that are required to make a move to EDLP pay out for the retailer.

If we divide both sides of Equation A1 by pq and substitute $\pi = (p - c)/p$ = gross profit margin and $\gamma = f/p$ = per unit operating costs as a % of the original price, we are left with

$$(A2) \quad \pi - \gamma = (\pi + \delta)(1 + \phi) - \gamma(1 + \lambda).$$

Arithmetic Derivation

For the simple formulation shown in Equation 1, we want to calculate the break-even change in volume, ϕ, assuming that the everyday price change has no impact on operating costs, that is, $\lambda = 0$. Then Equation A2 reduces to

$$\pi = (\pi + \delta)(1 + \phi)$$

or

$$(A3) \quad \phi = \frac{-\delta}{\pi + \delta}.$$

Operating Cost Arithmetic Derivation

Calculation of the break-even change in operating costs, λ, as shown in Equation 2, comes by rearranging the terms in Equation A2:

$$\gamma(1 + \lambda) - \gamma = (\pi + \delta)(1 + \phi) - \pi$$

or

$$(A4) \quad \lambda = \frac{(\pi + \delta)(1 + \phi) - \pi}{\gamma}.$$

REFERENCES

Arnold, Stephen J., Tae H. Oum, and Douglas J. Tigert (1983), "Determinant Attributes in Retail Patronage: Seasonal, Temporal, Regional, and International Comparisons," *Journal of Marketing Research*, 20 (May), 149–57.

Blattberg, Robert C., Gary D. Eppen, and Joshua Lieberman (1981), "A Theoretical and Empirical Evaluation of Price Deals for Consumer Nondurables," *Journal of Marketing*, 45 (Winter), 116–29.

——— and Scott A. Neslin (1990), *Sales Promotion*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Buzzell, Robert D., John A. Quelch, and Walter J. Salmon (1990). "The Costly Bargain of Trade Promotion," *Harvard Business Review*, (March/April), 141–49.

Davis, Scott J., Jeffrey Inman, and Leigh McAlister (1992), "Promotion Has a Negative Effect on Brand Evaluation—Or Does It? Additional Disconfirming Evidence," *Journal of Marketing Research*, 29 (February), 143–48.

Dickson, Peter R. and Alan G. Sawyer (1990), "The Price Knowledge and Search of Supermarket Shoppers," *Journal of Marketing*, 54 (July), 42–53.

Donnelley Marketing (1993), *15th Annual Survey of Promotional Practices*. Stamford, CT: Donnelley Marketing.

Ehrenberg, Andrew S.C. (1988), *Repeat-Buying: Theory and Applications*, 2nd ed. New York: Oxford University Press.

Hoch, Stephen J. and John A. Deighton (1989), "Managing What Consumers Learn From Experience," *Journal of Marketing*, 53 (2), 1–20.

———, Byung-Do Kim, Alan L. Montgomery, and Peter E. Rossi (1995), "Determinants of Store-Level Price Elasticity," *Journal of Marketing Research*, 32 (February), in press.

Information Resources, Inc. (1993), *Managing Your Business in an EDLP Environment*. Chicago: IRI.

Jeuland, Abel P. and Chakravarthi Narasimhan (1985), "Dealing—Temporary Price Cuts—by Seller as a Buyer Discrimination Mechanism," *Journal of Business*, 58 (3), 295–308.

Lal, Rajiv and Ram Rao (1993), "Supermarket Competition: The Case of Every Day Low Pricing," working paper, School of Management, University of Texas at Dallas.

Lattin, James M. and Gwen Ortmeyer (1991), "A Theoretical Rationale for Everyday Low Pricing by Grocery Retailers," working paper, Graduate School of Business, Stanford University.

Mandel, Stephen F. (1991), "How Supermarkets Can Get into the Productivity Loop," *Supermarket Business* (December), 27.

Narasimhan, Chakravarthi (1988), "Competitive Promotional Strategies," *Journal of Business*, 61 (4), 427–49.

Neslin, Scott A. and Robert W. Shoemaker (1989), "An Alternative Explanation for Lower Repeat Rates After Promotion Purchases," *Journal of Marketing Research*, 26 (May), 205–13.

O'Brien, Bridget (1993), "Continental Plans Test of Low-Fare, No-Frills Flights," *Wall Street Journal* (September 10), B1.

Orgel, David (1993), "Margins Suffer in Fleming ECR Test," *Supermarket News*, 43 (39), 1.

Ortmeyer, Gwen, John A. Quelch, and Walter Salmon (1991), "Restoring Credibility to Retail Pricing," *Sloan Management Review* (Fall), 55–66.

Partch, Ken (1992), "Why the Issue of EDLPP Won't Go Away," *Supermarket Business* (October), 19–22.

Pigou, A.C. (1920), *The Economics of Welfare*, 4th ed. London: MacMillan.

Rosenthal, Robert (1991), *Meta-Analytic Procedures for Social Research*. Beverly Hills, CA: Sage Publications.

Simester, Duncan (1994), "Which Products Should Retailers Promote?" working paper, Graduate School of Business, University of Chicago.

Supermarket Business (1993), "Consumer Expenditures Study," 48 (September).

Thaler, Richard (1985), "Using Mental Accounting in a Theory of Consumer Behavior," *Marketing Science*, 4 (3), 199–214.

Varian, Hal R. (1980), "A Model of Sales," *American Economic Review*, 70 (September), 651–59.

EDLP, hi-lo, and margin arithmetic

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Classification Codes: **9190**: *US*
9130: *Experimental/theoretical treatment*
8390: *Retail stores, includes groceries*
7000: *Marketing*
Geographic Names: US

Abstract:
*A study examines the viability of an "everyday low price" (**EDLP**) strategy in the supermarket industry. In 2 series of field experiments in 26 product categories conducted in an 86-store grocery chain, it was found that 10% **EDLP** category price decrease led to a 3% sales volume increase, whereas a 10% Hi-Lo price increase led to a 3% sales decrease. Because consumer demand did not respond much to changes in everyday price, large differences were found in profitability. An **EDLP** policy reduced profits by 18%, and Hi-Lo pricing increased profits by 15%. In a 3rd study, the frequency of shallow price deals are increased in the context of higher everyday prices and a 3% increase is found in unit volume, plus a 4% increase in profit. A conceptual distinction is drawn between "value pricing" at the back door and **EDLP** pricing at the front door.*

Full Text:

Retail formats come and go with changes in consumer tastes, lifestyles, and trends in demography and the economy. Recently it is the "everyday low price" (EDLP) format that has experienced rapid growth and media popularity. The prototypical description of an EDLP pricing policy is as follows: The retailer charges a constant, lower everyday price with no temporary price discounts. These constant everyday prices at the EDLP outlet eliminate week-to-week price uncertainty and represent a contrast to the "Hi-Lo" pricing of promotion-oriented

competitors. The Hi-Lo retailer charges higher prices on an everyday basis but then runs frequent promotions in which prices are temporarily lowered below the EDLP level.(1) Discounters like ⓘWal-Mart have led the EDLP wave and successfully encroached on the turf of supermarkets and department and drug stores by advertising that their everyday prices are "always the lowest" to be found. Warehouse club operations like Sam's, ⓘCostco, and others also have grown rapidly by pursuing limited assortment and limited service EDLP price strategies while using well-known brand names as a draw. Nonretail industries have adopted versions of EDLP, notably the airlines (Southwest) and automobile manufacturers (Satum).

Some grocery supermarket retailers also have implemented various forms of the EDLP concept including Food Lion, Winn-Dixie, Cub Foods, and Omni, among others. There are big differences in EDLP penetration across geographical markets, EDLP being more prevalent in Southern areas (Binningham, AL, 78%; New Orleans, 61%) and less popular in Northeastern areas (Upstate New York, < 5%; Boston, 16%) (Partch 1992). Moreover, some supermarket retailers have adopted EDLP on a more limited level, what sometimes has been labeled category-level EDLP. Here, they institute EDLP on a focal category like soft drinks or diapers in an attempt to build traffic and stave off competition from alternative retail formats.

Various rationales for adopting EDLP have been advanced. First, it has been argued that heavy price promotion has eroded consumer confidence in the credibility of everyday shelf prices (Ortmeyer, Quelch, and Salmon With an EDLP approach, it may be possible to restore price credibility. Because EDLP is simple and consistent, it may be easier to communicate to consumers and therefore to increase the chances of establishing a low price image through advertising. It also reduces managerial costs because it is easy to implement by simply matching or beating the most aggressive local competition. This assumes, of course, that the retailer has an appropriate cost structure in place.

Second, EDLP often is assumed to lower operating costs. These lower costs can be achieved in three primary ways: (1) reduced service and assortment, (2) reduced inventory and warehouse handling costs due to steady and more predictable demand, and (3) lower in-store labor costs because of less frequent changeovers in special displays. Warehouse operators gain additional cost savings due to less expensive locations and nonunionized labor. Lattin and Ortmeyer (1991) argue that EDLP also can reduce advertising expenses; for example, ⓘWal-Mart feature advertises in newspapers on a monthly basis, whereas many of their competitors do promotional advertising 52 weeks a year.

In spite of these apparent advantages, most retailers have not adopted EDLP. According to a recent survey of the top 50 U.S. retail markets, 26% of supermarket retailers are pursing some form of EDLP (Partch 1992). This means that the remaining 74% are Hi-Lo promotion-oriented operators. The question is why. The dominant is that retailers can price discriminate between consumers that vary in price sensitivity, one of the most basic and long-standing principles in economics (Pigou 1920). Hi-Lo pricing allows the retailer to discriminate between informed and uninformed consumers (ⓘVarian 1980). When heavy users of a product category also have higher inventory holding costs, retailers can use temporary price cuts to effectively charge them higher average prices (Blattberg, Eppen, and Lieberman 1981; Jeuland and Narasimhan 1985). With a Hi-Lo policy, retailers can attract price-sensitive switchers with promotions to build store traffic while store-loyal consumers buy merchandise both on deal and at higher everyday prices (Narasimhan 1988). Temporary price discounts also can lead to category expansion when consumption rates are more flexible (e.g., ready-to-eat cereal as compared with bath tissue). Many Hi-Lo retailers also believe that aggressive temporary price reductions help to sustain a low-price value image.

In this article we examine the viability of an EDLP pricing strategy in the supermarket grocery industry. The article addresses four questions:

1. What is EDLP in practice? A comprehensive study (ⓘInformation Resources, Inc. 1993) has found that although EDLP stores maintain lower prices on an everyday basis, they sell about the same amount of product deal as Hi-Lo operators. This suggests that the nonpromotion prototype described previously is not of how EDLP actually is executed in the field. Self-avowed EDLP chains do engage in promotional pricing, and in fact some engage in as much promotional activity as the Hi-Lo chains.

2. How well does EDLP work? We report the results of two comprehensive field experiments in which everyday prices were varied systematically on over 7500 items in 26 categories. We did not test the idealized EDLP prototype described at the outset but instead attempted to create test conditions that more closely matched actual practice. We found that 10 across-the-board price cuts do not drive volume sufficiently to overcome

decreases in profit margins. In fact, gross profits were over 35% greater when employing a Hi-Lo versus an EDLP strategy.

3. What does it take to make EDLP work? We offer a simple framework for calculating the magnitude of the volume increases that EDLP would have to produce to break even profitwise. We also consider the profit implications of decreases in operating costs that might accompany a move to EDLP. This makes it easier to evaluate the likelihood that EDLP would pay out in an implementation in which competitive conditions and historical precedent might differ from the market we studied.

4. When and how should EDLP be employed? We consider how the size of a retailer's installed base of consumers can affect the viability of EDLP. We also distinguish between a "value pricing" strategy at the wholesale level (i.e., the "back door" of the store) and EDLP pricing at the retailer's "front door" (where consumers actually shop).

WHAT IS EDLP IN PRACTICE?

In March 1993, ⓘInformation Resources, Inc. (IRI) completed a study of EDLP pricing in supermarkets utilizing their nationwide InfoScan syndicated database. Although a pure EDLP strategy implies low everyday prices with no temporary price promotion activity, IRI found that "true" EDLP rarely exists. Instead, it takes on many forms: chainwide, storewide, and categorywide. Because there are many hybrids, EDLP is best seen as a continuum. IRI compared the extremes: the 12% most EDLP-like stores versus the 204b most promotion-oriented (Hi-Lo) operators in their geographically diverse 3000-store sample. Representative EDLP operators included Cub, Food Lion, Lucky, Omni, and Winn-Dixie. Hi-Lo operators included A&P, ⓘDominick's, Jewel, ⓘSafeway, and Von's. Among many other findings, three interesting facts surfaced about EDLP in practice:

1. EDLP store prices are on average 9% below Hi-Lo stores. EDLP store prices were 11% below on an everyday basis and 6%, below on a promotion basis.

2. EDLP stores sell just as much merchandise on deal as Hi-Lo operators. 26% of overall store volume is sold with some form of merchandising support in EDLP stores, whereas 24% of volume is sold with merchandising support in Hi-Lo stores.

3. Percentage price reductions are less deep in EDLP stores. Discounts off everyday prices offer greater savings (percentagewise) in Hi-Lo stores, about 33% more.

In our experience, these facts do not always match up with the stylized "no-promotion EDLP" prototype that many industry observers maintain, a prototype that is much more consistent with warehouse clubs than with EDLP food retailers. Game theoretic analyses (Lal and Rao 1993; Lattin and Ortmeyer 1991) also have assumed that an EDLP strategy is characterized by constant prices (no temporary price deals) that are in between the Hi-Lo operator's regular and deal prices. This "pure" EDLP strategy is an interesting concept in theory but apparently is not pursued widely in practice. Even Food Lion, an acknowledged EDLP limited assortment chain with over 1000 outlets, offers hundreds of temporary price reductions each week. We designed our empirical implementation of EDLP to match the three characteristics listed previously: lower everyday prices, the same level of promotional activity as the Hi-Lo stores, and smaller price discounts off regular price on a percentage basis. One important limitation to our studies is that we did not widely advertise the existence of lower everyday prices.

HOW WELL DOES EDLP WORK?

For EDLP to increase volume substantially, a prerequisite for success given lower gross margins, the strategy must create a low-price image in the mind of the consumer. A change in price image is required to induce at least some consumers to switch stores. We partition the determinants of price image into three components: a pure price effect, a pure advertising effect, and an interaction of actual prices and image advertising (cf. Hoch and Deighton 1989). It is easy to imagine that a reduction in prices without advertising support might not be enough to change price image, at least in the short run. Moreover, any positive benefits from price advertising not backed by lower actual prices would seem to be difficult to sustain in the long run. As such, lower everyday prices may be a necessary but not sufficient condition for EDLP success.

So how well does EDLP work? The answer to this question is that it depends. ⓘSears Roebuck could not make

EDLP work, possibly because it did not convince the American public of its commitment to the pricing strategy after so many years of aggressive weekly promotional activity. ⓘWal-Mart and some of the warehouse clubs, however, follow an EDLP approach and are successful. Their prices are generally lower than local competition and they are admired for their efficient logistic and operating systems. There are many factors that influence the success of any retail strategy. So we ask a different, more specific question here--how viable is it for an established grocery retailer with a substantial installed base of customers to move to an EDLP pricing strategy? Because we could not experimentally manipulate price image advertising (all stores are located in the same media market), we focus solely on the pure price effect, which will tell us how large the advertising component must be for EDLP to be a profitable strategy.

As part of a multiyear project focusing on data-driven micro-marketing, we conducted two large-scale studies to compare the performance of EDLP with Hi-Lo pricing. The Micro-Marketing project is a joint venture between the University of Chicago Graduate School of Business, ⓘDominick's Finer Foods (which has a 20% share of metropolitan Chicago grocery sales), and 20 leading packaged goods companies. The project mission is to utilize marketing information technology to improve decision making at retail and better lever existing promotional expenditures. Micromarketing seeks to identify the wants and needs of the local marketplace and then customize strategies at the store level to exploit trading area differences in consumers and competition. One of the objectives was to evaluate the viability of everyday pricing on the basis of micro-market differences in price elasticities (Hoch et al. 1995). In addition, a variety of promotional experiments was conducted.

In two separate series of tests we evaluated the performance of EDLP versus Hi-Lo category pricing. The relevant details follow.

STUDY 1

Test product categories. We used 19 product categories, accounting for about 25% of store sales, for the tests. The categories were diverse (see Table 1); there were high-volume, high-velocity categories (e.g., soft drinks) as well as slower movers (e.g., hot cereal). (Table 1 omitted) Some categories offered the retailer high gross profit margins (cigarettes) and others low margins (canned soup). In some categories, consumers can modulate their rate of consumption (refrigerated juice) and in others, consumption rate is fixed (bath tissue). Finally, the main retail competitor varied by category, from supermarkets (cheese) to drug stores (analgesics) to mass merchant discounters (detergents). Everyday prices were changed on over 5000 stock keeping units (SKUs). The participating retailer conducts comprehensive competitive price audits each week, so we were able to monitor the everyday prices of other retailers in the market as well. Retail competitors did not respond with corresponding price changes during the test period. Lack of competitive reaction was not unexpected because competitors would have had to execute price changes on a store-by-store basis.

Everyday pricing conditions. All 86 stores in the ⓘDominick's chain were involved in the test. Stores were assigned randomly to three pricing conditions on a category by category basis. In control stores, all everyday, nonpromotional prices were kept at preexisting levels. Price increases and decreases were symmetric around existing control store levels. In EDLP stores, prices of each brand in a product category were decreased by a constant factor, ranging from 6% in bath tissue to 24% in soft drinks. On average, EDLP store prices were decreased by 10% across all 19 categories. In Hi-Lo stores, prices of each brand in a category were increased by the same factor, on average a 10% increase across all the categories. These category-level increases and decreases maintained the relative price levels of brands within a category, so substitution patterns between brands were not likely to change during the test. Because the competition did not react to these price changes, this meant that Hi-Lo stores offered prices significantly above the competition, resulting in adverse price comparisons. Contemporaneously, EDLP stores benefited from more favorable price comparisons.

Although everyday prices for individual product categories varied from store to store, the price of a complete market-basket of goods across all 19 categories remained unchanged for each store during the test period. This is because for any particular store, prices were raised in some categories and lowered in others. Our rationale for this design was to ensure that we could obtain a pure read on the effect of everyday prices for each category without possible contamination due to the prices of other categories. At the point in time the study was retailers and manufacturers were very interested in better understanding the viability of EDLP on a category-by-category basis. Clearly, it is important to understand storewide price effects, a phenomenon that we investigate in Study 2 with another series of experiments, but we believe that the current design was a necessary first step to understanding everyday pricing.

Pricing test duration. The tests ran for a minimum of 16 weeks. We settled on this test length to balance out two competing concerns. First, 16 weeks provided sufficient opportunity to learn about prices through multiple (at least two) category purchases even in the less frequently purchased health and beauty aid categories. Second, because a majority of consumers cross-shop multiple retailers, they at least had the opportunity to learn of price differences. At the same time, 16 weeks is short enough so that lack of experimental control does not become a problem. We had access to 170 weeks of historical data. As a sales baseline, we computed average weekly and profits for each store for the 26 weeks immediately preceding the initiation of the test period. In categories with large seasonal effects (e.g., canned soup), we utilized the same 16-week time period in the prior year.

Temporary promotional activity. Promotions occurred as they would in the normal course of business. About onethird of unit volume was sold with some form of promotional support: temporary shelf price reductions, feature advertising, and/or in-store display. The average price reduction across categories was about 15% below control store prices. This level of promotion intensity was consistent with the retailer's preexisting policy in the test categories.

Promotional prices were equivalent across everyday price conditions. That is, when an item went on deal, prices in all stores dropped down to the same price point. This policy resulted in a greater percentage of savings in Hi-Lo stores compared with EDLP stores. For example, assume that the everyday price was $1.99 in control stores, compared with $2.19 in Hi-Lo and $1.79 in EDLP stores. If the item went on deal for $1.49, this results in a 25% savings in control stores versus 32% and 17 savings in Hi-Lo and EDLP stores, respectively.

Although average everyday shelf prices were increased or decreased 10% during our tests, the fact that one-third of volume was sold at a constant dollar deal depth in all stores meant that effective out-the-door prices differed from control prices by only 7% up or down.(2)

Test implementation. Everyday and promotional price changes were made using existing scanner technology, along with shelf tags. This ensured a high-quality implementation of the pricing tests.

Does our study constitute a reasonable test of the effectiveness of EDLP versus Hi-Lo pricing at retail? There are several similarities between our operationalization of EDLP versus Hi-Lo and the IRI study previously mentioned. First, everyday prices are 20% lower in our EDLP stores compared with 11% in IRI's sample of stores. Second, the extent of promotional activity was equivalent in the Hi-Lo and EDLP stores in both our study and IRI's sample. And finally, because promotional prices in all stores in the chain went down to the same price point, deal depth in Hi-Lo stores was significantly greater than in EDLP stores on a percentage basis. This last point also mimics IRI's findings on deal depth.

The main difference between our study and EDLP in practice is that we instituted EDLP on a category-by-category basis. This precluded any additive effects of lower prices that might accumulate across categories, and it prevented broad-scale advertising of EDLP to the public.(3) These differences could be important because though consumers may not be very aware of individual product prices, they may be more likely to notice changes in their overall grocery bills. It is also the case that these findings occurred in the Chicago market, where 60% of the market is driven by Hi-Lo operators, though there are several well-known EDLP supermarket chains in the area (Cub Foods, Omni) along with ®KMart, ®Target, ®Wal-Mart, and several warehouse clubs. It is important to keep these similarities and differences in mind when interpreting the results. This first study therefore is viewed best as a test of the viability of category-level EDLP.

RESULTS

For each store, we calculated performance measures for unit volume, dollar sales, and dollar profit. Percentage changes in weekly store performance were calculated as follows: (average test performance--average historical performance)/(average historical performance). All findings were indexed to the control stores, which are set to a base of 100 and then subjected to an analysis of variance (Figure 1). (Figure 1 omitted)

Changes in unit volume. Across-the-board everyday prices were increased 10% in Hi-Lo stores and decreased 10% in EDLP stores compared with control stores. Ten percent higher Hi-Lo everyday prices led to a 3% decrease in unit volume on average. Ten percent lower EDLP prices led to a 3% increase in unit volume. This pattern of results was very consistent across categories and also held up over the entire test period (i.e., there was no suggestion of learning). Table 1 presents more detailed results for individual product categories. It shows

percentage changes in unit sales and dollar profit for the Hi-Lo and EDLP stores compared with the control stores that again were indexed to 100. Changes in everyday price produced statistically significant ($p < .10$) changes in unit sales for 7 of the 19 categories. A test combining F-tests (Rosenthal 1991) across all 19 categories indicated that the t 3% change in unit sales was statistically significant ($p < .001$). A more important issue, however, is the economic significance of these changes in unit sales.

Consumers showed little sensitivity to categorywide changes in everyday prices, an average elasticity of about -.4 (3% units/7% net prices).4 There are several possible reasons for this, some of which we address subsequently. We do not believe, however, that the length of the test is a likely candidate. Although 16 weeks is not long term, it also is not short term. And in fact, in most of the categories the test prices remained in effect much longer. We found that the results remained unchanged over periods of more than 40 weeks and in no case did we observe a shift in the basic pattern. It is possible that store switching might take more time to emerge, but after three-quarters of a year, one would expect to detect larger effects on sales if store switching is a major factor.

Changes in dollar profits. The gross profit results are from the retailer's perspective and are computed using the retailer's marginal costs based on an average cost accounting system. We found that 10% higher Hi-Lo prices led to a 15% increase in profitability, on average. On the other hand, 10% lower EDLP prices led to an 18% decrease in profits. Profit results were statistically significant in all 19 categories.

These results are dramatic and ex ante surprising. Consumer demand appears remarkably insensitive to in everyday prices: 10% changes in everyday price resulted in 3% changes in unit sales. it is possible, however, that the price changes were not large enough to be noticed by most consumers, especially in light of all the week-to-week promotional activity. Research has shown that many consumers do not possess accurate price knowledge (Dickson and Sawyer 1990). At the same time, however, the 20% price difference between Hi-Lo and EDLP stores is not trivial, at least in the eyes of the manufacturers and retailer who participated in the study and in light of the 9% difference found in the IRI study. Moreover, such price changes had a huge impact on profitability. We also found that consumers responded identically to price increases and decreases. On the basis of prior research on reference prices (e.g., Thaler 1985) and our assessment of prevailing retailer intuitions, we expected that consumers might react more strongly when faced with price increases (viewed as an out-of-pocket loss) compared with price decreases (viewed as a potential gain). We found no evidence of asymmetric response to increasing and decreasing everyday prices.

The bottom line is that EDLP did not drive volume sufficiently to compensate for lower profit margins. As shown in Table 1, EDLP led to decreased profitability in every category (18 out of 18), and a Hi-Lo pricing strategy led to increased profits in 17 out of 18 categories. There are several instances in which differences in profitability between Hi-Lo and EDLP are remarkably large, including analgesics (75%), canned soup (70%), and hot cereal (65%). In the cases of analgesics and hot cereal, the large differences in performance appear to be mainly caused by very low demand elasticities with respect to everyday price. In the case of canned soup, in which we only raised prices, the large profit effect also was driven by the fact that the category had been priced as a loss leader (meaning low retailer profit margins) prior to the test.

STUDY 2

We conducted a second everyday pricing study approximately eight months later. We had two objectives: We wanted to replicate our initial study to ensure that our findings were robust; but more importantly, we wanted to address one of the limitations of the first study. With our category-by-category randomization procedure, the average price of any individual store's total market basket of goods did not differ between the pre- and post-test periods. As such, we may have limited the size of the pure price effect on overall price image, which in turn might influence store switching behavior.

Test product categories. The pricing tests were conducted in 26 product categories accounting for about one-third of store sales. Additional categories were added to those involved in the initial study. We added several large health and beauty aid categories (e.g., hair care and grooming products). Everyday prices were changed on over 7500 items. And as in the first phase, we observed no everyday price response by retail competitors.

Everyday pricing conditions. As in the first study, all 86 stores in the ⓘDominick's chain were involved in the test. The major procedural difference in Study 2 was that we randomly assigned each store to the same everyday pricing condition consistently across categories. Of the participating stores, 29 adopted EDLP pricing in all 26 categories, 29 control stores maintained existing retail pricing, and 28 stores adopted Hi-Lo pricing. The average

price change across all categories was about 9%. Because the 26 categories represent one-third of store volume, this means that storewide prices were on average 3% lower in EDLP stores and 3% higher in Hi-Lo stores during the test. Clearly, this study constitutes a stronger experimental implementation of changes in store-level everyday prices. We do acknowledge, however, that the strongest test would involve price changes on more products and consumer advertising of the store policy, both features of a real-world EDLP program that are not achievable in a controlled test.

Pricing test duration. Because of the large number of everyday price changes that the retailer had to execute, rollouts were staggered over a one-month period. For analysis purposes, we used a 16-week period after price changes had been made in all 26 categories. To control for store size and other idiosyncratic factors, we utilized the same 26-week sales baselines as in Study 1. Temporary promotional activity was similar to that during the first study, with about 30% of volume sold on deal and an average price reduction of 15%.

Results. For each store, we calculated performance measures for unit volume, dollar sales, and dollar profit in a manner similar to the first study. All findings were then indexed to the control stores, which are set to a base of 100. As can be seen in Figure 2, the bar chart appears virtually identical to the Figure 1 results for Study 1. A 9% change in everyday prices produced a 3% increase in unit sales in the EDLP stores compared with a 2% decrease in unit sales in Hi-Lo stores. Changes in unit volume were statistically different ($p < .10$) in 9 out of 26 categories. Because consumer demand was insensitive to the price changes, profits decreased by 18% with EDLP pricing, and they increased by 17% with Hi-Lo pricing. Significant differences in profits were observed in all 26 categories.

SUMMARY OF THE EXPERIMENTS

In both studies, changes in everyday prices had a small impact on sales volume. In contrast, these price changes produced substantial differences in category profitability. The difference in category profits between EDLP and Hi-Lo pricing were over 32% in Study 1 and over 35% in Study 2. These are not small differences. In Study 2, we went back and examined the effect of these pricing changes on two other store-level performance indicators: customer count, that is, the average number of customers visiting the store each week, and dollar sales of all remaining nontest categories. We found no significant differences between the everyday pricing conditions, and if anything Hi-Lo stores showed slightly more positive changes in customer count during the test period. Moreover, dollar sales of nontest categories were within .5% of each other, suggesting no spillover from the test categories, either positive or negative.

We do not imply that a store's overall price level is not related to the store choice decision in the long run. If we had maintained test prices for one to two years, it seems likely that price eventually would have a more impact on volume and store traffic. As an example, a retailer who raises prices across the board (our Hi-Lo condition) opens up the possibility that a competitor might begin to advertise the price disparities that exist. The more important question, however, is how large the magnitude of the price-store choice relationship must be to justify an across-the-board cut in everyday retail prices.

WHAT DOES IT TAKE TO MAKE EDLP WORK?

To our knowledge, our two studies provide the first and only comparison of EDLP versus Hi-Lo everyday pricing utilizing tightly controlled experimental procedures. And although our design ensures high internal validity, an important question is how far (if at all) we should generalize our results. We already have mentioned the limitations of our study. In Study 1, we changed prices on a categorywide, not storewide, basis, though we remedied this limitation in Study 2 by changing one-third of the store's prices and observed identical results. We also could not advertise the EDLP price decreases to the public because of a noncontained media market, so the potential for chain-level price image effects (leading to store switching) clearly is limited. Moreover, the structure of competition in the Chicago market makes it problematic to project to other markets with different competitive structures.

We do feel reasonably confident that our results are relevant to the decision about whether to pursue EDLP on a category-by-category basis because that is exactly what our two studies investigated. Assuming that the retailer's goal is increased profitability, it is a bad idea for a full-service supermarket to try to compete with more efficient lower-cost alternative formats by lowering their everyday prices on selected high-volume categories like detergent, soft drinks, and diapers. Lower prices on selected categories do not bring new consumers into the store (who in turn might buy other regularly priced merchandise) at a fast enough rate to compensate for the

lower profit margins.(5)

We take a different approach, however, to evaluate the generalizability of our findings for store-and chain-level implementations of EDLP. We pose the following thought experiment: Imagine the best possible implementation of EDLP--a great chainwide advertising campaign, a longer time horizon for a new price image to form, and a conducive competitive environment. How much do you believe that sales would increase in this instance? Although we do not know with certainty, it is our belief that sales increases would be substantially greater under these conditions. The more important question, however, is whether these sales increases would be large enough to maintain or build dollar profits for the retailer. In other words, what kind of volume increases are needed to make EDLP work?

MARGIN ARITHMETIC

Understanding the economics of EDLP requires some very simple margin arithmetic to answer the question, "Given a particular change in everyday prices, what is the attendant change in volume necessary to maintain profits at the same level as before the price change?" The answer depends on two factors: (1) the retailer's original gross profit margin and (2) the level of everyday price change. The calculation is as follows: (equation omitted)

(See Appendix A for derivation details). The top half of Figure 3 illustrates the needed market response for an EDLP strategy to "work" given the 7% decrease in net prices we observed in our study. (Figure 3 omitted) The bottom half of Figure 3 provides the same market response information for the case of a 7% net Hi-Lo price increase.

Margins in the typical supermarket average around 25% (Supermarket Business 1993). Given an original margin of 25%, Figure 3 shows that unit sales would have to increase over 39% to make the same dollar profit after a 7% net reduction in everyday prices. Stores experienced a 2%-3% increase in our tests, an order of magnitude lower than necessary to break even profitwise. At higher margins, sales increases do not have to be so great. For example, if margins start at 40%, sales volume must increase 21%; and at 50%, sales volume must increase 16%. With the exception of a few general merchandise lines of business, there are few categories offering such high margins. At lower margins, sales volume must respond even more dramatically to decreases in everyday prices. For example, at 15% gross margins, typical for the high-velocity ready-to-eat breakfast cereal category and other categories viewed as loss leaders, a retailer would need to generate a volume increase of over 87% to break even with EDLP. Most retail experts find it difficult to imagine such large sales increases no matter how EDLP is implemented.

Figure 3 also illustrates the break-even decreases in sales volume for a Hi-Lo everyday price increase. It shows that consumer demand would have to be much more price sensitive than was the case in our studies for a Hi-Lo price increase to reduce dollar profits. With an original gross margin of 25%, unit sales must decrease 22%, more than six times the amount in our study. At a 15 margin, unit sales would have to drop over 32$ before the retailer begins to forgo dollar profits. Such massive store defections are possible but they seem quite unlikely, at least in the short to intermediate term.

We have found that retailers and manufacturers have asymmetric attitudes about raising and lowering prices. They express more concern about the deleterious market share effects that might accompany a price increase than they do about the potential negative implications of lower percent gross margins. In other words, retailers act as if they would rather set prices below the monopoly price than above it (Simester 1994). A natural question to ask is why retailers would choose to operate in the inelastic region of the demand curve. We have no definitive answer but can offer a few possibilities. First is lack of knowledge. Without systematic price experimentation and expertise in analyzing large scanner databases, retailers may not know exactly how price sensitive consumers really are. Moreover, with the vigilant price matching by competitors that characterizes most local markets, there are few opportunities to observe long-term store switching that does or does not take place. Second, retailers may focus more on increasing market share in the short run because of a belief (true or false) that higher market share will lead to greater profits in the long term. This story makes sense if store switching costs are fairly high because (1) it will be extremely expensive to attract back a customer who has defected and (2) the returns on investments in market share will accrue to the retailer for years in the future.

HOW AND WHEN SHOULD EDLP BE EMPLOYED?

We do not argue that EDLP is not a viable retail strategy. Clearly it can be, as is evidenced by the success of ⓘWal-Mart and others. We do believe, however, that it is important to understand when and how to use EDLP. Our pricing studies show that using EDLP on a category-by-category basis to stave off alternative format competition does not work well. If a retailer is going to make EDLP work, it probably has to be on a chainwide basis so as to benefit from overall store price image. Because the price alone does not drive volume, our results isolate how large the advertising component of EDLP must be for the retailer to gain profits-in the case at hand, a 36% increase. In executing any pricing strategy, firms must consider the likely impact on two customer sectors: their installed base of current users and nonusers who represent potential opportunity for growth.

INSTALLED BASE VERSUS OPPORTUNITY

For a retailer, the installed base consists of consumers already shopping at one of their locations, a particular store sub i , either as a primary shopping outlet where they buy a majority of their groceries or as a secondary source of supply. The installed base shops a particular store because of a multitude of factors. Consumer of retail patronage repeatedly have found that location/convenience is the most important factor, followed in order of mention by low prices, assortment, courteous service, good-quality merchandise, and fresh meat (Arnold, Oum, and Tigert 1983). These results show remarkable stability across time despite changes in economic conditions, suggesting that the strategic value of price should be evaluated as one part of a larger portfolio of attributes.

The main opportunity for a retailer comes from potential consumers who currently shop at a competitive chain store sub j , but could shop at storej given the appropriate retail mix of price and other attributes. If EDLP functions as an effective economic signal, certain consumers may shift shopping outlets. The profit potential of EDLP depends in large part, however, on the ratio of installed base to new opportunity. The greater the installed base, the more difficult it will be to make EDLP pay out. Why? Because EDLP requires forgoing significant profit dollars from the installed base in search of new opportunity. In our pricing experiments described previously, we saw that an across-the-board 10% EDLP price reduction (7% net) required a 39% increase in unit volume to maintain current levels of dollar profits. One way to do this is to get the installed base to increase its consumption rate by more than one-third. This may be possible in expandable categories like snack foods but is not likely for most grocery categories. Another way to think about this is that EDLP would need to bring in new business at a rate of approximately one new customer for every three members of the installed base. If the installed base is small, which would be the case for a small firm or a firm entering a new market, this may be more easily accomplished.

Using price discounting (everyday and promotional) to attract customers is cheaper when a retailer has few loyal customers (Simester 1944). But if the Hi-Lo retailer already has substantial market share, sufficient opportunity will be much more difficult to generate no matter how effectively EDLP is communicated. Repositioning is always risky and expensive, and using price as the currency for repositioning may be even more difficult because of the direct and immediate impact on margins. Apparently, not enough consumers consider low price an important enough attribute by itself to compensate for all the other attributes that bring them into a particular retail location.

So far, we have focused solely on the revenue side in evaluating the viability of the everyday price changes accompanying a move to EDLP or Hi-Lo. Many retail observers and proponents of EDLP argue that there are important cost savings associated with moving away from a promotion-oriented merchandising strategy to EDLP. We concur that retailers pursuing less promotion-intense strategies will incur lower costs because of warehouse and in-store efficiencies. It is important, however, to distinguish between the impact of EDLP on two aspects of retail operations: the "back door" and the "front door Recent industry discussion of EDLP presents a confusing picture.

BACK DOOR OPERATIONS

Back door operations involve a logistical partnership between manufacturer and retailer. The main goals here are (1) smoothing of the manufacturer's production process and (2) reductions in inventory, warehouse, and handling costs for both the manufacturer and the retailer. Policies that improve the efficiency of the manufacturer-retailer relationship seem to be a worthwhile investment. Recent industrywide initiatives such as efficient consumer response (ECR), which promotes greater reliance on electronic data interchange (EDI) and scanner-driven continuous replenishment, will help to take costs out of the channel.(6) Manufacturers and retailers that are not capable of instituting these logistical efficiencies will lose an important competitive advantage in the years to come because large players like ⓘWal-Mart, ⓘKMart, and ⓘProcter & Gamble already have made major

investments in information technology.

One food industry practice making it difficult to implement ECR is trade dealing. In the last decade, trade promotion has grown from about 33% of the total promotion budget to 45% in 1992, mainly at the expense of media advertising (Donnelley Marketing 1993). Buzzell, Quelch, and Salmon (1990) conducted a highly influential study of packaged goods retailing, in which they argue that the very high level of trade dealing between manufacturers, retailers, and wholesalers was adding substantial costs to the distribution system without providing tangible benefits. They calculated that trade dealing increased costs by 1.15%-2.0% of retail sales, excluding added administrative costs. Buzzell, Quelch, and Salmon maintain that these costs are eventually passed on to consumers in the form of higher retail prices.

Most of these costs are incurred from forward buying and diverting activities by large retailers and wholesalers. Armed with sophisticated buying models, retailers and wholesalers are able to arbitrage the wide fluctuations in wholesale prices that accompany periodic trade dealing, often buying anywhere from 10 to 20 times the inventory that normally could be sold. Not only does such heavy forward buying result in production discontinuities for manufacturers, especially during nationwide promotions, it also increases inventory holding costs or all parties. Moreover, it affords opportunities for retailers to offer very aggressive price deals to consumers (e.g., 50% off) in an effort to get rid of excess inventory quickly. Some manufacturers, notably P&G, believe that such steep discounting at retail can harm brand equity and decrease loyalty. Although it is difficult to imagine how aggressive sales promotion could increase loyalty, there is no definitive empirical evidence that promotion decreases loyalty; in fact, the most recent evidence suggests that promotion induces brand switching but has little effect on loyalty (Davis, Inman, and McAlister 1992; Ehrenberg 1988; Neslin and Shoemaker 1989).

Buzzell, Quelch, and Salmon (1990, p. 147) advocate a manufacturer to retailer pricing policy called "everyday low purchase price," (EDLPP), in which the "retailer arranges to buy product from the manufacturer on an as-needed basis at a weighted average price reflecting both the proportion of merchandise bought on a deal basis and the proportion bought at the regular price This EDLPP policy is remarkably similar to P&G's current "Value Pricing" strategy to the retail trade. Although the jury is still out as to the value of this policy, it is easy to enumerate the benefits that might accrue to manufacturers and retailers by smoothing out back door prices. Manufacturers can limit massive forward buying, which in turn thwarts diverting and reduces high inventory carrying costs for both parties. Manufacturers have more control over their flow of goods and can utilize production facilities more efficiently. Moreover, value pricing combined with "pay-for-performance" promotion programs--for example, trade discounts based on scanned units or category development funds based on a percentage of annual sales volume--can produce higher pass-through of wholesale cost decreases to the consumer. It probably is beneficial to manufacturers if retailers focus on merchandising and spend less time on trying to play the forward buying arbitrage game. However, retailers and wholesalers who have been earning a substantial portion of their income from arbitrage actually may be worse off. There is some evidence that EDLPP may increase the effective cost of goods, placing greater pressure on profit margins that are already very low (Orgel 1993).

Operating cost arithmetic. Let us assume that the retailer wishes to be no worse off profitwise after the move to EDLP. How much would operating costs, that is, all costs over and above the cost of goods sold, have to decrease to maintain preexisting dollar profits? The answer depends on four other factors:

pi = the original percent gross margin,

gamma = per unit operating costs as a percentage of the original price,

delta = the net percent change in everyday prices, and

phi = the percent change in unit volume.

The breakeven change in operating costs is then

(2) Breakeven Change in Operating Costs = (calculation omitted)

Assuming an initial gross margin phi = 25%, operating costs as a percentage of the original price of gamma = 24% (i.e., a net profit margin before the price change equal to 1% of sales), and a net price decrease delta = -7%,

Figure 4 plots the needed change in operating costs as a function of different changes in unit volume. (Figure 4 omitted) (The derivation is in Appendix A.) With a volume increase of 39%, no decrease in operating costs is required for an EDLP strategy to deliver breakeven profits. This 39% increase in volume exactly matches the situation laid out in Figure 3. (Figure 3 omitted) With lower volume increases, however, costs must be reduced quite dramatically. For example, with the 3% volume increase observed in our study, EDLP would need to be accompanied by a 27% decrease in operating costs. With a 20% increase in volume, operating costs need to be reduced by over 14%, not an insignificant amount, especially given the fact that only about half of a typical retailer's operating costs are fixed and half variable.

A breakdown of the typical retailer's operating costs reveals that some costs are compressible and some are not. ECR and EDLP can reduce warehouse, shipping, and inventory holding-costs, but these usually make up less than 3%% of total revenue (and 13%-17% of operating costs). Labor costs (salary and benefits), on the other hand, are less compressible, at least in the short run. ⓘWal-Mart is considered a state-of-the-art retailer in terms of efficient logistics and information capabilities, but its biggest cost advantage is labor. It has a nonunionized, short tenure labor force that by industry estimates is about 50 less expensive per retail dollar than their supermarket competitors (Mandel 1991). Because labor expenses make up more than 50% of a supermarket's operating costs, it is difficult to imagine how front door EDLP, even when coupled with EDLPP and ECR, could reduce costs enough to make the operating cost arithmetic pay out.

FRONT DOOR MERCHANDISING

Our position is that value pricing at the back door does not require EDLP pricing at the front door; that is, EDLPP EDLP. And this is where confusion in the media and the trade has arisen. Most media accounts of P&G's new pricing policy have referred to it as EDLP, not value pricing or even EDLPP. As mentioned previously, however, the ratio of installed base to opportunity may not warrant a change in retailer strategy from Hi-Lo to EDLP. When a manufacturer and retailer agree on an EDLPP wholesale pricing relationship, this does not imply that a retailer necessarily should drop everyday prices at the consumer level immediately. Although lower wholesale prices would give a retailer room to reduce everyday consumer prices while protecting gross profit margins, our study suggests that it may not be in the best interests of the retailer to pass through 100% of these wholesale price cuts. In fact, they may be better off maintaining higher margins and using wholesale cost savings to fund more aggressive promotional activity internally, in essence a "hyper" version of Hi-Lo pricing.

This was the topic of inquiry in our third study. Here we examined the performance of stores that move to higher everyday prices and at the same time increase the frequency of shallow price deals (compare the top and bottom halves of Figure 5). (Figure 5 omitted) The basic idea was to examine whether it was possible to utilize greater promotional activity to reduce the small market share/unit volume losses that accompanied higher everyday prices and at the same time hold onto some or all of the profit increases.

STUDY 3

During the everyday pricing experiments in Study 2, we added an additional promotional pricing manipulation to the basic EDLP, control, and Hi-Lo design. In half (n = 14) of the Hi-Lo stores and half (n = 14) of the control stores, we systematically increased the frequency of shallow price deals as portrayed in the bottom half of Figure 5. We called this pricing strategy "Hyper Hi-Lo." The other Hi-Lo and control stores maintained a regular (lower) level of temporary price promotion as shown in the top half of Figure 5. Random assignment to the regular or Hyper Hi-Lo condition was determined separately for each category.

Each week the responsible category manager would select one to five items to place on deal in addition to the large number of promotions taking place across the entire chain. The items were selected so as not to be too competitive with other chainwide promotions in a category. These items then were merchandized as "Bonus Buys" (with appropriate signage) along with approximately 2000 other items that the chain regularly promotes week in and week out. Each of the individual Hyper Hi-Lo items was price promoted down to regular EDLP price levels for one week. The price course for an individual item is shown in Figure 5. During the next week, another item(s) was promoted. These items received standard bonus buy signage, which consisted of a simple 3.5-inch by 2.5-inch shelf tag, the lower half of which said "BONUS BUY" in white letters on a red background.

Results. The basic experimental design was a 2 (Hyper Hi-Lo versus regular promotion pricing) x 2 (everyday pricing condition [Hi-Lo and control). EDLP stores were excluded from the analysis because they always had the low price. To test the effectiveness of this pricing strategy, we compared changes in total category unit volume

and dollar profits in the Hyper Hi-Lo stores with those in the regular stores over a 16-week test period. The test was implemented in 18 categories. The results appear in Table 2, collapsing across the control and Hi-Lo everyday pricing conditions. (Table 2 omitted) Overall, Hyper Hi-Lo pricing increased unit volume by 3.2%. The magnitude of the increase was not large but it was consistent, occurring in all 18 categories with $p < .10$ in 7 of 18 individual categories. Combining across the 18 categories, this increase in volume is statistically significant ($p < .001$) and, more importantly, economically significant. To put this result in proper perspective, we should note that this Hyper Hi-Lo sales increase was larger than the corresponding 2.1% sales decrease that accompanied a move to Hi-Lo everyday pricing. Hyper Hi-Lo pricing also produced a 4.1% increase in dollar profits (p .001). The effect of Hyper Hi-Lo pricing did not depend on (i.e., interact with) the everyday pricing condition in which it was implemented, which is a bit surprising because the percentage deal depth in Hi-Lo stores was twice as big as in the control stores.

These are important results because they suggest that it is possible for a retailer to retain the increased profits accruing to higher everyday prices and at the same time maintain unit sales levels and market share by systematically increasing the frequency of shallow price discounts. We do not argue that such a pricing strategy the best alternative for all retailers but simply that it is a viable option depending on market position.

Summary. In our view, front door strategies should be designed primarily to improve in-store interactions with the consumer. This may involve attempts to increase novelty and excitement through creative weekly promotional activity. In a typical supermarket, 20%-25% of the business is driven by fresh meat and produce. The seasonal nature of these two commodity groups produces a highly variable retail environment, a condition that will remain so for the foreseeable future despite rapid advances in biotechnology. Front door merchandising and pricing in a Hi-Lo market does not necessarily sabotage the value of a net pricing back door policy. True, it is a more difficult problem to solve because the retailer and manufacturer must improve their ability to forecast a more volatile sales pattern at retail. But the promotion spikes at retail caused by consumer purchase acceleration are much smaller (3 to 5 times regular sales on average) than those induced by trade forward buying (10 to 20 times average sales) (Blattberg and Neslin 1990). A single, uniform solution of back and front door EDLP may not be in the best interests of either manufacturer or retailer.

CONCLUSION

Retail diversity is a reality. Although some retailers have made EDLP work, other merchants like Von's Pavilion, Fresh Fields, Smith's, and Gelson's have been successful in moving upscale, providing high-quality, full-service, value-added grocery environments. Manufacturers must learn to manage a portfolio of retail formats, each with different segments of customers. We found that EDLP gave a small (3% increase in units) win to manufacturers. At the same time, EDLP represented a big loss for the retailer (18% decrease in profits). Attempts to impose front door EDLP on all retailers is probably counterproductive because eventually the manufacturer will have to pay for retailers' lost profits. Instead, manufacturers would be better served focusing on improved back door solutions and let the retailer take care of the front door. Together these two strategies--more targeted micro-market merchandising and promotions on the front end combined with improved logistics on the back end--are defensible competitive strategies. Price is not a defensible point of differentiation for a firm unless it already has the appropriate operating cost structure in place. Major airlines like American apparently have recognized this issue, because they abandoned the idea of imitating the low-cost, low-service strategy that has been so successful for ©Southwest Airlines (O'Brien 1993). Retailers can be profitable charging low prices, but only when they have low costs. Price alone will not drive a business even during tough economic times.

APPENDIX A

This appendix provides derivations of margin arithmetic and operating cost arithmetic. Given a change in policy, breakeven occurs when net profits are equal before and after he policy change, that is,

(A1) (p-c) q-fq = [p(1 = delta) - c)q(1 + phi] - fq (1 + lambda,

where p = price, c= cost of goods, f = per unit operating costs, delta = % change in price, phi = % change in unit volume, and lambda = % change in operating costs. For present purposes we assume that all operating costs are fixed, that is, no component of operating costs increases with increases in sales volume. When some operating costs actually are variable, our formulations provide conservative lower bounds on the volume increase and cost decrease that are required to make a move to EDLP pay out for the retailer. If we divide both sides of Equation A1 by pq and substitute phi = (p-c)/p= gross prifit margin and lambda = f/p = per unit operating costs as a % of

the orignial price, we are left with

(A2) phi-gamma = (phi + delta)(1 + phi) - gamma(1 + lambda).

ARITHMETIC DERIVATION (Derivation omitted)

OPERATING COST ARITHMETIC DERIVATION (Derivation omitted)

1 As we show subsequently, this prototype is not representative of how most food retailers actually practice EDLP.

2 The calculation works as follows. Assume that one-third is sold on deal and two-thirds at regular prices. Consider the difference between EDLP and control store average prices of a product sold in control stores every day for $1.00. With an average 15% promotional price reduction off control prices and a 10% everyday price cut in the EDLP stores, the average price is a simple weighted average of deal and everyday prices. That is, (Equation omitted)

3 It should be pointed out, however, that in-store signage (e.g., "Check Out Our Everyday Low Prices on 6-Packs") was utilized in several categories with no appreciable differences in the results.

4 Using historical data from the same retailer and many of the same categories, Hoch and colleagues (1994) estimated an average category constant elasticity of -1.06.

5 It is possible that category-level EDLP might work if backed by a successful advertising campaign. We would argue, however, that it is difficult to establish and maintain a consistent price image for the chain if the retailer is sending mixed advertising messages. An exception might occur for "stand-alone" departments that are clearly separable from the rest of the store. For example, some stores appear to pursue successfully some form of EDLP only on prescription drugs for loss leader purposes.

6 ECR is an ambitious cooperative effort by the food industry (Food Marketing Institute) to improve, among other things, coordination between manufacturers and retailers in an effort to reduce costs and increase efficiency.

REFERENCES

Arnold, Stephen J., Tae H. Oum, and Douglas J. Tigert (1983), "Determinant Attributes in Retail Patronage: Seasonal, Temporal, Regional, and International Comparisons," Journal of Marketing Research, 20 (May), 149-57.

Blattberg, Robert C., Gary D. Eppen, and Joshua Lieberman (1981), "A Theoretical and Empirical Evaluation of Price Deals for Consumer Nondurables," Journal of Marketing, 45 (Winter), 116-29.

--and Scott A. Neslin (1990), Sales Promotion. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Buzzell, Robert D., John A. Quelch, and Walter J. Salmon (1990). "The Costly Bargain of Trade Promotion," Harvard Business Review, (March/April), 141-49.

Davis, Scott J., Jeffrey Inman, and Leigh McAlister (1992), "Promotion Has a Negative Effect on Brand Evaluation--Or Does it? Additional Disconfirming Evidence," Journal of Marketing Research, 29 (February), 143-48.

Dickson, Peter R. and Alan G. Sawyer (1990), "The Price Knowledge and Search of Supermarket Shoppers," Journal of Marketing, 54 (July), 42-53.

Donnelley Marketing (1993), 15th Annual Survey of Promotional Practices. Stamford, CT: Donnelley Marketing.

Ehrenberg, Andrew S.C. (1988), Repeat-Buying: Theory and Applications, 2nd ed. New York: Oxford University

Press.

Hoch, Stephen J. and John A. Deighton (1989), "Managing What Consumers Learn From Experience," Journal of Marketing, 53 (2), 1-20.

--, Byung-Do Kim, Alan L. Montgomery, and Pete E. Rossi (1995), "Determinants of Store-Level Price Elasticity," Journal of Marketing Research, 32 (February), in press.

ⓘInformation Resources, Inc. (1993), Managing Your Business in an EDLP Environment. Chicago: IRI.

Jeuland, Abel P. and Chakravarthi Narasimhan (1985), "Dealing--Temporary Price Cuts--by Seller as a Buyer Discrimination Mechanism," Journal of Business, 58 (3), 295-308.

Lal, Rajiv and Ram Rao (1993), "Supermarket Competition: The Case of Every Day Low Pricing," working paper, School of Management, University of Texas at Dallas.

Lattin, James M. and Gwen Ortmeyer (1991), "A Theoretical Rationale for Everyday Low Pricing by Grocery Retailers," working paper, Graduate School of Business, ⓘStanford University.

Mandel, Stephen E (1991), "How Supermarkets Can Get into the Productivity Loop," Supermarket Business (December), 27.

Narasimhan, Chakravarthi (1988), "Competitive Promotional Strategies," Journal of Business, 61(4), 4279.

Neslin, Scott A. and Robert W. Shoemaker (1989), "An Alternative Explanation for Lower Repeat Rates After Promotion Purchases," Journal of Marketing Research, 26 (May), 205-13.

O'Brien, Bridget (1993), "Continental Plans Test of Low-Fare, No-Frills Flights," Wall Street Journal (September 10), B1.

Orgel, David (1993), "Margins Suffer in Fleming ECR Test," Supermarket News, 43 (39), 1.

Ortmeyer, Gwen, John A. Quelch, and Walter Salmon (1991), "Restoring Credibility to Retail Pricing," Sloan Management Review (Fall), 55-66.

Partch, Ken (1992), "Why the Issue of EDLPP Won't Go Away," Supermarket Business (October), 19-22.

Pigou, A.C. (1920), The Economics of Welfare, 4th ed. London: MacMillan.

Rosenthal. Robert (1991), Meta-Analytic Procedures for Social Research. Beverly Hills, CA: Sage Publications.

Simester, Duncan (1994), "Which Products Should Retailers Promote?" working paper, Graduate School of Business, ⓘUniversity of Chicago.

Supermarket Business (1993), "Consumer Expenditures Study," 48 (September).

Thaler, Richard (1985), "Using Mental Accounting in a Theory of Consumer Behavior," Marketing Science, 4 (3), 199-214.

ⓘVarian, Hal R. (1980), "A Model of Sales," American Economic Review, 70 (September), 651-59.

Stephen J. Hoch is the Robert P. Gwinn Professor of Marketing and Behavioral Science, Xavier Dreze is Director of MIS and a doctoral student, and Mary E. Purk is Manager of the Micro-Marketing Project, ⓘUniversity of Chicago. The authors thank ⓘDominick's Finer Foods for cooperation in the design and execution of the pricing experiments; ⓘInformation Resources, Inc. for providing supplemental data; and Dan Adams, Byung-Do Kim,

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Kmart: 2. Drop EDLP--continue promoting the value message

DSN Retailing Today; New York; Mar 11, 2002; Mike Troy;

*NAICS:***452110** *NAICS:***452990** *Duns:***00-896-5873**

Volume: 41
Issue: 5
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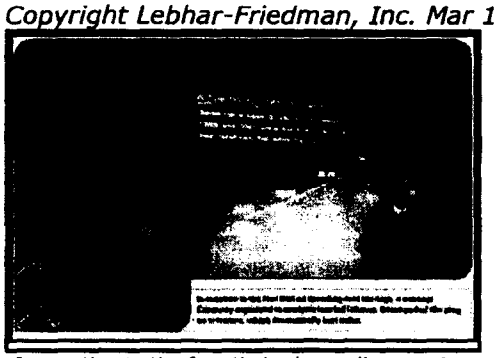
Subject Terms: Discount department stores
Pricing policies
Market strategy
Competition
Strategic planning
Classification Codes: **9190**: *United States*
8390: *Retailing industry*
7000: *Marketing*
2310: *Planning*
Geographic Names: United States
US
Companies: **Kmart Corp** *Ticker:***KM** *Duns:***00-896-5873** *NAICS:***452110**
*NAICS:***452990**

This is Exhibit G referred to in the affidavit of JOHN D. WINTER sworn before me, this 19th day of SEPTEMBER 20 03

A COMMISSIONER FOR TAKING AFFIDAVITS

Abstract:
The disastrous results produced by Kmart's short-lived flirtation last fall with everyday low pricing will not have been in vain if the company learned anything from the experience. Kmart now knows, as it should have prior to its EDLP experiment, that Wal-Mart will not tolerate such an affront to its pricing image. Now that Kmart has EDLP out of its system, it can resume a rational pricing scheme on commodity merchandise, combined with traffic-generating promotions and compelling merchandising of its proprietary brands to boost sales and margins.

Full Text:



In reaction to the fear that ad spending was too high, a concept Conaway explained to analysts last fall (above), Kmart pulled the plug on circulars, which dramatically hurt sales.

The disastrous results produced by Kmart's short-lived flirtation last fall with everyday low pricing won't have been in vain if the company learned anything from the experience.

Kmart now knows, as it should have prior to its EDLP experiment, that Wal-Mart wouldn't tolerate such an affront to its pricing image. That's why the price war that resulted from Kmart's actions was so predictable-and so was the eventual winner. Now that Kmart has EDLP out of its system, it can resume a rational pricing scheme on commodity merchandise, combined with traffic-generating promotions and compelling merchandising of its proprietary brands to boost

sales and margins.

This pricing strategy only works to the extent that Kmart's store operations and supply chain are executed properly and product offering is attractive. However, Kmart should be less concerned going forward about how its market basket stacks up to Wal-- Mart's pricing, and there are some good reasons why. Certainly pricing on key items needs to be competitive, but what's overlooked is Wal-Mart doesn't want to needlessly give away margin by pricing items substantially below competitors.

In its monthly circulars, Wal-Mart promotes high-- visibility items that offer customers tremendous value and reinforce its low-price image. On the vast majority of items, Wal-Mart is only priced as low as it needs to be to maintain its reputation. Often the price differential among Wal-Mart, Kmart and other retailers such as Home Depot, Walgreens, Costco and Staples is only a few cents, assuming Wal-Mart is even the lowest.

Retailers don't necessarily need to match competitors' prices to be considered equal, according to John Hauptman, vp of Willard Bishop Consulting. Consumers face so many choices during their shopping trips that they rely on a relatively small number of items to determine an individual store's price image, noted Hauptman.

Kmart needlessly reduced its prices last year to narrow the gap with Wal-Mart when it might have been more selective and accomplished the same goal without sacrificing margins in a war it could never win. It is understandable how Kmart fell for EDLP. The beauty of this strategy is reduced advertising costs and less dependence on traffic-generating promotions, which in turn enables more accurate forecasting of demand. As a result, goods flow more smoothly through the supply chain, thus ensuring a higher in-stock position, simplified store operations and greater profits.

There are other pricing alternatives, though. Kmart's strategy will be defined largely by its merchandising strategy, which combines commodity items that will require competitive pricing and proprietary brands for which it can charge higher prices.

Kmart also will want to turn to the science of retail revenue management, according to experts in the field. "While there have been great advances in the science of pricing products by retailers over the past few years, there is still too much dependence on cost-plus or competitive-centric pricing and too little analysis of consumer behavior," according to Eric Mitchell, president of the Professional Pricing Society. "The concept of revenue management is much more important for high-revenue, lower-margin industries like retail than it is for high-margin, low-fixed-costs industries because the positive and quick impact to the bottom line is much more pronounced. The return on investment for retailers implementing revenue management can pay bigger dividends than it would in other segments of our economy."

Deborah Vollmer Dahlke, who serves on the society's board, contends price optimization is the key for retailers' profits. "I believe that retailers need to be doing their pricing much more scientifically and strategically than they have in the past. They really should be taking advantage of the capabilities of price-optimization software," said Vollmer Dahlke, who also teaches pricing at St. Edwards University in Austin, Texas, and is working on a book about pricing. "Price optimization is not new, but the technology has matured, making it feasible for retailers."

There are a number of companies offering price-- optimization solutions, including KhiMetrics, DemandTec, Spotlight Solutions, Zilliant and others. According to U.S. Bancorp Piper Jaffray, the technology is gaining acceptance by retailers. "Profit optimization generated a lot of buzz at the [National Retail Federation] conference," according to a report from the firm. "By helping clients to determine optimal pricing levels, markdown strategies and the like, such solutions have many a retailer dreaming of even small increases in their paper-thin margins."

By pursuing EDLP, Kmart did everything but optimize its prices. Even if it doesn't invest in retail revenue management solutions, by simply dropping the EDLP philosophy and returning to its promotional roots, Kmart increases the odds that it can restore profitability.

[Sidebar]

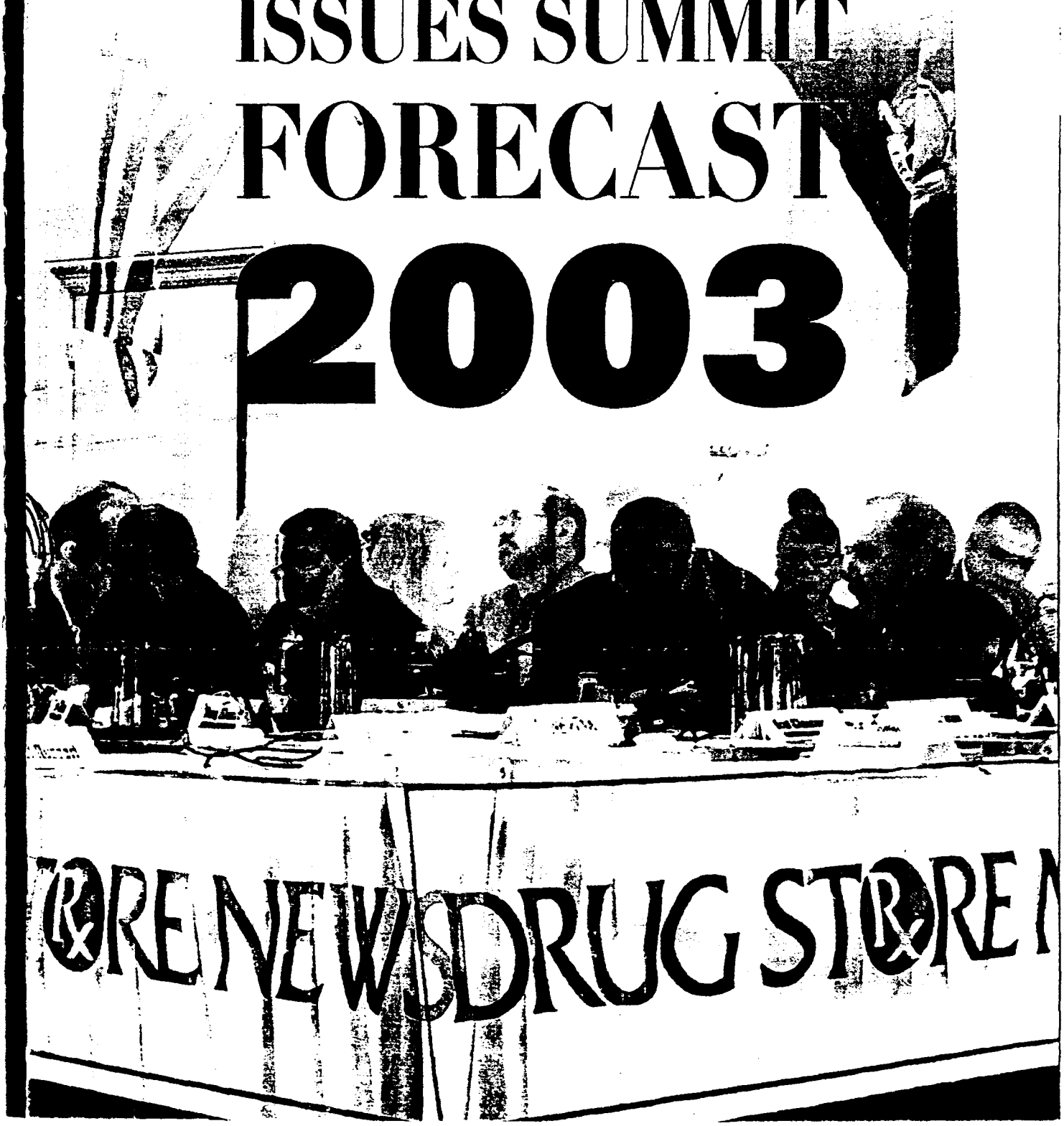
KMART'S ADOPTION OF EVERYDAY LOW PRICES WAS RIDDLED WITH PROBLEMS FROM THE OUTSET FOR ONE, THE BLUE LIGHT NAME WAS FIRST REINTRODUCED AS AN INTERNET VENTURE, WHICH FURTHER CONFUSED CONSUMERS STRUGGLING TO COMPREHEND THE NEW PRICING PLAN.

This is Exhibit "H" referred to in the
affidavit of JOHN D WINTER
sworn before me, this 19th
day of SEPTEMBER 2003

A COMMISSIONER FOR TAKING AFFIDAVITS

Supplement to:
DRUG STORE NEWS
February 2003

RETAILERS/SUPPLIERS ISSUES SUMMIT FORECAST 2003

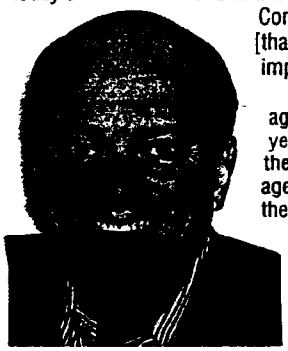


Nunnari, J&J: You can't be EDLP and high-low

Drug Store News: Drug chains feel there is a de facto edge provided to suppliers that structure their deals to favor EDLP retailers like Wal-Mart. How can you help drug chains compete in today's environment?

Nunnari: This is an interesting question because suppliers tend to tailor their promotional activity based on a retailer's request. If a retailer has indicated to us that they believe through our joint research that their best strategy is a high-low vehicle, then we tend to create promotions around a high-low concept. ... What you don't see is someone successful at EDLP and successful at high-low at the same time.

We try to help those who use EDLP or high-low promotions not to drive empty dollars by giving them innovative promotions, executing properly and using the right data to merchandise to the right consumer through what ever strategy they choose.



Paul Nunnari
vp, consumer developement
Johnson & Johnson

Drug Store News: What is your company doing to address the burgeoning dollar store channel?

Nunnari: We do have groups within the individual operating companies that are taking a look and working with the dollar stores to see if there is opportunity for us to not just shift the consumer, but to actually grow the businesses and grow our market share. So we are looking at a variety of sizes to see if it fits within the needs of the dollar store.

Drug Store News: What is the most important thing that suppliers can do to make the chain's front-end strategy work?

Nunnari: We as manufacturers must first take the time to understand better as a supplier what a retailer's true strategy is for the front-end ... and then tailor a program around that strategy.

Consumers today are looking for excitement and innovation [that will facilitate browsing] the store. Browsing drives impulse sales. ...

The one opportunity that does exist with product management, and it's existed since I started in this business 25 years ago, is the [opportunity] to get out and understand the retailer's needs. Suppliers tend to look at product management through the eyes of the data they receive; through the focus groups; through the different research programs that they do before new products are launched or reinvented. But, they tend to not understand or gain much perspective on the retailers' point of view.

We have been doing a much better job. And the retailer community has been much more inviting to our marketing people.

Drug Store News: With the abundance of data that is available today, how is your company using that information to grow the business?

Nunnari: The overwhelming amount of information from a supplier's standpoint tends to muddy the waters as to how we look at promoting and how we look at merchandising. One of the keys here is to develop better scorecarding around what that data is telling us. We invest a tremendous amount of money in process excellence and design excellence. If we can take that enormous amount of data and better scorecard it, we can use it more effectively.

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Exploring the effect of retail sector and firm characteristics on retail price promotion strategy

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Abstract

This study examines why retail price promotion strategies vary across retail sectors and across firms within sectors. Using hierarchical linear modeling and a sample of 38 firms from 11 retail sectors, the authors investigate how two sector-level characteristics, related to product assortment perishability and heterogeneity, and three firm-level characteristics, related to retailer differentiation, number of stores, and average store size, influence price promotion decisions. The results indicate that assortment heterogeneity moderates the positive influence of perishability on price promotion activity; scale and scope also have significant effects. These results offer fresh insight into the ongoing debate surrounding stable versus promotional pricing, suggesting that the benefits of a particular strategy are driven largely by a complex interaction between sector-level characteristics as well as firm-level cost advantages.

Keywords: Retail price promotion strategy; EDLP; Assortment heterogeneity; Perishability

Introduction

The successful use of everyday low pricing by companies such as Wal-Mart and The Home Depot has triggered interest in everyday stable pricing as an alternative to promotional pricing policies. Advocates of stable pricing urge retailers to cut back on promotions, differentiate their customer service and product assortments to increase customer loyalty, improve inventory management, and reduce labor and advertising expenses (Ortmeyer, Quelch, & Salmon 1991). However, it is not clear that a strategy based on differentiation and stable prices is viable in every retail sector. Moreover, the use of heavily-advertised sales events, with their ability to generate excitement, attract shoppers, clear out time-sensitive merchandise, and sell complementary, high-margin items, is deeply ingrained in retail strategy (Blattberg, Briesch, & Fox 1995; Kumar & Leone, 1988; Mulhern & Leone, 1991).

Much of the research examining stable pricing has been limited to single retail sectors and has produced conflicting results as to the relative benefits of stable versus promotional pricing. In the grocery supermarket sector, for example, Lal and Rao (1997) demonstrate that, under certain conditions, the presence of everyday low price (EDLP) and price-promotion policies can provide a perfect Nash equilibrium; that is, given the existence of a promotional-pricing competitor, adopting an EDLP policy is profit maximizing. However, Hoch, Drèze, and Purk (1994) conclude, on the basis of two extensive field experiments in a Chicago supermarket, that an EDLP policy leads to lower profits because volume increases do not fully compensate for lower profit margins.

Our goal is to offer fresh insight into why retailers elect different approaches to price promotion. To accomplish this, we draw from the marketing and competitive strategy literatures to develop a broad conceptual framework of the determinants of price promotion strategy, which we define as a coordinated set of pricing and promotion decisions designed to communicate a price position to consumers and influence short-term sales response and overall market performance (Kumar & Pereira, 1995, 1997; Lal & Rao, 1997). We then test the conceptual model by examining price promotion decisions implemented by 38 national retailers representing 11 retail sectors across five geographic marketplaces over 3 months. This examination leads to the identification of key sector-level characteristics that help to

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explain why price promotion strategies vary across retail sectors and key firm-level characteristics that help to explain why price promotion strategies vary across competitors within retail sectors.

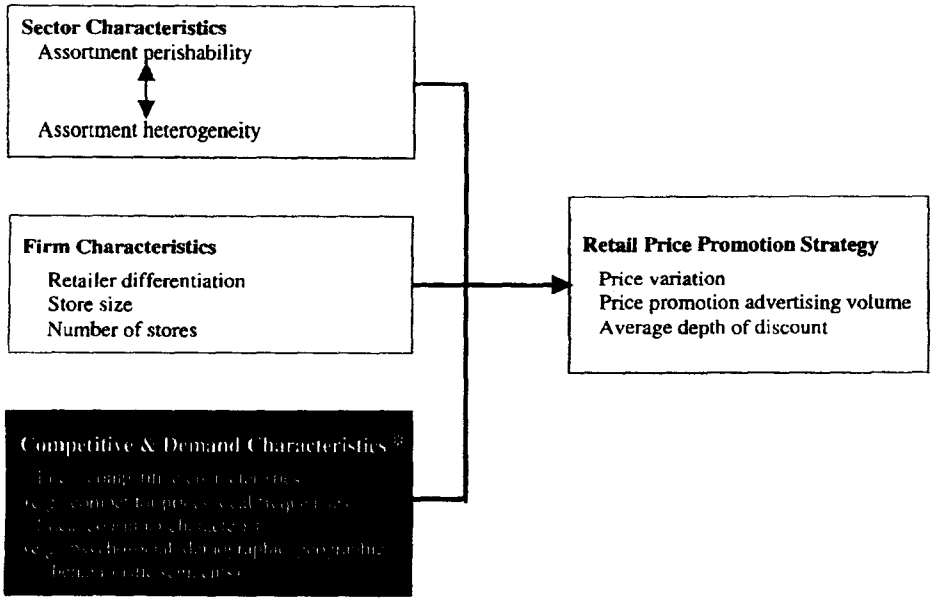
In the following section, we present the conceptual model that links retail sector and firm characteristics to price promotion strategy. We then describe the empirical study and results. In the last section, we explore research and managerial implications. These implications include speculations suggested by our results that retailers can redefine competition within their sectors by modifying key sector characteristics.

Determinants of retail price promotion strategy

A retailer's approach to pricing and price promotion emanates from strategic decisions related to competitive positioning (Lal & Rao, 1997). Strategic considerations address the extent to which price promotions will be used; if price promotions are to be used, tactical implementation involves the type, timing, frequency, and depth of the promotions (e.g., Krishna, 1994; Kumar & Pereira, 1997; Shankar & Bolton, 1999). Following this literature, we examine three distinct and important components of price promotion strategy:

- Price variation policy represents the firm's price position, one that can range from stable pricing, featuring consistent, everyday prices and few price discounts, to highly promotional pricing, featuring frequent price discounts (Hoch et al., 1994; Lal & Rao, 1997; Shankar & Bolton, 1999; Shankar & Krishnamurthi, 1996). For clarity in discussing relationships with predictor variables, we define and make price variation policy operational as the relative level of advertised price variation. Low levels of price variation are consistent with a stable price variation policy and high levels of price variation are consistent with a HiLo price variation policy.
- Price promotion advertising volume is the volume of advertising dedicated to communicating a price position. This dimension is independent of price variation policy, in that retailers can elect to advertise everyday prices that promote a stable price position or sale events that emphasize discounted prices.
- Depth of discount is the average magnitude of the discount offered on featured sale items (Shankar & Bolton, 1999; Shankar & Krishnamurthi, 1996). Although average depth of discount is relevant only with promotional pricing (i.e., there are no discounts with a completely stable price variation policy), it represents a discrete decision.

The conceptual model presented in Fig. 1 proposes three broad categories of antecedents to retail price promotion strategy: supply-side sector characteristics, individual firm characteristics, and competitive and demand characteristics manifest in the consumer marketplace. The model incorporates insights from the structure-conduct-performance paradigm, which holds that industry structure drives firm conduct, which in turn drives firm performance (Porter, 1980). Following this theory, we propose that retail price



* These characteristics are conceptually related to price promotion strategy but are not examined in the current study.

Fig. 1. Determinants of retail price promotion strategy.

promotion strategy is influenced by retail sector membership and examine two key supply-side characteristics associated with retail sectors, product *assortment perishability* and *assortment heterogeneity*. Assortment perishability is a function of the speed at which a typical assortment loses value or becomes obsolete over time. Assortment heterogeneity is the degree of between-store variability in product assortments among firms competing in the same retail sector.

We also recognize that firm differences likely influence a retailer's price promotion strategy. This perspective builds on research that emphasizes the importance of firm-level strategy and resources and downplays the importance of industry or strategic group membership (Barney, 1991; Rumelt, 1991). We capture firm-level strategy and resources as *retailer differentiation*, an assessment of the relative superiority of a retailer's offering compared to competitors', average *store size* (i.e., the average size in square feet for each store) and *number of stores* in the chain, which represent firm-level resources as well as operational efficiencies associated with economies of scale and scope.

Although we acknowledge that marketplace factors such as competitor actions and consumer responses to promotional activities also influence price promotion strategy (see e.g., Dickson & Urbany, 1994; Hoch, Kim, Montgomery, & Rossi, 1995), this study takes a strategic, macro approach to firm behavior and focuses on sector- and firm-level antecedents. As discussed below, the empirical analysis controls for marketplace variations, thereby attenuating the potential for bias due to omitted variables. Next, we examine the components of our model in greater detail.

Supply-side sector characteristics

Retail firms traditionally are categorized according to their membership in specific sectors. These sectors are defined according to product assortment, which is the basis for the standard industrial classification (SIC) system for retail trade. Each sector is served by specialized trade organizations, events, and publications (e.g., *Progressive Grocer, Discount Store News*). Because retailers' pricing and price promotion decisions depend to some degree on manufacturers' promotional policies (Dickson & Urbany, 1994; Hoch et al., 1994; Thomas, Staatz, & Pierson, 1995), the promotional practices of suppliers and resellers in one channel (e.g., the grocery sector) may be similar to each other but vary from the practices of suppliers and resellers in other channels (e.g., the department store sector).

We propose that supply-side sector characteristics associated with assortment perishability and heterogeneity play a significant role in determining retailers' price promotion strategies. These characteristics likely affect both manufacturers and retailers and should influence price promotion strategy throughout the channel. Surprisingly, though there is strong practical and conceptual support linking each of these sector-level characteristics to price promotion strategy, the literature provides little empirical support and thoughtful consideration suggests that the relationships may be more complex than has been previously explored.

Assortment perishability

The potentially destabilizing effect of perishability on prices has been recognized by economists (Stigler, 1987) and marketers (Tellis, 1986). Perishability has been proposed as a key factor driving dynamic pricing systems such as those implemented by the airlines (Bhattacharjee & Ramesh, 2000; Weatherford & Bodily, 1992). Shankar and Bolton (1999) speculate that assortment perishability might be an important determinant of retail price promotion. Anecdotally, price discounts linked with perishable products, including fashion, electronics, and perishable food items, are routinely observed.

Perishability is directly related to shelf life, in that products with a long shelf life have low levels of perishability and products with a short shelf life have high levels of perishability. Perishability increases when product innovation is frequent, products are physically perishable, or seasonality is a factor. These various forms of obsolescence have the same pricing implication, in that the product's value decreases relative to time. This decrease in value produces an incentive to offer price promotions to clear out obsolescent merchandise. All else being equal, then, we expect price promotion activity to be higher in sectors characterized by perishable product assortments.

H1. At the retail sector level, controlling for marketplace variations, product assortment perishability has a positive effect on

(a) price variation,
(b) price promotion advertising volume, and
(c) average depth of discount.

Assortment heterogeneity

The conceptual link between assortment heterogeneity and prices can be traced to Chamberlin's (1965) theory of monopolistic competition, which predicts that higher levels of heterogeneity across competitors within an industry lead to a reduction in direct price competition, greater latitude in price-setting, and greater variability in observed prices. Chamberlin's followers developed the structure-conduct-performance paradigm, which argues that greater latitude in price setting translates into greater industry profits (Bain, 1968; Ekelund & Hebert, 1990; Porter, 1980). Studies have supported the indirect link between industry-level product heterogeneity and firm performance (Robinson & McDougall, 1998; Sandberg, 1986), but to our knowledge no empirical study has examined the direct link between assortment heterogeneity and pricing or price promotion strategy.

Dickson's (1992) theory of competitive rationality provides another perspective linking heterogeneity to overall market dynamism and price promotion activity. Heterogeneity of supply (i.e., product assortments) results in heterogeneity in demand as buyers learn of and respond to different product offerings. The different response patterns then lead to imbalances in supply and demand and to market dynamism as sellers shift their efforts to serve more attractive segments. This type of market dynamism likely leads to price dynamism, as sellers of more/less preferred products raise/lower prices in response to market shifts and imbalances. Thus, overall price promotion activity likely increases as assortment heterogeneity and market dynamism increase.

Assortment perishability and heterogeneity are conceptually distinct concepts, but they are practically related in that some forms of perishability may lead to increased heterogeneity. This is particularly the case when perishability is driven by innovation. As models exhibiting new features are introduced, assortment heterogeneity increases as older models coexist with newer models, even as the obsolescence of the older models triggers price promotion. By stimulating supply-demand imbalances and market dynamism, assortment heterogeneity also might lead to perishability of less-preferred offerings.

Though assortment heterogeneity and perishability may be linked, the resulting level of price promotion activity within any sector likely depends on whether heterogeneity occurs within-retailer or cross-retailer. Within-retailer heterogeneity occurs in a sector when there is greater concentration at the retail level than at the manufacturer level, in which case large-scale, retail oligopolists develop broad and deep assortments that are supplied by multiple, differentiated manufacturers pursuing intensive distribution. This results in internal heterogeneity in the assortments carried by each retailer but little heterogeneity in assortments across retailers within that sector. An example can be found in the electronics superstore sector, where there are high levels of within-retailer perishability and heterogeneity as new models with varying features are introduced and occupy shelf space alongside older models, also with varying features. However, there is relatively little cross-retailer heterogeneity because electronics retailers tend to carry similar assortments provided by the same manufacturers.

Cross-retailer heterogeneity occurs when concentration at the retail- and manufacturer-level is approximately equal and differentiated manufacturers seek exclusive distribution. Retailers compete in monopolistic competition by developing unique assortments. Each retailer carries a limited number of different brands (low within-retailer heterogeneity) that are highly distinct from other retailers' offerings. An extreme example can be found in haute culture, where small boutique fashion stores may carry a single designer label. Each boutique maintains a unique position in a heterogeneous marketplace, selling perishable fashion items but offering relatively little internal variety.

We believe that promotional pricing activity will be higher in high perishability sectors marked by homogeneous, cross-retailer assortments and lower in high perishability sectors marked by distinctive, heterogeneous cross-retailer assortments. In high-perishability/low-heterogeneity retail sectors (e.g., electronics superstores), manufacturers and retailers are motivated to clear out obsolescent merchandise to make room for newer models. Given the low level of cross-retailer heterogeneity, retailers are motivated to advertise price promotions to generate excitement and traffic that will clear out the obsolescent merchandise along with complementary items.

In high-perishability/high-heterogeneity sectors (e.g., high-end fashion stores), retailers continuously offer new products in an attempt to avoid head-to-head competition with other retailers. Perceived distinctiveness is based not only on evidence of physical and image differences in products, but also on high rates of change in the actual products (Robinson & McDougall, 1998; Sandberg, 1986). These retailers are defined by the uniqueness of their products, sometimes tied to a single image or designer, and they typically practice an everyday high price strategy to reinforce the perceived exclusivity and cachet of their offerings. Because promotional pricing would detract from this positioning, they are more likely to use outlet stores or targeted personal invitations to move perishable merchandise rather than heavily-advertised price discounts.

Collectively, this suggests that heterogeneity acts as a quasi-moderator variable (Sharma, Durand, & Gur-Aric, 1981); that is, one independently related to the dependent variable (price promotion) and interacting with other predictor variables (perishability). Consistent with Dickson's (1992) theory of competitive rationality, we expect a positive direct association between assortment heterogeneity and price promotion activity. Consistent with the expectation that retailers offering differentiated, perishable assortments are motivated to avoid large-scale price promotions in an attempt to maintain an image of exclusivity, we expect that heterogeneity will attenuate the positive effect of perishability on price promotion activity. These expectations are formalized in the following hypothesis:

H2. At the retail sector level, controlling for marketplace variations, product assortment heterogeneity acts as a quasi moderator, exerting

(a) a direct positive effect on (i) price variation, (ii) price promotion advertising volume, and (iii) average depth of discount, and
(b) a moderating effect on the association between assortment perishability and (i) price variation, (ii) price promotion advertising volume, and (iii) average depth of discount.

Firm characteristics

At the most basic level, firm-level strategy seeks to develop positional advantages based on differentiation or cost advantages. Recognizing that these strategic choices likely influence price promotion strategy, we consider three characteristics that are directly linked to firm-level strategy: retailer differentiation and two sources of cost advantage—average store size and number of stores in the chain.

Retailer differentiation

Even in sectors marked by homogeneous product assortments, retailers can avoid direct competition by creating a distinctive position on a variety of image dimensions, including customer service and store environment (Mazursky & Jacoby, 1986). For example, retailers in mature, commodity-based sectors, which are constrained in terms of product differentiation (e.g., traditional supermarkets), can use operational initiatives such as increased speed of service and extended store hours to create value.

As differentiation increases, we expect retailers to follow a less promotional pricing policy. When successfully implemented, differentiation decreases price elasticity (Chamberlin, 1965), which in turn should reduce the importance of price promotion. Retailers emphasizing differentiation should shift to image-focused rather than price-oriented communications, resulting in a decrease in price promotion advertising volume.

However, when retailers with greater differentiation do offer price promotions, we expect that they will employ deeper promotional discounts because their original margins typically are greater than those of less differentiated competitors (Hoch et al., 1994). Faced with higher cost structures associated with their differentiation efforts, these retailers may use dramatic but infrequent sale events to increase traffic and sales while protecting image and price credibility. We therefore hypothesize that

H3. At the retail firm level, controlling for marketplace variations, as retailer differentiation increases

(a) price variation will decrease,
(b) price promotion advertising volume will decrease, and
(c) average depth of discount will increase.

Store size and number of stores

The expected relationship between price promotion strategies and number of stores and average store size is based on cost advantages associated with operational scale and scope. A retailer's scale can be considered within the context of the number of stores managed by the retail firm; that is, holding store size constant, increasing the number of stores increases operational scale. The size of a physical store largely determines the number of product categories and/or items that can be offered; thus, as store size increases, operational scope increases.

Retailers with greater scale and scope are more likely to benefit most from supply chain efficiencies and cost reductions associated with an EDLP policy (Thomas et al., 1995). Because of their wider and deeper assortments, larger stores draw from larger trading areas and may attract price-sensitive, "large basket" shoppers who prefer everyday low prices (Bell & Lattin, 1998; Tang, Bell, & Ho, 2001), whereas smaller stores attract more secondary shoppers who are location- and convenience-sensitive (Hoch et al., 1995). Prior research supports a negative relationship between the size of the merchandise assortment (which is related to store size) and average prices, price variability, and promotion intensity in the supermarket sector (Shankar & Bolton, 1999). Holding store size constant, increasing the number of stores should produce economies of scale associated with purchasing and distribution efficiencies, which are leveraged best by an EDLP policy (Thomas et al., 1995). Thus, we expect that the number of stores and the average store size will be negatively associated with price variation and average depth of discount.

It also has been argued that larger stores are likely to engage in competitive pricing to defend market share (Shankar & Bolton, 1999). We expect that the pressure to defend share will manifest as a positive relationship between store size and price promotion advertising volume. Large-store and large-chain retailers with clustered locations gain most from investments in high-volume, price-oriented advertising, either promotional or nonpromotional. These retailers benefit from higher market power, which allows them to negotiate lower advertising costs and more substantial manufacturer support through advertising allowances. Small-store or small-chain retailers that are less capable of capturing promotional synergies related to broad and deep assortments are less likely to reap the same level of advertising benefits.

Summarizing, we expect that larger scale and scope translates into cost efficiencies that are more compatible with a price promotion strategy that emphasizes stable, low prices with few discounts. Accordingly, these large-scale and scope retailers likely advertise their price position more than smaller retailers, but focus their advertising on stable low prices rather than on deeply-discounted, promotional prices. More formally

H4. At the retail firm level, controlling for marketplace variations and store size, as the number of stores increases

(a) price variation will decrease,
(b) price promotion advertising volume will increase, and
(c) average depth of discount will decrease.

H5. At the retail firm level, controlling for marketplace variations and number of stores, as average store size increases

(a) price variation will decrease,
(b) price promotion advertising volume will increase, and
(c) average depth of discount will decrease.

Methodology

To test the hypotheses, we collected data for 38 retailers across 11 retail sectors (Table A.1). The sample of companies was chosen to represent key national competitors in a variety of retail sectors. We gathered measures for this study from three sources, using objective measures whenever possible.

Measuring price promotion strategy

To measure the dependent variables—price variation, price promotion advertising volume, and average depth of discount—we tracked advertisements in five metropolitan areas' leading newspapers: *The Los Angeles Times*, *The Dallas Morning News*, *The Boston Globe*, *The Chicago Tribune*, and *The Raleigh News & Observer*. All advertisements, including inserts, were collected daily, 7 days a week, for a 3-month period, from July 1 to September 30. We used five geographically dispersed markets and a 3-month observation period to offset the possibility that a retailer's price promotion activities might exhibit extreme regional or temporal differences.

The use of the newspaper medium to examine price promotion activities is appropriate for three reasons: (1) price information is nearly twice as common in newspaper advertisements as in advertising in general (Abernethy & Franke, 1996); (2) with the recent trend toward integrated marketing communication, advertising and promotion are coordinated and implemented contemporaneously to gain synergies (Shankar & Bolton, 1999); and (3) newspaper advertising reflects a level of measurement that is consistent with our objective of exploring variations in price promotion strategy at the sector, firm, and marketplace level, but not at the individual store level. A comparison of the total recorded newspaper promotion volume for each of the 38 retail chains with the newspaper advertising dollar volume reported by Competitive Media Reporting (1998) for each chain for the same time period indicated a high correlation ($r = .78$), suggesting that our choice of markets and newspapers provided a representative sample.

We analyzed the information content of the advertisements and coded the content into three major categories: temporary price promotion (i.e., featuring temporary sales events and discounts), positional price promotion (i.e., featuring everyday prices); positional nonprice promotion (i.e., price not mentioned) also was coded but was not used in this study. The unit of measure was the amount of page space allocated to each type of information. For example, if a half-page advertisement allocated 50% of the space to temporary price promotions and 50% to positional price promotion, the coded measure would be one-quarter page of temporary price promotion and one-quarter page of positional price promotion.

The dependent measures were aggregated by month (3) and market (5), producing as many as 15 distinct observations for each dependent measure, depending on the number of markets in which each retailer competed. Price promotion advertising volume was calculated as the number of pages that focused on price promotion, either temporary price promotion or positional price promotion (i.e., the sum of the two). Price variation was made operational as the percentage of price promotion advertising allocated to temporary price promotions (i.e., temporary price promotion advertising volume divided by total price promotion advertising volume). Depth of discount was measured as the average depth of price discounts offered in each advertisement.

Two judges were trained to code all advertisements (8030 pages), and a third judge was trained to conduct random reliability checks on 18% of the advertisements coded by the other two judges (1438 pages). Reliability assessments indicated that interrater agreement was very high for price promotion advertising volume ($r = .98$) and slightly lower for price variation ($r = .89$) and average depth of discount ($r = .78$, Table A.2).

To explore the discriminant validity of the dependent measures, we examined the correlations between price variation and price promotion advertising volume ($r = .04$, $p > .10$), between price promotion advertising volume and average depth of discount ($r = -.08$, $p > .10$), and between price variation and average depth of discount ($r = .54$, $p < .01$). The correlation between price variation and average depth of discount is inflated by the fact that average depth of discount is by definition 0 when price variation is 0; if price variation values of 0 are eliminated from the analysis, the correlation drops to .33.

Measuring retail sector characteristics

A panel of retail experts provided the measures of assortment heterogeneity and perishability. There is substantial support in the literature for the use of expert panels to measure complex phenomena, such as industry-level success factors (Sousa De Vasconcelos e Sa & Hambrick, 1989); specific functions of new products (Rangan, Menezes, & Maier, 1992); performance of markets for potential entry (Papadopoulos, 1989); fit of business-level strategic variables and typologies across industries (Segev, 1989); companies' corporate and business level strategies (Willard & Cooper, 1985) and technological strength (Narin, Noma, & Perry, 1987). Prior studies also have validated the use of expert assessments by comparing them to objective measures (Albert, Avery, Narin, & McAllister, 1991; Narin et al., 1987).

The panel consisted of six professors of retailing—four current or past directors of university retailing centers and four endowed retailing chairs—and two practitioners who are senior retailing consultants, each with at least 20 years

of experience. To gauge the reliability of the panel's assessments of assortment perishability and heterogeneity, we examined the extent to which the experts agreed in their evaluations. A high level of agreement would suggest that panel experts were capable of providing accurate assessments of the constructs, whereas a low level of agreement would indicate that the constructs were poorly defined or the experts were incapable of providing accurate assessments (Kolbe & Burnett, 1991). This examination found a high level of interrater agreement ($\alpha = 0.88$), which suggests clear construct definitions and accurate expert assessments. The relatively low correlation ($r = .25$) between the assortment heterogeneity and perishability measures suggests that the two constructs are conceptually distinct.

Measuring firm characteristics

We obtained objective measures of firm characteristics from the retailers' 1998 annual reports, which were concurrent with the time period covered in the advertising content analysis. For retailer differentiation, we used a composite score that incorporated service intensity (i.e., number of employees per square foot of retail space for each retailer) and atmospherics (i.e., furniture, fixtures and equipment dollars per total square feet). These measures represent two key value dimensions that are not confounded with the sector-level assortment heterogeneity measure. Because these two objective measures indicated an acceptable level of reliability ($\alpha = 0.73$), we standardized and summed the measures to form a composite retailer differentiation score.

We obtained objective measures of the number of stores and average square feet of retail space per store for each retailer from the annual reports. We implemented log transformations for these two measures to normalize their distributions and increase scale commensurability. Firm characteristics for each retailer and sector averages are reported in Table A.1.

Analysis and results

We conducted hierarchical linear modeling (HLM) to test H1–5 for each dependent measure. As described by Bryk and Raudenbush (1992), HLM uses maximum likelihood estimation to fit multilevel, hierarchical models. There are two advantages to using HLM in the current analysis. First, HLM allows for fixed effects associated with independent variables specified at multiple levels of theory and measurement. In the current study, the dependent variables are conceptualized and measured at the firm level, as are retailer differentiation, number of stores, and average store size. Assortment perishability and heterogeneity are conceptualized and measured at the sector level.

The second advantage is that random effects can be modeled as cross-level variations in slopes or intercepts in HLM. This allowed us to specify a random marketplace effect so that the intercept varied across markets by firm (see "Market (firm) random intercept effects" in Table 1). This specification controls for market variations and attenuates the possibility of bias due to omitted variables at the marketplace level. Additional details on model specification for the multilevel analysis are provided in the appendix.

To test for the moderating effects predicted by H2, we conducted a variation on hierarchical moderator analysis (Arnold, 1982; Sharma et al., 1981). This approach requires comparing the fit of three nested models, one with no effects for the moderator variable, a second with direct effects only for the moderator variable, and a third with direct and interaction terms. Moderation is supported if the fit for Model 3 is significantly greater than the fit for Model 2. If moderation is supported, a significantly better fit for Model 2 than for Model 1 indicates that the moderator is a quasi moderator; otherwise, it is a pure moderator. When using regression analysis, best fit is determined by examining incremental improvements in R^2 using an F test with one degree of freedom in the numerator. Using maximum likelihood estimation in HLM, the -2 log likelihood (-2LL) criterion, which follows a χ^2 distribution, offers a statistical test for assessing fit; smaller -2LL numbers equate to better fit.

Price variation

We present results with price variation as the dependent variable in the first three numerical columns in Table 1. Examining the hierarchical moderator analysis first, the -2LL criterion suggests that adding the interaction term improves model fit and that adding assortment heterogeneity as an independent variable also improves model fit. The χ^2 difference tests are significant ($p < .01$) and the individual coefficients are significant in the expected direction. Specifically, the coefficient for the assortment heterogeneity × assortment perishability interaction term is significantly negative ($p < .01$), and the coefficients for assortment perishability and heterogeneity are both significantly positive ($p < .01$). These results provide support for H1a, H2a(i), and H2b(i), relating retail sector characteristics to price variation.

To further explore the nature of the interaction effect, we split the sample into two groups—low and high heterogeneity—and re-ran the analysis. The results indicated that the perishability coefficient was significantly positive ($p < .01$) for the low heterogeneity group and nonsignificant for the high heterogeneity group. This implies that price variation is low when assortment perishability and heterogeneity are both low, and that price variation increases as assortment perishability increases if heterogeneity is low but not if heterogeneity is high.

H3a, which predicted that price variation would decrease as retailer differentiation increased, is not supported. The results also do not support H4a, which predicted a negative association between number of stores and price variation,

Table 1
The effect of retail sector, firm and marketplace characteristics on price promotion strategy (t scores in parentheses)

Independent variables	Dependent variables[c]								
	Price variation			Price promotion advertising volume			Average depth of discount		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Market (firm) random intercept effects	0.07[a] (4.50)	0.06[a] (4.34)	0.05[a] (4.37)	2.55[a] (7.02)	2.54[a] (6.99)	1.27[a] (6.67)	0.62[a] (2.46)	0.54[a] (2.34)	0.48[b] (2.26)
Sector characteristics									
H1: assortment perishability	0.20[a] (18.69)	0.07[a] (2.47)	0.20[a] (4.52)	0.64[a] (12.26)	0.55[a] (3.47)	2.03[a] (11.20)	0.83[a] (21.42)	0.46[a] (4.19)	0.87[a] (5.08)
H2a: assortment heterogeneity		0.14[a] (4.47)	0.18[a] (5.59)		0.11 (.64)	0.50[a] (3.95)		0.42[a] (3.48)	0.53[a] (4.35)
H2b: assortment perishability × assortment heterogeneity			−0.56[a] (−3.69)			−6.42[a] (−10.49)			−1.79[a] (−3.01)
Firm characteristics									
H3: retailer differentiation	0.01 (0.17)	0.01 (0.19)	0.01 (0.28)	0.06 (0.40)	0.06 (.41)	0.10 (.86)	−0.17 (−1.46)	−0.16 (−1.50)	−0.17 (−1.59)
H4: number of stores	−0.06 (−1.26)	−0.05 (−1.13)	−0.05 (−1.22)	0.35 (1.63)	0.36[b] (1.67)	0.36[b] (2.34)	−0.42[a] (−2.61)	−0.38[a] (−2.51)	−0.40[a] (−2.71)
H5: average store size	−0.20[a] (−3.44)	−0.18[a] (−3.26)	−0.18[a] (−3.36)	0.46 (1.58)	0.47 (1.63)	0.55[a] (2.59)	−0.90[a] (−4.19)	−0.83[a] (−4.07)	−0.84[a] (−4.24)
Fit criterion									
−2 log likelihood (−2LL)	175.77	157.18	144.26	876.03	875.62	797.95	877.60	866.01	857.24
Change in −2LL (1 df)		18.59[a]	12.92[a]		0.41	77.67[a]		11.59[a]	8.77[a]

[a] Significant at $p < .01$.
[b] Significant at $p < .05$ (one-tailed t tests).
[c] Individual parameters are unstandardized coefficient estimates with t values in parentheses.

but do support H5a ($p < .01$), which predicted a negative association between store size and price variation. These results suggest that retailers with smaller stores use more price variation whereas retailers with larger stores are more likely to promote stable everyday prices. The number of stores has no effect on price variation.

Price promotion advertising volume

We present results with price promotion advertising volume as the dependent variable in the second set of three numerical columns in Table 1. In support of H2b(ii), the results in Model 3 suggest that assortment heterogeneity moderates the relationship between perishability and price promotion advertising volume; the addition of the interaction term improves model fit ($p < .01$) and the coefficient is significantly negative ($p < .01$). The Model 2 results do not support H2a(ii), which predicted that heterogeneity would have a positive, direct effect on price promotion advertising volume. Both the χ^2 difference value and the heterogeneity coefficient are nonsignificant. These results indicate that heterogeneity is a pure (rather than quasi) moderator of the positive relationship between perishability and price promotion advertising volume. As predicted by H1b, perishability is positively associated with price promotion advertising volume.

Splitting the sample into low and high heterogeneity groups indicated that the perishability coefficient was significantly positive ($p < .01$) for the low heterogeneity group and significantly negative ($p < .01$) for the high heterogeneity group. This suggests that price promotion advertising volume is low when assortment perishability and heterogeneity are both low, and that price promotion advertising volume increases as assortment perishability increases if heterogeneity is low but that price promotion advertising volume actually decreases as assortment perishability increases if heterogeneity is high.

H3b, which predicted a negative relationship between retailer differentiation and price promotion advertising volume, is not supported. The Model 3 results offer support for the predictions that price promotion advertising volume is positively related to number of stores (H4b; $p < .05$) and to average store size (H5b; $p < .01$). These results suggest that firms with fewer, smaller stores are less likely to promote their prices than are firms with a greater number of larger stores.

Average depth of discount

The results with average depth of discount as the dependent variable, presented in the last set of three numerical columns in Table 1, offer strong support for H2a(iii) and H2b(iii). Specifically, the addition of the interaction variable and the direct effect for heterogeneity both improve model fit ($p < .01$); the direct effect of heterogeneity is significantly positive ($p < .01$) and the interaction coefficient is significantly negative ($p < .01$). H1c, which predicted that perishability would be positively associated with average depth of discount, also is supported ($p < .01$). Splitting the sample into low and high heterogeneity groups indicated that the perishability coefficient was significantly positive ($p < .05$) for both the low and high heterogeneity groups, which suggests that depth of discount is low when assortment perishability and heterogeneity are both low, and that depth of discount increases as assortment perishability increases but that the rate of increase is lower if heterogeneity is high than if heterogeneity is low.

H3c, which predicted a positive relationship between retailer differentiation and average depth of discount, is not supported. H4c, which predicted a negative association between number of stores and average depth of discount, is supported ($p < .05$), as is H5c, which predicted a negative association between store size and average depth of discount ($p < .01$). Thus, firms with fewer, smaller stores tend to offer deeper discounts than do firms with a greater number of larger stores.

Marketplace variations

Although this research did not explicitly examine the effect of local marketplace conditions on price promotion decisions, the significant market (firm) random intercept term for each of the dependent variables in Table 1 indicates that price promotion activity did vary significantly within firms across markets. To further explore the relative size of these effects, we conducted a nested analysis of variance (ANOVA) with price promotion activity as dependent variables and sector, firm, and market as class variables. This analysis indicated that with price variation as the dependent variable, sector explained 36% of the variance, firm explained 18% of the variance, and market explained 18% of variance; with price promotion advertising volume as the dependent variable, sector explained 34% of the variance, firm explained 27% of the variance, and market explained 33% of variance; and with average depth of discount as the dependent variable, sector explained 15% of the variance, firm explained 36% of the variance, and market explained 19% of variance. While this analysis supports the role of local marketplace conditions in explaining price promotion activity (especially price promotion advertising volume), it also underscores the relative importance of sector and firm characteristics in explaining price promotion strategy.

Discussion

Summarizing the results (Table 2), we found support for the expected moderating role of assortment heterogeneity in all three analyses, although the nonsignificant direct

Table 2
Summary of results

Independent variables	Dependent variables		
	Price variation	Price promotion advertising volume	Average depth of discount
Assortment perishability	Positive effect H1a supported	Positive effect H1b supported	Positive effect H1c supported
Assortment heterogeneity	Positive effect H2a(i) supported	No effect H2a(ii) not supported	Positive effect H2a(iii) supported
Perishability × heterogeneity	Negative interaction H2b(I) supported	Negative interaction H2b(ii) supported	Negative interaction H2b(iii) supported
Retailer differentiation	No effect H3a not supported	No effect H3b not supported	No effect H3c not supported
Number of stores	No effect H4a not supported	Positive effect H4b supported	Negative effect H4c supported
Average store size	Negative effect H5a supported	Positive effect H5b supported	Negative effect H5c supported

relationship between assortment heterogeneity and price promotion advertising volume indicates that the relationship is not the same in all three cases. These sector-level results point to systematic differences in price variation, price promotion advertising volume, and average depth of promotional discount, related to assortment perishability and the moderating effect of assortment heterogeneity. The results also offer a plausible explanation as to why a dominant approach to price promotion strategy exists in many retail sectors, with more apparent differences across sectors.

We found no support for the prediction that retailer differentiation would be related to price promotion strategy. We found consistent support for our predictions that store size would be associated with greater price promotion advertising volume and less price variation and average depth of discount. There was mixed support for the predictions that a larger number of stores would be positively associated with price promotion advertising volume (supported), negatively associated with price variation (not supported), and negatively associated with average depth of discount (supported). Collectively, the firm-level results confirm the important role that scale and scope economies play in price promotion decisions. We now explore the implications of these findings.

Research implications

Our findings offer new insights into the debate about the relative advantages of stable versus variable price promotion strategies. The key implication is that the advantages of stable or promotional pricing likely are limited to certain retail sectors. Thus, empirical studies demonstrating that EDLP is not profit-maximizing in the grocery industry, for example, may not be generalizable to other retail sectors. In-depth studies examining the office supply sector, the discount sector, or the fashion sector may lead to significantly different conclusions.

Our results elucidate the relationship between price promotion strategy and assortment perishability and heterogeneity. Although the independent effects of these two variables have been suggested before in the literature, to our knowledge this is the first study to examine, conceptually or empirically, a moderating role for assortment heterogeneity. Particularly interesting are the findings that when heterogeneity is high, perishability had no effect on price variation, a negative effect on price promotion advertising volume, and a positive effect on average depth of discount. These findings are consistent with our expectation that retailers in high-perishability, high-heterogeneity sectors spurn price promotion messages that dilute their image of exclusivity. When these companies engage in price promotion, they do so in a limited manner, offering deep discounts on presumably obsolete models or fashions.

The fact that heterogeneity exerted a direct, positive effect (in addition to a moderator effect) on price variation and average depth of discount but not on price promotion advertising volume also is worth noting. This suggests that in sectors marked by high assortment heterogeneity, competitors do not focus their promotion efforts on price-based advertisements. This finding is counter to our prediction, but it does make some intuitive sense. Facing less pressure to compete on price, competitors in heterogeneous sectors may be better served by advertising that emphasizes the distinctiveness of their assortment rather than their prices. When prices are advertised, however, our results indicate that they feature heavy discounts, apparently designed to generate traffic and enhance promotional attractiveness.

Additional research is needed to explore why cost advantages associated with economies of scope and, to a lesser extent, economies of scale were related to price promotion strategy but retailer differentiation was not. It appears that retailers implementing a cost leadership strategy embrace the complementary cost efficiencies that stable pricing provides, but that retailers adopting a differentiation strategy

do not demonstrate any consistency with respect to price promotion. Perhaps the differentiated retailers in our sample failed to fully recognize the benefits of their advantageous position. Or, perhaps price promotion strategies implemented by retailers pursuing differentiation are more vulnerable to competitive forces than are the strategies of cost leaders; in other words, whereas cost leadership can insulate a retailer from the vagaries of constant price promotion, differentiation cannot.

Understanding why retailers adopt strategies that involve different approaches to price promotion is an important first step toward explaining the relationship between price promotion and firm performance. The hypotheses examined in this study are based on normative assumptions; that is, managers should use the level of price promotion that is optimal given the sector and firm characteristics that apply. By extension, the findings imply that the retail sector and firm characteristics investigated here should moderate the relationship between price promotion strategy and firm performance. For example, the relationship is likely nonpositive for retailers operating in sectors that feature low or high levels of both assortment heterogeneity and perishability but likely positive for retailers operating in sectors that feature high levels of perishability and low levels of heterogeneity. Further research should examine whether these and other sector and firm characteristics moderate the link between retail price promotion strategy and firm performance.

Managerial implications

Our framework and findings can be used to understand how retail managers can challenge and break away from pricing norms. For example, the electronics sector carries relatively homogeneous assortments that exhibit high levels of perishability; consistent with our expectations, these retailers generally use heavy price promotion to reinforce their "value" orientation. However, differences in strategies also are evident within the sector: Tandy and CompUSA have significantly higher price variation and average depth of discount and lower price promotion advertising volume, whereas Best Buy and Circuit City have significantly higher price promotion advertising volume and lower price variation and average depth of discount (Table A.1). One plausible explanation for this divergence is a different level of assortment perishability for these two subgroups. Tandy and CompUSA sell computer and electronics products almost exclusively, whereas Best Buy and Circuit City, in addition to electronics, carry small and large household appliances, which are considerably less perishable and therefore require less price promotion activity. This suggests that effective alignment of firm-level goals and price promotion strategy may require shifts in product assortments.

Our framework may be especially useful when applied to hybrid sectors such as supermarkets and traditional department stores. These sectors exhibit moderate levels of overall assortment heterogeneity and perishability and high promotional activity (Table A.1). Their broad product assortments include a variety of items, ranging from low to high in both perishability and heterogeneity. For example, supermarkets offer national (manufacturer) brand packaged goods, store-brand packaged goods, and perishable items in the deli, seafood, and bakery departments. Similarly, traditional department stores offer basic, commodity-type soft goods, store-brand apparel, and designer apparel items that follow fashion seasons. Because their assortments include many product categories that are not strongly differentiated, these retailers face intense competition. The perishable product categories encourage price promotions that attract customers and move obsolescent inventory. Thus, although stable pricing has attracted keen attention from retailers in these sectors, our findings suggest that highly promotional strategies may be more effective.

In the traditional department store sector, Dillard's has deviated from the norm by moving toward an *everyday fair pricing strategy*. Dillard's is likely to struggle with this positioning (as Sears did in the past) unless it can increase the perishability and/or differentiation of its offering relative to its competitors by improving service, increasing the percentage of high-quality, private-label fashions, or enhancing atmospherics. Ultimately, this type of strategic shift would challenge mobility barriers and place Dillard's in more direct competition with fashion department stores, which typically demonstrate lower levels of price promotion. A strategic shift also may occur in the supermarket sector as Wal-Mart moves the sector towards supercenters that carry a larger proportion of homogeneous, nonperishable products.

This post hoc analysis suggests that within-sector variations in price promotion strategy may be linked to assortment differences in rather complex ways. We conceptualized and made assortment perishability operational at the sector level, but differences across retailers within a single sector (such as those in the consumer electronics sector) also may drive within-sector variation. A retailer adopting a price promotion strategy that is not consistent with sector characteristics may be successful by altering the heterogeneity and perishability of its product assortment (e.g., Best Buy and Circuit City offering stable household appliances; Wal-Mart supercenters increasing the proportion of nonperishable goods), which ultimately may redefine sector-level conditions. This implies a bi-directional or reciprocal relationship between structure and conduct. Thus, while our results offer support for the traditional perspective that industry structure affects firm conduct, the results also intimate that successful firm conduct ultimately can alter industry structure.

Limitations

This study forges a new direction for price promotion research, but it is not without limitations. Although

newspapers are the preferred medium for promoting prices (Abernethy & Franke, 1996), newspaper advertising does not capture the full scope of retail price promotion activity. The failure to capture in-store and direct mail promotions, for example, is a limitation of the current study. In addition, our sample of newspapers, which included only major newspapers in major markets, could bias the results if retailers implement different price promotion campaigns across different types of newspapers.

Our characterization of price promotion strategy as consisting of three dimensions may not be comprehensive. For example, although the idea of promotion frequency is implicitly captured in the price promotion advertising volume measure, a more explicit examination of promotion frequency may be informative. Our sample of sectors and firms was limited, and it may have been preferable to develop objective measures of assortment perishability and assortment heterogeneity rather than subjective, expert assessments. Finally, the lack of significant findings for the retailer differentiation variable may be attributable to the implementation, which captured the intensity of investment in service personnel and store atmospherics but did not capture other value dimensions such as product superiority.

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Appendix A

This appendix provides measurement details, including firm and sector scores for the variables of interest, a summary of the advertisement coding, and a description of the hierarchical linear model specification.

Model specification

The hierarchical linear model can partition variance in the dependent variable on the basis of sector, firm, and marketplace effects (see Bryk and Raudenbush (1992) for additional details on specifying fixed and random effects in hierarchical models). At level one (i.e., the geographic marketplace) the dependent variable is determined by (1) an intercept that represents the mean value for firm j in sector k (β_{0jk}), (2) a series of random deviations from the sector-firm mean that capture marketplace variations for each firm (u_{ijk}), and (3) a random error term (r_{ijk}):

$$Y_{ijk(t=1-3)} = \beta_{0jk} + u_{ijk} + r_{ijk} \tag{A.1}$$

where Y_{ijk} is the price promotion strategy in market i for firm j in sector k; β_{0jk} the mean price promotion strategy level for firm j in sector k; $u_{ijk} \sim N(0, \tau_{ijk})$, and $r_{ijk} \sim N(0, \Sigma)$.

At level two, the sector-firm intercept (β_{0jk}) is determined by a conditional model that includes (1) a sector-level mean (γ_{00k}), and (2) firm-level (j) independent variables:

$$\beta_{0jk} = \gamma_{00k} + \gamma_{01k}\mathrm{RD}_{0jk} + \gamma_{02k}\mathrm{SS}_{0jk} + \gamma_{03k}\mathrm{NS}_{0jk} \tag{A.2}$$

where γ_{00k} is the mean price promotion strategy level in sector k; RD denotes the retailer differentiation strategy; SS is the store size; and NS is the number of stores.

At level three, the sector-level intercepts (γ_{00k}) are determined by a conditional model that includes the sector-level independent variables and interactions.

$$\gamma_{00k} = \gamma_{001}\mathrm{AH}_k + \gamma_{002}\mathrm{AP}_k + \gamma_{003}\mathrm{AH}_k \times \mathrm{AP}_k + u_{00k} \tag{A.3}$$

where AH is the assortment heterogeneity and; AP is the assortment perishability.

Prior to substituting the level-three equation into the level-two equation, we centered the firm-level independent variables around the sector means; this process partitions the sector- and firm-level effects that are captured in the firm-level measure and produces the following model:

$$\begin{aligned} Y_{ijk} = {} & \gamma_{001}\mathrm{AH}_k + \gamma_{002}\mathrm{AP}_k + \gamma_{003}\mathrm{AH}_k \times \mathrm{AP}_k + \gamma_{01k}\mathrm{RD}_{0jk} \\ & + \gamma_{02k}(\mathrm{SS}_{0jk} - \overline{\mathrm{SS}}_k) + \gamma_{03k}(\mathrm{NS}_{0jk} - \overline{\mathrm{NS}}_k) \end{aligned} \tag{A.4}$$

which specifies that firm price promotion strategy is a function of (1) fixed sector-level effects (captured in line one), (2) fixed firm-level effects (captured in line two), (3) random marketplace effects (u_{ijk} in line three), and (4) a random error term (r_{ijk}). The random marketplace effect allows the intercept to vary across markets by firm. This term is labeled "Market (firm) random intercept effects" in Table 1.

Table A.1
Retail sector means and firm scores for variables of interest

Retail sectors and firms	Price variation		Price promotion advertising volume		Average depth of discount		Assortment perishability	Assortment heterogeneity	Retailer differentiation (standardized)	Store size[b]	No. of stores[b]
	Mean	Grouping[a]	Mean	Grouping[a]	Mean	Grouping[a]					
Traditional department stores	0.83	A	63.3	A	0.29	A	3.25	2.50	−1.01	11.66	6.48
Macy's	0.86	1	44.2	2	0.34	1/2			−0.82	12.22	5.99
JC Penney	0.94	1	38.2	2	0.30	2			−0.57	11.50	7.09
Sears	0.86	1	122.8	1	0.22	3			−0.65	10.81	7.96
Montgomery Ward	0.71	1	23.1	2	0.30	2			−2.31	11.78	5.71
Dillard's	0.54	2	49.0	2	0.40	1			−0.70	11.99	5.60
Discount stores	0.78	A	54.7	A	0.22	A	2.12	2.13	−1.08	11.26	7.09
Service Merchandise	0.92	1	16.1	3	0.44	1			−1.41	10.82	5.89
Target	0.92	1	66.5	1	0.18	2			−1.17	11.60	6.68
Kmart	0.74	2	66.5	1	0.18	2			−1.02	11.17	7.67
Wal-Mart	0.21	3	32.0	2	0.18	2			−0.72	11.43	8.13
Grocery stores	0.85	A	12.4	C/D	0.32	A	2.43	2.63	0.96	10.56	6.49
Food Lion	0.98	1	2.2	3	0.25	1			−0.44	10.35	7.05
Kroger	0.90	1	25.7	1	0.38	1			0.20	10.90	7.24
Albertson's	0.68	1	5.2	1/2	0.24	1			−0.22	10.79	6.78
Winn Dixie	0.57	1	5.8	1/2	0.30	1			0.50	10.66	7.06
Whole Foods	1.00	1	0.3	3	0.40	1			4.75	10.09	4.33
Furniture stores	0.78	A	4.1	C/D/E	0.24	A	1.62	3.63	−0.32	9.51	5.49
Bombay Company	0.88	1	5.3	2	0.24	1			−0.08	8.01	6.03
Ethan Allen	0.88	1	0.5	2	0.23	1			3.07	9.62	4.22
Heilig Meyers	0.72	1	3.0	2	0.32	1			−2.40	10.00	7.13
Haverty's	0.33	2	12.4	1	0.05	2			−1.86	10.39	4.58
Fashion department stores	0.79	A	1.5	D/E	0.31	A	4.25	3.00	0.97	11.56	4.27
Nordstrom's	0.73	1	3.4	1	0.29	1			1.71	11.83	4.53
Neiman Marcus	1.00	1	0.8	2	0.33	1			1.31	11.72	3.71
Saks Fifth Avenue	0.63	1	1.0	2	0.30	1			−0.11	11.13	4.58
Off-price stores	0.55	B	1.6	D/E	0.28	A	3.87	3.50	−1.27	9.80	6.02
Men's Warehouse	1.00	1	0.8	1	0.60	1			−0.06	8.54	5.98
Steinmart	0.74	1/2	2.4	1	0.33	2			−2.02	10.55	5.02
TJMaxx	0.13	2	1.2	1	0.08	3			−1.74	10.31	7.07
Specialty clothing	0.43	B/C	1.1	D/E	0.25	A	4.12	4.00	3.48	8.51	6.61
Talbot's	0.56	1	0.9	1	0.45	1			4.26	8.01	6.40
The Gap	0.47	1	1.8	1	0.10	1			3.87	8.88	7.66
Ann Taylor	0.00	1	0.5	1	0.00	1			2.31	8.63	5.78
Electronics stores	0.47	B/C	42.4	B	0.22	A	3.25	2.25	1.25	9.56	6.40
Tandy	0.71	1	9.8	3	0.35	1			0.88	7.76	8.51
CompUSA	0.56	1	14.9	3	0.26	2			0.65	10.22	5.09
Circuit City	0.31	2	65.8	2	0.13	3			3.50	9.60	6.33
Best Buy	0.26	2	76.5	1	0.16	3			−0.05	10.67	5.65

Table A.1 (*Continued*)

Retail sectors and firms	Price variation		Price promotion advertising volume		Average depth of discount		Assortment perishability	Assortment heterogeneity	Retailer differentiation (standardized)	Store size[b]	No. of stores[b]
	Mean	Grouping[a]	Mean	Grouping[a]	Mean	Grouping[a]					
Office supply stores	0.31	C/D	14.2	C	0.21	A	1.75	1.88	−1.13	9.97	6.53
Staples	0.54	1	12.8	1	0.26	1			−0.98	9.62	6.61
OfficeMax	0.28	2	17.6	1	0.20	1			−1.57	10.06	6.57
Office Depot	0.22	2	11.8	1	0.20	1			−0.83	10.22	6.40
Home improvement stores	0.15	D/E	6.4	C/D/E	0.09	B	1.37	2.63	−1.13	11.44	6.27
Lowes	0.28	1	3.4	1	0.17	1			−0.81	11.31	6.10
Home Depot	0.10	1	7.3	1	0.06	1			−1.45	11.57	6.44
Book stores	0.00	E	0.4	E	0.00	B	2.25	2.25	−0.15	9.22	6.98
Barnes and Noble	0.00	1	0.8	1	0.00	1			−0.60	9.45	6.92
Borders	0.00	1	0.0	1	N/A	N/A			0.30	8.99	7.03

[a] Groupings are based on Duncan multiple-range tests. Sectors with different grouping letters are significantly ($p < .05$) different from one another, and firms within sectors that have different grouping numbers are significantly different from one another. N/A indicates firms that either offered no price promotion or provided no details on the depth of discounts.

[b] Store size and number of store values are log transformations.

Table A.2
Details on advertisement coding and reliability checks

Price promotion measures	Overall sample	Reliability checks	
	Total number of pages of advertisements coded and average price variation and depth of discount	Total number of pages of advertisements subjected to reliability checks and average price variation and depth of discount	Interrater agreement (correlations)
Temporary price promotion advertising volume	5090	940	.98
Positional price promotion advertising volume	2604	468	.97
Total price promotion advertising volume	7694	1408	.98
Total advertising volume	8030	1438	.99
Average price variation (%)[a]	56	57	.89
Average depth of discount (%)[a]	24	25	.78

[a] Price variation and depth of discount represent average monthly observations.

References

Abernethy, Avery M., & Franke, George R. (1996). The information content of advertising: A meta-analysis. *Journal of Advertising*, *25*(Summer), 1–17.

Albert, M. B., Avery, D., Narin, F., & McAllister, P. (1991). Direct validation of citation counts as indicators of industrially important patents. *Research Policy*, *20*(3), 251–259.

Arnold, Harvey J. (1982). Moderator variables: A clarification of conceptual, analytic, and psychometric issues. *Organizational Behavior and Human Performance*, *29*(April), 143–174.

Bain, J. S. (1968). *Industrial organization*. New York: Wiley.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*, 771–792.

Bhattacharjee, Sudip, & Ramesh, R. (2000). A multi-period profit maximizing model for retail supply chain management: An integration of demand and supply-side mechanisms. *European Journal of Operational Research*, *122*(3), 584–601.

Bell, David R., & Lattin, James M. (1998). Shopping behavior and consumer preference for store price format: Why 'large basket' shoppers prefer EDLP. *Marketing Science*, *17*(1), 66–88.

Blattberg, Robert C., Briesch, Richard, & Fox, Edward J. (1995). How promotions work. *Marketing Science*, *14*(3), G122–G132.

Bryk, Anthony S., & Raudenbush, Stephen W. (1992). *Hierarchical linear modeling*. Newbury Park, CA: Sage Publications.

Chamberlin, Edward H. (1965). *The theory of monopolistic competition*. Cambridge, MA: Harvard University Press.

Competitive Media Reporting. (1998). *Multimedia service: Leading national advertisers*. New York: Competitive Media Reporting.

Dickson, Peter R. (1992). Toward a general theory of competitive rationality. *Journal of Marketing*, *56*(January), 69–83.

Dickson, Peter R., & Urbany, Joel E. (1994). Retailer reactions to competitive price changes. *Journal of Retailing*, *70*(1), 1–21.

Ekelund, Robert B., Jr., & Hebert, Robert F. (1990). E.H Chamberlin and contemporary industrial organisation theory. *Journal of Economic Studies*, *17*(2), 20–31.

Hoch, Stephen J., Drèze, Xaxier, & Purk, Mary E. (1994). EDLP, hi-lo, and margin arithmetic. *Journal of Marketing*, *58*(October), 16–27.

Hoch, Stephen J., Kim, Byung-Do, Montgomery, Alan L., & Rossi, Peter E. (1995). Determinants of store-level price elasticity. *Journal of Marketing Research*, *32*(February), 17–29.

Kolbe, Richard H., & Burnett, Melissa S. (1991). Content-analysis research: An examination of applications with directives for improving research reliability and objectivity. *Journal of Consumer Research*, *18*(September), 243–250.

Krishna, Aradhna. (1994). The impact of dealing patterns on purchase behavior. *Marketing Science*, *13*(Fall), 351–373.

Kumar, V., & Leone, R. P. (1988). Measuring the effect of retail store promotions on brand and store substitution. *Journal of Marketing Research*, *25*(May), 178–185.

Kumar, V., & Pereira, Arun. (1995). Explaining variation in short-term sales response to retail price promotions. *Journal of the Academy of Marketing Science*, *23*(3), 155–170.

Kumar, V., & Pereira, Arun. (1997). Assessing the competitive impact of type, timing, frequency, and magnitude of retail promotions. *Journal of Business Research*, *40*(1), 1–13.

Lal, Rajiv, & Rao, Ram. (1997). Supermarket competition: The case of every day low pricing. *Marketing Science*, *16*(1), 60–80.

Mazursky, David, & Jacoby, J. (1986). Exploring the development of store images. *Journal of Retailing*, *62*(2), 145–165.

Mulhern, Francis J., & Leone, Robert P. (1991). Implicit price bundling of retail products: A multi-product approach to maximizing store profitability. *Journal of Marketing*, *55*(October), 63–76.

Narin, Francis, Noma, Elliot, & Perry, Ross. (1987). Patents as indicators of corporate technological strength. *Research Policy*, *16*(2/4), 143–155.

Ortmeyer, Gwen, Quelch, John A., & Salmon, Walter. (1991). Restoring credibility to retail pricing. *Sloan Management Review*, *33*, 55–66.

Papadopoulos, Socrates I. (1989). Strategy development and implementation of tourism marketing plans. *European Journal of Marketing*, *23*(3), 37–48.

Porter, M. E. (1980). *Competitive strategy*. New York: Free Press.

Rangan, V. Kasturi, Menezes Melvyn, A., & Maier, E. P. (1992). Channel selection for new industrial products: A framework, method, and application. *Journal of Marketing*, *56*(July), 69–83.

Robinson, Kenneth C., & McDougall, Patricia Phillips. (1998). The impact of alternative operationalizations of industry structural elements on measures of performance for entrepreneurial manufacturing ventures. *Strategic Management Journal*, *19*(11), 1079–1100.

Rumelt, Richard P. (1991). How much does industry matter? *Strategic Management Journal*, *12*(3), 167–186.

Sandberg, W. R. (1986). *New venture performance: The role of strategy and industry structure*. Lexington, MA: Lexington Books.

Segev, Eli. (1989). A systematic comparative analysis and synthesis of two businesses. *Strategic Management Journal*, *10*(5), 487–506.

Shankar, Venkatesh, & Bolton, Ruth N. (1999). *Dimensions and determinants of retailer pricing strategy and tactics*. Cambridge, MA: Marketing Science Institute.

Shankar, Venkatesh, & Krishnamurthi, Lakshman. (1996). Relating price sensitivity to retailer promotional variables and pricing policy: An empirical analysis. *Journal of Retailing*, *72*, 249–272.

Sharma, Subhash, Durand, Richard M., & Gur-Arie, Oded. (1981). Identification and analysis of moderator variables. *Journal of Marketing Research*, *18*, 291–300.

Stigler, George J. (1987). *The theory of price*. New York: Macmillan.

Sousa De Vasconcelos e Sa, Jorge A., & Hambrick, Donald. (1989). How to compete and communicate in mature industrial products. *European Journal of Marketing*, *23*(12), 53–72.

Tang, Christopher S., Bell, David R., & Ho, Teck-Hua. (2001). Store choice and shopping behavior: How price format works. *California Management Review*, *43*(2), 56–74.

Tellis, Gerald J. (1986). Beyond the many faces of price: An integration of pricing strategies. *Journal of Marketing*, *50*(October), 146–160.

Thomas, Jeffrey M., Staatz, John M., & Pierson, Thomas R. (1995). Analysis of grocery buying and selling practices among manufacturers and distributors: Implications for industry structure and performance. *Agribusiness*, *11*(6), 537–551.

Weatherford, Lawrence R., & Bodily, Samuel E. (1992). A taxonomy and research overview of perishable-asset revenue. *Operations Research*. *40*(5), 831–845.

Willard, G. E., & Cooper, A. C. (1985). Survivors of industry shake-outs: The case of the U.S. color television set industry. *Strategic Management Journal*, *6*(4), 299–318.

Everyday prices

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This is Exhibit J referred to in the affidavit of JOHN O. WINTER sworn before me, this 19th day of SEPTEMBER 20 03
A COMMISSIONER FOR TAKING AFFIDAVITS

Abstract:
*Although the Every Day Low Pricing (**EDLP**) strategy has been successfully implemented by sporting goods megastores chains, retail experts are still debating whether the strategy will be to overcome the power of **Hi/Lo** or event-driven pricing, which has typically worked in the sporting goods business. A major reason that retailers adopt **EDLP** is for increased earnings. Retailers that properly execute **EDLP** have a fair shot at success; however, setting up the right infrastructure to make this strategy work is complicated. Perhaps the most crucial point for **EDLP** retailers is actually having legitimately low prices. One of the major advantages of **EDLP** is that it lowers operating costs for retailers, with advertising being the primary area where savings are made. But since many consumers are still driven, lack of advertising can be a problem for stores using **EDLP**. Customer loyalty is another often-named benefit of **EDLP**, but consumer loyalty can backfire on an **EDLP** retailer if a customer perceives the **EDLP** price as too high.*

Full Text:

Sears and Montgomery Ward decided it didn't work. Toys 'R' Us and ©Wal-Mart swear by it. "It" is Every Day Low Pricing (EDLP), a strategy where retailers guarantee customers that their prices are the lowest without special sales events. The question is, will it work long-term in the sporting goods industry?

EDLP has been successfully implemented by several of the industry's leading megastore chains, including The Sports Authority, Sportmart, SportsTown and Sports Unlimited. But retail experts are still debating whether the strategy will be able to overcome the power of "Hi/Lo" or event-driven pricing, which has typically worked in the sporting goods business.

While most analysts admit that the EDLP strategy has worked for ⓘWal-Mart and other mass merchants, they claim it may backfire on the impulse-driven sports audience. "Unlike consumer products, sporting goods do not have a broad range of customers. Everyone needs dishwasher detergent or toothpaste, so the competition at mass merchants and the various channels of distribution that carry these products is much more heated," says Jon Amsler, director, athletic leisure market, for Atlanta-based Kurt Salmon Associates.

Since people are constantly needing to replenish their stash of consumable products, it is quite likely that they would frequent stores like ⓘWal-Mart almost everyday, which serves to reinforce its EDLP policy. This is not the case with sporting goods. "People are not going to shop for sporting goods on a daily basis, so an EDLP pricing policy will have less of an impact (in this industry)," explains Howard Davidowitz, chairman, New York-based Davidowitz & Associates.

"Let's face it, a Spalding basketball is not a necessity," adds Amsler. "In many ways, sporting goods are luxury items. They are impulse or luxury buys, so low prices are not necessarily a high priority."

And with less and less time to shop, things like service, value, convenience and expertise of sales staff are becoming increasingly important factors that drive consumer purchases, particularly when spending a significant amount of money. These factors have traditionally been the trump card of specialty stores, although more EDLP stores are competing on these levels, as well.

Another point to keep in mind when assessing pricing strategies in the sporting goods industry is that most consumers don't know what things should cost. An avid golfer may know how much golf tees and balls cost, but does he or she know how much to pay for gloves or a shirt? George Whalin, president of San Marcos, CA-based Retail Management Consultants (RMC) thinks not. "Take shoes, for example: There are so many styles and SKUs, how can anyone know the prices? It's not like buying a tube of toothpaste or shampoo. Those are real simple. Sporting goods aren't so simple."

LAYING THE GROUNDWORK

Analysts say the success of retailers like ⓘWal-Mart, Toys 'R' Us and ⓘHome Depot helped to proliferate the EDLP strategy, which took hold in the late '80s. However, they differ on its long-term chances for success. "EDLP is a value concept and it's not going to go away. It's a way of life that's going to be around for a long time. And with few exceptions, there is not a segment of retail that hasn't been touched by it," says Whalin.

On the other hand, Carl Steidtmann, director of research at Management Horizons, a division of Price Waterhouse, believes EDLP will become extinct because so few retailers have the resources and infrastructure to successfully operate in this paradigm.

Nearly all analysts agree, however, that the only cases where EDLP will succeed is with large box chain retailers. Experts are quick to point out that it's very difficult to use EDLP unless you're a very big store, because a significant increase in volume is necessary to make up for lower profit margins.

Another reason EDLP is virtually exclusive to the "big boys" is because of the buying power they wield and their ability to get the best prices from vendors. "ⓘWal-Mart is a success because it has the best buyers in retail. They are very aggressive and make great demands on vendors," says RMC's Whalin. Likewise, The Sports Authority has key arrangements with manufacturers that allows it to get the best prices, adds Amsler. Clearly, mom-and-pop shops, smaller chains and independents don't have the clout to get the same deals.

"The main advantage of EDLP is that customers are driven by value, and today people have fewer dollars to spend on disposable income," says Amsler.

However, this obsession with finding the best price works for Hi/Lo retailers, as well. "Consumers love a deal and Hi/Lo retailers can give better deals on certain products because they can make up the margin on other products," explains Davidowitz.

DOWN TO DETAILS

There are many reasons retailers adopt EDLP, but dreams of increased earnings probably top the list. While it's unrealistic to expect riches of Waltonian proportions, retailers that properly execute EDLP have a fair shot at success. The catch? While the basic premise of EDLP is simple, setting up the right infrastructure to make this strategy work is a lot more complicated then just slashing prices. Perhaps the most crucial point for EDLP retailers is actually having legitimately low prices. If a store breaks this "Golden Rule," it loses credibility with consumers, analysts stress.

One of the major advantages of EDLP is that it lowers operating costs for retailers. Advertising is the primary area where savings are made. "With EDLP, retailers don't need to continuously create new ads to highlight weekly sales and promotions. So they all save on things like re-ticketing, returns, etc.," says Paul Koenigsberg director, retail marketing strategy of New York-based Deloitte & Touche.

But since many consumers are still driven, this can be an advantage for Hi/Lo retailers, most of which spend mega-dollars on advertising. EDLP retailers continue to advertise, but they tend to utilize alternative, less-costly forms than specialty stores. "Billboards are used a lot because messages don't need to be changed often," says Koenigsberg. For example, generic copy touting specific brands and locations of headquarter stores are ideal. "Sports Unlimited is particularly adept at using these types of vehicles," he says.

FREQUENT FLIERS

Customer loyalty is another often-named benefit of EDLP. Once a retailer proves to the consumer that it consistently carries the lowest prices in town, that customer will return time and again. "An avid tennis player, for example, who knows that The Sports Authority has the best price on balls will keep going back to that store for balls," explains Amsler.

However, consumer loyalty can backfire on an EDLP retailer if a customer perceives the EDLP price as too high to begin with. Another problem: Many EDLP retailers still periodically run sales. "This appears to be one of the cracks in the EDLP armor," says RMC's Whalin. Unless the retailer makes it clear that it's getting rid of end-of-season goods, bad buys or discontinued styles, it will undermine its credibility with shoppers."

Not only do retailers have to be careful about the promotions they run, they need to be cognizant of what other stores are doing, analysts point out. After all, sales events are the lifeblood of many of their competitors.

According to Koenigsberg, though, the lowest expected price doesn't always win the prize--a consumer purchase. "If a customer is looking for skis, for example, he knows he's going to be making a purchase of several hundred dollars. He goes to Herman's, and the skis are $500. He goes to Sports Unlimited, and the same skis are $400, yet he knows that eventually the skis will go on sale for $350 at Herman's. What does he do? Chances are he'll go for the $400 skis at Sports Unlimited because he doesn't wants to pay full price and he wants the skis immediately."

The last thing an EDLP retailer wants to do is get into a bidding war with specialty stores, however. "That's why an EDLP retailer better have staying power. You can't avoid price wars, but you can try to minimize them by not playing the game," says Amsler of Kurt Salmon. In an effort to deal with price wars that are inevitably waged, virtually all EDLP retailers match prices.

There's no doubt that EDLP stores lose an edge from a lack of sales events. However, their breadth of assortment can go a long way. "The Sports Authority has a good mix of middle-of-the-road merchandise. They never used to carry brands like ⓘNike because they were considered a discounter, but that has all changed. And Sports Unlimited is probably the most serious challenge to Herman's or Oshman's because its stores are set up as a series a specialty stores. They carry all the brands and have very knowledgeable staff," says Deloitte & Touche's Koenigsberg. He added that unless specialty stores come up with set reasons for shoppers to frequent the they will lose business.

"Herman's and Oshmans should be very afraid of these EDLP retailers because they [the Hi/Lo retailers] are tied into more costly real estate, their labor is more expensive and they're not consistently offering anything the Sportmarts don't offer," adds Koenigsberg.

Most analysts agree that Hi/Lo retailers need to offer special services and unique merchandise in order to

succeed. But they also believe that if they keep up with the times and provide consumers with what they want, they'll be around to give EDLP stores a run for their money. Only time--and the consumer--will tell.

Exhibit "K"

STRUCTURE OF THE RETAIL TIRE AFTERMARKET, CANADA, MID- TO LATE 1990s

Retail Store Type	*Notes*	National Share of 1996 Purchases		Variations by Province, 1996	Estimated Number of 1999 Outlets	Sources of Number Estimates
Tire Stores		35.0%		Share higher Prairies, BC	2,510	Telephone CD
Goodyear/Fountain			6.6%		193	Telephone CD and *Sears*
Firestone			2.5%		80	*Sears* documentation
OK Tire			1.0%		125	Telephone CD
All others tire stores			24.9%		2,112	Subtraction from above
Canadian Tire	*A*	15.8%		Share higher Mar, Ontario	430	*Sears* documentation
Department Stores		11.0%		Share higher Mar, Prairies, BC		Some *K-Mart/Zellers* had facilities
Sears Auto Centre			6.5%	Share higher Mar, Prairies, BC	67	Competition Bureau, Notice, page 5
Wal-Mart Tire & Lube Express	*B*		2.5%	Share higher Mar, Prairies	109	Telephone CD
Independent Repair Shop		10.6%		Share higher PQ, Ontario	1,590	Telephone CD
New Car Dealers		6.3%		Share higher Mar, PQ	2,658	*Sears* documentation
Service Stations		6.3%		Share higher Mar	5,686	Stats Can Retail Chain Info.
Don't Know Retail Type	*C*	4.3%				
Muffler/Brake Repairs		4.1%		Share higher Prairies	637	*Sears* documentation
Warehouse Clubs		3.9%		Share higher Prairies, BC	50	Telephone CD
All Other Outlets	*D*	2.7%			405	Est. based on Indep Repair Shop %
Total		100.0%			14,142	

Notes:

A. Internal Sears *documents suggest somewhat higher share, 21.9% in 1999.*
B. Two years after purchase of Woolco. *Share higher now.* Sears *thinks it may be 5.4% in 1999, two percentage points lower than* Sears.
C. Does not include don't knows (of store name) under various store types.
D. Includes cross-border shopping, auto parts, junkyard, auto glass, and other.

Source: Des Rosiers Automotive Consultants Tire Market Study, released August 1996.
There is a range of estimate/error around each share quoted.

This is Exhibit "K" referred to in the affidavit of JOHN D. WINTER sworn before me, this 19th day of SEPTEMBER 20 02

A COMMISSIONER FOR TAKING AFFIDAVITS

This is Exhibit "L" referred to in the
affidavit of JOHN O. WINTER
sworn before me, this 19th
day of SEPTEMBER 2005

A COMMISSIONER FOR TAKING AFFIDAVITS

The Voice of Authority

Merriam Webster's Collegiate® Dictionary

TENTH EDITION

America's foremost dictionary publisher continues its 150-year tradition of excellence with this new edition of America's best-selling dictionary.

form on a roller or on wheels or casters for moving heavy objects **b** : a wheeled platform for a television or motion-picture camera

²dolly *vb* **dol·lied; dol·ly·ing** *vt* (1878) 1 : to treat with a dolly 2 : to move or convey on a dolly ~ *vi* : to move a motion-picture or television camera about on a dolly while shooting a scene; *also, of a camera* : to be moved on a dolly

dol·ly bird \'dä-lē-ˌbərd, 'dō-lē-\ *n* (1964) *Brit* : a pretty young woman

dolly shot *n* (1933) : TRACKING SHOT

Dol·ly Var·den trout \ˌdä-lē-'vär-d'n-\ *n* [*Dolly Varden*, gaily dressed coquette in *Barnaby Rudge* (1841), novel by Charles Dickens] (ca. 1876) : a large char (*Salvelinus malma*) widespread in streams of western No. America and Japan as well as in coastal salt waters — called also *Dolly Varden*

dol·ma \'dōl-'mä, 'dōl-mə, 'däl-\ *n, pl* **dolmas** *or* **dol·ma·des** \dōl-'mä-(ˌ)thēz, dōl-, däl-\ [Turk, lit., something stuffed] (ca. 1889) : a stuffed grape leaf or vegetable shell

dolman sleeve *n* [F *dolman* coat with dolman sleeves, fr. G *Dolman* or Hung *dolmány*, fr. Turk *dolama*, a Turkish robe] (1934) : a sleeve very wide at the armhole and tight at the wrist often cut in one piece with the bodice

dol·men \'dōl-mən, 'dōl-, 'däl-\ *n* [F, fr. Bret *tolmen*, fr. *tol* table + *men* stone] (1859) : a prehistoric monument of two or more upright stones supporting a horizontal stone slab found esp. in Britain and France and thought to be a tomb

dolmen

do·lo·mite \'dō-lə-ˌmīt, 'dä-\ *n* [F, fr. Déodat de *Dolomieu* †1801 Fr. geologist] (1794) 1 : a mineral $CaMg(CO_3)_2$ consisting of a calcium magnesium carbonate found in crystals and in extensive beds as a compact limestone 2 : a limestone or marble rich in magnesium carbonate — **do·lo·mit·ic** \ˌdō-lə-'mi-tik, ˌdä-\ *adj*

do·lo·mi·ti·za·tion \ˌdō-lə-mə-tə-'zā-shən, ˌdä-, -ˌmī-\ *n* (1862) : the process of converting into dolomite — **do·lo·mi·tize** \'dō-lə-mə-ˌtīz, 'dä-\ *vt*

do·lor \'dō-lər *also* 'dä-\ *n* [ME *dolour*, fr. MF, fr. L *dolor* pain, grief, fr. *dolēre* to feel pain, grieve] (14c) : mental suffering or anguish : SORROW

do·lor·ous \'dō-lə-rəs *also* 'dä-\ *adj* (15c) : causing, marked by, or expressing misery or grief — **do·lor·ous·ly** *adv* — **do·lor·ous·ness** *n*

do·lour *chiefly Brit var of* DOLOR

dol·phin \'däl-fən, 'dōl-\ *n* [ME, fr. MF *dophin, daufin*, fr. OF *dalfin*, fr. OProv, fr. ML *dalfinus*, alter. of L *delphinus*, fr. Gk *delphin-, delphis*; akin to Gk *delphys* womb, Skt *garbha*] (14c) 1 **a** : any of various small toothed whales (family Delphinidae) with the snout more or less elongated into a beak and the neck vertebrae partially fused **b** : PORPOISE 1 2 : either of two active pelagic bony food fishes (genus *Coryphaena* of the family Coryphaenidae) of tropical and temperate seas that are used for food — called also *dolphinfish* 3 *cap* : DELPHINUS 4 : a spar or buoy for mooring boats; *also* : a cluster of closely driven piles used as a fender for a dock or as a mooring or guide for boats

dolphin striker *n* (1833) : a vertical spar under the end of the bowsprit of a sailboat to extend and support the martingale

dolt \'dōlt\ *n* [prob. akin to OE *dol* foolish] (1553) : a stupid person — **dolt·ish** \'dōl-tish\ *adj* — **dolt·ish·ly** *adv* — **dolt·ish·ness** *n*

Dom [L *dominus* master] (1716) 1 \'däm\ — used as a title for some monks and canons regular 2 \'dōm\ — used as a title prefixed to the Christian name of a Portuguese or Brazilian man of rank

-dom \dəm\ *n suffix* [ME, fr. OE *-dōm*; akin to OHG *-tuom* -dom, OE *dōm* judgment — more at DOOM] 1 **a** : dignity : office ⟨duke*dom*⟩ **b** : realm : jurisdiction ⟨king*dom*⟩ 2 : state or fact of being ⟨free*dom*⟩ 3 : those having a (specified) office, occupation, interest, or character ⟨official*dom*⟩

do·main \dō-'mān, də-\ *n* [ME *domayne*, fr. MF *domaine, demaine*, fr. L *dominium*, fr. *dominus*] (15c) 1 **a** : complete and absolute ownership of land — compare EMINENT DOMAIN **b** : land so owned 2 : a territory over which dominion is exercised 3 : a region distinctively marked by some physical feature ⟨the ~ of rushing streams, tall trees, and lakes⟩ 4 : a sphere of knowledge, influence, or activity ⟨the ~ of art⟩ 5 : the set of elements to which a mathematical or logical variable is limited; *specif* : the set on which a function is defined 6 : any of the small randomly oriented regions of uniform magnetization in a ferromagnetic substance 7 : INTEGRAL DOMAIN

¹dome \'dōm\ *n* [F, It, & L; F *dôme* dome, cathedral, fr. It *duomo* cathedral, fr. ML *domus* church, fr. L, house; akin to Gk *domos* house, Skt *dam*] (1513) 1 *archaic* : a stately building : MANSION 2 : a large hemispherical roof or ceiling 3 : a natural formation or structure that resembles the dome or cupola of a building 4 : a form of crystal composed of planes parallel to a lateral axis that meet above in a horizontal edge like a roof 5 : an upward fold in rock whose sides dip uniformly in all directions 6 : a roofed sports stadium — **dom·al** \'dō-məl\ *adj*

²dome *vb* **domed; dom·ing** *vt* (1876) 1 : to cover with a dome 2 : to form into a dome ~ *vi* : to swell upward or outward like a dome

Domes·day Book \'dümz-ˌdā-, 'dōmz-\ *n* [ME, fr. *domesday* doomsday] (1591) : a record of a survey of English lands and landholdings made by order of William the Conqueror about 1086

¹do·mes·tic \də-'mes-tik\ *adj* [ME, fr. MF *domestique*, fr. L *domesticus*, fr. *domus*] (15c) 1 **a** : living near or about human habitations **b** : TAME, DOMESTICATED 2 : of, relating to, or originating within a country and esp. one's own country ⟨~ politics⟩ ⟨~ wines⟩ 3 : of or relating to the household or the family 4 : devoted to home duties and pleasures 5 : INDIGENOUS — **do·mes·ti·cal·ly** \-ti-k(ə-)lē\ *adv*

²domestic *n* (1613) 1 : a household servant 2 : an article of domestic manufacture — usu. used in pl.

domestic animal *n* (ca. 1855) : any of various animals (as the horse or sheep) domesticated so as to live and breed in a tame condition

¹do·mes·ti·cate \də-'mes-tiˌkāt\ *vt* **-cat·ed; -cat·ing** (ca. 1639) 1 : to bring into domestic use : ADOPT 2 : to adapt (an animal or plant) to life in intimate association with and to the advantage of humans 3 : to make domestic : fit for domestic life 4 : to bring to the level of ordinary people : FAMILIARIZE — **do·mes·ti·ca·tion** \-ˌmes-

shən\ *n*

²do·mes·ti·cate \-kət, -kāt\ *n* (1951) : a domesticated animal or

do·mes·tic·i·ty \ˌdō-ˌmes-'ti-sə-tē, -mə-; ˌdä-\ *n, pl* **-ties** (17

: the quality or state of being domestic or domesticated 2 : d

activities or life 3 *pl* : domestic affairs

domestic prelate *n* (1929) : a priest having permanent honorar

bership in the papal household

domestic relations court *n* (ca. 1939) : COURT OF DOMESTIC RE

domestic science *n* (1869) : HOME ECONOMICS

dom·i·cal \'dō-mi-kəl, 'dä-\ *adj* (1846) : relating to, shaped

having a dome

¹do·mi·cile \'dä-mə-ˌsīl, 'dō-; 'dä-mə-səl\ *also* **dom·i·cil** \'dä

[ME, fr. MF, fr. L *domicilium*, fr. *domus*] (15c) 1 : a dwell

: place of residence : HOME 2 **a** : a person's fixed, permane

principal home for legal purposes **b** : RESIDENCE 2b

²domicile *vt* **-ciled; -cil·ing** (1809) : to establish in or provid

domicile

do·mi·cil·i·ary \ˌdä-mə-'si-lē-ˌer-ē, ˌdō-\ *adj* (1790) : of, relating

constituting a domicile: as **a** : provided or taking place in the

⟨~ midwifery⟩ **b** : providing care and living space (as for

veterans)

do·mi·cil·i·ate \ˌdä-mə-'si-lē-ˌāt, ˌdō-\ *vb* **-at·ed; -at·in**

domicilium] *vt* (1778) : DOMICILE ~ *vi* : RESIDE — **do·mi·cil·i·**

\-ˌsi-lē-'ā-shən\ *n*

dom·i·nance \'dä-mə-nən(t)s, 'däm-nən(t)s\ *n* (1819) 1 : the

state of being dominant: as **a** : dominant position esp. in

hierarchy **b** : the property of one of a pair of alleles or traits th

presses expression of the other in the heterozygous condition

influence or control over ecological communities exerted by a

nant 2 : functional asymmetry between a pair of bodily structu

the right and left hands)

¹dom·i·nant \-nənt\ *adj* [MF or L; MF, fr. L *dominant-, domi*

prp. of *dominari*] (ca. 1532) 1 : commanding, controlling, or

ing over all others 2 : overlooking and commanding from a

position 3 : of, relating to, or exerting ecological or genetic

nance 4 : being the one of a pair of bodily structures that is the

effective or predominant in action ⟨~ eye⟩ — **dom·i·nant·ly** *adv*

syn DOMINANT, PREDOMINANT, PARAMOUNT, PREPONDERANT mean

rior to all others in influence or importance. DOMINANT app

something that is uppermost because ruling or controlling ⟨*dominant* social class⟩. PREDOMINANT applies to something that

often temporarily, the most marked influence ⟨a *predominant* tion⟩. PARAMOUNT implies supremacy in importance, rank, or

tion ⟨unemployment was the *paramount* issue in the campaign

PONDERANT applies to an element or factor that outweighs all o

influence or effect ⟨*preponderant* evidence in her favor⟩.

²dominant *n* (1819) 1 : the fifth tone of a diatonic scale

dominant genetic character or factor **b** : any of one or more

organism (as a species) in an ecological community that exerts

trolling influence on the environment and thereby largely deter

what other kinds of organisms are present **c** : a dominant ind

in a social hierarchy

dom·i·nate \'dä-mə-ˌnāt\ *vb* **-nat·ed; -nat·ing** [L *dominatus*

dominari, fr. *dominus* master; akin to L *domus* house — more at

vt (1611) 1 : RULE, CONTROL 2 : to exert the supreme determi

guiding influence on 3 : to overlook from a superior elevati

command because of superior height or position 4 : to have

manding or preeminent place or position in ⟨name brands ~ the

ket⟩ ~ *vi* 1 : to have or exert mastery, control, or preemine

: to occupy a more elevated or superior position — **dom·i·na**

\-ˌnā-tiv\ *adj* — **dom·i·na·tor** \-ˌnā-tər\ *n*

dom·i·na·tion \ˌdä-mə-'nā-shən\ *n* (14c) 1 : supremacy or p

nence over another 2 : exercise of mastery or ruling power 3

cise of preponderant, governing, or controlling influence 4 *pl* :

ION 3

do·mi·na·trix \ˌdä-mi-'nā-triks\ *n, pl* **-trices** \-'nā-trə-sēz, -nə-'t

[L, fem. of *dominator*] (1971) : a woman who physically and p

logically dominates and abuses her partner in sadomasochis

broadly : a dominating woman

dom·i·neer \ˌdä-mə-'nir\ *vb* [D *domineren*, fr. F *domine*

dominari] *vi* (1591) : to exercise arbitrary or overbearing control

: to tyrannize over

dom·i·neer·ing *adj* (1588) : inclined to domineer *syn* see MAST

— **dom·i·neer·ing·ly** \-iŋ-lē\ *adv* — **dom·i·neer·ing·ness** *n*

do·min·i·cal \də-'mi-ni-kəl\ *adj* [LL *dominicalis*, fr. *dominicus*

the Lord's day, fr. L *dominicus* of a lord, fr. *dominus* lord, m

(15c) 1 : of or relating to Jesus Christ as Lord 2 : of or relati

the Lord's day

Do·min·i·can \də-'mi-ni-kən\ *n* [St. *Dominic*] (ca. 1632) : a mem

a mendicant order of friars founded by St. Dominic in 1215 and

cated esp. to preaching — **Dominican** *adj*

dom·i·nick·er \'dä-mə-ˌne-kər, -ˌni-\ *also* **dom·i·nick** \-(ˌ)nik,

often cap (1806) : DOMINIQUE

do·mi·nie \ *usu* 'dä-mə-nē, *2 usu* 'dō-\ *n* [L *domine*, voc. of *do*

(1612) 1 *chiefly Scot* : SCHOOLMASTER 2 : CLERGYMAN

do·min·ion \də-'mi-nyən\ *n* [ME *dominioun*, fr. MF *dominion*

of L *dominium*, fr. *dominus*] (14c) 1 : DOMAIN 2 : supreme auth

: SOVEREIGNTY 3 *pl* : an order of angels — see CELESTIAL HIERARC

often cap : a self-governing nation of the Commonwealth other

the United Kingdom that acknowledges the British monarch as

state 5 : absolute ownership *syn* see POWER

Dominion Day *n* (1867) : CANADA DAY

dom·i·nique \'dä-mə-ˌnēk\ *n* [*Dominique* (Dominica), one of the

ward islands, West Indies] (1849) : any of an American breed

mestic fowl with a rose comb, yellow legs, and barred plumage

: a barred fowl

dom·i·no \'dä-mə-ˌnō\ *n, pl* **-noes** *or* **-nos** [F, prob. fr. L (in the

formula *benedicamus Domino* let us bless the Lord)] (ca. 1694)

(1) : a long loose hooded cloak usu. worn with a half mask as

querade costume (2) : a half mask worn over the eyes with a

querade costume **b** : a person wearing a domino 2 **a** : a flat

gular block (as of wood or plastic) whose face is divided into two

This is Exhibit "M" referred to in the
affidavit of JOHN O. WINTER
sworn before me, this 19th
day of SEPTEMBER 2013.

A COMMISSIONER FOR TAKING AFFIDAVITS

Exhibit "M" redacted in its entirety.