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# **Mergers and the Food Industry Structure\***

by

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## **Abstract**

The structure of industries changes in two major ways. Mergers, acquisitions, and divestitures are considered external factors. In addition, the firm rate of internal growth will influence market concentration. If the firm grows slower than the market, concentration will go down, etc. These two factors may work in concert or pull in opposite directions. The authors investigate the trends and effects of mergers on the food marketing system. A clear trend of increasing merger activity from 1982 through 1986 is apparent. It is not clear what has happened after 1986, although accounts suggest a continued high level of merger activity. The cumulative result of these mergers is even more pronounced when combined with the growth trends in each sector.

## **Introduction**

An extensive merger movement is at work within the food industries. Each of the major food groups--food manufacturing, food wholesaling and food retailing--are affected as are many other sectors of the economy. The consequences of this pattern of change will include a more clearly defined conglomerate structure in food manufacturing and greater market concentration in parts of the food sector. In addi-

tion, there are indications that some industries (meat packing and processing) are becoming more vertically integrated [Ward]. Taken together, significant restructuring activity is occurring in the food industries.

The purpose of this paper is to: 1) present data describing observable changes over time in food industry structure, 2) discuss causes and prospects for continuation of these changes and 3) assess the likelihood and extent of public or business problems associated with a more consolidated U.S. food industry. The assessment of consequences is an identification of generalities which reflect the judgment of the authors based on years of experience studying the food industry structure and behavior. It gives an overview. This overview may not precisely relate to conditions in a particular industrial grouping, but rather reflects the general tendency across most industrial groups. The behavior and performance in a particular industry can be special or different for many reasons.

## **Measuring Industrial Structure Change**

The nature and magnitude of merger activity is extensively documented (Tables 1, 2 and 3). A clear trend of increasing activity from 1982 through 1986 is apparent (Table 3).

\*Technical Article Number 24800 of the Texas Agricultural Experiment Station.

**Table 1**  
**Food Marketing Mergers and Divestitures**  
**Costing More than \$100 Million, 1985 and 1986<sup>1</sup>**

<u>Buyer</u>	<u>Seller</u>	<u>Price</u> (Million dollars)	<u>Type<sup>2</sup></u>
<b>1985</b>			
Phillip Morris Company	General Foods Corporation	5,965	2
Kohlberg, Travis, Roberts, & Co.	Beatrice Foods Corporation	5,362	2
R. J. Reynolds Ind., Inc.	Nabisco Brands Inc.	4,906	2
Pantry Pride, Inc.	Revlon, Inc.	1,639	2
Procter & Gamble Company	Richardson, Vicks, Inc.	1,611	2
Cheesebrough-Ponds, Inc.	Stauffer Chemical Company	1,218	2
PepsiCo, Inc.	M.E.I. Corporation	683	2
Private Group	Household International Inc.	645	1
Castle & Cooke, Inc.	Flexi-Van Corporation	559	2
Private Group	Ralston Purina Co. (Foodmaker, Inc.)	450	1
Pillsbury Company	Diversifoods, Inc.	388	2
Coca-Cola Company	Embassy Communications, Inc. & Tandem Productions	365	3
Procter & Gamble Company	Monsanto Company	300	1
National Distillers & Chemical Corp.	Reliance Group Holding, Inc.	225	1
Sandoz Ltd.-Switzerland	Martin Marietta Corp. (subsidiary)	190	1
Circle K Corporation	Shop & Go, Inc.	167	2
Kroger Company	Hook Drugs, Inc.	161	2
PepsiCo, Inc.	Allegheny Beverage Corp.	160	1
USA Cafes	Ponderosa, Inc.	154	2
Whirlpool Corporation	Dart & Kraft, Inc. (Kitchen Aid)	150	1
Wesray/Capital Corporation	PepsiCo, Inc. (Wilson Sporting Goods)	150	1
Private Group	Swift Independent Corporation	140	2
Pullman Company	Peabody International Corp.	127	2
Private Group	I.C. Industries (P.P.C. Food Markets)	125	1
Unilever NV-Netherlands	Anderson Clayton & Company	113	1
<b>1986</b>			
SSI Holdings Corporation	Safeway Stores, Inc.	4,198	2
Unilever NV-Netherlands	Chesapeake Ponds Inc.	3,092	2
Ralston Purina Company	Union Carbide Corporation	1,420	1
Coca-Cola Corporation	JTL Corporation	1,400	3
Private Group	Beatrice Companies	1,250	1
Coca-Cola Corporation	Beatrice Cos. (US & Canadian bottling operations)	1,000	1
PepsiCo, Inc.	RJR Nabisco, Inc. (Kentucky Fried Chicken)	850	1
Quaker Oats Company	Anderson Clayton Company	804	2

Table 1 Cont'd

Buyer	Seller	Price (Million dollars)	Type <sup>2</sup>
<b>1986</b>			
LLC Corporation	Amalgamated Sugar Company	685	2
National Distillers & Chemical Corporation	Enron Corp. (Enron Chemical Co.)	575	1
British Petroleum Co. PLC, United Kingdom	Ralston Purina Co. (Purina Mills Inc.)	545	1
Marriott Corporation	Saga Corporation	500	2
Private Group	Beatrice Companies	480	2
Private Group	Forstmann Little & Co. (Dr. Pepper Co.)	416	1
Revlon Group Inc.	Beatrice Companies	375	1
IC Industries Inc.	Ogden Corporation	320	1
Borden Inc.	Beatrice Companies	315	1
Private Group	Mariott Corp. (four Saga Corp. restaurants)	300	1
Petroleos De Venezuela, Venezuela	Southland Corporation	290	1
Great Atlantic & Pacific Tea Co.	Waldbaum Inc.	287	2
Quaker Oats Company	Golden Grain Macaroni Co.	250	3
Private Group	Beatrice Companies	250	1
PepsiCo Inc.	Phillip Morris Companies	246	1
Private Group	Phillip Morris Inc.	240	1
Private Group	Ponderosa Inc.-Rem 81%	231	2
Rowntree Mackintosh United Kingdom	Sunmark Inc.	230	3
Cadbury Schweppes PLC United Kingdom	RJR Nabisco Inc. (Canada Dry, Sunkist)	230	1
Coca-Cola Company	Merv Griffin Enterprise	200	1
Private Group	IU International Corp.	200	1
Bruno's Inc.	Delchamps Inc.	161	2
National Distillers & Chemical Corp.	Union Texas Petroleum Holdings Inc.	185	1
John Labatt Ltd.-Canada	DA Squale Food Company	165	2
Dean Foods Company	Larsen Company	164	2
Great Atlantic & Pacific Tea Co.	Lucky Stores, Inc.	155	1
CPC International Inc.	Arnold Foods Company	145	3
Private Group	Holly Sugar Company	140	2
Sara Lee Corporation	Nicholas Kiwi Australasia Ltd.- Rem 74% Australia	130	4
Shaklee Corporation	RJR Nabisco	123	1
American Brands Inc.	NSS News Agents PLC- United Kingdom	120	4
Tyson Foods Inc.	Lane Processing Inc.	115	3
Revlon Group Inc.	Figitonics, Inc.	111	2

<sup>1</sup>Completed or pending.<sup>2</sup>1 = Divestiture, 2 = public seller, 3 = private seller.

SOURCE: The W. T. Grimm &amp; Co., Mergerstat Review, 1985 &amp; 1986, 135 South LaSalle St., Chicago, 1987, pp. 13-31.

**Table 2**  
**Food Processing Mergers, by Rank Among All Industries and Foreign Activity,  
1981-86**

<u>Year</u>	<u>Value</u>	<u>Rank among all industries</u>	<u>Foreign buyers</u>		<u>U.S. purchases of foreign firms</u>	
			<u>Number</u>	<u>Value</u>	<u>Number</u>	<u>Value<sup>a</sup></u>
<u>-- million \$ --</u>						
1981	3,800	5	9	135	7	52
1982	4,952	4	4	131	5	154
1983	2,712	8	9	253	6	105
1984	7,948	2	8	2,994	5	96
1985	12,854	5	8	257	10	70
1986	8,432	4	13	1,246	9	98

<sup>a</sup>Includes only those mergers in which the value of the transaction was recorded.

SOURCE: U.S. Department of Agriculture, *Food Marketing Review*, A.E.R. #590, Economic Research Service, Washington, D.C., 1987.

**Table 3**

**Food Marketing Mergers**

<u>Year</u>	<u>Processing</u>	<u>Wholesaling</u>	<u>Retailing</u>	<u>Food Service</u>	<u>Total</u>
<u>----- number -----</u>					
1982	250	38	38	51	377
1983	225	38	45	64	372
1984	242	37	60	78	417
1985	291	64	52	73	480
1986	347	65	91	81	584

SOURCE: U.S. Department of Agriculture, *Food Marketing Review*, A.E.R. #590, Economic Research Service, Washington, D.C., 1987.

It is not clear what has happened after 1986, although anecdotal accounts suggest a continued high level of merger activity. The cumulative result of these mergers is even more pronounced when combined with the growth trends in each sector.

### *Food Manufacturing*

The data available for describing the changing structure of food manufacturing is poor. Census data from 1947 to 1982 (Table 4) show patterns in Standard Industrial Classification (SIC) groupings. These data show little of the effects of the current merger movement because most of the action has occurred since 1982. In addition, the SIC groupings are a rather antiquated industrial definition for the food manufacturing industry.

Large food manufacturing firms have emerged as multi-output producers, in the sense that they operate in numerous four-digit SIC industries (Table 5). The modern food conglomerate operations are diversified within the food and kindred products industries (those whose SIC numbers begin with 20). The largest fifteen food processing companies operate in an average of ten four-digit SIC industries (Table 5). The least diversification among the top fifteen is Pepsico, Inc. and Coca-Cola Co., operating in only four four-digit industries. The most diversified is RJR Nabisco, Inc. which operates in twenty-one of the forty-nine food and kindred products categories.

The cost concepts of traditional economics (single product) cannot easily be extended to explain the distribution of industries a firm occupies. Economies of size and technological or market factors provide reasonable explanations for observed size of plants and firms within an industry, but not conglomerate distributions. Panzar and Willig recently have suggested economics of scope as an alternative explanation for diversified organization of firms. This appears to be particularly cogent when a transaction cost approach, embracing risk concepts, is the framework for analysis [MacDonald].

Probably the most important dynamic at work in the food manufacturing structure is strategic competition in selling nationally branded products. Large conglomerate firms are leaders here [Padberg and Rogers]. Many of the mergers relate to this firm type and are motivated by the powerful scope economies associated with this "strategic group." SIC data do not effectively describe changes in con-

glomerate firms. Concentration ratios based on SIC classifications do not reflect ownership patterns of the modern diversified food manufacturing firms, as evidenced in Table 5.

There is probably a significant trend toward consolidation on the part of food manufacturing specialized toward advertised food products. Data in Table 4 for Breakfast Cereal (SIC 2043), Roasted Coffee (SIC 2095), Macaroni and Spaghetti (SIC 2098) and Food Preparations (SIC 2099) suggest such a pattern along with increased share of business for the largest fifty firms (Table 6). Aside from this pattern, some SIC groups are increasing while others are decreasing, providing little basis for generalizations.

Market shares for meat packing as reflected in the livestock buying market, have increased significantly (Table 7). In 1972, the top four firms in steer and heifer slaughter controlled 26 percent of that slaughter. Those top four firms included American Beef Processors (ABP), Armour, Iowa Beef Processors (IBP) and Swift. ABP quit business in 1976, while Armour and Swift were both acquired by ConAgra. In 1987, the top four firms controlled 64 percent of the steer and heifer slaughter. Those firms included IBP, ConAgra, Excel and National Beef. Most of the large increase between 1982 and 1987 resulted from mergers and acquisitions.

Today's "Big Four" represent the greatest concentration in the meat packing industry since the 1920 Consent Decree was imposed on the "Big Five" firms consisting of Armour, Swift, Morrell, Wilson and Cudahy. At that time, the "Big Five" were found to be slaughtering about 70 percent of all livestock slaughter in interstate trade [Fowler]. At that time this was considered to be monopolistic control which suppressed competition.

### *Food Retailing*

The available data for food retailing is considerably stronger than for food processing. A longer pattern is available and the measured categories more convincingly capture the "big business" aspects of the industry. National four-firm and eight-firm market shares from 1919 to 1985 show no alarming trend (Figure 1 and Table 8). The effects of three waves of mergers are apparent in these data: the 1920s and early 1930s, the 1950s and early 1960s and the current 1980s. Market shares have increased during the merger periods and have declined during other periods [Padberg and Rogers]. The

Table 4

Number of Firms, Four Firm and Eight Firm Concentration,  
Selected Food Manufacturing Industries, 1947, 58, 67, 77, and 82

Industry	S.I.C.		1947	1958	1967	1977	1982
Meat Packing	2011	LGST 4, % of sales	41	34	26	19	29
		LGST 8, % of sales	54	46	38	37	43
		Total # of firms:	1999	2646	2529	2404	1658
Prepared Meats	2013	LGST 4, % of sales	--	17	15	23	19
		LGST 8, % of sales	--	25	22	30	28
		Total # of firms:	--	1432	1294	1213	1193
Poultry Dressing	2016	LGST 4, % of sales	32	12	--	16	22
		LGST 8, % of sales	40	16	--	27	36
		Total # of firms:	330	1041	--	313	231
Creamy Butter	2021	LGST 4, % of sales	18	11	44	49	41
		LGST 8, % of sales	24	18	51	66	61
		Total # of firms:	1482	997	890	123	61
Cheese Nat. & Proc.	2022	LGST 4, % of sales	27	35	44	35	34
		LGST 8, % of sales	32	42	51	48	47
		Total # of firms:	1313	1095	891	660	575
Ice Cream	2024	LGST 4, % of sales	40	38	33	28	22
		LGST 8, % of sales	48	48	43	40	34
		Total # of firms:	1273	1171	713	567	482
Fluid Milk	2026	LGST 4, % of sales	--	23	22	18	16
		LGST 8, % of sales	--	29	30	28	27
		Total # of firms:	--	5008	2988	1516	853
Canned Fruits & Veg.	2033	LGST 4, % of sales	27	29	34	22	21
		LGST 8, % of sales	35	39	52	35	35
		Total # of firms:	1856	1347	930	648	514
Frozen Fruits & Veg.	2037	LGST 4, % of sales	--	31	36	22	27
		LGST 8, % of sales	--	43	55	40	42
		Total # of firms:	--	246	495	187	195
Cereal B-fast Food	2043	LGST 4, % of sales	79	83	88	89	86
		LGST 8, % of sales	91	95	97	98	--
		Total # of firms:	55	34	30	32	32
Mixes & Doughs	2045	LGST 4, % of sales	41	75	68	51	58
		LGST 8, % of sales	60	86	82	69	74
		Total # of firms:	115	109	126	111	91
Cookies & Crackers	2052	LGST 4, % of sales	72	65	59	59	59
		LGST 8, % of sales	78	72	70	68	71
		Total # of firms:	249	253	286	263	269
Chocolate & Cocoa	2066	LGST 4, % of sales	68	71	77	73	75
		LGST 8, % of sales	61	84	89	88	89
		Total # of firms:	31	26	27	47	77
Roasted Coffee	2095	LGST 4, % of sales	--	--	53	65	65
		LGST 8, % of sales	--	--	71	79	76
		Total # of firms:	--	--	206	133	118
Macaroni & Spaghetti	2098	LGST 4, % of sales	23	25	31	36	42
		LGST 8, % of sales	35	41	48	54	66
		Total # of firms:	219	205	190	189	208
Food Preparation	2099	LGST 4, % of sales	--	29	24	28	32
		LGST 8, % of sales	--	36	35	36	40
		Total # of firms:	--	2596	1824	1872	1746

SOURCE: U.S. Census, Concentration Ratios in Manufacturing Industry, 1958, Part 1, Committee on the Judiciary, U.S. Government Printing Office, 1962, Table 2 and later Census of Manufacturing.

**Table 5**  
**Distribution of the Largest Food Manufacturing Companies' Operations**  
**By Four-Digit SIC Within Food and Kindred Products, 1985-1987**

SIC Code	Firm Abbreviation <sup>1</sup>													
	PMC	RNI	PEP	CCC	KFT	ABC	SLC	BDN	ULR	CSC	HJH	RPC	KLG	CNG
Meat Pack							*							*
Sausage	*						*				*			*
Poul. Proc.	*	*					*			*			*	
Butter													*	
Cheese	*				*		*						*	
Dairy Prod.								*				*		*
Ice Cream	*		*	*	*		*	*					*	*
Milk	*						*						*	*
Can Spec.	*					*				*	*		*	
Can, F&V	*				*		*	*		*	*		*	*
Dried F&V	*						*	*		*				*
Sauces	*	*					*	*		*	*		*	
Frozen F&V	*									*	*		*	
Frozen Spec.	*	*					*	*		*	*		*	
Flour	*						*			*				*
Cereal	*	*									*	*	*	
Rice Mill	*										*			
Prep. Flour							*					*		*
Corn Mill											*			
Dog/Cat Food	*									*	*		*	
Feed														
Bread	*	*				*	*	*	*			*	*	
Cookies	*		*							*		*		
Frozen Baker.							*			*			*	
<u>Sugar, Ex. Ref.</u>														
Sugar Ref.														
Beet Sugar														
Candy	*						*			*			*	
Chocolate											*			
Chewing Gum	*													
Nuts	*													
Cottonseed Oil														
Soybean Oil														
Vegetable Oil														
<u>Animal Fat</u>														
Shortening	*						*						*	
Malt Bev.	*													
Malt														
Wines		*												
<u>Liquors</u>														
Soft Drinks	*					*	*							
Flavoring	*					*	*							
Canned Fish	*									*	*	*		
Prep. Fish									*					
<u>Coffee</u>	*					*			*					
Snacks						*								
Ice														
Macaroni														
<u>Food Prep.</u>	*	*	*	*	*	*	*	*	*	*	*	*	*	

<sup>1</sup> PMC: Philip Morris Cos. ABC: Anheuser-Busch Cos KLG: Kellogg Co. RNI: RJR Nabisco  
 SLC: Sara Lee Corp. CNG: ConAgra, Inc. PEP: Pepsico, Inc. BDN: Borden Inc.  
 GMI: General Mills, Inc. CCC: Coca-Cola Company ULR: Unilever N.V. HJH: H. J. Heinz Co.  
 KFT: Kraft, Inc. CSC: Campbell Soup Co. RPC: Ralston Purina Co.

SOURCE: *Annual Reports, 1985 through 1987.*

**Table 6**  
**Aggregate Concentration in Food Marketing, Census Years, 1963 - 1982**

<u>Year</u>	<u>Share of market controlled by top firms</u>			
	<u>Top 50 processing firms</u>	<u>Top 50 wholesaling firms</u>	<u>Top 20 retailing firms</u>	<u>Top 50 foodservice firms</u>
----- percent -----				
1963	NA	NA	34.0	NA
1967	35.0	NA	34.4	NA
1972	38.0	48.0	34.8	13.3
1977	40.0	57.0	34.5	17.8
1982	43.0	64.0	34.9	20.2

NA = not available

SOURCES: U.S. Department of Agriculture, *Food Marketing Review*, A.E.R. #590, Economic Research Service, Washington, D.C., 1987.

**Table 7**

Four Firm Concentration Ratios for Steer and Heifer Slaughter,  
Boxed Beef Production, Hog Slaughter, and Sheep and Lamb Slaughter,  
Selected Years, 1972-1987

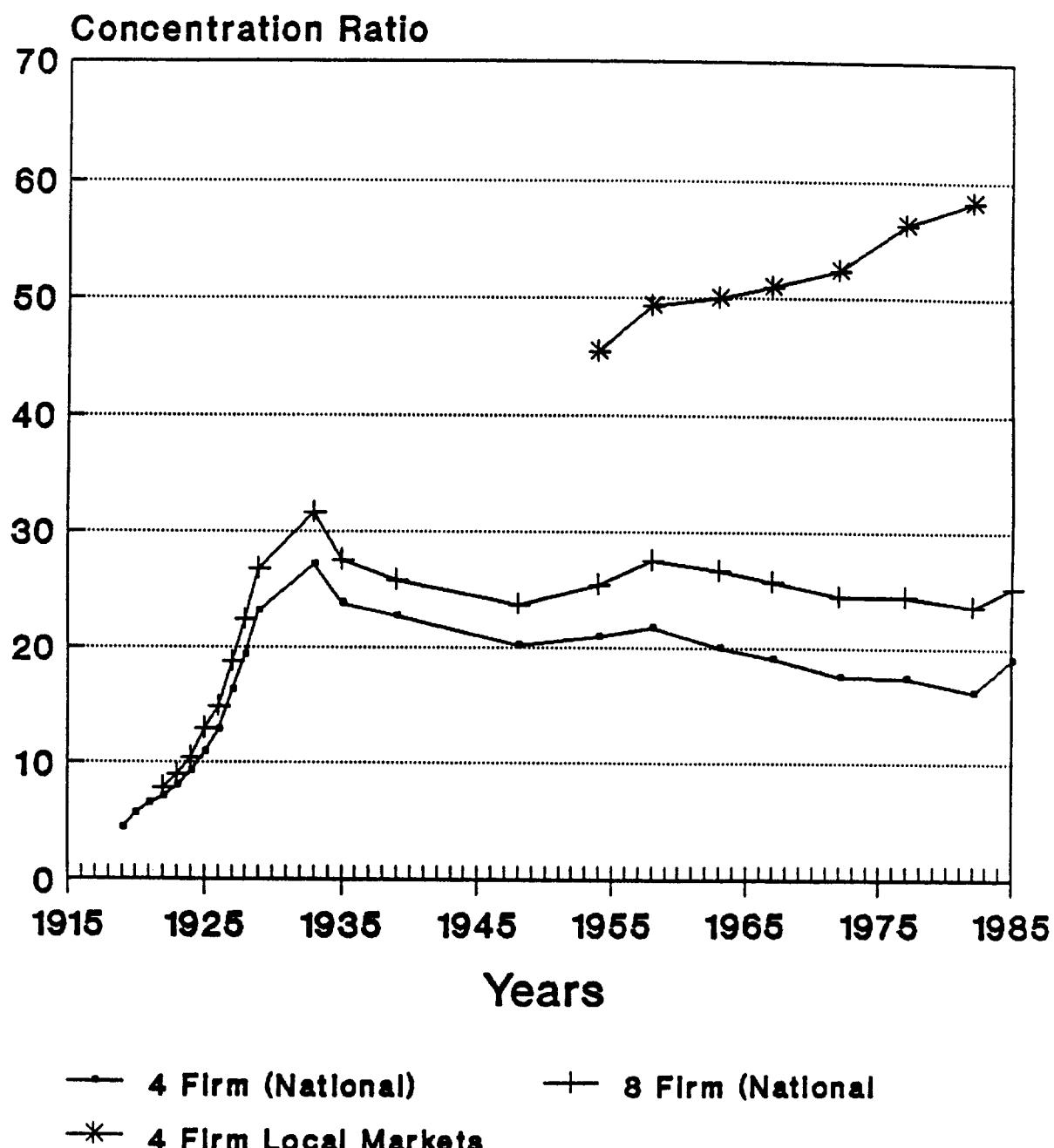
<u>Year</u>	<u>Steer &amp; Heifer Slaughter</u>	<u>Boxed Beef Production<sup>1</sup></u>	<u>Hog Slaughter</u>	<u>Sheep &amp; Lamb Slaughter</u>
1972	26.0	NA	32.0	54.7
1977	26.9	NA	33.7	52.9
1982	41.4	59.1	35.8	43.6
1987	64.0	82.3	56.0	65.9

NA = Not Available

<sup>1</sup>Data series for boxed beef began in 1979.

SOURCE: Packers' and Stockyards Administration, U.S. Department of Agriculture, Selected years.

**Figure 1. Local and National Concentration in Food Retailing, Selected Years, 1919-1985.**



**Table 8**  
**Four and Eight Firm National Concentration for Food Retailing,  
1919 - 1985, Selected Years**

Year	4 Firm	8 Firm	Year	4 Firm	8 Firm
1919	4.4	NA	1935	23.8	27.5
1920	5.7	NA	1939	22.6	25.8
1921	6.5	NA	1948	20.1	23.7
1922	7.1	7.8	1954	20.9	25.4
1923	8.0	9.0	1958	21.7	27.5
1924	9.3	10.4	1963	20.0	26.6
1925	10.9	12.9	1967	19.0	25.7
1926	12.8	14.8	1972	17.5	24.4
1927	16.2	18.7	1977	17.4	24.4
1928	19.3	22.3	1982	16.1	23.6
1929	23.1	26.7	1985	19.0	25.2
1933	27.1	31.6			

NA = Not Available

SOURCE: NCFM #7 Appendix Tables 13-14 for 1919 to 1939 and U.S. Department of Agriculture, *Food Marketing Review*, A.E.R. #590, Economic Research Service, Washington, D.C., 1987.

**Table 9**  
**Number of Food Marketing Companies and Establishments,  
Census Years, 1963-1982**

Establishment Type	Year				
	1963	1967	1972	1977	1982
<i>Processing</i> Companies Establishments	32,617 37,521	26,549 32,517	22,171 28,193	20,616 26,656	16,800 22,130
<i>Wholesaling</i> Companies Establishments	35,666 41,890	33,848 40,005	32,053 38,531	31,670 37,960	31,290 38,516
<i>Food Service</i> Companies Establishments	NA 334,481	NA 271,182	221,883 359,524	226,421 368,066	198,088 379,444
<i>Retailing</i> Companies Establishments	NA 319,433	NA 294,243	218,320 267,352	200,486 252,853	198,815 241,737
<b>Total</b> Companies Establishments	NA 733,325	NA 637,947	494,427 693,420	478,590 685,135	444,993 684,084

NA = Not Available

SOURCE: U.S. Department of Agriculture, *Food Marketing Review*, A.E. R. #590, Economic Research Service, Washington, D.C., 1987.

essentially "local" nature of this business and the growth patterns over most of this century make a strong point that internal growth of the largest firms typically does not keep pace with market growth.

Data for local markets are available from 1954 through 1982. The market and firm definitions are good and the data quality is strong. Local market shares have increased very substantially during this period (Figure 1). Most of the increase occurred before 1958 and after 1972.

**Table 10**

Sales of Top 25 Wholesale Food Companies, 1985

Company	Sales
-- million \$ --	
Super Valu	5,589
Fleming Companies, Inc.	5,511
Wetterau, Inc.	2,915
Sysco Corporation	2,800
Malone and Hyde, Inc.	2,682
Wakefern Food Corporation	2,500
Scrivner, Inc.	2,166
Certified Grocers (CA)	1,874
CFS Continental, Inc.	1,700
PYA Monarch, Inc.	1,500
Associated Wholesale Grocers (KC)	1,475
Super Food Service, Inc.	1,397
Roundy's Inc.	1,380
Spartan Stores, Inc.	1,312
McLane Company	1,001
Rykoff-Sexton, Inc.	1,000
Kraft, Inc.	917
Richfood, Inc.	870
Twin County Grocers, Inc.	858
Springfield Sugar & Products	850
Gateway Foods, Inc.	800
Associated Grocers (Seattle)	757
Nash Finch Company	715
Certified Grocers Midwest	700
Alfred M. Lewis, Inc.	687

SOURCE: U.S. Department of Agriculture, *Food Marketing Review*, A.E.R. #590, Economic Research Service, Washington, D.C., 1987.

### **Food Wholesaling**

The number of food wholesaling companies over the last couple of decades has been declining (Table 9). The largest 25 independent wholesale food companies range in size from less than \$1 billion in annual sales to over \$5 billion (Table 10). Most wholesaling is done by the food chains. Their market share growth has left less market for independent wholesalers.

### **Food Service**

Food service is growing rapidly in number of establishments but with fewer companies (Table 11). The number of establishments has been increasing since the late 1960s and the largest firms show a continued growth pattern. The "fast food" chains are among the largest firms nationally.

### **Regional Concentration**

The relevant market for producers selling commodities is often a region rather than the entire national market. Buyer concentration in a particular region is the most important description of the selling choices available. The sheep and lamb industry has long had concern for maintaining a viable market for slaughter lambs. The slaughter numbers have declined steadily since 1940 adding to the problem.

Five regions have been defined as important in the sheep and lamb industry (Figure 2). The location of slaughter plants by regions in 1987 follows a pattern of acquisitions in the last couple of years, giving farmers and ranchers few choices for selling lambs. The Central Region, accounting for about 25 percent of national slaughter, is best with four independently owned plants (Figure 2). In each of the Western and Plains Regions there are only two firms operating through a pattern of multiple plants. Those regions combine to produce 60 percent of industry output. The smaller production regions of East Central and Eastern each have one plant. While the national four-firm concentration is 66, the regional market is considerably more concentrated.

Competition among so few buyers is a problem. Farmers and ranchers feel the lack of selling alternatives works against them. While the lamb industry is an extreme case, the rapid increases in concentration in livestock slaughter may point to a more general problem.

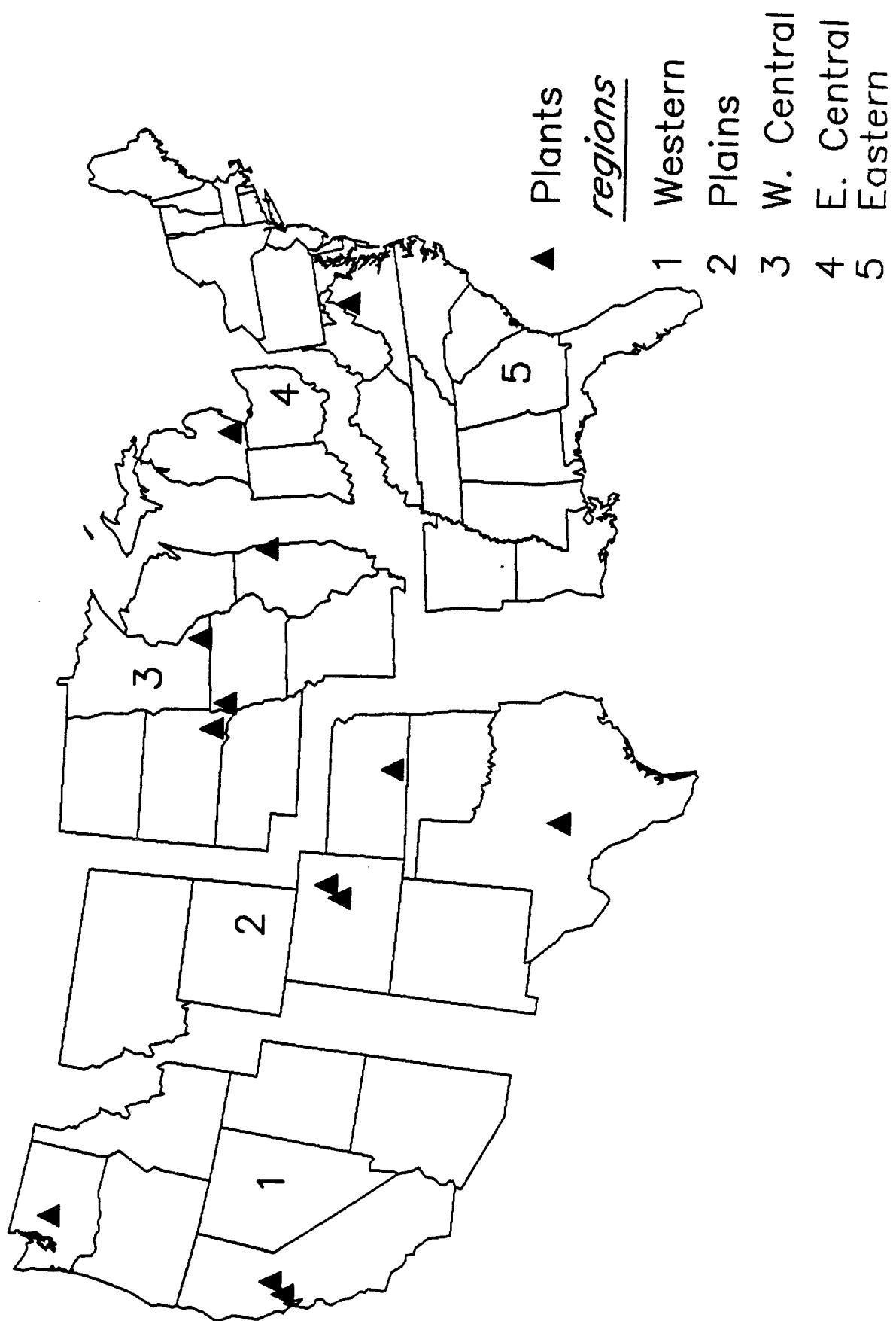
### **Causes of Structural Change**

**Table 11**  
**Sales of Top 25 Service Operators, 1984-1985**

<u>Company</u>	<u>1985</u>		<u>1984</u>	
	<u>Rank</u>	<u>Sales</u>	<u>Rank</u>	<u>Sales</u>
-- <i>million \$</i> --				
McDonald's Corporation	1	11,000	1	10,006
Pillsbury Restaurant Grp.	2	5,538	2	4,364
Pepsi Cola Foodservice Div.	3	3,671	4	3,159
Marriott Corporation	4	3,394	6	2,921
Kentucky Fried Chicken	5	3,100	3	3,328
Wendy's International	6	2,694	7	2,423
USDA, Food & Nutrition Ser.	7	2,671	5	3,032
ARA Services, Inc.	8	2,380	10	1,960
Imasco U.S.A.	9	1,936	8	2,200
Trans World Corporation	10	1,815	11	1,712
Holiday Corporation	11	1,622	9	2,020
International Dairy Queen	12	1,604	12	1,423
Denny's, Inc.	13	1,280	13	1,237
Saga Corporation	14	1,254	14	1,130
Sheraton Corporation	15	1,162	15	1,095
Domino's Pizza	16	1,084	32	626
General Mills Restaurant	17	1,050	16	1,080
W. R. Grace Restaurant Grp.	18	1,036	21	771
Service America Corporation	19	1,000	19	980
Shoney's Inc.	20	985	17	932
Collins Foods International	21	895	23	752
Hilton Hotels	22	881	20	790
U.S. Navy Foodservice	23	852	18	873
Arby's Inc.	24	811	22	756
Southland Corporation	25	810	37	508

**SOURCE:** U.S. Department of Agriculture, *Food Marketing Review*, A.E.R. #590, Economic Research Service, Washington, D.C., 1987.

Figure 2: National Lamb Plants in 1987



Several interesting questions relate to the causes of structural change. Unfortunately, they get little attention. Is structural change a by-product of other events, or is it a major strategic goal? Are events of competition which change industry structure driven by expected effects on cost or on market power? How important are changes in other markets, such as industry maturity or consumer preference, in explaining structural change in food manufacturing and retailing? These questions are given special importance by the anti-trust laws which frequently attach significance to "intent." Study of the causes of structural change will never give a complete identification of a competitor's intent, but it is useful.

#### *Food Manufacturing*

Firms which specialize in advertised brands of food products, such as those summarized in Table 5, are large conglomerate firms. They are among the largest advertisers in the United States. These firms have an enormous capability for developing new products, shaping a positive consumer image for the product and introducing the product into distribution. The cost of this capability can only be profitably borne when sales volume is high. It is often argued that this marketing overhead is spreadable across different product lines--justifying a conglomerate structure.

This industry segment seems to experience high internal growth rates. Aside from mergers, the larger firms tend to have faster growth rates than do other firms. This leads to increasing concentration. But in addition, there are a high number of mergers and acquisitions among these firms. Both the internal and external patterns of growth are probably driven by the cost advantages of large size--scope economies [Panzar and Willig].

At the same time, mergers may be encouraged by forces external to the industry. The complex and expensive stock transfers and/or leveraged buyouts involved in industrial firm mergers give business opportunities for the securities industry. It is argued that some firms get accounting advantages from the transitional chaos created in the joining or splitting up of large complex organizations. For these reasons, mergers have a dynamic of their own [Briloff]. Perhaps these factors result in merger activity occurring in "waves" or "movements." Similar to an intense pattern of mergers in the 1950s and 1960s, we are experiencing such a merger movement currently [Connor].

These observations support the following inferences concerning "intent": a) Motivation concerning cost savings is an important factor in the emerging pattern of higher concentration in the "advertised brand" sector of the food manufacturing industry; and b) External influences encourage mergers for mergers sake, especially in the merger wave periods.

Aside from these patterns influencing most food manufacturing industries, there seems to be a special set of events in the meat industry. After a long trend to lower national and regional concentration, meat packing has become more concentrated over the last several years [Ward]. These changes are a part of a major repositioning in the meat industries. The expected emergence of processor brands in fresh beef may be a cause or a result. In turn, these changes may precipitate major changes in "price discovery" mechanisms and/or government rules.

#### *Food Retailing*

Food retailing is an interesting and special case within the food industries. National concentration has increased noticeably during merger patterns and declined otherwise. The internal growth rates of large firms have typically been so slow that they lose ground to the collective growth patterns of smaller firms. This suggests that there is no serious "cost advantage" to larger size and therefore no cost saving motivation in individual mergers.

Local market concentration is quite a different matter. Local market concentration is rising rapidly (Figure 1). That is significant because of the local nature of retail competition.

A major cause of changes in local market concentration is change in store size. Initial supermarket introduction caused significant impact on local market concentration. In 1948, supermarkets (in the early small definition) had only 25 percent of industry sales. That went to 60 percent by the early 1960s--a decade and a half. Naturally, that was a period of increasing market concentration.

The size of supermarkets did not change so much year to year until after 1970. In these early years, most supermarkets looked alike and had selling areas of 10,000-12,000 square feet. After 1970, supermarkets were being built into saturated markets and each year's model was a little bigger. Between 1972 and 1982, total industry square feet of selling area increased by 30 percent [USDA]. By the end of that period,

few "conventional" supermarkets were being built. Most new openings were either on the superstore (60,000 square feet or so) end of size classification or were among the rapidly increasing numbers of convenience stores. The opening of large stores, each of which replaces several smaller ones, has resulted in the current rising local market four-firm concentration.

There may be many patterns of strategy and intent as local market competitors make decisions about store openings, closings, acquisitions and divestitures. We may never observe or understand them. Yet, when store size goes up, fairly straightforward arithmetic requires market concentration to rise. Consumer acceptance is an important limitation on store size. The superstore was introduced in the mid-1960s but failed. Industry maturity and market segmentation may be more important influences in the evolution of store size and market concentration than choices taken by competitors.

#### *Wholesaling*

Independent (non-chain) wholesalers have had an up and down pattern. The general statistics show that they have lost ground to chains--not the largest chains, but the aggregate of all chains. This really means that the growth dynamics in the "smaller chain" category have been the source of strength, because repeatedly we observe the largest chains being only able to grow through acquisition. The irony of this is that group wholesalers frequently show statistical losses when their more successful retail customers open their own warehouse--they become a chain.

This results in an apparent weakness when, in fact, these groups are frequently competitively strong and effective. They enable the growth among their retail customers, which leads to the splitting off of small chains. While the market share of independent wholesalers is declining, this category contains several strong and successful businesses.

#### *Food Service*

The dynamics in the "food service" category is the chain and franchise fast food business. The number of firms goes down as the number of establishments goes up. The chain/franchise business replaces some old line independent restaurants and finds some growth opportunities from changes in lifestyles.

#### *Prospects for the Future*

There is no way to forecast how long this pattern of consolidation will continue or to what extent market concentration will be increased. Clearly market concentration has proceeded further than shown in the 1982 Census of Business statistics, because the main pattern of consolidation has occurred since 1982.

In past merger cycles, most of the activity was completed within a decade. In that frame of reference, the pace of merger may slow in the next two to three years.

It has also been observed in other merger cycles that public concern has been translated into increased antitrust activity and merger bans. The 1960s ban on mergers involving several food chains is an example. It is difficult to assess the importance of governmental signals and antitrust activity in the tapering off of mergers.

We expect merger activity to subside with or without major policy intervention. On the other hand, the parts of the food industry experiencing significant structural change--the conglomerate manufacturer of branded food products and local retail grocery stores--are influenced by other important factors. It is likely that consolidation and growth in industry concentration will continue in these areas. Meat packing also seems to be driven by an industry transition which may continue toward a significantly different structure.

#### *Consequences*

The emergence of large conglomerate firms and increasing market concentration suggests concerns about monopolizing strategies and insensitivity to consumers. Sorting out these prospects and concerns must be done on a "case by case" basis and in considerable detail. Study of these issues over the years provides some generalities which may enable forming useful expectations and interpretations.

#### *Consumer Concerns*

Much has been written about an expectation that high market concentration and/or large conglomerate manufacturers will invite reduced competition among manufacturers and result in poor performance as seen by consumers. Certainly these are serious questions and deserve constant surveillance. At the same time, it is easy to over-represent these concerns for the following reasons: 1) private label products

provide an economic alternative to most high volume food products; 2) the largest firms tend to seek consumers' attention through product development competition. This type of rivalry generally leads to independent activity rather than a tendency toward collusion. It is also "expansive," rather than restrictive, as one expects from monopolistic behavior.

These two conditions apply unevenly across the different product groups in the food industry. In addition there are other important questions about performance to consider. As a generalization, these two conditions seem to be important factors explaining why we get generally good performance from the consumer's perspective in the food manufacturing industries. Not everyone shares this view. Other analysts have calculated "monopoly overcharges" which they identify as evidence of poor performance [Parker and Conner]. These costs are generally the higher public and private costs required for developing and introducing new and special products or giving old products zest or status [Marion and Grinnell]. The availability of a consumer choice between advertised brands and economy private label or generic products is the key in assessing the appropriate meaning of monopoly overcharges.

Food retailing has very little "value added." For the most part, costs are associated with fixed facilities and a good bit of fixed personnel costs. With all of these fixed costs, it is not surprising that volume of business powerfully determines total costs and, therefore, profits. This is the driving relationship that is involved in studies of the effect of market structure (concentration) on consumer level performance (prices or margins).

As a practical matter, economies of size or scope are confounded with concentration. It is a tough measurement problem to separate out the effects that economies of concentration have on price. Firms with high store volume have high concentration and significant economies. This leads to the often reported positive relationship between market concentration and profits. Retail price data are difficult to aggregate and compare. One study made claims based on an analysis of meager data [Marion, Mueller, Cotterill, Geithman and Schmelzer]. Obvious flaws have been identified in the analysis and inferences concerning the price data used [Padberg]. New evidence by Kaufman and MacDonald indicates that concentration is not a significant factor in explaining prices among retail stores when controlling for cost differences among stores. New research by Kaufman

and MacDonald, and Kaufman and Handy suggests that occupancy costs and greater store services had a statistically significant positive impact on price.

Probably the greatest factor affecting food retailing competition is entry conditions. On this frontier, the frequent tendency to open new malls and shopping centers beyond the needs of most communities creates a large supply of unused retail real estate. Owners of unused sites work intently to get a competitor in place--often with a significant subsidy. This makes for more intense competition for consumer patronage. This condition, though widespread, is not uniform from one region to another. It probably gives a better signal concerning the vigor of retail competition than level of market concentration. The observation that total food retailing selling space is increasing rapidly leads us to feel that the likelihood consumers will be adversely affected by changes in the retail structure is small, especially in communities where retail real estate is developed and abundant.

#### *Market for Agricultural Commodities*

When the structure of the food marketing channels becomes more concentrated, the farm producer as well as the consumer may be affected. Agriculture has long been characterized by the "thin market problem." From early days, many conditions have emerged in which farmers did not have a market at all for their commodities. In even more situations, there has been concern for the quality of competition within the markets that emerged.

These trends in industry concentration will undoubtedly rekindle this debate. The smaller number and higher market shares of first-handlers, together with the trend toward fewer and larger farmers will lead us to reconsider some of our fundamental patterns of price discovery. It may be a time to develop new price setting machinery for highly concentrated but geographically dispersed industries [Sporleider]. These problems continue in eggs and broilers and seem likely to worsen in the red meat industries. Grains have the influence of stabilizing central markets. Specialty crops will also be affected. All of these concerns increase the incentive for vertical integration. Affects on intermediate markets may be the most significant consequence of the restructuring currently under way in the food industries.

#### **Conclusions**

The restructuring of the food industries currently occurring through mergers and acquisitions will get careful attention over the next decade. Each industry will be affected differently. Yet, we can generalize that frequently the outcome will be to give the consumer more choices--whether for products or shopping space. At the same time these industry changes will give the farmer less choice. Dealing with the results of these changes will involve fundamental reconsiderations of the markets for farm commodities.

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