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Food Marketing Policy Center

Continuing Concentration in the U.S.: Strategic Challenges to an Unstable Status Quo

By Ronald W. Cotterill

Food Marketing Policy Center
Research Report No. 48
August 1999

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Department of Agricultural and Resource Economics

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Executive Summary

- Food manufacturing industries in the U.S. are more highly concentrated than in Europe. The top 20 firms account for 52% of the sector's value added and approximately 70% of the sector's advertising. Thus, branded food product marketing is more concentrated among the sector's top firms.
- Supermarket concentration at the local market level is high and has increased substantially over the past decade. For 94 large U.S. cities four-firm concentration averaged 74.4 % in 1998, up from 64.5% in 1987.
- Supermarket concentration in many regions comparable in size to countries in Western Europe has also increased and is approaching European level. For example, the top four chains in California (population 32 million) now account for 70% of supermarket sales.
- National supermarket concentration has also increased but not to such high levels. The top four chains accounted for 31.7% of total U.S. sales in 1998, up from 23.3% in 1992.
- Foreign firms, most notably Ahold, Tengelmann, Sainsbury and Del Haize, are major players in U.S. retailing; however, leading U.S. chains, Kroger, Albertsons and Safeway are also participating in the merger wave that has been the primary source of increased retail concentration at local, regional, and national levels.
- High concentration and strong brands at the manufacturing level combine with high local market concentration at the retail to create a vertical coordination problem. Double marginalization due to the exercise of market power at successive stages of the food channel means prices are higher and total channel profits are lower than they would be with joint, or vertically coordinated pricings by retailers and manufacturers. Many systems innovations including efficient consumer response, (ECR) and category management programs are best seen as attempts to eliminate double marginalization.
- Every day low pricing (EDLP) programs have failed to supplant trade promotion, which in the ECR framework is seen as inefficient and wasteful, because trade promotion is one of the most effective strategies for eliminating double marginalization.
- Copycat private labels are an alternative coordination strategy that lower prices to consumers and allow retailers to capture a larger share of increased channel profits.
- National market concentration may well double in the near future if the leading chains, which are still essentially regional, merge to form truly national supermarket chains.
- Truly national supermarket chains may attain the critical mass needed to establish retailer brands as leading European chains have done with supply chain management systems that tap into the creativity and flexibility of smaller food manufacturers. This "out of the box" solution could severely diminish the position and power of the large food manufacturers and smaller supermarket chains.
- Antitrust enforcement in the U.S. has not impeded the steady rise in concentration at all stages of the U.S. food system. However, support for more vigorous merger enforcement may soon come from major players within the sector. Since the context of antitrust is now "double monopoly" public actions to limit mergers that tend to create monopoly power at one stage of the channel benefit not only consumers but also firms at other stages who capture higher channel profits. Powerful firms at one stage of the food marketing channel have a vested interest in preventing mergers that create or sustain powerful firms at other stages.
- In the current environment the Robinson Patman Act, with its proscription of discriminatory discounts by manufacturers to large retailers, i.e. better trade terms that are not cost justified, may become a more binding constraint.
- Ultimately, the evolution and performance of the U.S. food system depends upon strategic moves by leading global manufacturers and retailers and public policy actions, especially antitrust enforcement. Given the current unstable environment, the stakes for winners and losers in this game are very high.

1. Introduction

Both food retailing and food manufacturing industries continue to consolidate in the U.S. The most recent wave of consolidation at the manufacturing level occurred in the 1980s, and the sector is more concentrated than food manufacturing is in Western Europe. Seller concentration in U.S. supermarket retailing has accelerated during the 1990s and is rapidly approaching European levels. The U.S. food system has traditionally been led by its large, often global, food manufacturers with retailers serving a passive and cooperative role as shopkeepers for manufacturer's branded products. Today, however, the increase in retail concentration and power in distribution channels is fundamentally altering retailer-manufacturer relations. No one knows with certainty how this dynamic scenario will play out. It depends on strategic moves by the world's leading food firms and public policy, especially antitrust enforcement.

This paper documents key trends in concentration at both the manufacturing and retailing level in the U.S. Recent mergers have been a major contributor to retail concentration. Many of the recent innovations in vertical coordination including Efficient Consumer Response (ECR), Every Day Low Pricing (EDLP), category management and other strategic moves are best understood as responses to increasing concentration at all stages of the post farm gate food system. The channel now has "shared" monopoly, i.e. tight oligopoly at both the manufacturing and retail stages. There is a need for vertical coordination between manufacturers and retailers to supplant market price determination in wholesale and retail markets. Large manufacturers, with category dominant national brands, and large supermarket chains that occupy powerful positions in many local food markets must rely on more than independent product pricing (what economists call vertical Nash pricing) to reduce "double marginalization." As we show below reducing double marginalization, i.e. the exercise of market power at two stages in the channel increases total channel profits and lowers prices to consumers.

From a public policy perspective, for whatever reason, antitrust policy has been ineffective in limiting concentration and the exercise of market power in food industries. Now we face compound market power. Antitrust challenges that enhance competition at one stage of the marketing channel should have support not only from consumers but also powerful firms at other stages of the market channel because such actions increase their profits.

Box 1: External Forces Driving Observed Changes in the Food System

Several forces, external to the food industry, are driving changes in the system that offer challenges and opportunities for manufacturers and retailers:

- Information technology is reconfiguring business organization and procedures with major gains in labor productivity and ability to manage. First generation uniform communication system/uniform product code scanning systems are universal. Second generation intranet and internet technologies are rapidly gaining acceptance.
- Biotechnology and other food science technologies are creating new functional foods for health needs.
- The revolution in communications is directly affecting the ability of food firms to advertise and build brands. Mass-market advertising is being fragmented into much finer consumer segments via the offer of multiple cable TV channels. Indirectly, the revolution in communications, including mobil telephones, faxes, e-mails, etc., is creating a society where instant gratification is common. Consumers have low tolerance for cumbersome, time consuming relationships, including food shopping and food preparation.
- U.S. consumers envision an affluent, multicultural global society in the future. Travel, trade, and open communication ensure this. Diversity in the workplace will increase and be valued. Incomes will continue their recent strong growth. A recent survey finds that 51 percent of U.S. teenagers expect to "live outside of country of birth". This compares to 37 percent for European teenagers (Quelch).

Strategic Implications

- Food manufacturers must move beyond traditional old-line brands and line extensions thereof to apply their branding skills to truly new food products that consumers find novel, interesting and valuable. This includes moving beyond "ethnic" food to international cuisines, sourced globally.
- Food retailers may find advantage in reconfiguring the superstore to offer more than rows of shelves with groceries arranged by product category for preparation at home. Superstores will take advantage of new technologies and demographic trends by offering cuisine areas (Chinese, Mexican, Italian, Indian) with prepared food entrees for on-site or at home consumption, and chilled entrees for use at home, as well as packaged groceries for preparation at home.
- Executives in both manufacturing and retailing will of necessity need a global view of the food system to capitalize on external forces affecting the food system.

2. Food and Tobacco Manufacturer Concentration in the U.S.: Who are the Major Players and How Dominant are They?

The U.S. food manufacturing system is highly concentrated with relatively few large firms dominating the sector. Table 1 lists the top 25 food processing companies for 1998 in the United States. Philip Morris companies with 31 billion in food sales leads the list. The top ten companies all had more than 10 billion dollars in annual sales in 1998. For comparison, a 1997 study of European food manufacturing lists only 3 companies with annual sales of over 10 billion dollars. (FT Study, Ramsay 1997). They are Nestle (38.8 billion dollars), Unilever (26.7 billion dollars) and Danone (12.8 billion dollars). Twelve European companies, as opposed to 25 American companies, have sales of over 4 billion dollars annually. The American list includes only the U.S. sales of Nestle. Nestle is ranked number 14. If Nestle total company sales were, in fact, included, as is the case for the other American companies on this list, it would rank number one.

Figure 1 documents the increase in dominance by the top 20 food and tobacco manufacturing companies over the past 30 years. In 1995, the top 20 food and tobacco manufacturing companies are estimated to account for over 52 percent of the sector's value added. This is up from 23 percent of value added in 1967. In 1995, if one adds the value added from the remaining top 100 food manufacturers they account for 77 percent of the sector's value added. This figure is up from 50.8 percent of value added in 1967.

Since advertising is the key component in branded food product marketing, an examination of company advertising outlays gives us an indication of who the major players are in branded food product marketing. Table 2 lists the top 21 advertisers in the food and tobacco processing sector for 1997. Sixteen of these leading advertisers are among the top 25 food processing companies in the country. Philip Morris leads both lists and is far and away the largest food advertiser with advertising expenditures of over 1.3 billion dollars in 1997. Note that the top 20 advertisers in food and tobacco processing accounted for 71.9 percent of all food advertising in 1997. This compares 52 percent value added in 1995. Thus, food advertising and branded food product production is even more concentrated than all food and tobacco manufacturing activity. Fresh product, i.e. fruit, vegetable, and meat industry concentration is also very high at the packer stage with a few agricultural cooperatives, as well as private firms, capturing large market shares.

From the standpoint of food manufacturer/food retailer relationships it is clear that food retailers are dealing with relatively few large organizations for a very significant proportion of the products that they sell in their supermarkets. Moreover, these companies sell highly differentiated products that have strong consumer acceptance; i.e. these brands have relatively inelastic demand curves.

3. Food Retailer Concentration in the U.S.: Local Market, Regional and National Concentration Estimates

Commentaries on retailer power often do not appreciate the important distinction between supermarket concentration in local city markets and aggregate concentration measured at the regional or national level. They quickly leap to the latter and the issue of "bargaining power" against manufacturers assuming that it is the paramount issue. This is a mistake, because the problem of successive monopoly and its attendant demand for increased coordination between manufacturers and retailer is, by far, more important for understanding today's market place. Local market concentration measures the ability of supermarkets to exercise market power to raise retail prices. Figure 2 reports the distribution of four firm concentration ratios in 94 of the top 100 U.S. cities for 1987 and 1998. There is a clear upward shift in four-firm concentration over this 11-year period. For example, in 1997 one third of these markets (31) had four-firm concentration above 80 percent of supermarket sales. In 1987 only 12 markets were that concentrated. Four firm concentration for 1998 averaged 74.4 percent. In 1987 four firm concentration averaged 64.5 percent. Markets with four-firm concentration above 60 percent would routinely be expected to offer selling supermarkets some ability to exercise market power over retail prices. (See Box 2 on the relationship between seller concentration and price.) All but 12 of these 94 markets had four-firm concentration above 60 percent.

Table 3 gives the mean value for metropolitan statistical area concentration ratios for selected regions of the country as well as for the entire country. Local market concentration is highest in California at 90.7 percent average and lowest in the Midwest at 69.3 percent in 1998. Local market concentration uniformly increased throughout the country.

Since European authors often quote country level concentration ratios when discussing European food retailing, I have computed regional concentration ratios for regions of the United States that are of a similar size to European countries. Table 4 gives such concentration

Box 2: The Relationship between Local Market Concentration and Prices

Figure 3 is an illustration of the relationship between market concentration and price levels. Prices for several Royal Ahold supermarkets for a set of local markets with variation in concentration were collected in March 1999. The lowest priced supermarket was assigned an index value of 100. Prices across these markets were as much as 20 percent higher than the lowest priced store. Some of this price variation is due to factors other than market concentration; however, as this plot reveals a very significant proportion of observed price variation is explained by market concentration.*

Market concentration in Figure 3 is measured by the Herfindahl Index, which is the sum of the square of each market share. The Herfindahl ranges from near zero (many small share firms) to 10,000 (one firm with 100 percent SOM). Four-firm concentration ratios are highly correlated with the Herfindahl. A four-firm ratio of 60 percent is roughly equivalent to a Herfindahl value of 1,000. A four-firm ratio of 80 percent is roughly equivalent to a Herfindahl of 1,800. The U.S. federal merger guidelines consider markets with Herfindahls below 1,000 to so unconcentrated as to offer no chance for the exercise of market power. Between 1,000 and 1,800, the exercise of power is deemed feasible. Above 1,800 the U.S. government becomes very concerned. Figure 3 supports the government's conjecture. Between 1,000 and 2,000 prices clearly rise, and thereafter, the price rise continues but at a less steep rate.

*Fitting a logarithmic line to these data explains 60.1 percent of the variation in price.

ratios for 1992, and Table 5 gives them for 1998 so that we can evaluate in detail the increase in retail concentration for these regions of the United States. In Table 4 the state of California with population of 29.7 million had four-firm concentration of 50.1% in 1992. Four-firm concentration for the state of Florida with population of 12.9 million was 77.7% in 1992, considerably higher than for the state of California. The Northeast and the upper Midwest both had four-firm concentration ratios of roughly 31% in 1992.

Moving now to Table 5, by 1998 four-firm concentration in the state of California had increased 19.7 points to 69.8%. This dramatic increase of four firm concentration is due primarily to two major mergers in California. Albertsons acquired American Stores, and Safeway acquired the Von's grocery store company. By 1998 concentration in the state of Florida also increased increasing 10 points to 87.7%. In the Northeast with a population of 57.9 million people, which is similar in size to the United Kingdom, four-firm concentration

increased 10.7 percentage points to 41.3 percent. Again, a major source of this increase in four-firm concentration was mergers between firms in the region, especially mergers under the Royal Ahold corporate umbrella. In 1992 Ahold wasn't even listed in the top 5 retailers for the Northeast region, but by 1998 it was ranked first because it had acquired the Stop & Shop chain in New England, the Giant Food chain in Washington, D.C. and Baltimore, and the Pathmark chain in the greater New York City region. Note also that Sainsbury with its acquisition of Shaw's and Star Markets in New England joined the Tengelmann/A&P chain in the top 4 ranking for the Northeast. Thus, 3 of the 4 leading supermarket chains in Northeastern United States are now European owned.

In the upper Midwest, retail concentration increased only 2.3 percentage points to 34 percent of the market. The region was relatively calm on the merger front, however, Safeway acquired the Chicago based Dominick's chain and the Jewel chain, a subsidiary of American stores, was acquired by Albertsons.

Note that the regional four-firm concentration ratios in Table 5 are all uniformly lower than the corresponding average local market concentration ratios for cities and that are reported in Table 3. For example, local market concentration in California in 1998 in its 6 major cities averaged 90.7 percent, which is significantly higher than the statewide four-firm concentration ratio of 69.8. This means regional concentration ratios uniformly tend to understate local market concentration and thus uniformly tend to understate the degree of seller power that supermarket chains have in local geographic markets. This insight also holds for country vs. local city market comparisons in Europe. The relevant concentration figures are for local urban food markets, e.g., Manchester or Birmingham, or possibly sections of such major urban areas, not the total U.K.

Table 5 also gives the regional dollar sales and the total U.S. corporate sales for each chain. For, multi-national chains it gives a total global sales as well. Note that Walmart with 136.6 billion dollars (which includes all of its non-food operations as well as its food operations globally) is by far the largest retail organization. Kroger is next with total sales all in the US of 43 billion dollars, then Albertsons with total sales, again all in the US, of 35.7 billion. Three leading European chains rank among the largest retailers globally. The Tengelmann chain has total sales of 29.6 billion (10.5 billion in the United States.) The Ahold chain has global sales of 25.9 billion with 19.7 billion in the United States and the Sainsbury chain has a total global sales of 23.8 billion with only 4.2 billion in the United States.

Moving on to national market concentration one finds a significantly weaker but very visible trend towards increased concentration. Table 6 reports the sales and market share position for the top 20 supermarket chains in 1992. The top four chains nationally in 1992 were Kroger, American Stores, Safeway and A&P/Tengelmann. Those four firms together, however, accounted for only 23.3% of US supermarket sales. The top 20 firms in 1992 accounted for 51.0% of supermarket sales in 1998. Table 7 shows that top chain, Kroger, increased sales by 21.9 billion dollars to 43.1 billion. Kroger's market share increased from 7.7% in 1992 to 10.8% in 1998. Much of this gain was due to acquisitions (see Table 8.). The number 2 chain in 1998 is the combination of Albertsons and American at 35.7 billion with an 8.9 percent market share. The number 3 chain is the combination of Safeway and Vons with 25 billion in sales and 6.2% market share. The number 4 chain is the Ahold companies, which moved up from number 8 in 1992 to sales of 23.4 billion in 1998 and a market share of 5.8%. The top four firms in 1998 account for 31.7% of the market up from 23.3% in 1992. The top 20 firms in 1998 accounted for 60.4% of the market, up 10.2 percentage points from 1992. Thus, we can conclude if one is comparing national concentration to national concentration across the Atlantic, concentration at the national level is indeed lower in the United States than it is in most of the smaller European nations. However, American supermarket chains are larger in absolute dollar volume size than European companies in Europe. This suggests that they should, if anything, enjoy larger economies of scale and scope related to the production and physical distribution of food products than European chains.

With regard to the exercise of retailer power against manufacturers and other suppliers in the food system, local and regional concentration may be more important than national concentration because suppliers can't threaten to switch sales to other geographic localities. Fully national distribution is important to them. This improves retailers' bargaining position in any coordination games and is a major reason for the rise in slotting allowances, street money, and other transfers to retailers.

Table 8 lists the major supermarket mergers for 1991 through the first half of 1999. Kroger's acquisition conduct is a classic example of smaller fish being swallowed by progressively larger fish. Kroger, the big fish, acquired Fred Meyer in 1998, which acquired Ralphs and Quality Foods in 1997, and Quality Foods acquired Hughes in 1996. Over the 1991 to 1999 period, the aggregate value (price paid) for acquired

supermarkets relative to their annual sales has increased from the .2 to .3 range in 1991 to the .5 to .8 range in 1998-99. Acquirers are now paying a higher premium per dollar retail sales. To make such a merger pay for acquiring firm shareholders, even larger efficiencies and/or more pricing power needs to flow from the combination.

In summary, two related major forces contributed to increased retail concentration in the United States during the 1990s: the entry of European chains into US markets, and mergers. In many instances these mergers had significant horizontal components, i.e., the merged chains competed with each other in one or more local geographic markets. Only one merger was stopped by antitrust authorities. The state of California successfully challenged the American Stores-Lucky merger forcing American to divest its Alpha Beta chain to Food 4 Less in 1991 (see Table 8). In all other mergers Federal Trade Commission and state antitrust authorities have routinely forced divestiture of only overlapping stores in an attempt to preserve competition. The regional and local market concentration data presented here, however, indicate that in spite of antitrust authority efforts, concentration has increased significantly. Recently, individual firms, the American Antitrust Institute, and other trade associations representing consumers, farmers, and food firms, have called for stiffer anti-merger enforcement in food industries, especially food retailing (Foer, 1999, Cotterill, 1999b).

4. Shifting Power Balances Drive New Coordination Programs

In the 1980s leading food-manufacturing firms enjoyed powerful market positions with strongly differentiated brands supported by significant advertising expenditures. Their position has not appreciably changed since then, however, the position of food retailers has. Local market retail concentration has increased significantly giving retailers the ability to exercise market power on a more systematic and pervasive basis than in the 1980s. Consequently, we have a food system that is predominantly served by powerful food manufacturers selling to powerful food retailers.

A successive monopoly model of the distribution channel captures the essence of the channel coordination problem in the U.S. Food manufacturing industries such as carbonated beverages, breakfast cereal, and beer are tight oligopolies that sell highly differentiated brands that have reasonably inelastic (-1.5 to -3.0) brand level demand curves at retail (Tellis, 1988, Cotterill et al. 1996, Langan and Cotterill 1994, Langan 1997, Ma

1997, Nevo 1997, Cotterill and Haller 1997). The observed brand inelasticity is primarily due to product differentiation, however, some is also due to coordinated pricing, i.e. price followship tends to reduce brand elasticities (Cotterill et al. 2000). Consumer pull advertising and promotion by the brand manufacturer reduces any bargaining power of buying groups (Cotterill 1997, Gerstner and Hess, 1991). Consumers want the brand so retailers must carry it. Thus each brand tends to be a monopoly; i.e. its food manufacturers face a brand level demand curve that has slope. As we have explained, however, retailers also have market power in the local markets where they sell products due to high seller concentration in such local markets (Also see Marion et al. 1979, Weiss, 1989, Cotterill, 1986, 1999a, Foer, 1999).

Spengler (1950) was the first to analyze the impact of successive monopoly on channel coordination and economic efficiency. Figure 4 can be used to explain the problem.¹ D_r is the retailers demand curve. MR_r is the corresponding retail marginal revenue curve. If we assume, without loss of generality and for ease of illustration, that the retailer has a fixed cost of retailing and that the only variable cost is the purchase of the product Q , then the retailers marginal cost is the manufacturer price, w . Since a profit maximizing retailer always equates marginal revenue and marginal cost ($MR_r = w$) the retailers marginal revenue curve is the demand curve for Q at the manufacturer level. The manufacturer therefore equates the marginal revenue of the retailers input demand curve (MR_m) to its marginal cost of manufacturing the product. In other words, the manufacturer computes the marginal revenue of the retailer's marginal revenue, hence the name double marginalization. In Figure 4 the profit maximizing manufacturer offer quantity Q_2 at price $p_1 = w$, and the profit maximizing retailer sells this quantity at price p_2 . If the two firms integrated the new single monopolist would maximize profits by lowering price to p_1 and selling Q_1 . The integrated firm's total profits are greater than the profits of the two successive monopolists.

The implications of this double marginalization phenomena are very real for the US food marketing system today. Food manufacturers and food retailers, can in fact, increase their profits if they discard independent pricing practices and talk to each other to coordinate pricing and other terms of trade. To the

extent that retailers also have power in wholesale markets, this "big buyer power" affects their bargaining ability to capture a larger share of the coordination gains. The double marginalization model predicts that vertical coordination will increase channel profits and lower prices to consumers. This is a very rare win-win situation in economics, the "dismal science" of trade offs!

With this economic model one can begin to understand why strategic moves such as the efficient consumer response (ECR) program with its everyday low pricing (EDLP) component was only partially successful. ECR moves to improve the logistical flow of products through the system, such as just-in-time inventory management procedures, have been successful because they reduce cost. However, one of the largest projected savings due to the innovation of ECR was related to the elimination of stop-go price promotions via the establishment of everyday low prices (EDLP) throughout the food system. EDLP didn't work and savings due to smoother product flow haven't accrued. EDLP has failed in the United States precisely because of the need for trade promotion programs as a vehicle to control or eliminate double marginalization in the channel.

Consider Figure 5. The manufacturer can offer product to the retailer on the condition that it be promoted at price p_1 the channel profit-maximizing price. To obtain the retailers cooperation, the manufacturer need only lower w to a level that increases the retailer's profits from the nonpromoted level. Figure 5 illustrates a trade promotion's impact on prices and profits. At the nonpromoted retail price level, p_2 , the channel profit the manufacturer has profits equal to the area, $wbde$. The retailer earns profits equal to area, p_2abw . With promotion the retailer agrees to sell at p_1 and the manufacturer lowers the wholesale price to w_1 . The retailer participates in the trade promotion because its profits, area p_1fiw_1 , are greater than its nonpromotion profits, area p_2abw . Manufacturer profits under promotion are area w_1ige , which is larger than nonpromotion profits, $wbde$.

Under the trade promotion scenario both the manufacturer and retailer share the increased profits due to the elimination of double marginalization. Thus an old logistically inefficient workhorse in the food system, trade promotions, has not been put out to pasture. It has a new more central role for pricing efficiency in concentrated food channels.

¹ This analysis of double marginalization to explain formally the role of trade promotions and private labels in the food system was first presented in Cotterill (1999d).

The retailer, however, has a second marketing strategy that can dominate participation in a trade promotion. If the retailer can introduce a private label product of equal quality and consumer acceptance, i.e. a product that destroys all manufacturer brand equity built up due to advertising, product trademarks, and design, the retailer can appropriate all of the profits earned at $p_1 Q_1$ in figures 4 and 5. Private label products, however, rarely are so successful that they eliminate manufacturer brands but clearly they diminish national brand pricing power (Cotterill et al. 2000). Trade promotion by manufacturers reduces the incentives for development of private labels, and the amount of brand equity that manufacturers have created also affects retailers ability to introduce private label products. One cannot analyze private label pricing in a vacuum. Nonetheless, the rapid growth of private label products in the 1990's is in large part due to the problem of successive monopoly in the food system.

5. An Out of the Box Solution: Truly National Supermarket Chains

Moves to improve channel coordination and pricing efficiency such as trade promotions, ECR, category management, and copycat private label programs are "in the box" solutions. They don't challenge the structure of the food-marketing channel, essentially leaving the food-manufacturing firms intact and in control of the content of the system. Although U.S. supermarket chains are larger in absolute size than their European markets counterparts, and they dominate regions of the U.S. comparable in size to many European countries, unlike many European supermarket chains they have not established themselves as channel captains by instituting strong retail brands via supply chain management programs.² In the U.S. this is an "out of the box" move that would diminish the position and stock market value of large U.S. food manufacturers. The breakfast cereal industry has experienced a very strong taste of this since 1995 (Cotterill, 1999c).

The next phase in retail concentration may well be the harbinger of such a radical shift in economic fortunes in the U.S. food system. That phase is the emergence of truly national supermarket chains, unseen in the U.S. since the heyday of A&P in the 1930's and 1940s. In the near future, we undoubtedly will see more mergers

among the top 10 supermarket chains. Since this is an "out of the box" solution, let's speculate on some feasible geographic combinations that would assemble truly national chains with significant national market shares. Using Table 7 as a base, and ignoring the impact of horizontal divestitures that attempt to protect competition in local market areas, if Kroger, Safeway, Winn Dixie and Shaws (Midwest, West, South, and Northeast) combined, the resulting company would be truly national in scope with sales of \$86.4 billion and a national market share of 21.5%. A second combination could be Albertsons, Ahold, Food Lion, and Meijer (West, East, South and Midwest). It would have sales of \$77.9 billion and a national market share of 19.3 percent. These two mammoth chains would account for slightly over 40 percent of supermarket sales. Walmart's much ballyhooed expansion by building supercenters is trivial in comparison. A third combination could assemble another 20 percent firm in response to these conjectured consolidations. These three firms plus a larger Walmart, e.g. 10 percent SOM, would put national four-firm concentration at 70 percent.

Consolidation to this level would have two major impacts. The first is a quantum leap in bargaining power that was the basis for the Robinson Patman Act (the anti A&P act) in the 1930's. Recently, the American Antitrust Institute (AAI) and Wakefern Food Corporation, Elizabeth, New Jersey, the nation's largest retailer-owned cooperative wholesale, petitioned the FTC on, among other things, this issue. The AAI already is concerned that recent mergers have, in fact, generated sufficient size disparity in the supermarket industry to trigger Robinson Patman claims:

"What we are calling the mega-chains—the five largest retail grocery sellers—exercise enormous buying power, which they employ against the food producers and manufacturers. The sheer size of the mega-chains looms as a lever—the manufacturers must get their products onto the shelves of the largest retailers, even if they have to pay higher, even exorbitant, slotting and other allowances and make other costly concessions—which they are forced to do. As a result, manufacturers may raise their prices to all customers in order to earn an acceptable return on investment. In that case, all other customers subsidize the mega-chains. ...smaller customers are always at a competitive disadvantage, because they are not receiving the higher allowances and other concessions, which effectively raises their cost of goods."(Foer, 1999, p.7).

² Cotterill (1997) discusses this option and whether developed nations' food systems might converge to it. See Wrigley (1999), a leading British geographer, for a very interesting European perspective on the transformation of U.S. food retailing.

The R-P Act may come to the forefront after decades of relatively inactive and marginal enforcement. It gives retailers (read smaller ones) legal recourse against manufacturers that grant discounts to other retailers (read larger ones) that are not cost justified. In the conjectured scenario, manufacturers would have two choices: either give all retailers noncost justified discounts that large retailers demand, or give no one such discounts.

This latter option may not be sustainable in the long run because the truly national chains may go out of the box. They may develop strong retail brands that supplant or at least significantly curtail time honored manufacturer brands. Leading manufacturers and smaller retail chains would both lose position in the food system.

Whether this large chain strategy is viable depends upon the trade off between economies of specialization versus economies of scope in branding food products. Economies of scale and scope in production and distribution are not an issue. Branded food companies, for example, in fruits, vegetables and cheese have spun off production to agricultural cooperatives. They buy the product as a graded commodity and then put their brand on it. Supermarkets in Europe do the same with their supply chain management approach.

Does a company such as Kellogg's or Campbell's have a competitive advantage in branding new products in cereal or soups, or does a truly national supermarket chain have the edge because of scope economies? If advertising is losing its punch due to new technologies, then the era of branding food products with TV media may be over (see Box 3).

Box 3: Goodbye to Advertising As We Know It

"Thanks to smart new VCR-like machines from Silicon Valley, the viewer is king, media moguls are fretting, and advertisers are terrified. A DVR (Digital Video Recorder) incorporates a hard-disk drive, a modem, and silicon circuitry. It converts TV programs entering your home via cable, satellite dish, or antenna into digital bits (up to 30 hours' worth) that the hard drive can store for you to view at your convenience... It's a Trojan horse that could surprise...advertisers with radical change... That's because, yes, DVRs let you skip commercials with ease. Advertisers will feel added pressure to come up with ads "sticky" enough to keep viewers from zapping them... Forrester Research of Cambridge, Mass., predicts that 13% of U.S. households will have one by 2004, an adoption rate faster than that of VCRs." (Schlender 1999)

If a retailer can establish a uniform high quality reputation across several categories, the retailer name alone would be the brand, and it would be transferable to new product categories. Underlying this economy of scope argument is the supposition that truly national chains could develop extensive managerial cadre that could work with smaller manufacturers in a supply chain management context to produce and market truly innovative new foods and high quality established foods. Truly national chains could make more effective use of TV media that is segmented along demographic rather than geographic lines. These chains would not rely on leading manufacturer brands to do category management. Their own management would do it. Fundamentally, this battle for channel control distills down to whether large old-line food manufacturers, or new retailer "product development and marketing" departments working with smaller possibly more experimental and entrepreneurial food manufacturers can be the most innovative and creative.

Truly national chains may also be able to capitalize more quickly on two emerging trends: meal solutions and international cuisine affinity centers within stores. With continuing economic growth, wealthier consumers will pay for prepared meals rather than branded ingredients to combine and cook at home. Affinity centers will replace the traditional aisles of packaged groceries with more circular areas that will offer an array of prepared ready-to-eat meals and ingredients for a particular cuisine such as Indian or Mexican.

If, in fact, economies of scope at retail can dominate economies of specialization at the manufacturing level for the marketing of specific food products, we may very well eliminate double marginalization in food channels; however, we would be left with a food system dominated by retailers who are shared monopolists/monopsonists. Can three or four huge retail bureaucracies truly be efficient and responsive? The monopsonistic power of large retailers against primary food producers is already becoming a concern among U.S. farmers. Recently, farmer groups were concerned when a glut of pork depressed farm level prices by more than 50 percent for several months, but retail pork prices remained unchanged. Rapid and responsive price transmission is necessary to expand consumer demand in such situations to reduce the severity of commodity price cycles.

Unless antitrust enforcement is significantly tightened, mergers will continue to contribute to concentration at all stages of the food system. Antitrust challenges at retail may very well be supported by manufacturers and small retailers as well as consumers to the extent that they curtail double marginalization,

limit the bargaining power of large retailers, and preclude the European solution. Nonetheless, if concentration in local retail markets and in food manufacturing markets continues to increase, problems of double marginalization will increase creating even more impetus for vertical coordination. Third party marketing firms that facilitate vertical coordination in all phases of marketing will thrive. Those include A.C. Nielsen Information Resources, Inc., Catalina Marketing with its electronic in-store coupons, Vlassis with newspaper coupons, and News America/Actmedia with newspaper coupons and in-store electronic and paper promotion programs.

The European retail brand/supply chain management model is a real and viable option (Cotterill 1997). But most American marketing pundits prefer a more diverse less bureaucratic food system with cooperative efforts to improve coordination. A tougher stance against retailer mergers by antitrust agencies would preserve a more diverse system. We end this essay with the insight proffered in the introduction. No one knows with certainty how this dynamic scenario will play out. It depends on strategic moves by the world's leading food firms and public policy, especially antitrust enforcement.

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Table 1. Food Processing Magazine's Top 25 U.S. Food Processing Companies, 1998

Rank	Company	Millions \$		Percent Food
		Food Sales	Total Sales	
1	Philip Morris Companies, Inc.	31,527	71,592	44
2	Conagra, Inc.	28,840	28,840	100
3	Cargill, Inc.	21,400	51,000	42
4	Pepsico, Inc.	20,917	20,917	100
5	The Coca-Cola Company	18,800	18,868	100
6	Archer Daniels Midland Company	16,109	16,109	100
7	Mars Inc.	14,000	14,000	100
8	IBP, Inc.	13,259	13,259	100
9	Anheuser-Busch Companies, Inc.	12,832	12,832	100
10	Sara Lee Corporation	10,800	20,000	54
11	H.J. Heinz Company	9,209	9,209	100
12	Nabisco, Inc.	8,734	8,734	100
13	Bestfoods	8,400	8,400	100
14	Nestle USA, Inc.	7,800	7,800	100
15	Dairy Farmers of America	7,000	7,000	100
16	Kellogg Company	6,830	6,830	100
17	Campbell Soup Company	6,696	6,696	100
18	The Pillsbury Company	6,500	6,500	100
19	Tyson Foods, Inc.	6,356	6,356	100
20	General Mills, Inc.	6,033	6,033	100
21	Quaker Oats Company	5,010	5,010	100
22	The Proctor & Gamble Company	4,376	37,154	12
23	Dole Food Co., Inc.	4,336	4,336	100
24	Hershey Foods Corporation	4,300	4,300	100
25	Land O'Lakes, Inc.	4,195	4,195	100

Source: The 1998 Top 100 Food Companies, *Food Processing*, December 1998 Issue.

Table 2. Leading Company Advertisers in Food and Tobacco Processing, 1997

Rank	Company	1997 Advertising Expenditure	Percent Of Total	Cumulative Percent
1	Philip Morris Inc.	\$1,313,430.9	17.48	17.48
2	General Mill's	416,684.6	5.55	23.03
3	Kellogg Co.	403,215.5	5.37	28.39
4	Coca-Cola Co.	317,190.1	4.22	32.62
5	Pepsico Inc.	292,467.8	3.89	36.51
6	RJR Nabisco	287,243.6	3.82	40.33
7	Anheuser-Busch Inc.	263,366.1	3.51	43.84
8	Diageo PLC*	251,715.8	3.35	47.19
9	Campbell Soup Co.	250,726.4	3.34	50.53
10	Mars	192,424.4	2.56	53.09
11	Nestle	183,748.4	2.45	55.53
12	Quaker Oats Co	176,602.1	2.35	57.88
13	Proctor & Gamble	174,623.4	2.32	60.21
14	Hershey Foods Corp	174,331.7	2.32	62.53
15	Unilever	142,082.1	1.89	64.42
16	William Wrigley Co	139,334.7	1.85	66.27
17	Adolph Coors	139,289.6	1.85	68.13
18	Seagram Co	114,412.9	1.52	69.65
19	Conagra Inc.	91,537.2	1.22	70.87
20	Slim Fast	78,959.0	1.05	71.92
21	Bat Industries	68,861.6	0.92	72.84

* Includes the following subsidiaries: Pillsbury, Green Giant Vegetables, Haagen-Dazs, Old El Paso, Guinness.

Source: Calculated from Competitive Media Reporting, 1998. Based on a total \$7.513 billion in advertising for cigarettes and food products.

Table 3. Mean Values for Supermarket Four Firm Concentration Ratios in MSA Areas: 1987 and 1998

	All MSA's	FL	CA	NE	MW
1998	74.4	72.4	90.7	73.5	69.3
1987	64.5	60.0	82.9	59.7	60.6
n=	94	10	6	26	13

Source: Trade Dimensions *Market Scope* 1988, 1999.

Table 4. Supermarket Sales and Concentration Ratios for Selected Regions in the U.S., 1992

Area	Rank	Chain	Region Share	Population
<u>California</u>				<u>29,760,000</u>
	1	Lucky	19.0	
	2	Vons	13.8	
	3	Ralphs	9.4	
	4	Safeway	7.8	
	5	Alpha Beta(Food 4 Less)	5.4	
		C ₂ =	32.8	
		C ₄ =	50.1	
<u>Florida</u>				<u>12,938,000</u>
	1	Publix	35.2	
	2	Winn-Dixie	27.6	
	3	Albertson's	9.2	
	4	Kash N Karry	5.7	
	5	Food Lion(Del Haize)	5.1	
		C ₂ =	62.8	
		C ₄ =	77.7	
<u>North East¹</u>				<u>53,798,000</u>
	1	A&P(Tengelman)	12.4	
	2	Pathmark	8.0	
	3	Giant Food Inc.	5.5	
	4	Acme (American)	4.7	
	5	Stop & Shop	4.2	
		C ₂ =	20.4	
		C ₄ =	30.6	
<u>Upper Midwest²</u>				<u>32,820,000</u>
	1	Kroger	10.6	
	2	Jewel(American)	10.0	
	3	Dominick's	5.8	
	4	A&P(Tengelman)	5.3	
	5	Cub(SuperValu)	3.8	
		C ₂ =	20.6	
		C ₄ =	31.7	

¹ Includes Washington D.C., Baltimore, Pennsylvania, New York, and New England

² Includes Michigan, Wisconsin, Illinois, Indiana, Ohio, and Minnesota.

Source: Cotterill, R.W. 1997. The Food Distribution System of the Future: Convergence Towards the US or UK Model? *Agribusiness* 13(2):123-135.

Table 5. Supermarket Sales and Concentration Ratios for Selected Regions in the U.S. 1998

Area (population)	Rank	Chain	Region Sales (\$ Billion)	Region Share	Total U.S. Corporate Sales (\$ Billion)	Total Global Sales (\$ Billion)
California			\$31.1			
(32 million)	1	Albertsons/Lucky	7.6	24.5	35.7	
	2	Safeway/Vons	6.9	22.0	25.0	
	3	Ralphs(Kroger)	5.6	18.1	43.1	
	4	Stater Bros.	1.6	5.2	1.7	
	5	Raleys	0.7	2.4	2.5	
		C ₂ =		46.5		
		C ₄ =		69.8		
Florida			\$16.2			
(14.6 million)	1	Publix	7.0	43.1	12.1	
	2	Winn Dixie	4.4	26.9	13.9	
	3	Albertson's	1.5	9.5	35.7	
	4	Food Lion(Del Haize)	1.3	8.2	10.2	14.5
	5	Wal Mart	0.4	2.5	12.8 ¹	136.6
		C ₂ =		70.0		
		C ₄ =		87.7		
North East²			\$69.7			
(57.9 million)	1	Ahold ³	15.9	22.8	23.4	25.9
	2	A&P(Tengelmann)	5.3	7.6	10.5	29.6
	3	Shop Rite/Wakefern	3.9	5.6	5.2	
	4	Shaws(Sainsbury)	3.7	5.3	4.2	23.8
	5	Acme (Albertson's)	2.2	3.2	35.7	
		C ₂ =		30.4		
		C ₄ =		41.3		
Upper Midwest⁴			\$40.6			
(34.1 million)	1	Kroger	6.1	15.1	43.1	
	2	Jewel(Albertsons)	3.3	8.2	35.7	
	3	Dominick's (Safeway)	2.5	6.3	25.0	
	4	A&P(Tengelmann)	1.8	4.4	10.5	29.6
	5	Meijer	1.7	4.2	8.6	
		C ₂ =		23.3		
		C ₄ =		34.0		

¹ Grocery sales account for 40% of the total Wal Mart sales or \$12.8b.² Includes Washington D.C., Baltimore, Pennsylvania, New York, and New England³ AHOLD operates Bi-Lo, Edwards/Finast, Giant Food Stores, Tops, Stop & Shop, Giant (Landover MD), and Pathmark (assuming approval with no divestiture).⁴ Includes Michigan, Wisconsin, Illinois, Indiana, Ohio, and Minnesota.Source: Trade Dimensions, *Market Scope* 1999, Trade Dimensions, *Marketing Guidebook* 1999, Bureau of Census Population. *Fortune* Global 500, 1998, www.fortune.com. *Forbes*, Top 100 Largest Private Companies, www.forbes.com.

Table 6. Top 20 Supermarket Chains, Total U.S. 1992

Rank	Chain	Sales (\$ Billion)	Share
1	Kroger	21.9	7.7
2	American	19.0	6.6
3	Safeway	15.1	5.3
4	A&P/Tengelmann	10.7	3.7
5	Winn-Dixie	10.3	3.6
6	Albertson's	10.2	3.6
7	Food Lion	7.1	2.5
8	AHOLD*	6.3	2.2
9	Publix	6.1	2.1
10	Vons	5.6	2.0
11	Penn Traffic/Grand Union	5.6	2.0
12	Supermarkets General	4.7	1.6
13	HE Butt	3.8	1.3
14	Giant Food (Landover, MD)	3.5	1.2
15	Stop & Shop	3.2	1.1
16	Food 4 Less	3.0	1.0
17	Ralph's	2.9	1.0
18	Bruno's	2.7	0.9
19	Roundy's	2.5	0.9
20	Spartan Stores	2.4	0.8
	C ₂ =	14.3	
	C ₄ =	23.3	
	C ₈ =	35.2	
	C ₂₀ =	51.0	

* Ahold operates Bi-Lo, Edwards/Finast, Giant Food Stores, Tops, Stop & Shop, Giant (Landover MD),

Source: *Supermarket News* January 18, 1993. The Food Institute *Food Retailing Review 1994*, Fair Lawn, NJ. Trade Dimensions, *Marketing Guidebook*, 1994, Supermarket sales of \$286.3b.

Table 7. Top 20 Supermarket Chains, Total U.S. 1998

Rank	Chain	Sales (\$ Billion)	Share
1	Kroger	43.1	10.8
2	Albertsons/American	35.7	8.9
3	Safeway/Vons	25.0	6.2
4	AHOLD*	23.4	5.8
5	Winn-Dixie	13.9	3.5
6	Wal Mart	12.8	3.2
7	Publix	12.1	3.0
8	A&P(Tengelman)	10.5	2.6
9	Food Lion(Del Haize)	10.2	2.5
10	Meijer	8.6	2.1
11	H.E. Butt	6.9	1.7
12	ShopRite(Wakefern)	5.2	1.3
13	Shaw's(Sainsbury)	4.2	1.0
14	SuperValu	4.1	1.0
15	Giant Eagle	4.0	1.0
16	Fleming	3.5	0.9
17	Hannaford(Sobey's)	3.4	0.8
18	Hy Vee	3.2	0.8
19	Penn Traffic/Grand Union	2.8	0.7
20	Randall's	2.5	0.6
	C ₂ =	19.7	
	C ₄ =	31.7	
	C ₈ =	44.0	
	C ₂₀ =	60.4	

* AHOLD operates Bi-Lo, Edwards/Finast, Giant Food Stores, Tops, Stop & Shop, Giant (Landover MD), and Pathmark (assuming approval with no divestiture).

Source: *Supermarket News* January 25, 1999. Supermarket sales of \$400.5b.

Table 8. Supermarket Merger Activity in the U.S., 1991 to 1999

Year	Acquiree	Acquirer	Transaction Value ¹	Aggregate Value ²	
				Sales	EBITDA
1991	Almac's	Leonard Green	125.0	N.A.	7.5
	American Stores	Food 4 Less	248.0	0.2	4.5
	Tops(Freeman Spogli)	Royal Ahold	125.5	0.2	6.4
	Purity Supreme	Freeman Spogli	319.9	0.3	5.9
	Williams Brothers	Vons Companies	48.0	0.2	N.A.
1992	Baker's Supermarkets	Fleming Cos.	50.0	0.2	N.A.
	Cullum	Randall's	468.0	0.4	7.7
	Grand Union ³	Grand Union	1,404.7	0.5	7.1
	Jewel (TX/OK/FL)	Albertson's	455.0	0.3	5.3
	Wetterau Inc.	SUPERVALU	1,164.6	0.2	6.8
1993	Big Star Stores	Great A&P	121.0	0.3	N.A.
	Insalaco	Penn Traffic	45.0	0.3	N.A.
	Pueblo International	Cisneros Group	418.0	0.3	5.9
1994	Acme N.E. PA	Penn Traffic	94.0	0.3	5.8
	Ralph's Grocery	Food 4 Less	1,581.0	0.6	6.9
	Scrivner, Inc.	Fleming Cos.	1,085.0	0.2	6.4
	Smitty's	Yucaipa	168.0	0.3	6.2
	Star Markets	Investcorp	285.0	0.3	6.7
	Wilson's	Hannaford Bros.	127.0	0.6	7.4
1995	Bruno's	KKR	1,233.3	0.4	8.0
	Dominick's	Yucaipa	693.0	0.3	6.2
	Jitney Jungle	Bruckman, Rosser	317.5	N.A.	5.9
	Mayfair	Royal Ahold	188.0	0.3	7.6
	Purity Supreme	Stop & Shop	255.0	0.3	7.9
1996	Hughes	Quality Foods	391.5	0.3	6.4
	Kash & Karry	Food Lion	342.5	0.3	6.0
	Smitty's	Smith's Food & Drug	195.4	0.3	6.7
	Stop & Shop	Royal Ahold	2,900.0	0.7	8.9
	Vons	Safeway	3,447.2	0.6	9.9
1997	Delchamps	Jitney Jungle	244.4	0.2	6.6
	Quality Food Centers	Fred Meyer	1,700.0	0.9	11.2
	Ralph's Grocery	Fred Meyer	3,100.0	0.6	8.2
	Randall's Food Markets	KKR	N.A.	N.A.	N.A.
	Riser Foods	Giant Eagle	403.0	0.3	7.2
	Smith's Food & Drugs	Fred Meyer	2,000.0	0.7	7.3
1998	American Stores	Albertson's Inc.	11,700.0	0.6	8.5
	Buttrey Foods	Albertson's Inc.	169.0	0.5	10.2
	Carr Gottstein	Safeway	330.0	0.6	7.2
	Dominick's	Safeway	1,846.2	0.7	10.0
	Fred Meyer	Kroger	12,800.0	0.8	10.0
	Giant Food	Royal Ahold	2,790.3	0.7	12.2
	John C. Groub Co.	Kroger	121.5	0.5	11.0
	Sessel Holdings	Albertson's Inc.	88.0	0.5	9.3
	Star Markets	J. Sainsbury	759.0	0.5	N.A.
1999 (1 st half)	Pathmark	Royal Ahold	1,750.0	0.5	N.A.
	Glen's Markets	Spartan Stores	N.A.	N.A.	N.A.
	Family Fare Supermarkets	Spartan Stores	N.A.	N.A.	N.A.
	Cox Supermarkets	Marsh Supermarkets, Inc	N.A.	N.A.	N.A.

Note: All sales figures in million dollars.

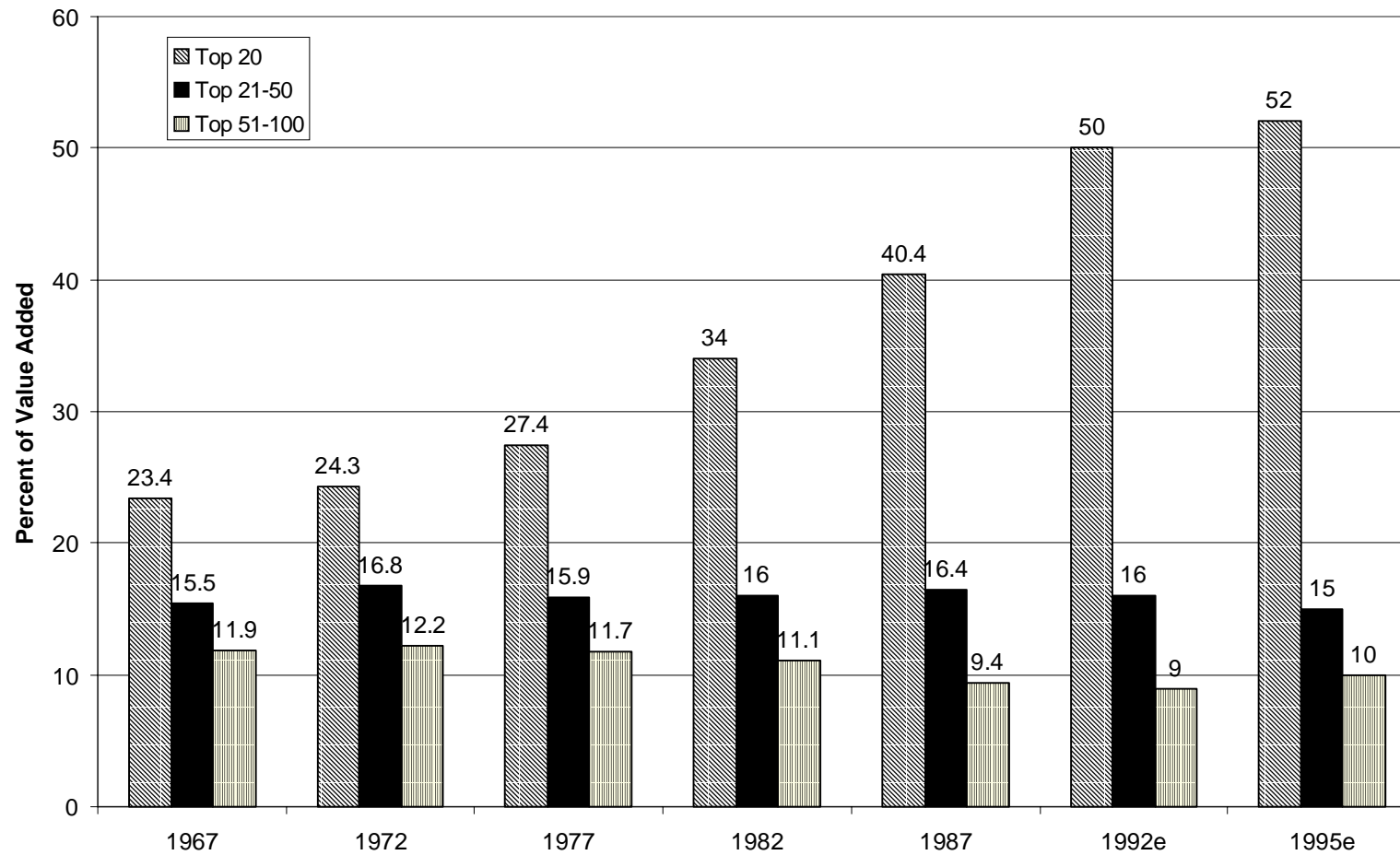
1 Includes completed and pending transactions.

2 "Aggregate Value" equals net debt plus equity.

3 As part of recapitalization, Salomon Brothers sold its 40.7% stake in Grand Union.

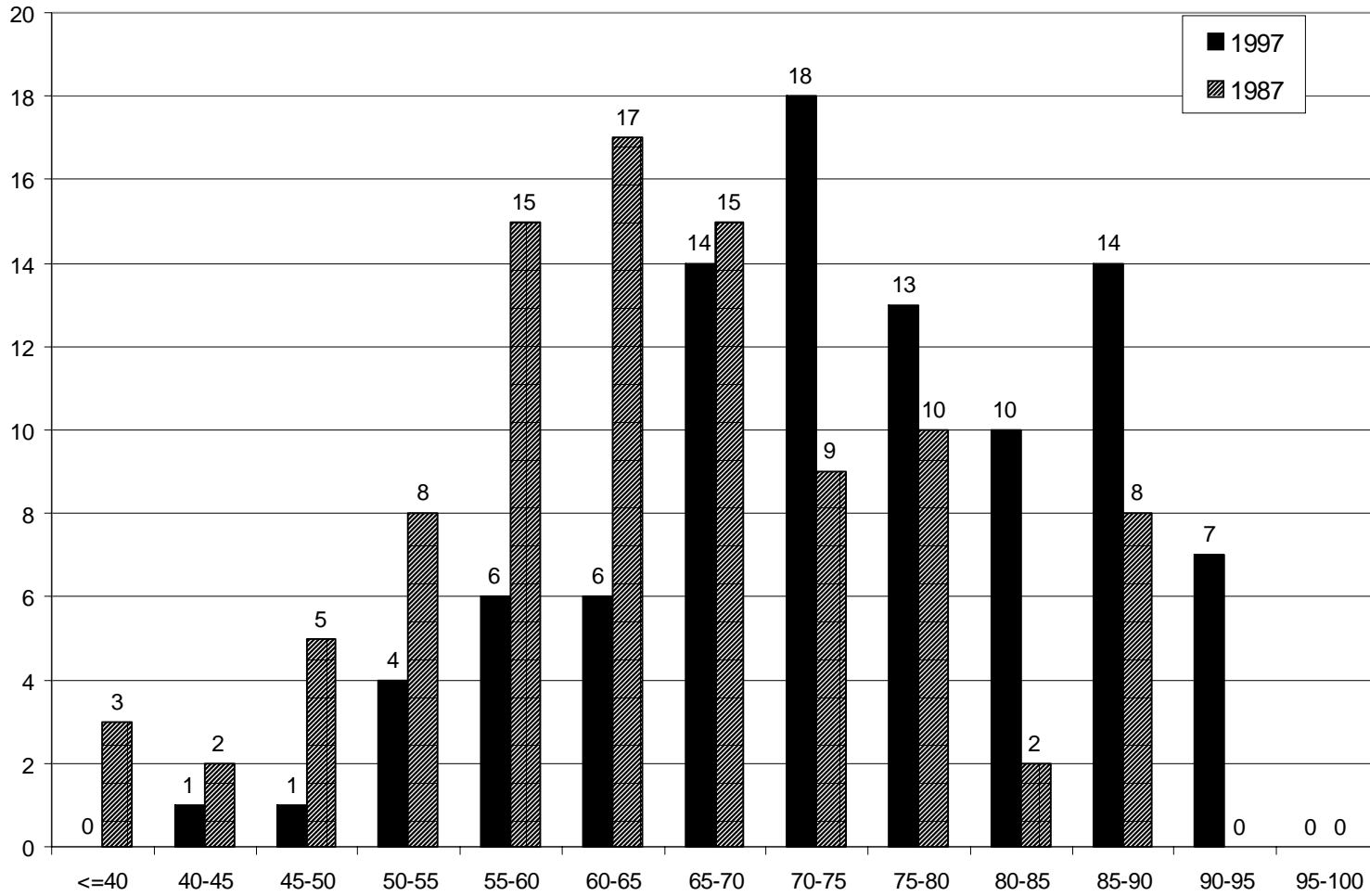
Source: Goch, 1999; The Food Institute: *Food Institute Report*, various issues.

**Figure 1. Increasing Dominance by the Top 20 Food and Tobacco Manufacturing Companies
Census Years 1967-1995**



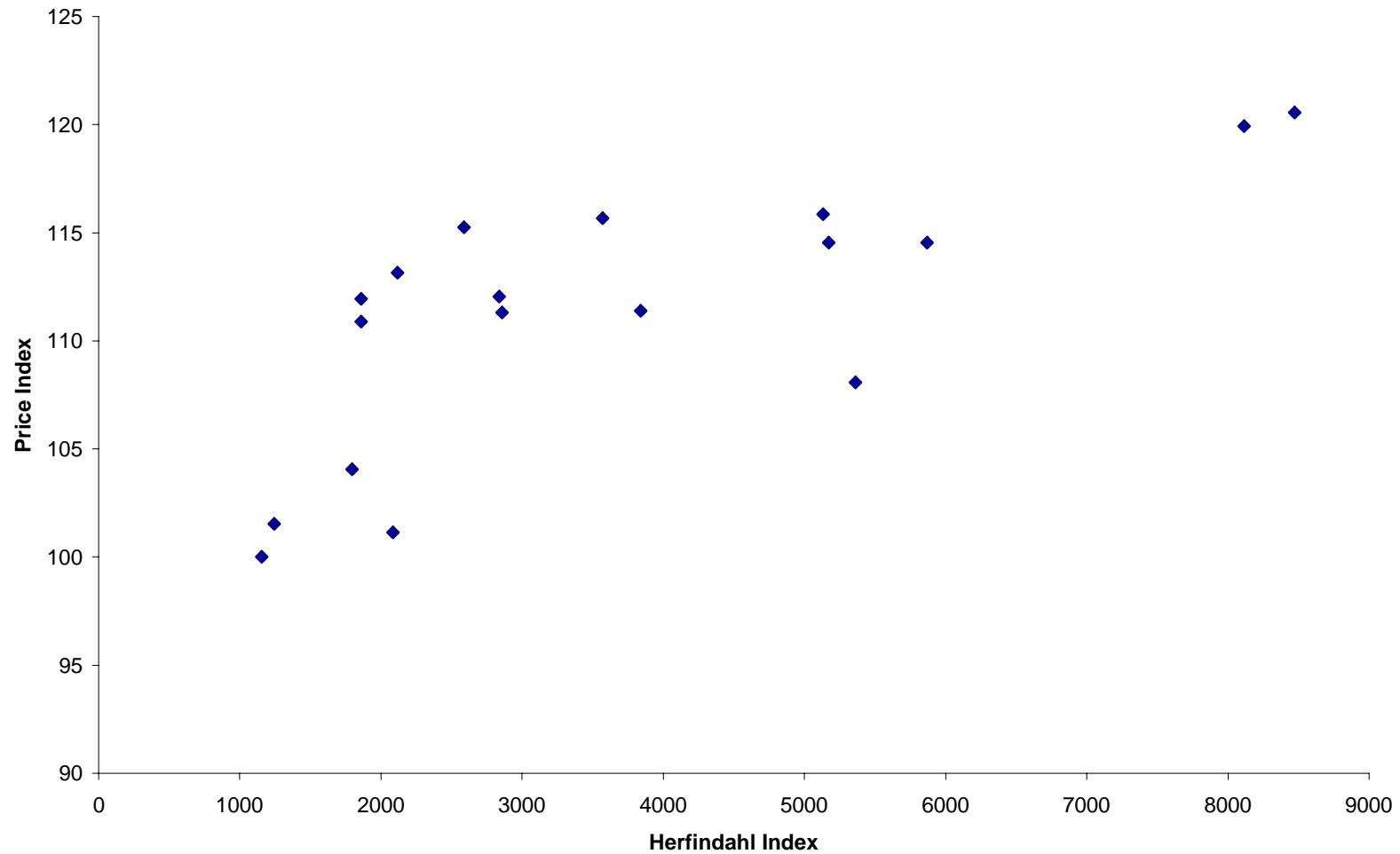
Source: Rogers, 1999

**Figure 2. Histogram of Supermarket Four Firm Concentration Ratios
in Metropolitan Statistical Areas: 1987 and 1998**



Source: Trade Dimensions Market Scope 1999, 1988, n=94

**Figure 3. Scatterplot for Local Market Concentration and Price Level:
Royal Ahold Prices in Selected Connecticut and Pennsylvania Markets**



Source: Cotterill, R.W. 1999. An Antitrust Economic Analysis of the Proposed Acquisition of Supermarkets General Holdings Corporation by Ahold Acquisition Inc. Food Marketing Policy Center, University of Connecticut
Storrs, CT 06269, April 19.

Figure 4. The Problem of Channel Coordination: Successive Monopoly

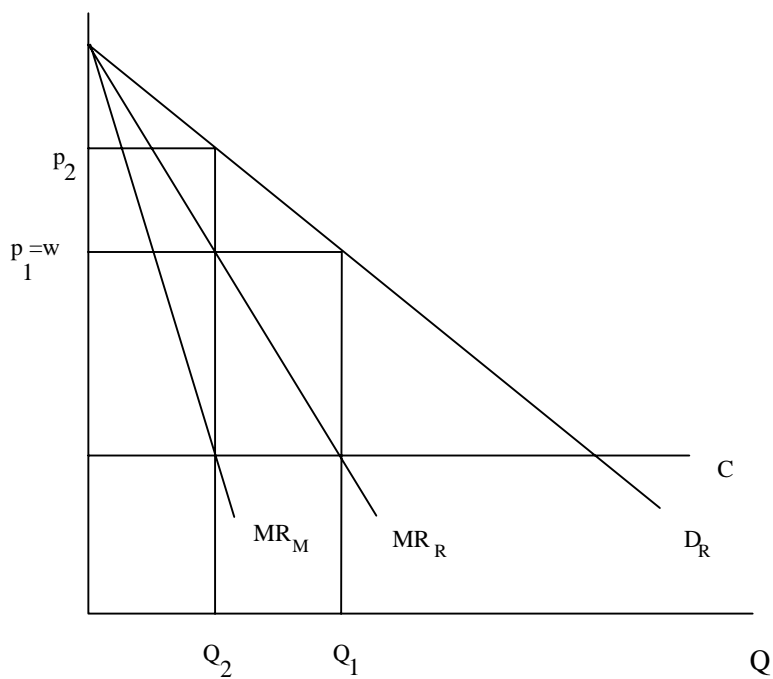
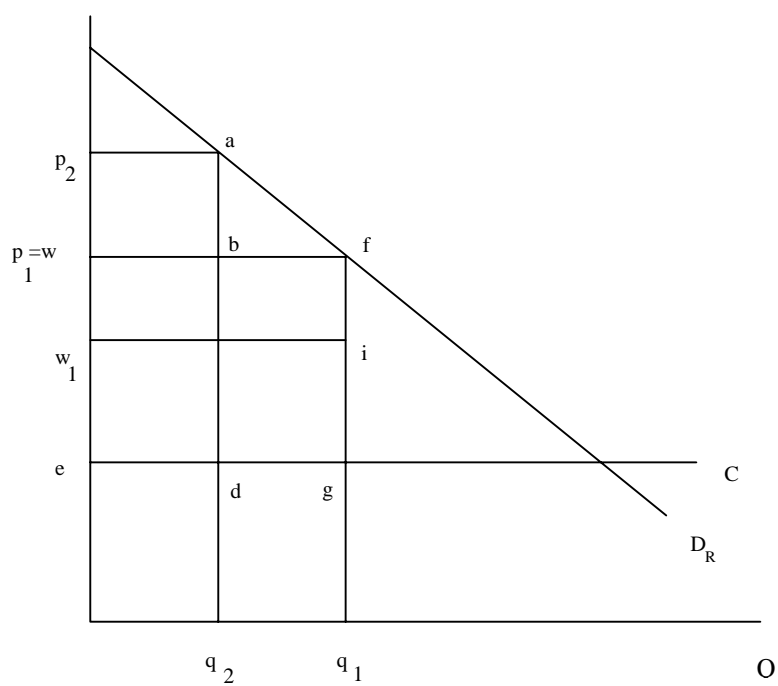


Figure 5. Elimination of Double Marginalization by Trade Promotion



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