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**Food Retailing and Wholesaling in the United States:  
Organization, Trends and Competition\***

by  
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In many countries, the retailing of food is done by many small shopkeepers. For example, visitors to France will find a bakery in every neighborhood. Charcuteries (delicatessens) are common. Each region is proud of its local cheese and wine. In many European countries, one can observe homemakers, shopping bag in hand, scurrying to central markets early in the morning to buy fresh fruits, vegetables and flowers, meat, cheese and bakery products.

Not so in the U.S. Here, the supermarket dominates food retailing. Shopping is usually limited to once or twice a week. Its shelves bulging with 15,000 or more items, the supermarket symbolizes both the abundance and efficiency of the U.S. food economy. However, it also symbolizes the impersonal mass merchandising of highly processed products, glamorized and promoted by millions of dollars of advertising. Thus, the supermarket reflects both the strengths and the limitations of the U.S. food system.

Characterized by a broad selection of products, self-service, no credit and large volumes, supermarkets accounted for about three of every four dollars spent in grocery stores in 1987, nearly double their share in 1948 when they accounted for less than 40 percent of grocery store sales (ERS, Food Marketing Review 1988).

In 1987, total grocery store sales in the U.S. were estimated at \$296 billion by the U.S. Department of Commerce, Bureau of Census, while all food store sales were estimated at \$314 billion (Food Institute Report, April 30, 1988). The \$18 billion difference represents the sales of specialty food stores such as retail bakeries, meat and seafood markets, produce markets, confectionery stores, and other miscellaneous food stores. Specialty food stores experienced a long-term decline in importance until recent years, when an increase in quality conscious consumers has sparked a renaissance of these shops in many communities. Specialty food store growth is also related to the increase in the number of households with discretionary income (income retained after taxes and all necessary expenditures). Approximately 27 million households (30% of U.S. total) are estimated to have discretionary income and to make up the affluent segment of consumers. The remaining 70 percent of households make up the less affluent segment.

The growing interest of consumers in nutritious and wholesome food products has also impacted food retailing. Fresh fruits and vegetables, fresh fish, pastas and whole grain bakery and cereal products have enjoyed increased demand. Specialty food stores have benefited some from this increased demand. Supermarkets have also responded by shifting the products carried and increasing in-store bakeries, delicatessens, fresh seafood, and produce departments.

Although specialty food stores have enjoyed some increase in popularity of late, they still only account for about 6 percent of all food store sales. Thus, the emphasis in this article will be on

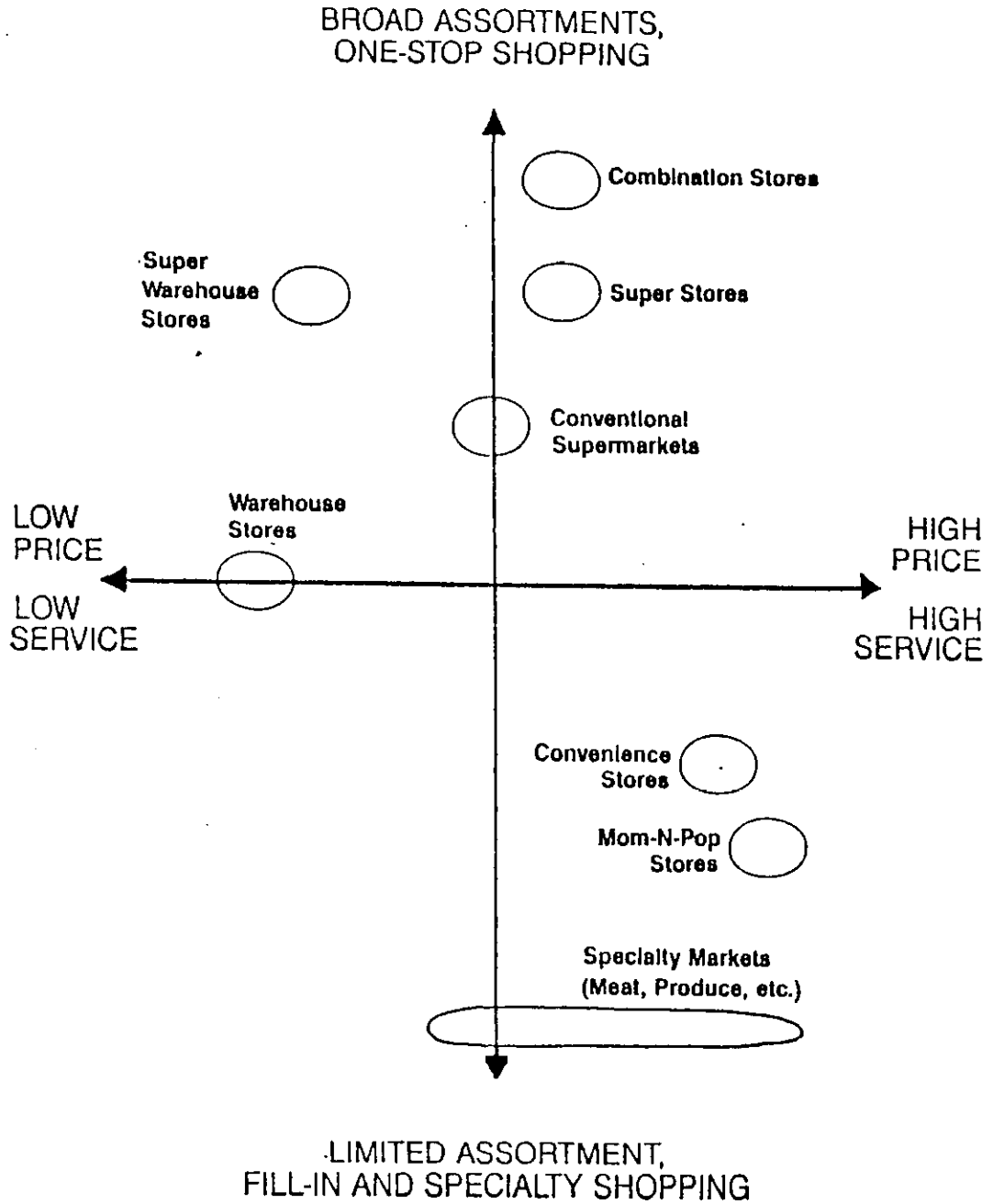
grocery stores which account for the remaining 94 percent, and particularly supermarkets, which dominate the retailing of food in the U.S.

### Evolution of Store Formats

A major dynamic force in U.S. food retailing has been the continued experimentation with different store formats. Figure 1 indicates the major store formats now in use. In the terminology of Michael Porter, each format represents a different strategic group. The formats vary in the size and design of stores, products carried, services provided and prices charged. However, different store formats do not necessarily constitute different relevant markets. For example, the formats on or above the horizontal axis in Figure 1 all have product-service-price combinations that allow them to compete for the major shopping trips of consumers. I would place these formats in the same relevant market -- referred to generically as the supermarket market.

How is a "supermarket" defined? While there is no official definition, the term generally refers to self-service, cash and carry stores with sufficient breadth of merchandise to allow one-stop shopping for food. Over time, various sales figures have been used to define the break between smaller grocery stores and supermarkets. Currently, annual sales of 2.0 or 2.5 million dollars are used by various sources as the dividing line. While such figures are somewhat arbitrary, the exact dividing line is not critical since convenience stores averaged about \$500,000 in annual sales in 1987 (Food Institute Report, June 11, 1988) while supermarkets averaged \$8 to \$10 million in

Figure 1. Retail Food Store Formats



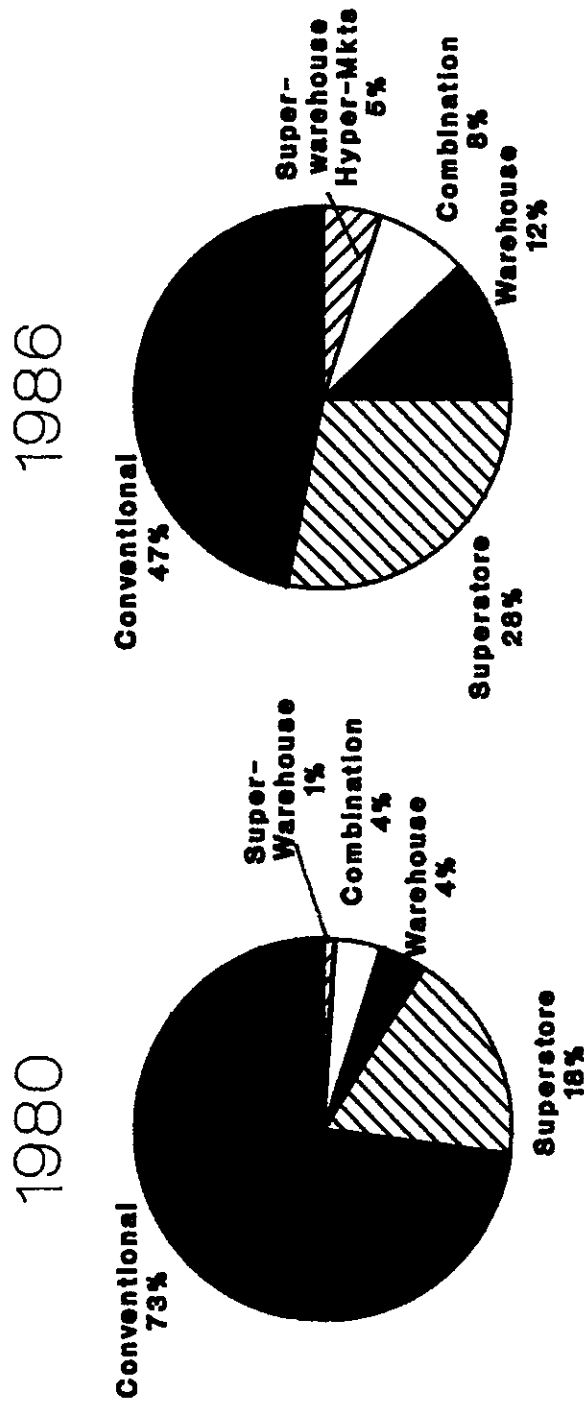
annual sales (ERS, Food Marketing Review, 1987). Thus, most stores are either substantially above or below \$2.0 million.

Within the broad supermarket category, conventional supermarkets still account for about half of all sales but are rapidly being replaced by larger superstores, combination stores and warehouse stores (Figure 2). The trend is clearly toward bigger stores with broader selection and more extensive departmentalization. New stores built in 1986 averaged 44,000 square feet compared to 36,000 square feet in 1982 (Food Institute Report, May 9, 1987). Table 1 indicates the typical characteristics of five supermarket formats plus convenience stores.

Warehouse, super warehouse stores and hypermarkets are the newest store formats. Warehouse stores are in many ways a return to the original supermarket of the 1930s with spartan buildings and fixtures, very low margins and high sales per square foot. Super warehouse stores are a hybrid of the superstore and warehouse store that combine extensive perishable departments with palletized stocking of grocery items and low prices. Whereas the gross margins of conventional supermarkets and super stores were about 24 percent of sales in 1986 (McLaughlin 1988), the gross margins of warehouse and super warehouse stores were about 16.5 percent of sales (Food Institute Report, April 18, 1987).

Because consumers can save roughly 8 to 10 percent by shopping at warehouse or super warehouse stores, these stores have enjoyed considerable success in many metropolitan areas. Like most major innovations in grocery retailing, these stores tend to be owned and operated by independents and small chains, often supplied and backed by

**Figure 2. Percent of Supermarket Sales by Store Format, 1980 and 1986**



**Source: ERS, Food Marketing Review, 1987**



Table 1. Store Characteristics by Format  
(Typical Store - 1986)

	<u>Total Area/Sq. Ft.</u>	<u>Weekly Sales</u>	<u># of Items</u>
Conventional Supermarket	22,500	\$127,000	12,000
Superstore	40,500	252,000	18,000
Food/Drug Combo	50,000	325,000	24,500
Warehouse Store	30,000	190,000	10,500
Super Warehouse	50,000	490,000	16,000
Convenience Store	2,500	9,400	3,100

Source: Willard Bishop Consulting Economists, "Competitive Edge," June 1987.

a major wholesaler. While these stores have gradually spread in geographic coverage, many metropolitan areas still do not have warehouse or super warehouse stores. There appears to be considerable potential for these store formats to expand.

A second relevant market includes convenience stores and Mom-n-Pop stores not large enough to compete for the major shopping of consumers; this I refer to as the "fill-in" market. Whereas convenience stores compete directly with Mom-n-Pop stores, they compete only indirectly with store formats in the supermarket market. There is substantial evidence supporting the distinction between the major shopping and fill-in relevant markets. Supermarket companies regularly price check competing super stores, conventional supermarkets, warehouse stores and combination stores, but rarely if ever price check convenience stores or consider them in their business plans. The location of convenience stores is rarely considered in supermarket store location studies. And, the relatively few supermarket companies that also operate convenience stores sometimes locate the two side by side. For example, Vons Grocery Company is currently converting liquor stores located adjacent to their supermarkets into convenience stores (Supermarket News, July 18, 1988). This type of behavior only makes sense if supermarkets and convenience stores are in separate relevant product markets.

As supermarkets have increased in size, opportunities for convenience stores and Mom-n-Pop stores have increased. In 1987, total sales of these stores were estimated at \$74 billion, including gasoline sales. The Economic Research Service estimated that these sales were approximately split between convenience stores (such as 7-Eleven, Stop

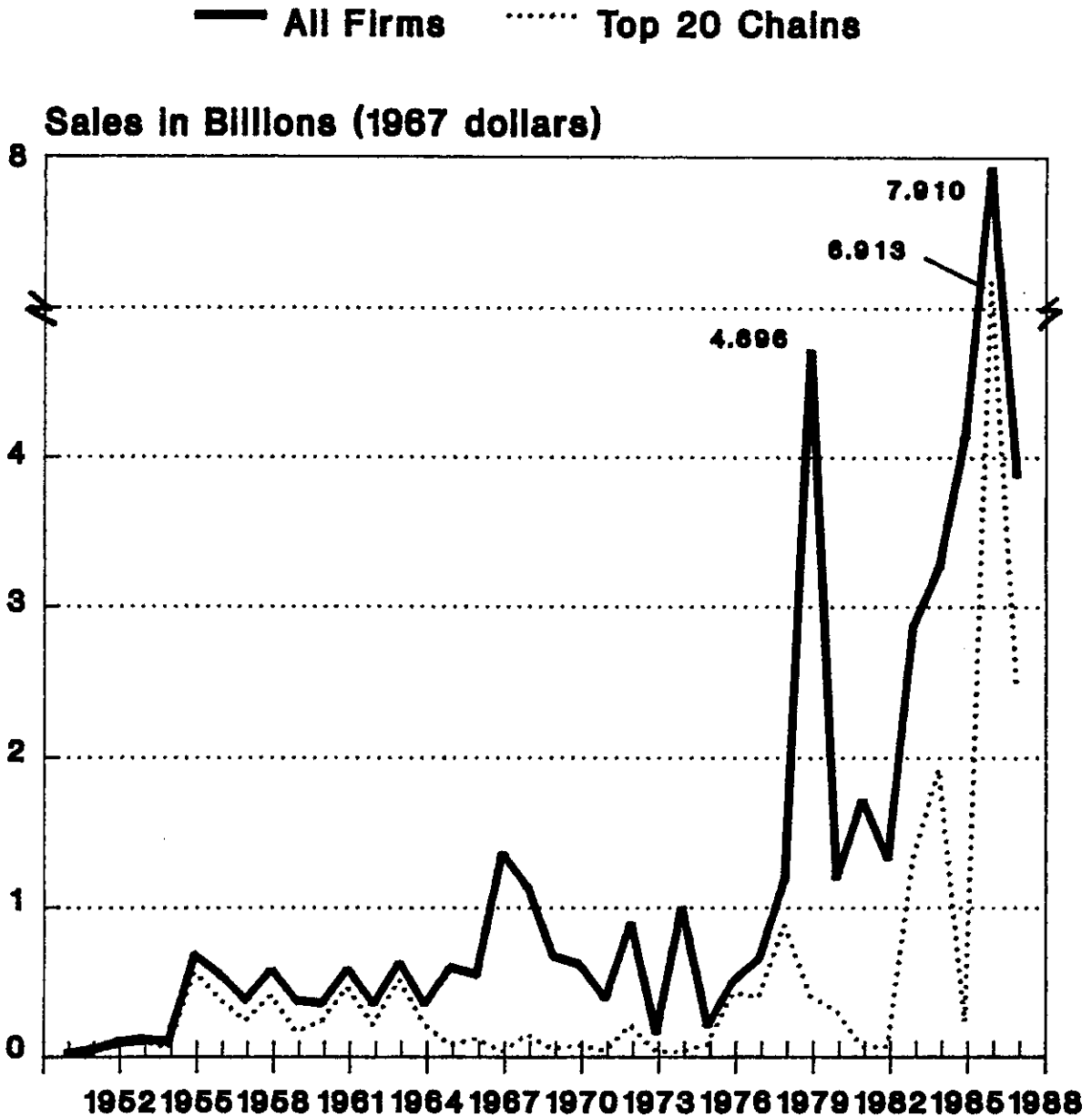
N Go, Circle K) and Mom-n-Pop grocery stores. The Southland Corporation has been the dominant convenience store chain with 20 to 25 percent of the sales by convenience stores. In 1987, Southland went private with a \$5.1 billion buy-out. Several other mergers of convenience store chains have also occurred in recent years. For the most part, convenience store chains do not operate supermarkets and vice versa.

### National Concentration and Consolidation

Competition among grocery retailers as sellers occurs in local markets. However, the national size distribution of retailers may affect their power as buyers, affects the number of potential entrants into metropolitan areas and influences the overall economic power of companies.

National concentration of retail sales is affected by merger activity as well as the advantages and disadvantages of large firm size. Since the late 1970s, mergers, divestitures and leveraged buy-outs involving grocery retailers have been unprecedented in size. Figure 3 indicates the acquisitions of grocery retailers from 1950 to 1987, including leveraged buyouts. Leveraged buyouts have largely become important in the 1980s and accounted for 49, 92 and 56 percent, respectively, of the sales acquired during 1985, 1986, and 1987. By the end of 1987, eight of the largest 20 supermarket chains were privately owned (Supermarket News January 11, 1988). Safeway Stores, the second largest supermarket chain in the U.S. in 1986, went through a leveraged buyout that year. During 1987, Safeway undertook massive

**Fig.3 Acquisitions of Food Retailers by All Firms and by Top 20 Grocery Chains, 1950 - 1987 (1967 dollars)**



divestitures to finance the \$4.1 billion buyout. Six divisions representing more than 600 stores in the U.S. were sold, plus the 132-store United Kingdom division (Supermarket News December 28, 1987). Over the last decade, many other firms have repositioned their assets by withdrawing from markets in which they had weak positions and/or acquiring other chains. Several of the largest food retailing mergers in history took place during this period, including Grand Union's acquisition of Colonial Stores in 1978, Kroger's acquisition of Dillon Co. in 1983 and American Store's acquisition of Jewel Co. in 1984. These were all largely market extension mergers.

In the 1980s, an increasing number of significant horizontal mergers have been permitted by the antitrust agencies. Two pending mergers -- American Store's acquisition of Lucky Stores (\$6.4 billion in sales) and Von's acquisition of Safeway's southern California division -- dwarf earlier horizontal mergers involving supermarket chains. If consummated these mergers will dramatically increase concentration in many California metropolitan areas.

Mergers have undoubtedly affected the national concentration of grocery store sales in the U.S. Due largely to the decline in sales of A&P, the national share of the largest 20 chains was constant from 1958 to 1977 at about 34 percent. Since 1977, the top 4, 8 and 20 chains have captured an increasing share of U.S. grocery store sales (Table 2).

Foreign companies -- mainly European and Canadian -- became active purchasers of U.S. supermarket chains in the 1970s. A substantial weakening of the U.S. dollar in the late 1970s together with a

Table 2. Share of U.S. Grocery Store Sales Held by the  
Twenty Largest Grocery Chains, Census Years 1948-1981  
(percentage)

<u>Firm Size</u>	<u>1948</u>	<u>1954</u>	<u>1958</u>	<u>1963</u>	<u>1967</u>	<u>1972</u>	<u>1977</u>	<u>1982</u>	<u>1986</u>
Four largest	20.1	20.9	21.7	20.0	19.0	17.5	17.4	17.8	18.6
Fifth to Eight largest	3.6	4.5	5.8	6.6	6.7	6.9	7.0	7.3	8.7
Eight largest	23.7	25.4	27.5	26.6	25.7	24.4	24.4	25.1	27.3
Ninth to twentieth largest	3.2	4.5	6.6	7.4	8.7	10.4	10.1	10.4	11.0
Twenty largest	26.9	29.9	34.1	34.0	34.4	34.8	34.5	35.6	38.3
A&P	10.7	11.3	11.1	9.4	8.3	6.6	4.2	1.7	2.2
Twenty largest excluding A&P	16.2	18.7	23.0	24.6	26.1	28.2	30.3	34.3	36.1

Source: Data for 1948 to 1982 from B. Marion (1986), p. 332. Data for 1986 from ERS, Food Marketing Review, 1987.

depressed stock market provided an ideal buying environment for European companies (Marion and Nash, 1983). Foreign acquisitions have continued at a slower pace during the 1980s. Approximately one-tenth of U.S. grocery stores sales are estimated to be held by foreign controlled companies (Supermarket News July 18, 1988).

#### Grocery Chains vs. Independents and Grocery Wholesalers

Chains are usually defined as companies operating 11 or more stores. The share of grocery store sales held by chains steadily increased from 34 percent in 1948 to 60 percent in 1982 (Marion and NC 117 Committee 1986) and then has levelled off. Independent operators have experienced a long-term decline in market share. In part this is due to the shift of some independents into the chain category. The number of firms classified as chains increased from 299 in 1967 to 468 in 1982. Chains are even more important in the supermarket submarket than in all grocery stores sales, accounting for about 70 percent of all supermarket sales (Progressive Grocer 1988).

The survival of independents is closely tied to the efficiency and progressiveness of the wholesalers supplying them. Independents are often at a competitive disadvantage in pre-store functions (e.g., merchandise procurement costs, computer systems, warehousing and transportation, site selection and financing). While some independents are able to offset these disadvantages by better store level management, this is not always the case.

There has been substantial consolidation among food wholesalers through mergers. On average, food wholesalers made 22 acquisitions per

year during the 1970s, and 36 per year between 1980 and 1984. In 1985, the number jumped to 64 (ERS, Food Marketing Review, 1986). There has been a sharp increase in the number of mergers by large wholesalers such as Fleming, Super Valu, and Wetterau, the three leading wholesalers supplying grocery stores (Sysco, another large wholesaler, primarily supplies foodservice accounts). Most wholesale mergers are market extension mergers.

Changes in technology -- especially information and computer related, the increase in capital required for larger stores, and the substantial resources required to compete effectively with large supermarket chains has increased the optimum size of grocery wholesalers. As wholesalers have increased in size, the number of wholesalers servicing independent retailers in a MSA has declined. In many metropolitan areas, independents must choose between only 2 or 3 wholesalers. Present trends seem to be leading toward a natural monopoly or duopoly in food wholesaling in many areas.

#### Competition in Grocery Retailing

Food retailers sell in geographic markets that are inherently local. Consumers do not travel from one city to another to shop for groceries. Thus, national concentration figures tell us little about the nature of competition; the structure of local markets must be examined.

Metropolitan Statistical Areas (MSA) have often been used as relevant geographic markets for structure-performance research and antitrust cases. However, there is a growing recognition that MSAs are



often larger than the relevant geographic markets for grocery retailing. Surveys show that supermarket customers generally travel less than 2 miles from their home. And, supermarket chains sometimes employ several price "zones" within an MSA, which is essentially geographic price discrimination. Geographic price discrimination is only workable if buyers in different locations don't respond by travelling to stores in the low price zones to shop. That is, the cross elasticity of demand for a firm's stores in different parts of an MSA must be relatively low for zone pricing to be a viable competitive strategy. Zone pricing is often used by leading incumbent chains to limit the success of new entrants. Typically, prices are dropped in a few of the incumbent chain's stores near the new entrant. Losses or reduced profits from these stores are cross subsidized by the higher profits in the incumbents chain's remaining stores.

In many cases, Census defined MSAs include more than one city such as Raleigh and Durham, N.C., Santa Barbara, Santa Maria and Lompoc, Cal., Dallas and Ft. Worth, Tex., and Janesville and Beloit, Wisc. Several miles separate these cities. In these cases, the MSA is usually larger than the relevant geographic market for grocery retailing.

Unfortunately, data are generally available only for MSAs, not for smaller geographic areas. Thus, MSAs are the geographic markets on which most analyses are based, including the following. Data on grocery store sales are also more widely collected by public and private agencies than data on supermarket sales. Special tabulations by the U.S. Bureau of Census provided MSA supermarket concentration

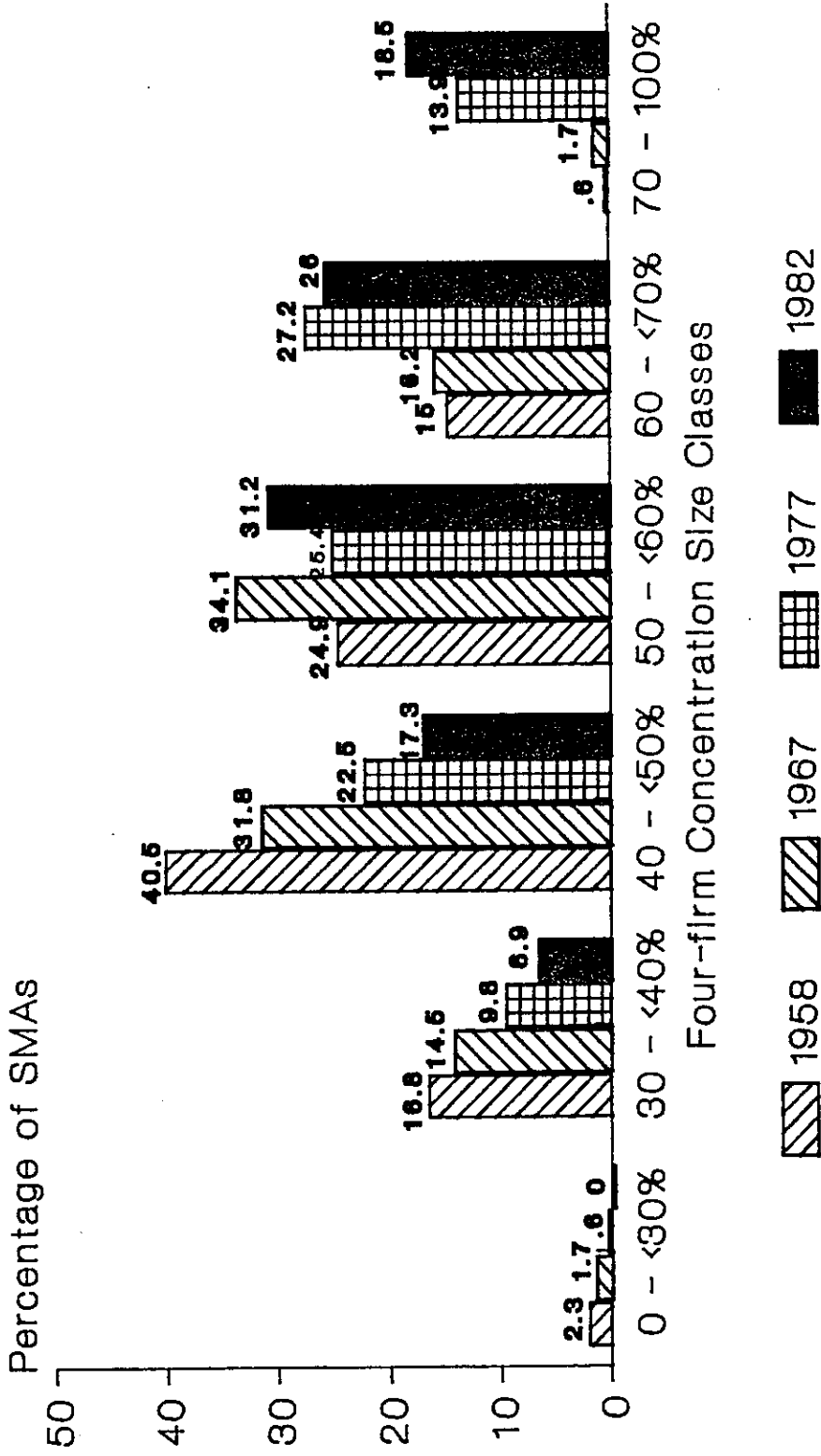
figures for 1972 and 1977. For other census years, only grocery store concentration figures are available. Four-firm concentration ( $CR_4$ ) of supermarket sales in MSAs is generally about 130 percent of the grocery store concentration figures. For 240 MSAs, average grocery store  $CR_4$  was 52.6 and 56.1 in 1972 and 1977 (Marion 1986, p. 309). Average supermarket  $CR_4$  for the same years were 69.6 and 70.9. Although grocery store concentration is not a perfect proxy for supermarket concentration, the former are reasonable indicators of the trends in concentration and are more widely available than supermarket concentration figures.

#### Trends in MSA Grocery Store Concentration

Concentration of grocery store sales in MSAs has experienced a consistent upward trend. For 173 MSAs that had little change in definition from 1958 to 1982, average grocery store  $CR_4$  increased from 48.7 to 58.6. The distribution of these MSAs by level of concentration is shown in Figure 4. In 1967, only 18 percent of these MSAs had four-firm concentration ratios of 60 percent or greater. By 1982, 44 percent of the same MSAs had this level of concentration. A grocery store  $CR_4$  of 60 translates to a supermarket  $CR_4$  of roughly 75, a very high level of concentration. Thus, by 1982, nearly half of the U.S. metropolitan areas had very concentrated supermarket sales.

A larger number of MSAs can be compared for 1972 to 1982. Table 3 indicates that for 258 MSAs, average  $CR_4$  increased from 52.4 in 1972 to 58.8 in 1982. This table classifies MSAs according to their  $CR_4$  in 1972. Thus, one can determine the change in concentration that

**Figure 4. Distribution of 173 SMAs,  
By Grocery Store Sales Four-firm  
Concentration Levels, Various Years**



Source: Special tabulation of Census of Retail Trade, various years

Table 3. Four-Firm Grocery Store Concentration Ratios for  
258 MSAs, 1972-1982.

	Grocery Store Concentration in 1972 (CR4)	Number of MSAs	Grocery Store Concentration <sup>a</sup>			Change in Mean CR4 1972-77	Change in Mean CR4 1977-82
			Mean CR4 in 1972	Mean CR4 in 1977	Mean CR4 in 1982		
1	<30%	5	27.86	32.20	37.68	4.34	5.48
2	30<40%	18	35.11	39.98	43.34	4.87	3.36
3	40<50%	92	44.95	49.95	54.80	5.00	4.85
4	50<60%	80	54.72	58.10	60.07	3.38	1.97
5	60<70%	47	64.57	66.38	66.72	1.81	.34
6	>70%	<u>16</u>	<u>74.64</u>	<u>76.54</u>	<u>76.19</u>	<u>1.90</u>	<u>&lt;.35&gt;</u>
	Total	258	52.38	56.08	58.80	3.70	2.75

<sup>a</sup> 1982 data are based on establishments with payroll only.

Source: Special tabulations by the Bureau of Census, Census of Retail Trade,  
Various Years.

occurred for a group of the MSAs. For example, 16 MSAs had a 1972  $CR_4$  of 70 or greater. These increased some in concentration from 1972 to 1977, then held constant from 1977 to 1982. Concentration increased greatest in MSAs that had a  $CR_4$  of 50 or less in 1972. There is some indication that when  $CR_4$  is 60 or greater, the rate of increase begins to flatten out.

The causes of increased concentration have been examined by Cotterill and Mueller (1980) and by Parker (summarized in Marion, 1986, p. 328-331). The increasing size of new supermarkets has provided upward pressure on the concentration of small MSAs since there is only room for a limited number of stores. Concentration has increased less in rapidly growing MSAs, consistent with traditional industrial organization theory. Horizontal mergers have tended to increase concentration, as expected. Market extension acquisitions of one of the top four retailers in an MSA tended to increase concentration, whereas toehold acquisitions tended to erode concentration. Finally, Parker found that de novo entry into concentrated MSAs generally reduced concentration while de novo entry into unconcentrated MSAs ( $CR_4 < 50$ ) had no significant effect on concentration. These results are for various time periods up to 1977. The substantial change in antitrust policy since 1977 that has encouraged a massive increase in mergers by large chains may have made the structural impact of mergers even greater in recent years.

### Concentration-Price Relationships

An obvious question from the trend toward increased MSA concentration is what effect this has on retail performance. Is there evidence that high concentration results in oligopolistic coordination or dominant firm price leadership and hence to higher prices? Or, is entry sufficiently easy and potential entrants sufficiently numerous that even concentrated markets are "effectively contestable" and realize no monopoly rents?

At least five studies have examined concentration-price relationships in grocery retailing (Marion et al., 1979; Lamm 1981; Hall, Schmitz and Cothorn 1979; Meyer 1983; and Cotterill 1986). The geographic markets examined have ranged from trading areas within metropolitan areas, to cities and rural villages in Vermont, to a cross section of MSAs. The five studies are summarized in Table 4. A consistent positive relationship was found between concentration and prices. The first three studies used more appropriate data to test the concentration-price relationship. Prices for an identical basket of 90 plus items (e.g., Kellogs Corn Flakes, 18 oz.; Tide Detergent, 84 oz.; Kraft Miracle Whip, 16 oz.) in different supermarkets were compared across geographic markets. The Bureau of Labor Statistics price data used in the last two studies was a weighted price index for all food stores in an MSA, including convenience stores, meat markets, etc. BLS also priced the fastest selling brand of a product in each store, so that a store brand might be priced in some stores while national brands were priced in others (for a more complete critique, see Geithman and Marion, 1978). The Lamm and Hall et al. studies also used less

Table 4. Characteristics of Five Concentration-Price Studies of Grocery Retailing.

Study	Market Prices	Firm or Source of Data	Products Priced & Source of Data	Nr. and Type of Geog. Markets	Time Period of Prices	Market Structure Variables & Data Source	Effect of Concentration on Prices
1. Joint Economic Committee (Marion et al.)	Firm (3 large supermarket chains)	Grocery basket of 34 comparable products. Chain price checks submitted to JEC.	32 MSAs (36 observations)	October 1974	Grocery store concentration plus firm market share based upon firm sales data and Census.	Pos.	
2. Cotterill	Firm (3 supermarket chains plus 6 independent supermarkets)	Same as JEC plus dairy, frozen food and H&BA products. Data collected through store visits.	18 Vermont cities and towns (35 observations)	Two consecutive days in August 1981	Supermarket concentration plus firm market shares based upon firm sales data.	Pos.	
3. Meyer	Firm & trading area (supermarkets)	183 products based upon BLS sample. Data collected through store visits.	Several neighborhoods in 2 areas: Santa Cruz - Capitola Berkeley-Oakland Hills	Two weeks in Summer, 1980	Neighborhood classified as monopoly, concentrated oligopoly, or unconcentrated oligopoly based upon number of stores in area.	Pos.	
4. Laum	Market (All food stores)	BLS market basket cost for family of four	18 MSAs	Annual data, 1974-77	Grocery store concentration and market shares based upon Metro Market Studies	Pos.	
5. Hall, Schmitz & Cothorn	Market (All food stores)	Wholesale-Retail margin for beef using BLS beef price data	23 MSAs	Annual data, 1967-1973	Grocery store concentration based upon Supermarket News "Distribution of Food Store Sales."	Pos.	

reliable measures of concentration and were limited to only large MSAs. In spite of these limitations, which would be expected to bias the results of the last two studies toward zero, these also found a significant positive relationship between concentration and prices.

The first three studies were all firm-in-market studies that compared prices for a basket of identical items in supermarkets in different geographic markets. Cotterill examined supermarket prices in 18 Vermont cities and towns, only one of which was large enough to be an MSA. Meyer examined supermarket prices in neighborhoods within two California metropolitan areas. Because concentration measures were unavailable, he classified neighborhoods as monopolies (1 supermarket), concentrated oligopolies (2 supermarkets) or unconcentrated oligopolies (3 or more supermarkets).

The JEC study (U.S. Congress, 1977a; republished as Marion et al., 1979) examined the prices of three supermarket chains across 32 MSAs. Because of its unusually accurate data and the more typical geographic areas studies, it probably is the best indicator of the general relationship between supermarket prices and market concentration. It has also been widely cited and reviewed and has stood the test of time. Professor Douglas Greer, author of the leading undergraduate text in industrial organization, commented:

With respect to the JEC study, my summary assessment is that it is undoubtedly the best piece of research ever done on the topic. Indeed, it is one of the best studies I have seen of this general type (cross-section, intra-industry, multi-variate regression analysis of market structure and performance). (U.S. Congress, 1977b)

The main market structure variables included in the JEC model were various measures of concentration and relative firm market share (RFMS)



or firm market share (FMS). The concentration variables test the hypothesis that as concentration increases, oligopolistic coordination results in higher prices. RFMS and FMS test the hypothesis that the prices charged by a firm are influenced by its position in the market. All of the structural variables were positively and significantly related to grocery prices. The results indicate that market concentration and a firm's relative position in a market have independent but significant influences on the firm's prices.

The results of the JEC study are summarized in Table 5. Because profit data were also obtained in this study, the impact of market structure on prices and profits are both presented in this table. Because the samples for the price and profit analyses were not the same, some caution must be exercised in comparing them. However, Table 5 provides no evidence on increased efficiency from higher market shares or more concentrated markets. Indeed, the opposite is indicated. As RFMS and  $CR_4$  increase, prices increase faster than profits, suggesting that costs also increase. Supermarkets in non-competitive markets may experience the bloated and unnecessary costs that Leibenstein (1966) has called "X-inefficiency".

For consumers and antitrust agencies, the above results should cause considerable concern about the high and increasing levels of supermarket concentration. High concentration generally results in high consumer prices. A large number of concentration-price studies during the last decade indicates that concentration and prices are positively related in a large number of industries, not just supermarkets. After reviewing over 70 studies in industries such as

Table 5. Estimated Index of Grocery Prices and Pretax Profit-Sales Ratios Associated with Various Levels of Market Concentration and Relative Firm Market Share.

Relative Firm Market Share (RFMS)	Four-Firm Concentration Ratio (CR <sub>4</sub> )							
	40		50		60		70	
	Index of Grocery Prices <sup>a</sup>	Profits as Percent of Sales <sup>b</sup>	Index of Grocery Prices	Profits as Percent of Sales	Index of Grocery Prices	Profits as Percent of Sales	Index of Grocery Prices	Profits as Percent of Sales
10	100.0	.36	101.0	.96	103.0	1.18	105.4	1.23
25	100.7	1.14	101.7	1.74	103.7	1.96	106.1	2.01
40	102.2	1.92	103.2	2.52	105.2	2.74	107.6	2.79
55	103.2	2.70	104.2	3.30	106.2	3.52	108.6	3.57

<sup>a</sup> The estimated grocery basket cost for each combination of RFMS and CR<sub>4</sub> was calculated using equation 1h, Table 4.3 from B.W. Marion et al., and holding other independent variables at their respective means. The index was constructed by setting the grocery basket computed for RFMS=10, CR<sub>4</sub>=40 equal to 100.0.

<sup>b</sup> Profits as a percent of sales were estimated for each combination of RFMS and CR<sub>4</sub> using equation 1d, Table 3.7 from B.W. Marion et al.; all other variables except API were introduced at their means; the binary variable API was introduced with a value of 1. Equation 1d was developed using the average division profit levels for 1970, 1971, and 1974. The grocery price models were based upon 1974 prices.

Source: Marion, B.W. et al., 1979a, p. 131.

airlines, cement, newspaper advertising rates, gas stations, banking, timber and off-shore oil leases, rail freight rates, beef packing and supermarkets, Leonard Weiss (forthcoming) concludes: "...our evidence that concentration is correlated with price is overwhelming." Thus, the findings of the five studies reviewed above are consistent with the vast majority of other studies on the subject.

For supermarket companies, the results identify at least two factors that affect their pricing discretion and profits: their market share and the concentration of the market. Given these findings, one might expect to find supermarket chain entry behavior to be focused on concentrated MSAs. However, this has not been the case in the U.S. Cotterill and Haller (1987) studied the de novo entry behavior of the largest 20 supermarket chains during 1972-1981. De novo entry into an MSA was more likely if the MSA was growing rapidly and there was at least one large potential entrant within 200 miles of the MSA. High entry barriers made de novo entry less likely. Cotterill and Haller conclude:

"...barriers to entry exist in retail food markets. Entry barriers appear to be strongly related to the number of large food chains present in the market and, to a somewhat lesser degree, to the level of seller concentration and/or ratio of supermarket to grocery sales in the market" (p. 219).

There is considerable other evidence of significant entry barriers in grocery retailing markets (Marion 1987). The positive relationship between concentration and prices in the five studies reviewed earlier is difficult to explain if there are not entry barriers. Persistent high levels of concentration in medium and large MSAs also suggest

entry barriers. Economies of scale do not require high levels of concentration except in small markets.

Thus, supermarket companies may avoid de novo entry into concentrated MSAs because entry barriers are high. Entry by acquisition is likely the more profitable way into such markets if permitted by antitrust laws and enforcement.

### Conclusions

Substantial changes in store formats, a sharp increase in mergers and divestitures, and important computer-related technological change have been the major dynamic forces affecting U.S. food wholesaling and retailing since the mid 1970s. This article has emphasized some of the structural changes that have occurred in these industries.

Electronic scanning has also substantially altered the balance of power between food retailers/wholesalers and grocery manufacturers. Supermarket chains now often possess more information about the demand for a manufacturer's product than the manufacturer. This has shifted the balance of power toward the retailer and has led to such controversial practices as "slotting allowances," or payments by the manufacturer to gain access to the supermarket shelves.

The increase in the concentration of supermarket sales in MSAs also has implications for grocery manufacturers. In MSAs like Denver or Washington, DC, two chains account for 75 percent or more of all supermarket sales. To gain access to the consumers in these MSAs, manufacturers must gain access to the shelf space of the dominant chains. This provides the leading chains with more power to demand

"street money" (slotting allowance, trade promotions, etc.) and places smaller food manufacturers at a greater competitive disadvantage. Thus, the changes that are occurring create potential problems not only for effective competition in grocery retailing but for competition in food manufacturing industries.

Antitrust enforcement under the Reagan administration shifted sharply from earlier administrations. Mergers, predatory tactics, price discrimination and vertical restraints have largely been ignored or viewed as pro-competitive. The food wholesaling and retailing industries have responded accordingly with mergers and strategic tactics that would have been avoided in earlier periods. The pendulum has now swung to one extreme. It appears likely that under the next administration, antitrust enforcement will be more vigorous and some current practices and trends in food wholesaling and retailing will be challenged. However, it is extremely difficult to reverse structural change once it has occurred. The high and increasing levels of concentration of supermarket sales in many MSAs and the growing concentration in grocery wholesaling are likely to persist. For those in the industry who are one of the survivors, this is probably good news. For consumers, prices are likely to be higher and firms less responsive than with more competitive market structures.

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