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PRICE DIFFERENTIALS BY BRAND TYPE IN SUPERMARKETS

by

Charles R. Handy
USDA, ERS

Introduction

The purpose of this paper is to examine differences in retail prices between national brands and their first-line private label counterparts sold in supermarkets. National brands and private labels are products of a dual distribution system which characterizes our packaged food industry (Handy and Padberg). Large diversified manufacturers dominate the national brand segment of this distribution system. National brand manufacturers stress new product development and brand advertising. Large retail chains and wholesalers dominate the private label segment of the system. These distributors develop detailed product and package specifications for private label products, take responsibility for quality control, and negotiate terms of trade from competing contract suppliers. Emphasis is on price and minimizing production and distribution costs.

Questions to be answered in this paper include: (1) What is the magnitude of price differentials between national brands and first-line private labels? (2) Have price differentials between national brands and private labels narrowed over time? (3) How do price differentials faced by consumers on a particular shopping trip compare to price differentials that include the effect of price specials over a period of time?

There are many alternative methods for measuring price differentials. For example, should all quality levels of private label products be included in the comparison with national brands, or just first line private labels? How far should the researcher go in selecting

products to make the specifications of national brand and private label items as alike as possible? Should you measure price differentials as faced by shoppers in any given trip to the supermarket? Or, should the volume effect of temporary price specials over time be taken into account?

Earlier Studies

As part of its analysis of the food system, the National Commission on Food Marketing conducted a study of comparative prices of national brands and private labels in 1965. Prices were summarized from a 12-week analysis of 11 supermarket chains in 11 cities. Prices were compared for the top selling national brand and the equivalent top quality private label item for 10 products. The study assumed the quality of the top private label line was comparable to the national brands. The study took into account the increased movement that occurred during temporary price specials. For the 10 products studied over the 12-week period, the price of the leading national brand averaged 21.5 percent higher than the comparable first line private label item (National Commission, p. 65).

Methodology

Data for this paper were taken from a U.S. Department of Agriculture study of supermarket prices in Washington, DC during a 3-day period in May 1980 (Handy and Stafford). One hundred items were priced in 26 supermarkets representing five chains and two independent supermarket operators. For this study, only those items which were comparable in quality between national brands and private label and were generally avail-

able in the sampled supermarkets were selected for analysis. In general, the leading two or three national brands and the top quality private label were chosen for each item in the analysis. Considerable effort was taken to insure that the national brands and their private label counterpart were as equivalent in product specification as possible. Only first line private label products were compared. In comparing prices of margarine, for example, only 100 percent corn oil margarine brands were compared. Products that did not have a close match in national brand-private label specifications were omitted. Price comparisons between brands of ice cream, for example, were omitted for this reason. In all, 41 products were included in this study: 34 were food products; 7 were non-food products. All 26 stores included in the price survey were conventional supermarkets; no box stores or warehouse stores were included.

Price differentials were determined by the following procedure.

1. Compute price per unit (ounce, pound, etc.) for each item for each store.
2. Compute average unit price for each item for each firm.
3. Compute a city-wide average unit price across firms for national brands and corresponding private label item for each of the 41 products.
4. Price differentials between national brands and private labels were computed as a percentage of the average private label price.
5. Department-level price differentials were computed as simple averages across products within each department.

Results

The above procedure reflects the national brand-private label price differential that consumers are likely to encounter on any given shopping trip. This procedure does not take into ac-

count the increase movement that occurs when an item is on temporary price special.

A summary of the price comparisons are presented in Table 1. The price differential between national brands and top line private labels for 41 products

TABLE 1. Price Differences Between Leading National Brands and First-line Private Labels, Washington, DC, 1980

Product Group	# of Products Priced	Average Price Differential
	Number	Percent
Dairy	3	28.8
Processed Meats	4	46.5
Frozens	1	18.9
Dry Groceries, warehoused	20	27.6
Pet Food	2	54.8
Dry Groceries, direct store delivery	4	40.3
Non-foods	7	45.4
TOTAL, all products	41	34.9 (s.d. 19.7)

Source: USDA Survey, May, 1980.

averaged 34.9 percent. The range was from 1.7 percent to 77.1 percent, while the standard deviation was 19.7 percent. Product groups or departments with the largest price differentials were: pet food, 54.8 percent; processed meats, 46.5 percent; and non-foods, 45.4 percent. These price differentials are surprisingly high and are considerably larger than reported in the National Commission on Food Marketing study.

By using data from A. C. Nielsen's Directory of Supermarket Products, we were able to compare the results from the Washington, DC price survey with price differentials from a much broader

sample of supermarkets. The time period covered by the Nielsen data (April-May, 1980) was nearly identical with the Washington, DC survey. We were able to select 30 products from the Nielsen data that were identical to the products and brands used in the Washington, DC analysis.

The Nielsen data, however, did differ from the Washington, DC data in 3 important ways:

1. The Nielsen data was representative of all U.S. supermarkets. The sample includes 150 supermarkets, served from 80 warehouses, and represents one percent of supermarket sales.
2. The Nielsen data includes second-line as well as first-line private label, although generics are excluded.
3. The Nielsen data base includes the volume effect of price specials since price is computed as total sales dollars divided by quantity.

Table 2 compares price differentials for 30 identical products using data from both the Washington, DC survey and the Nielsen Directory. Only 30 of the 41 products are included in this table since the Nielsen data did not include direct-store-delivery items nor non-food items. Using the Nielsen data, national brands averaged 22.9 percent higher than their private label counterparts. Using the Washington, DC survey data, the price differential was considerably higher--31.8 percent.

The lower price differential obtained by using Nielsen data most likely reflects the effect of price specials. For 26 of the 30 products in the analysis, the average national brand price was higher in the Washington, DC survey than in the Nielsen data. All four products in which the DC average national brand prices were lower were on sale at the time of the survey.

TABLE 2. Alternative Measures of National Brand-Private Label Price Differentials, 1980

Product Group	# of Products Priced	Ave. Price Differential	
		DC	Neilsen
	Number	Percent	
Dairy	3	28.8	16.7
Processed Meats	4	46.5	30.9
Frozens	1	18.9	27.6
Dry Groceries, warehoused	20	27.6	19.7
Pet Food	2	54.8	45.0
TOTAL*	30	31.8	22.9
		(s.d. 19.3)	(s.d. 11.8)

*A.C. Nielsen data did not include direct store delivery and non-food items.

Source: USDA survey.

An analysis of the Washington, DC price differentials was conducted to test the sensitivity of the differentials to the effect of national brand price specials. We arbitrarily assumed an average reduction in list price of 15 percent when a national brand item was on special. The effect of price specials on the average national brand private label price differential was then computed by altering the total national brand volume sold while on special from 20 percent to 50 percent. Assuming 20 percent of the national brand volume moved at the sale price lowered the price differential between national brands and private label from 31.8 percent to 27.9 percent for the 30 products studied. For each 10 percentage point increase in the volume moved at the sale price, the average price differential declined 2 percentage points. If one assumed that 50 percent of the national brand volume moved while on price special, the average differential over the private label price dropped to 21.9 percent. Thus, incorporating the volume effect of price specials would clearly reduce the

price differentials found in the Washington, DC survey to more nearly coincide with the price differentials computed from the Neilsen data.

Implications

If the Washington, DC survey results are typical, then on any given shopping trip consumers are faced with a wider price differential between national brands and first line private label counterparts than is often recognized. For many products it may be advantageous for retailers to exploit this price differential in promotion private label.

With the multitude of deals, coupons, and rebates available to retailers and consumers, it is increasingly difficult to determine the "real" price differential between national brands and private labels. The price differential

can vary widely depending on the measurement procedures.

Brand manufacturers' heavy reliance on deals rather than adjusting list prices encourages the growing use of diverters as distributors search for the lowest available price. This may have a negative impact on efficiency because of increased handling and transportation than would otherwise be necessary.

And, finally, for a substantial proportion of packaged products in supermarkets, the dual distribution system continues to offer consumers a major choice in price between nationally and regionally advertised brands and comparable first line private label items. Based on evidence in this study, price differentials between national brands and private labels have not narrowed since the National Commission on Food Marketing study in the mid-60's.

TABLE 3. National Brand-Private Label Price Differentials by Detailed Product Category

Product Group and Category	Ave. Price Differential	
	DC Survey	A.C. Neilsen
	Percent	
<u>Dairy</u>	28.8	16.7
Am. cheese slices, 24 singles	13.6	11.0
Margarine, corn oil, 16 oz.	62.1	32.6
Butter, light SLTD, 16 oz.	10.7	6.6
<u>Processed Meats</u>	46.5	30.9
Bacon, 16 oz.	33.3	35.6
Franks, beef, 16 oz.	62.4	15.4
Sliced bologna, beef, 16 oz.	52.1	31.3
Pork sausage, 16 oz.	38.2	41.4
<u>Frozens</u>	18.9	27.6
O.J. Concentrate, 12 oz.	18.9	27.6
<u>Dry Groceries, warehoused</u>	27.6	19.7
Tuna fish, LGT chunk	13.7	13.9
Canned lucnh meat, 12 oz.	7.9	26.9
Chicken noodle soup	21.3	11.1
Yel. cling SLCD peaches	20.1	7.9
Canned sweet peas	19.4	22.1
Ground coffee, reg., 16 oz.	2.2	9.8

TABLE 3. (Continued)

Product Group and Category	Ave. Price Differential	
	DC Survey	A.C. Neilsen
	Percent	
Ground coffee, reg., 32 oz.	1.7	9.8
Instant coffee, freeze dried, 8 oz.	14.1	17.4
Hot cocoa mix, 12/box	42.4	22.1
Catsup, 14 oz.	27.6	33.8
Thous. Island salad dressing, 8 oz.	43.0	23.4
Solid shortening, 48 oz.	54.2	40.4
Corn flakes, 12 oz.	18.1	21.7
Oat cereal, RTE, 15 oz.	7.1	28.1
Raisin bran, 20 oz.	38.1	15.1
Ylw cake mix, debef	41.4	21.5
White sugar, 5 lb.	36.8	8.6
Macaroni, elbow, 16 oz.	56.0	31.8
All purpose flour, 5 lb.	36.0	16.3
Non-fat dry milk, 20 qts.	51.1	12.9
<u>Pet Food</u>	54.8	45.0
Canned dog food, 14.5-15.5 oz.	69.5	53.0
Dog food, semi-moist, 72 oz.	40.1	36.9
<u>Groceries, direct store delivery</u>	40.3	*
Saltine crackers, 16 oz.	36.4	
Cookies, Sand. cream	30.2	
Potato chips, reg., 7-8 oz.	39.6	
White bread, sandwich	55.0	
<u>Cleaning and Washing Products</u>	47.9	*
Fabric softner, 64 oz.	76.4	
Liq. dish detergent, 22 oz.	22.0	
Dry laundry detergent, 49 oz.	45.4	
<u>Paper Products</u>	26.3	*
Bathroom tissue, 4 pack	30.4	
Paper napkins, 120-160 count	22.2	
<u>Baby Care Products</u>	60.5	*
Baby powder, 14 oz.	77.1	
Disp. diapers, overnight	43.9	

*A.C. Neilsen data did not include these products.

Source: USDA survey, May 1980 and A.C. Neilsen Directory of Supermarket Products, April-May, 1980

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