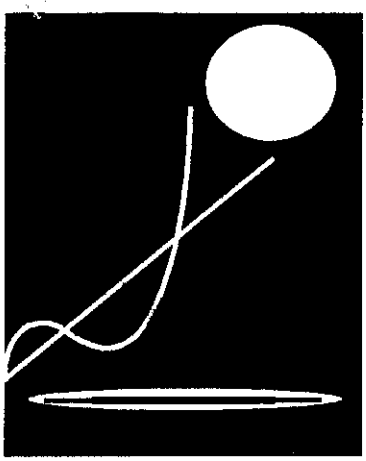

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Breakfast Cereals: The Extreme Food Industry

by

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"Right here in [Battle Creek, Michigan], there were 44 cereal companies in 1910. Now the number of cereal companies is down to a handful. To me, this is how the free enterprise system should work and how it should evolve. You can still have vigorous competition with two or three or five competitors, but you don't need 50."

Mr. W.E. LaMothe, President of Kelloggs (*Advertising Age* 10/2/78, p. 60).

Acknowledgments: Yusheng Wu helped prepare some of the tabular materials at the end of this paper. Brenda Pearl typed this manuscript at short notice.

The purpose of my talk today is to review several aspects of the market structure, strategic rivalry, and economic performance of the ready-to-eat cereals industry. To do so, I will at times take a long historical view of the breakfast cereals industry because many of the behaviors we observe today seem to me to be imbedded in habits of business rivalry that were learned many decades ago and yet persist today. My perspective on the RTE breakfast cereals industry is informed by nearly twenty years of research on the economics of the 50 food processing industries, and my yardstick for judging the performance of the cereals industry is the economist's vision of the perfectly competitive market, or some reasonably close approximation to that ideal.

The subtitle of my paper accuses the breakfast cereal industry to being an extreme case. Compared to other food manufacturing industries, I think the facts speak for themselves.[1] During the 20th century, ready-to-eat breakfast cereals was the only consumer grain-based product that experienced an increase in per-capita consumption.[2] Since the 1960s, the long-run growth of the cereals industry has been one of the highest if not the highest, among all the food industries. Both the increases in real (volume) growth and increases in prices have been near the top of the range, though growth seems to have faltered in the last year or two.

Market Structure

Production of breakfast cereals occurs under extremely concentrated conditions (Table 1). From the 1940s through the 1980s, merely 30 to 35 plants accounted for nearly all of industry

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[1]These facts are either cited in the text, in the tables, or may be found in the Bibliography.

[2]The average American consumed almost zero pounds per year in 1900, increasing to about 3.5 pounds in 1938, to 6.1 pounds in 1964, to 10.9 pounds in 1987, and to 18.4 pounds in 1992.

output, and these plants were predominantly located in the Great Lakes States.[3] The total number of companies in the industry is also extremely small by the standards of food processing–less than 35 firms during the 1950-1990 period–and sales are highly concentrated in the hands of a few producers. The typical food industry comprises nearly 300 companies. Domestic cereals manufacturing sales have been dominated by four or five companies since the earliest records on ownership concentration became available. (Only the small chewing gum industry has been consistently more concentrated, but the Census Bureau recently reduced the status of chewing gum to a mere "product class"). If one examines the 200 or so product classes in food manufacturing, breakfast cereals still remains among the five most concentrated classes (following canned soup, ketchup, and a couple of others). Finally, at the individual product level (corn flakes, puffed rice, etc.), the number of U.S. suppliers varies from six to 13 companies–among the lowest in food processing.[4]

Other supply conditions are extreme as well. The breakfast cereals industry purchases the smallest amount of materials relative to sales of any food industry – only about 25 percent in 1992 (Table 2). Moreover, less than 9 percent of cereals' shipments revenues were used to purchase *food* materials (grains, sugar, and flavorings). In 1954, the cost of food ingredients accounted for 23 percent of processors' sales, and I doubt that any other industry has seen such a precipitous drop I its food-cost share. The cost of packaging and containers now outweigh food ingredient costs of

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[3]In 1992, the number of plants specialized in breakfast cereals with 20 or more employees edged slight above 40 for the first time since 1947.

[4]In other comparable consumer grain products such as family flour, pancake mixes, or milled rice, the number of suppliers averages more than 20 for each product.

cereal manufacturers. On the other hand, the industry is inordinately generous with compensation of its workers. At a time when manufacturing wages have been steady or falling in real terms, workers in breakfast cereal plants have been doing relatively well. In 1967, the average cereals production worker made $7,119 in wages per year, which was 32 percent higher than the all-food average; by 1992, the average cereals wage had climbed to $45,618 (and fringe benefits were $13,019), an amazing 115 percent higher than all food-processing production workers.[5] These wages should have commanded a highly productive workforce, but in fact labor productivity growth has been slower than the average for manufacturing or food manufacturing. Neither do plant sizes seem to explain the industry's spotty productivity record. Plant scales are among the four or five largest relative to industry output–a condition that has probably contributed more to creating barriers to new market entry than to technological progressiveness.

Merchandising

The breakfast cereals industry also displays extremes in the marketing of its products. In the early 1950s, the RTE cereals companies spent only 5 percent of their sales on media advertising, but by the mid 1960s that ratio rose to 15 percent–one of the very highest in the food industries and *five times* the average in the food industries. Media advertising intensity has remained in the 10 to 15 percent range ever since. Another big change in breakfast cereals has been in other sales and marketing costs. The costs of personal selling and consumer or distributor promotions have risen

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[5]Cereals wages were 89 percent higher than the all-manufacturing average in 1992. Salaries of other employees were about 50 percent higher in breakfast cereals than the rest of food manufacturing.

sharply from the 4 percent of sales observed in the mid 1960s, though the actual level is hard to determine with precision. Total selling costs (advertising, promotion, product development, and other distribution costs of manufacturers) are currently estimated to be about 30 percent of manufacturers' revenues, a ratio only slightly higher than that observed in the mid 1960s. Interestingly, the top four manufacturers have total selling expenses of only about 28 to 29 percent of sales, whereas smaller companies selling branded cereals are required to spend 35 to 40 percent of their revenues on selling costs. This fact seems to account for most of the lower profitability of smaller cereal manufacturers.[6]

The breakfast cereal industry is highly unusual in that product patents were very important in solidifying the positions of the leading firms during the formative years of the industry, say 1910-1940. Shredded wheat and raisin bran were two products that received patent protection in the early years. while patents for bran flakes, fruits in cereals, and sugar coating were issued in the 1950s, patents are no longer the main form of rivalry in the cereals industry.

The cereals industry today comprises a curious mixture of brands holding world titles to longevity and brands whose life-cycles seem as fleeting as the average Hollywood movie's first run. The forerunner of Grape Nuts dates to 1862, Shredded Wheat (originally a trademark) to 1876, and Kellogg's Corn Flakes to 1902 (Connor and Schiek 1996). Quaker Puffed Rice was introduced at the great St. Louis Exposition of 1904. Trademark and patent protections reinforced quite early

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[6]In 1963, the top four earned before-tax profits of 16 percent of sales, the next four 8 percent, and the rest only 5 percent (NCFM 1965). After-tax profits were about half those rates on sales. Profit margins remained at 16 percent of sales in the early 1990s.

with heavy advertising have kept these antique brands alive and profitable. On the other hand, breakfast cereals like ET or Mr. T remain in the market about as long as a five-year-old child's attention span.

The principal strategic efforts today focus on media advertising (especially television) and new product launches. While these are forms of business *rivalry*, they are not strictly speaking *competition* as economists use the term. Businessmen often refer to "vigorous competition" actions directed at taking away the market shares of rival sellers (see the quote by W.E. LaMothe above). "Competition" as used by economists means using or acceding to price cuts, as the exclusive method of selling competitive advantage. The strategic thrusts and parries common in the cereals industry are definitely of the nonprice variety. The rivalry I observe in the breakfast cereals industry is more akin to the choreographed grunts of televised wrestling than a cutthroat dual to the death. The ultimate weapon, steep price cuts, is rarely unsheathed.

Media advertising and new product introductions are intimately related. New RTE cereal products launches have accelerated from one or two per year in the 1950s, to about 60 per year in the mid 1980s, to more than 100 per year since 1989 (*New Product News* data, excluding new sizes, reformulations, and minor product modifications). There are now more than 400 *brands* of RTE cereals for sale in U.S. grocery stores. Counting all variations in brands, sizes, and flavors, there are just about 1,000 RTE cereal items currently in distribution. Nearly all of the new brands or flavors are failures in the sense that they never turn profitable or are withdrawn from the market in five years or less. Indeed, it has become so hard to devise cereals that do not simply displace sales

of existing items (instead of creating new demand) that many "new" cereals provide more costs than benefits to consumers (Scherer 1979). Introductory media advertising is extremely expensive; one reliable study found that first-year media advertising costs amounted to nearly 50 percent of first-year sales; and by the second and third year, advertising ate up about 22 percent of brand sales.

New product introductions are one of the principal mechanisms for effecting rapid price increases in the breakfast cereals industry. I examined all the new cereals introduced by the big four companies between 1981 and 1987. In the first year of sales, the average new cereal was priced 12 percent above the company's existing average prices (Table 3). Some new items commanded a 60 percent price premium over the company's older brands. Only 20 percent of the new cereals were priced at or below the company average price, and almost all of those were high-bran or other "adult" cereals. Children's cereals (20 brands with names like C-3 PO, OJs, Smurf-Berry, Crispy Critters, Pac Man, Smores, Circus Fun, and Halfsies) were introduced at prices fully 19 percent above each company's average price level. The delight bestowed by these colorful, sweet treats may be beyond measure, but the cost of parental indulgence can be calculated to be hundreds of millions of dollars.

The extraordinary attachment of consumers to branded cereals (or at least to the boxes they come in) has made entry by private-label products extremely difficult prior to the 1990s (Table 4). In 1964, less than one percent of the cereals market was occupied by private-label items, and throughout the 1980s the private-label sales share wavered between 2 and 3 percent only (including"generic" private labels). Although the sensory quality of many private-label cereals is

equal to or superior to that of the brands (corn flakes and oat rings, for example), entry has proven difficult for both store brands and small brands (see Eisner 1977).[7] The small share of private label cereals has limited their impact on pricing by branded cereals (Table 1). By 1979-1980, retail price differences between national brands of breakfast cereals and private label equivalents were in the range of 25 to 35 percent–one of the largest such price differences in the food industry. During the period 1981-1988, the price gap was at least 34 to 40 percent (Table 3). In 1989-1991, our data show a 43 to 47 percent price difference. The rise of private-label cereals to as much as 8 percent of volume in 1995 is an encouraging sign, but evidence from other food and tobacco markets seems to suggest that shares of 25 to 30 percent are necessary to bring about significant price responses from leading brands.

The lack of price competition among major brands and the limited (as yet) effect of private label alternatives has allowed considerable excess pricing by breakfast cereal manufacturers. Empirical studies from he 1970s and early 1980s typically found consumers paying 18 to 38 percent above "perfectly competitive" prices (Connor, *et al.* 1985). More sophisticated models incorporating theoretical advances in economies made in the 1980s fail to alter these extremely high consumer overcharge estimates (Connor and Peterson 1996). Estimation techniques derived from the New Empirical Industrial Organization approach also find evidence of noncompetitive cereals pricing (Liang 1989).

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[7]Consumer Reports does find private-label raisin brans inferior to the leading brands.

Price Changes

The question of breakfast cereal inflation rates is an issue that has been around for some time. The President's national Commission on Food Marketing addressed this issue for the 1947-1964 period (NCFM 1965). Relying on Bureau of Labor Statistics (BLS) data on wholesale and retail price changes, this report concluded that breakfast cereal prices increased at both levels far faster than did the prices of all processed foods. Wholesale cereals prices increased 70 percent (*six times faster* than all wholesale food prices), whereas retail cereal prices increased by 131 percent (four times faster than all retail food prices). Grain and labor costs could not explain most of the wholesale (producer) price inflation, nor did consumer promotions play a role.

Another approach to measuring wholesale price changes is shown in Table 1 for the years 1963-1992. These data develop implicit wholesale (manufacturers') price changes from Census of Manufacturers data. Prices are net of discounts. It appears that during 1963-1972, cereals prices and all processed foods prices changed at about the same rate. During the highly inflationary 1972-1982 period, breakfast cereal prices outpaced those of other processed foods by one or two percent per year. The next decade, 1982-1992, displays a much greater discrepancy between the two price series; wholesale cereals prices advanced by 6 to 7 percent per year, a rate that was *five times faster* than the all-food rate of 1.2 percent annually. Tables 5 and 6 confirm this pattern for some specific breakfast-cereal products. Note that these data purport to be free of distortions that might be caused

by consumer promotions. Because these data are derived from plant-level data and promotional discounts are a headquarter's function, there is good reason to believe their accuracy.[8]

Average national retail prices for RTE cereals are shown in Table 7. The years covered are 1981 to 1992, with a break in the series between 1990 and 1991. The five leading companies increased their retail prices by 104 percent in the 11-year period, or by 6.7 percent per year on average. All other companies, including manufacturers of private-label cereals, increased their prices by only 94 percent, or 6.2 percent per year. Within the top five, Ralston and General Mills were able to achieve the greatest price increases (123 and 117 percent, respectively), while Quaker Oats and Kellogg had the slowest price increases (79 and 95 percent, respectively). Despite the fact that General Mills has the highest overall cereal prices and the greatest price increases, GM experienced the largest increase in market share (Table 4). Quaker Oats, now with the cheapest cereals, had the greatest loss in market share.

The interplay of consumer promotional expenditures with sales and prices of RTE cereals is a tricky issue. There is little doubt that manufacturers' expenditures have positive effects on the volume of RTE cereals purchased. Some apparently reliable data on volume growth for 1992-1995 showed the following:

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[8]The implicit price series also parallels the Producer Price Index series quite closely.

	Chg. in Couponing Costs in Previous Year	Change in Volume
1992	+$73 million	+1.5%
1993	+$211 million	+6.9%
1994	-$200 million	+2.8%
1995	-$130 million	+0.5%

However, the effect of coupons issued (especially the Buy-One-Get-One-Free or BOGO types) on cereal prices depends on the rate at which coupons are redeemed by consumers. The greater the redemption rate, the greater the effective price cuts on cereals. Some industry sources place redemption rates at about 5 percent in the late 1980s, with rates rising above 10 percent during 1993-1994. In 1993 and early 1994, the number of brands with BOGO coupons ranged from 20 to 35 each month, but the number fell mysteriously and universally in late 1994 (Table 8). In 1995, no more than two brands were on BOGO promotions. Even though the number of BOGO offers was high in 1993, to calculate the aggregate effect on prices requires information on the market shares of the promoted brands, information that I do not have.

Competition Policy

The RTE cereals industry is an extreme example of public policy failure. For nearly ten years, the Federal Trade Commission investigated and prosecuted the three largest cereals makers on the charge of "shared monopoly". Most economists have no difficulty in understanding the concept of tacit collusive behavior in the context of tight oligopoly. Perhaps because the letter of

the law (the Sherman Act) makes no mention of the word oligopoly (coined in the 1930s), many lawyers found the novel legal theory bizarre (Baldwin 1993). The way things stand now, parallel actions by a few, powerful entrenched sellers that have the effect of increasing or maintaining their market power are beyond the reach of U.S. antitrust law, so long as the companies make no overt agreements to act in concert.

The big cereals case along with two other monopoly cases took more than half of the professional resources at the command of the two leading antitrust agencies (Preston and Connor 1993). The failure of the case "traumatized" the FTC's staff and has caused economists to rethink the collusion theory of market power in the cereals industry. Now, empirical studies seem to be focussing on the exercise of unilateral market power as a more viable basis for future legal action (Shapiro 1995). However, I am not yet persuaded that a case built upon concerted action has received its day in court. After all, the cereals case was abrogated by Congressional intervention in 1981 (no doubt encouraged by the new Presidential administration). The September 1981 decision of the FTC's Administrative Law Judge is one that I sometimes have my students read as an example of egregiously muddled legal reasoning. Perhaps a more leisurely consideration of the facts presented about the cereals industry would have resulted in a different conclusion.

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Table 1. Basic Economic Data, Breakfast Cereals and All Food Processing Industries, 1963-199

Item (unit)	Year						
	1963	1967	1972	1977	1982	1987	1992
Value of product shipments ($million)	561	716	935	1,833	3,112	5,081	7,795
	65,134	83,975	106,780	177,467	259,473	305,753	376,541
Plant employment (thousands)	11.4	10.1	12.9	16.6	15.6	16.0	16.1
	1,653.5	1,649.6	1,569.0	1,520.0	1,487.7	1,448.8	1,504.9
Gross value added/shipments (percent)	58.4[1]	59.7	61.2	57.9	63.5	74.7[1]	74.9[2]
	31.9	31.7	32.9	29.1	31.5	36.8	38.6
U.S. exports ($million, 3-yr. ave.)	--	--	30	64	26	26	136
	--	--	2,840	6,270	11,825	11,402	21,622
U.S. exports (percent of shipments)	--	--	3.2	3.2	0.8	0.5	1.7
	--	--	2.8	3.8	4.2	3.5	5.4
U.S. imports ($million, 3-yr. ave.)	--	--	2	5	9	14	59
	--	--	5,842	7,152	11,419	16,856	20,288
U.S. imports (percent of shipments)	--	--	0.2	0.1	0.3	0.3	0.8
	--	--	5.8	4.3	4.1	5.1	5.0
Annual growth rates (percent):							
Value of product shipments	--	6.3	5.5	14.4	11.2	10.3	8.9
	--	6.6	4.9	10.7	7.9	3.3	4.3
Real output	--	4.1	2.2	3.6	5.4	4.6	2.1
	--	3.5	3.0	1.7	3.0	1.9	3.3

Implicit wholesale prices	--	2.2	3.3	10.8	5.8	5.7	6.8
	--	3.1	2.9	9.0	4.9	1.4	1.0
Producer Price Index	--	--	--	--	--	5.8E	6.8
	--	--	--	--	6.2	1.5	2.6
Plant Employment	--	-3.0	5.0	5.2	-1.2	0.5	0.1
	--	-0.1	-1.0	-0.6	-0.4	-0.5	0.8
Value added/shipments ratio	--	0.4	0.5	-1.1	1.9	3.3	0.1
	--	-0.2	0.8	-2.4	1.6	3.2	1.0

E=Estimated. -- = Not available.

Sources: U.S. Bureau of the Census, *Census of Manufactures* (various years); John M. Connor and William A. Schiek, *Food Processing: An Industrial Powerhouse in Transition* (Second Revised Edition), New York: John Wiley and Sons (forthcoming 1996).

Note: Upper number in row refers to breakfast cereals, low number to all food processing industries.

[1]Breakfast cereals ranked first among all food industries.
[2]Breakfast cereals ranked second among all food industries.

Table 2. Cost Analysis of the U.S. Breakfast Cereals Industry (SIC 2043), 1992

Component	Value	Proportion of Sales	
		Manufacturers' Shipments	Retail 20 oz. box
	$Million	Percent	Dollars
Revenues:	$9,798.6	100.0	$3.73
Breakfast cereal products	7,507.3		
Secondary products	1,445.3		
	846.1		
Miscellaneous receipts	5.7		
(cereals made outside industry)	(288.1)		
Manufacturing costs & profits:	9,798.6	100.0	2.60
Materials and related:	2,470.9	25.5	0.66
Food & agric. ingredients	870.0	8.9	0.23
Packaging, containers	1,097.0	11.2	0.29
Cost of resales	414.0	4.2	0.11
Electricity & fuel	81.4	0.8	0.02
Contract work	9.0	0.1	0.00
Labor compensation:	1,081.1	11.0	0.29
Wages (production workers)	597.6		
Salaries (other plant workers)	147.7		
Fringe benefits (plant workers)	209.6		
Est. auxiliaries workers	126.2		
Purchased plant services	75.6	0.8	0.02
New capital expenditures	396.6	4.1	0.11
Gross margin:	5,774.4	58.9	1.53
Est. total selling costs	2,940.0	30.0	0.78
Before-tax profits	1,550.0	15.8	0.41
Other overhead costs	1,284.4	13.1	0.34
Distributors' mark-ups	0	0	1.12

Sources: *Census of Manufactures* and trade sources.

Table 3. Average Annual Retail Prices of RTE Breakfast Cereals Introduced from 1981 to 1987.

Brand (introduced)	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Market Share Trend
			Company Average = 100			
Kellogg's:						
*Marshmallow Krispies (5/82)	117	107	117	118	188	down
Crispix (2/83)	97	100	102	105	110	up
Fruitful Bran (10/83)	104	103	101	99	99	down
Apple Raisin Crips (4/84)	110	110	111	111	109	down
*C-3 PO (1984)	125	125	--	--	--	down
Shredded Wheat Raisin (8/84)	96	98	95	93	91	up/down
*OJs (3/85)	119	114	--	--	--	down
Extra Fiber All Bran (3/85)	111	109	108	107	101	up/down
Just Right (9/85)	119	114	118	21	122	steady
Nutri-Grain Wheat & Raisin (1/86)	107	106	107	106	107	down
Nutri-Grain almond & Raisin (1/86)	120	121	119	121	118	steady
All Bran Fruit/Almond (6/86)	124	117	112	--	--	down
*Fruity Marsh. Krispies (1/87)	116	114	115	117	--	down
KELLOGG AVERAGE	113	112	110	110	108	

Table 3 (continued)

General Foods (Post):						
Raisin Grape Nuts (4/81)	90	89	85	84	85	up/down
H/Nut Corn Raisin Bran (1981)	103	93	88	89	--	up/down
*Strawberry Honeycomb (1982)	159	147	150	--	--	up/down
*Smurf-Berry Crunch (2/83)	123	132	138	140	142	down
Toasties Frosted (1983)	89	83	85	--	--	none
Horizon Trail Mix (9/85)	157	145	139	134	148	up/down
*Crispy Critters (6/87)	112	106	106	108	--	down
*Smurf-Berry Magic (3/88)	141	135	138	--	--	down
*Croonchy Stars (1988)	125	116	127	--	--	down
POST AVERAGE	122	116	117	111	125	
General Mills:						
*Pac Man (4/83)	114	112	113	112	114	down
Cinnamon Toasty Crunch (3/84)	101	102	101	102	104	steady
*ET (1984)	107	106	--	--	--	down
*Smores (3/85)	105	104	105	105	106	down
Fiber One (3/85)	76	75	76	76	76	steady
Bran Muffin Crisp (4/85)	82	81	79	--	--	down
Raisin Nut Bran (1/86)	91	88	87	87	89	up
*Rocky Road (1/86)	114	114	115	120	--	down
*Circus Fun (4/86)	119	121	121	118	--	down
*Ice Cream Cones (1/87)	111	108	106	--	--	down

Table 3 (continued)

Oatmeal Raisin Crisp (4/87)	93	92	90	89	--	up
Clusters (5/87)	103	102	102	100	--	up
G. M. AVERAGE	101	100	100	101	98	
Quaker Oats:						
*Halfsies (1982)	109	105	106	--	--	down
*Cap-N-Crunch Ch. Cr. (10/83)	114	110	113	116	120	up/down
Life Raisin (1984)	101	100	--	--	--	down
*Mr. T (8/84)	129	128	138	144	--	down
Toasted Wheat Bran (11/85)	84	81	86	94	96	down
*Oh's Honey Graham (1/86)	115	114	118	119	121	up/down
*Oh's Crunchy Nut (1/86)	108	107	111	112	114	up/down
QUAKER AVERAGE	109	106	112	117	113	

Source: SAMI, *Million Dollar Brand Study* (Chicago 1991).
Note: Lists all brands introduced between 1981 and 1987 by the top four companies in the years they achieved at least $1 million in retail U.S. sales.

* = Judged to be primarily targeted at children.

Table 4. Average Annual Dollar Sales Shares in the U.S. Ready-to-Eat Cereal Market, 1981-1992.

Company or Category	Year											
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
	Percent											
Kellogg	37.7	37.6	36.3	39.3	41.0	41.4	41.3	41.5	39.8	37.5	37.4	37.0
General Mills	23.7	23.3	24.0	23.8	24.1	24.6	24.1	24.1	26.6	28.0	28.7	29.3
General Foods (Post)	14.8	15.3	15.6	13.1	12.2	11.9	12.0	11.4	10.1	10.8	10.8	11.4
Quaker Oats	9.5	9.6	9.3	9.0	8.0	7.6	8.1	8.4	7.9	7.5	7.1	7.1
Ralston Purina (Brands)	5.2	4.9	5.8	6.2	6.1	5.8	5.6	5.5	6.5	6.5	5.3	5.0
Top Five Companies	90.8	90.7	91.0	91.3	91.3	91.3	91.2	90.9	91.0	90.4	89.3	89.8
All Other Manufacturer's Brands	6.0	6.1	6.1	6.1	6.1	6.1	6.3	6.2	5.7	5.8	5.7	5.0
Regular Private Label	2.6	2.3	2.0	1.8	1.9	2.0	2.1	2.5	2.9	3.5	5.0	5.2
Generic Private Label	0.6	0.9	0.9	0.8	0.7	0.6	0.5	0.4	0.4	0.3E	--	--
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Selling-Area Markets, Inc. Million Dollar Brand Study (Chicago, 1991), Private Label and Generic Analysis (Chicago, 1990), and IRI data.

Table 5. Implicit Manufacturers' Selling Prices of Breakfast Cereals, 1972-1992.

Cereal Products	Year				
	1972	1977	1982	1987	1992
	Dollars per lb. net weight				
Ready to eat:					
Corn flakes	0.4539	0.7541	1.1501	1.6240	--
Wheat flakes	0.4307	0.7012	1.1268	1.6153	1.7226
Oat breakfast foods	--	--	--	1.8491	--
Rice breakfast foods	0.6653	0.9138	1.4293	1.5865	2.0152
Other grains and mixed grains	0.4989[b]	0.8756[b]	1.1747[b]	2.0303	--
To be cooked:					
Farina and other wheat-based	0.2919	0.3908	0.7102	0.7341	1.1642
Rolled oats & oatmeal	--	0.2728	--	0.4188	0.4002
Other grains & mixed grains	--	--	0.7826	0.9184	1.2278

-- = Not available

[a] Implicit wholesale prices are based on the ratio of value of shipment to product weight. Shipments are net selling values, f.o.b. plant, after discounts and allowances, excluding shipping charges and sales or excise taxes.

b Includes infant foods

Source: U.S. Bureau of the Census, *1992 Census of Manufactures: Industry Report Series* (Table 6a-1) and previous issues.

Table 6. Annual Manufacturers' net Price Changes, Cereal Breakfast Foods, Intercensus Years, 1972-1992

Product	1972-1977	1977-1982	1982-1987	1987-1992	1972-1992
	Percent per year compounded				
Read to eat:					
Corn flakes	10.69	8.81	7.14	--	--
Wheat flakes	10.24	9.95	7.47	1.29	7.18
Oat	--	--	--	--	--
Rice	6.55	9.36	2.11	4.90	5.70
Other & mixed grains	11.91	6.05	11.56	--	--
To be cooked:					
Wheat	6.01	12.69	0.66	9.66	7.16
Oat	--	4.38	4.38	-0.90	--
Other & mixed grains	--	--	3.25	5.98	--

Note: Prices are net of discounts, allowances, taxes, and delivery costs.

Source: Connor and Schiek (1996).

Table 7. Average Annual U. S. Retail Prices for Ready-to-Eat Cereals, by Manufacturer, 1981-1992

Manufacturer	Year												
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1990[a]	1991[a]	1992[a]
	Dollars Per Pound												
Kellogg	1.64	1.78	1.88	2.01	2.13	2.26	2.39	2.62	2.92	3.07	2.79	2.90	2.90
General Mills	1.72	1.92	2.09	2.24	2.39	2.53	2.65	2.84	3.15	3.40	3.21	3.38	3.52
General Foods (Post)	1.54	1.68	1.81	1.89	2.01	2.17	2.26	2.52	2.78	2.96	2.67	2.84	2.94
Quaker Oats	1.70	1.83	1.93	2.08	2.19	2.29	2.37	2.43	2.70	2.88	2.70	2.85	2.85
Ralston Purina (Brands)	1.61	1.77	1.93	2.15	2.29	2.41	2.53	2.74	3.10	3.39	3.10	3.22	3.28
Top Five Companies	1.65	1.81	1.93	2.07	2.20	2.34	2.44	2.65	2.97	3.16	2.91	3.05	3.10
All Others	1.19	1.32	1.44	1.54	1.62	1.73	1.83	1.95	2.09	2.20	2.07	2.08	2.17
Total Market	1.61	1.76	1.89	2.02	2.15	2.29	2.39	2.59	2.89	3.07	2.79	2.91	2.98

Sources: Selling-Area Markets, Inc. Million Dollar Brands Study (Chicago, 1991) and Information Resources, Inc.

[a] IRI data generally show lower prices than the SAMI data because the former include all brands, including those that never achieved $1 million in sales per year. Also, IRI data are gathered at the retail check-out point, while SAMI data were based on some suggested retail prices of grocery wholesalers. Finally, the IRI data are net of consumer coupon redemptions, while the SAMI data cannot make such adjustments. In 1990, coupon redemptions on cereals made by the top five companies amounted to an effective 8 percent retail price reduction; the price reductions varied from 6 to 10 percent across companies.

Table 8. Number of Brands of Breakfast Cereals on BOGO Promotion, 1994 and 1995.

Quarter of the Year	Kellogg	General Mills	General Foods (Post)	Quaker Oats	Ralston Purina	Total
1994 I	8	14	2	2	1	27
1994 II	7	7	3	3	2	22
1994 III	1	1	5	3	2	11
1994 IV	0	1	0	2	2	5
1995 I	0	0	0	1	1	2
1995 II	0	0	0	0	1	1
1995 III	0	0	0	0	1	1
1995 IV	0	0	0	0	1	1

Source: PIM and trade estimates.

Note: "BOGO means "Buy-One-Get-One (free)", a 50% price reduction. Includes national BOGOs only.