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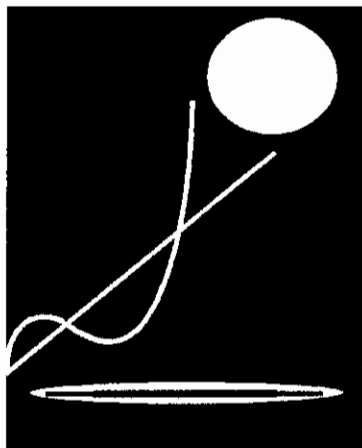
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Harvesting and Tacit Collusion in the Breakfast Cereal Industry: A Case Study of Nabisco Shredded Wheat and Post Grape Nuts

by

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I. Introduction

Shredded wheat was invented in the late 19th century and has been marketed under the Nabisco brand name since 1925. In 1985 the R.J. Reynolds Tobacco Company acquired the Nabisco Company and in 1988 the RJR Nabisco Company underwent a leveraged buyout (LBO) led by Kolberg, Kravis, and Roberts that recapitalized the firm at a record \$25 billion (Food Institute Report 1988, p. 2). The firm has continued to struggle under its LBO debt in a fashion that suggests the \$25 billion price paid was too high.

In September 1992, RJR Nabisco attempted to sell its ready-to-eat (RTE) breakfast cereal unit to General Mills for \$450 million; however, the deal fell through because of active antitrust investigation. Two weeks later Nabisco and Philip Morris/Kraft General Foods (Post Cereals) announced a preliminary agreement whereby Philip Morris would acquire the Nabisco breakfast cereal franchise for the same price, \$450 million. That deal was consummated in January 1993; however, it was immediately challenged by the state of New York on antitrust grounds. This paper is based to a large extent upon the public record of that ongoing antitrust case and detailed supermarket scanner data on the ready-to-eat cereal industry that the University of Connecticut Food Marketing Policy Center has purchased from Information Resources, Inc.

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The senior author is currently expert economist for the State of New York in its challenge of the acquisition of the Nabisco ready-to-eat breakfast cereal business in the U.S. and Canada by Philip Morris (Kraft-General Foods subsidiary). This paper was circulated to attorneys representing the State of New York and attorneys from Arnold and Porter, counsel for the defendants. Their review does not constitute endorsement, verification or responsibility for any of the opinions stated herein. The opinions expressed in this paper are the authors' and are based solely on the facts and publications cited herein. This research was supported by Special Research Grant No. 91-34178-6330, Cooperative State Research Service, USDA.

Economists have documented that highly leveraged firms, such as RJR Nabisco, tend to behave differently than less leveraged competitors because of a need for cash to pay down LBO debt (Chevalier 1993, Cotterill 1993b). Highly leveraged firms have even more incentive than other firms to exercise market power to increase short term business profitability. Once this "harvest" is over they often sell the remaining assets in a strategic fashion to generate additional cash. KKR's management and attempted sale of Nabisco Shredded Wheat are an excellent example of this strategy. Post management, in a letter to the Philip Morris Board of Directors requesting approval for the Nabisco acquisition, recognize this and state:

"Since KKR purchased RJR Nabisco in 1988, the franchise appears to have been managed for short term profit." (Cotterill 1993a, Para 30).

In this paper we identify the primary components of Nabisco's "harvest and sell" strategy. We examine market share, retail price, merchandising, advertising and profit data.¹ Our main thesis and conclusion after analyzing available data is that a significant component of the Nabisco strategy was tacit coordination with Post Grape Nuts to elevate profits and lessen market share losses. In other words, Post and Nabisco tacitly coordinated their cereal price and merchandising actions in a fashion that allowed Post as well as Nabisco to significantly increase profits. Consequently, consumers paid more for these breakfast cereals than they would have paid in a more competitive market. As Levy and Reitzes (1993) have stressed, such coordination need not be explicit collusion or price fixing. Tacit collusion based upon close

¹ Over time we have purchased annual "Supermarket Review" reports from the Information Resources, Inc. (I.R.I.) company to conduct research on food marketing issues. This I.R.I. Infoscan data base covers 74 product categories for 1988-1992 and reports information at the brand level on a quarterly basis for individual urban areas (e.g., San Francisco) and the nation. The data base covers most major branded and private label manufactured food products sold through supermarkets, and thus includes cold breakfast cereals. Quarterly brand level advertising data are from Leading National Advertisers, Inc.

tracking of each brand's marketing strategies and each firm's individual interest in maximizing profits is sufficient basis for the observed anticompetitive conduct.

The reader should not infer the existence of any unlawful conduct from this paper's description of tacit coordination (also referred to as tacit collusion) by companies in the ready-to-eat cereal industry. Tacit collusion or coordination, by itself, has not been found to violate the antitrust laws (Scherer and Ross 1990, p. 346-47). However, as stated in the prior paragraph, tacit collusion or coordination can have the effect of raising prices to non-competitive levels to the detriment of consumers, and thus has been criticized by economists (Scherer and Ross 1990, p. 347). Such tacit collusion or coordination may also be a relevant factor to consider in evaluating an acquisition under the antitrust laws (U.S. Dept. Justice, Horizontal Merger Guidelines, 1992, S 2.1). This paper does not address the legality, under the antitrust laws, of Kraft's acquisition of the Nabisco RTE cereal business, which is currently being challenged in federal court by the State of New York.

The following section explains the harvest strategy and compares it to the traditional limit price strategy. The third section develops the economic concept of tacit collusion in a differentiated product industry and identifies conduct patterns that would be observed if such noncompetitive conduct is in place. The fourth, fifth, sixth, and seventh sections present evidence for our hypotheses. The final section contains conclusions. Appendix tables and references are attached to provide further basis for the presentation and analysis in the text.

II. To Harvest or Not to Harvest

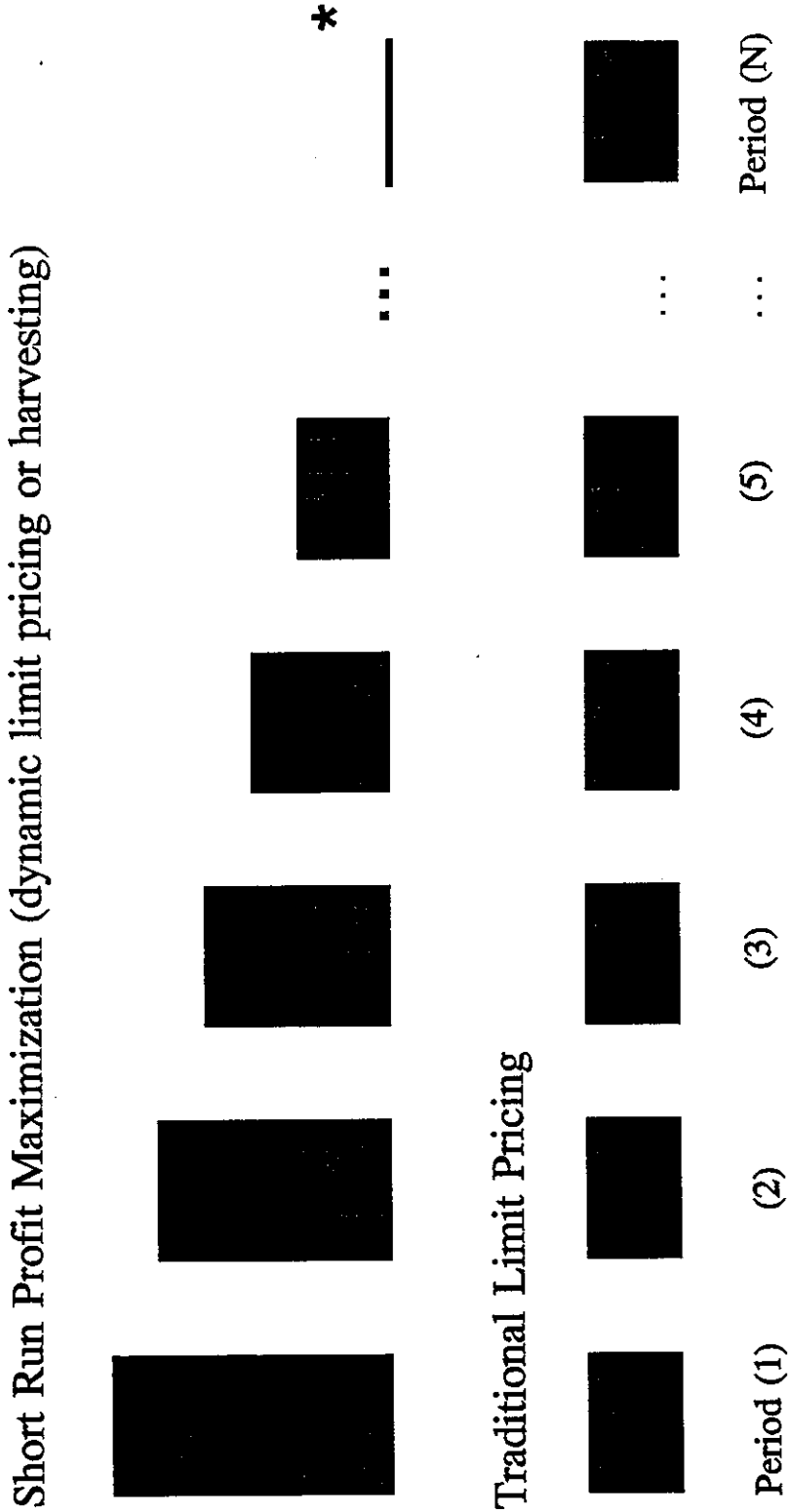
The technical economic name for the harvest strategy is dynamic limit pricing (Scherer and Ross 1990, p. 357-361). Prior to an LBO a firm may have been exercising market power by

following a traditional limit price strategy. Under that strategy price is above average cost but not so high as to attract significant entry or expansion by other firms, thereby insuring a stable market share and stream of excess profits over time (traditional limit pricing example in Figure 1). An LBO significantly increases the firm's discount rate. Cash is needed now to avoid bankruptcy or lesser but binding short term financial constraints. In an LBO situation a dollar earned from operations today is much more valuable than a dollar from operations in the distant future. Thus, the leveraged buyout event in many instances forces a firm that is exercising some market power under the traditional limit pricing strategy to shift to a dynamic limit pricing strategy to monetize all of its market power in the short run. It raises price and cuts marketing outlays beyond levels required to maintain its market share and manages its share decline in a fashion that maximizes short run profits. This short run profit maximization (dynamic limit pricing or harvest) strategy is also illustrated in Figure 1. When executives are seeking to maximize the net present value of the firm and they face a very high discount rate, the harvest strategy dominates the traditional limit pricing strategy. As we will show and Philip Morris/Kraft General Foods management suggests (quote on page 2) Nabisco clearly did switch to a harvest strategy for its RTE cereal business in late 1989.

III. On Collusion in Differentiated Product Industries

To facilitate our analysis it will be useful to explain how economists analyze tacit collusion or coordination in differentiated product industries. Generally economists regard product heterogeneity as a barrier to collusion (U.S. Dept. Justice, Horizontal Merger Guidelines, 1992, Sec. 2.11). One must, however, not confuse product heterogeneity with product differentiation. Hydroelectric turbines are heterogeneous products because each is designed with a set of

Figure 1 Comparisons of Excess Profit Stream Over Time for the Exercise of Market Power via the Traditional Limit Pricing and the Short Run Profit Maximizing (Dynamic Limit Pricing or Harvesting) Strategies



* No excess profits in period N.
Source: Adapted from Scherer and Ross, 1990, (p. 360).

complex technical specifications that must possess specific values for a particular site. Costing such a complex and unique product is very difficult. Consequently, it is very difficult to tacitly coordinate pricing of such "malleable" products, and any exercise of market power usually requires explicit collusion, e.g., the electrical equipment conspiracy case (U.S. vs. General Electric Co. et al.; Scherer and Ross 1990, p. 243, 258-259).

A differentiated product differs from a heterogeneous product because it is not malleable. It is a well defined, stable set of product attributes that are promoted to consumers under a brand name. Nabisco Shredded Wheat, for example, has very little in common with a hydroelectric turbine. This point is not trivial—Professor Daniel Rubinfeld, expert economist for Philip Morris/Kraft General Foods, cites Scherer and Ross as evidence that collusion is unlikely in the RTE cereal industry. He states:

Economists' studies of industrial organization tell us that collusive behavior is most likely to occur in concentrated industries with homogeneous products.²⁹

²⁹ See, for example, F.M. Scherer, Industrial Market Structure and Economic Performance, Second Edition, 1990, pp. 200-205. Scherer notes that "The type of heterogeneity most likely to disrupt pricing discipline appears to be multi-dimensionality of a product's technical features." (p. 203) {Rubinfeld 1993, p. 13}

Yet even if one recognizes that product differentiation avoids the "malleable product" problem associated with heterogeneous goods, in an industry such as RTE cereal there are several dozen branded products as well as private label products. If all such products compete with each other, as Professor Rubinfeld predictably opines,² then the sheer size of the coordination problem would seem insurmountable.

² When pricing, Post focuses on particular brands that are in each individual product's "competitive set." This set generally includes products that are in different marketing segments. Moreover, products in one competitive set compete for sales with products in other competitive sets (Rubinfeld 1994, p. 3).

There are two general responses to this assertion. First, if the industry is highly concentrated, then the relatively few large sellers have portfolios of brands and, to a large extent, internalize the interbrand coordination problem. Concerning intercompany coordination, facilitating devices such as leader-follower routines in key competitive dimensions can support substantial coordination. (We will have more to say on this below.)

Second, this assertion depends critically upon the nature of product differentiation. If Chamberlinian or symmetric differentiation exists then all brands compete with all other brands. The increase in demand for a product due to a reduction in price or shifts in other strategic variables comes from all other brands in the market in proportion to their market shares. For example, if Brand X with a 10 percent market share lowers price, and Brand Y accounts for one half of the remaining 90 percent of the market then one half of Brand X's increased demand comes from Brand Y. Hotelling or spatial product differentiation, on the other hand, is clearly more plausible for the RTE cereal industry. In the Hotelling model, each brand can be visualized as being located at a point in a multidimensional product space, and as competing only with its close neighbors (substitutes) because they have similar attributes.

Readily observable industry marketing conduct—segmentation and targeting of strategic moves (pricing, advertising, couponing) to the moves of well identified "nearby" products—supports the Hotelling spatial model, not the Chamberlinian symmetric model. Levy and Reitzes (1993) demonstrate that spatial differentiation, unlike product heterogeneity, facilitates tacit collusion because it is easier to identify and discipline cheaters. Marketers of each brand clearly

know who their nearby (major) competitors are and can more easily track strategic moves.³

Those that argue that collusion is unlikely offer yet another argument. Even if one recognizes that Hotelling product differentiation exists, competition can take many forms and so there may be several dimensions that one must tacitly coordinate in order to exercise market power. There are two parts to this argument. Although there are only a few close competitors, the problem of coordination across many dimensions of competition may be too complex. Second, high prices may reflect tacit collusion on price, but competition may "bust out" in other dimensions. Professor Rubinfeld, writing on behalf of Philip Morris/Kraft General Foods, states:

Based on my study of the RTE cereal market, it is clear that this is not a market in which collusion would be likely to be successful. In addition to price, colluding firms would have to agree on: (a) product improvements, (b) product introductions, (c) trade allowances, (d) advertising, and (e) couponing. In light of the many dimensions of competition in the RTE cereal market, any cartel would be ineffective if it merely controlled published wholesale prices. In fact, any coordinated effort to elevate wholesale prices would be likely to stimulate competition on *all* other dimensions: differences in product attributes, product improvement, product introduction, trade allowances, advertising and couponing. (Rubinfeld 1993, p. 13).

We label Professor Rubinfeld's second contention the "pervasive competition" doctrine. Even if businessmen do collude in one or more dimensions they do so only to compete more effectively in yet another dimension.

We will place in a footnote our analysis of whether tacit collusion on price and possibly

³ This tracking capability has significantly increased during the past ten years. New computerized business communications (the food industry's standardized Uniform Communication System), electronic checkout scanner data services and many other third party market monitoring services enable marketing managers to track competitor as well as their own strategic moves on a weekly and in some cases almost daily basis (Cotterill 1985, 1988). These advances, in the main, have produced a vastly more efficient food marketing system. Their advent, however, makes it even more important to maintain a competitive market structure with incentives to compete.

other major variables that harms consumers is mitigated by "competition" in other dimensions.⁴ Here we choose to focus upon the fact that if such pervasive competition does exist then one would not see an increase in profits when tacit coordination on price becomes effective. The case at hand is two "spatially close" brands of RTE cereal: Post Grape Nuts and Nabisco Shredded Wheat.

IV. Market Share Analysis

In this section we analyze the impact of Nabisco's harvest strategy on market shares. The profitability of a harvest strategy depends critically upon a brand's elasticity of demand. When the brand's price is elevated, if demand is not sufficiently inelastic, the loss in market share (sales) will result in lower total profits and defeat the harvest strategy.

As the prior section explained a brand can have a low price elasticity in a spatially differentiated market. Brand marketers actually seek to establish and enhance a brand's unique position and market segmentation because they insulate their product from price competition.

Tacit collusion is a second major contributor to brand price inelasticity. If a close

⁴ This reasoning implies that consumers are indifferent or prefer the latter of the following two alternatives: an opportunity to purchase \$2.50/lb breakfast cereal with minimal marketing and promotion and the opportunity to purchase the same cereal at a collusive price of \$5.00/lb but with a reduced price offer for Nintendo on the back panel, frequent T.V. advertisements targeted at one's children, and cents off coupons available from time to time to soften the price shock. Writing about the airlines industry prior to deregulation, which was a price cartel that competed in nonprice dimensions such as the quality of meals and service, Scherer and Ross state: "One of the surest ways to call forth the wrong amount of variety is to set, either through governmental regulation or a rigid cartel mechanism, a uniformly high monopoly price and then let individual producers compete for business on non-price bases." (Scherer and Ross 1990, p. 601).

Scherer (1979) and Schmalensee (1978) illustrate this point for the RTE cereal industry. The Federal Horizontal Merger Guidelines also reject the pervasive competition argument stating:

Terms of coordination need not perfectly achieve the monopoly outcome in order to be harmful to consumers. Instead, the terms of coordination may be imperfect and incomplete—inasmuch as they omit some market participants, omit some dimensions of competition, omit some customers, yield elevated prices short of monopoly levels, or lapse into episodic price wars—and still result in significant competitive harm. (U.S. Dept. of Justice 1992, Sec. 2.11).

substitute brand follows a harvester's price elevation, then consumers no longer have the opportunity to switch to that lower priced substitute brand. Thus, when tacit collusion between close substitutes is effective we would expect less loss of market share due to a harvest strategy.⁵

We will begin our analysis by examining annual market share trends over the 1988-1992 period at the company level.⁶ Table 1 reports the volume market shares for the six major RTE cereal manufacturers for 1988-1992. Quarterly market shares are reported in Appendix Table A1.⁷ Nabisco started the five year period with a 5.42 percent share of market. By 1992 that market share had declined to 2.94 percent. During the five year period the industry was buffeted by several marketing events including the rise of private label, and the oat bran craze

⁵ Following Baker and Bresnahan (1985) one can rigorously state the determinants of a brand's price elasticity as follows:

$$\eta_1 = \eta_{11} + \eta_{12}\eta_{21} + \dots + \eta_{1N}\eta_{N1} = \eta_{11} + \sum_{i=2}^N \eta_{1i}\varepsilon_{ii}$$

Where: η_1 = brand 1's price elasticity; η_{11} = the brand's nonfollowship elasticity, i.e., the "change" in its output when it changes price and no one follows. η_{1i} is brand 1's cross price elasticity of demand with respect to price i , i.e., the "change" in its output when price i changes; and ε_{ii} is the change in price i when price 1 changes. These cross price and price response elasticities are summed over the other brands and since under tacit collusion (price followship) this sum is positive, it reduces brand 1's price elasticity. All "changes" mentioned above are actually percent changes. If the number of close substitute products is small and these products are insulated from other products then effective N is small, and the effective cross price elasticities η_{1i} are larger, and the effective price followship elasticities, ε_{ii} , are larger. These shifts all tend to reduce the brand's price elasticity of demand.

⁶ In the next two sections we will analyze pricing issues and explain how observed pricing and brand level market share conduct patterns for Nabisco Shredded Wheat and Post Grape Nuts are consistent with a profitable tacitly collusive harvest strategy.

⁷ All market shares in this paper are for the national ready to eat (RTE) cereal category which is all cold cereal except wheat germ. Appendix Table A11 reports annual and quarterly RTE cereal national consumption as a percent of cold cereal national consumption. In all cases it is above 99.6 percent. Thus, the deletion of wheat germ produces a more fungible product market but does not significantly alter the market shares.

that peaked in 1989 and benefitted General Mills with its line of Cheerios products. As this paper documents, the persistence of the Nabisco decline, however, was primarily self inflicted.

Table 1 Ready-to-Eat Cereal Volume Share for 6 Major Manufacturers, 1988-1992

	1988	1989	1990	1991	1992
Kellogg	40.965	39.670	37.351	37.393	37.029
General Mills	21.306	23.685	24.462	25.114	25.576
Post	11.883	10.560	11.188	11.420	11.792
Quaker Oats	8.528	8.068	7.547	7.188	7.133
Ralston Purina	5.462	5.946	6.002	4.938	4.629
Nabisco	5.423	4.702	4.362	3.208	2.941
Private Label	3.670	4.494	6.106	7.747	7.990

Source: I.R.I. Infoscan Data Base. University of Connecticut, Food Marketing Policy Center.

The Nabisco shredded wheat business can be divided into Nabisco Big Biscuit Shredded Wheat, Nabisco Spoon Size Shredded Wheat, and Nabisco Shredded Wheat and Bran.⁸ The brand market shares reported in Appendix Tables A5 and A6 document changes in the ranks and market shares of these brands. Nabisco Spoon Size Shredded Wheat was the 15th largest brand with a 1.61 percent share of market (SOM) in 1988. By 1992 it had dropped to 22nd with 1.11 percent SOM. Big Biscuit ranked 28th with 0.97 percent SOM in 1988 but dropped to 36th with 0.71 percent SOM in 1992. Shredded Wheat and Bran ranked 39th in 1988 with 0.79 percent SOM and dropped to 61st with 0.42 percent SOM in 1992.

Although the Shredded Wheat line lost significant market position and share, Appendix Table A8 indicates that the company's top three brands continue to be sold throughout the U.S.

⁸ For a short period Nabisco apparently produced a "Shredded Wheat and Oat Bran" product, however its sales were limited and negligible.

Other smaller Nabisco brands were more aggressively harvested during the 1990-1992 period. Nabisco Fruit Wheats, for example, was introduced by Nabisco in 1987. Initially it was quite successful, ranking 33rd with 0.900 percent SOM in 1988. By 1992 its share had declined to less than 0.125 percent and it dropped out of the top 100 brands. Nabisco Frosted Wheat Squares was introduced as a new product in 1988 and ranked 61st with 0.475 SOM but dropped to 77th with 0.260 SOM in 1992. Two other RTE cereal brands, Nabisco 100 percent Bran and Nabisco Team Flakes, also lost market share during the 1988-1992 period. Nabisco Teddy Graham Breakfast Bears, introduced as a kid cereal, was initially successful but was discontinued as part of Nabisco's harvest strategy (See Appendix Tables A8 and A10).

Appendix Table A8 documents that losses in market share for Fruit Wheats and Team Flakes correspond with major reductions in their distribution, i.e., many retailers stopped carrying these products. For example, stores accounting for 95.7 percent of all commodity volume (supermarket products) sold to consumers carried Fruit Wheats in early 1988, but that distribution measure dropped to 38.8 percent by the end of 1992.

V. Retail Price Analysis

As a starting point for our retail price analysis let us examine the trend over time for RTE cereal prices and the food at home component of the Consumer Price Index. Figure 2 reports these price trends for the period 1983-1992.⁹ The food at home component of the Consumer Price Index increased 38 percent over that 10 year period. RTE cereals increased 75 percent

⁹ Retail RTE cereal prices cover the retailers markup, as well as the RTE cereal manufacturers price to the retailer. Since retail markups tend to be stable and uniform for brands in a category such as RTE cereals, the observed trends in retail RTE cereal prices are overwhelmingly due to changes in cereal manufacturer price and trade promotion strategy. Tables in Appendix A contain the data for all charts presented in this section.

during the same period. Herein lies the most fundamental reason for the recent consumer outcry over RTE cereal prices.¹⁰

These price series, however, may overstate the rise of cereal prices relative to the food-at-home CPI for shoppers that use manufacturers' coupons. Neither series incorporates price reductions due to redeemed manufacturer coupons. Coupon usage and values are higher for RTE cereal than for other food products (Food Institute 1993, p. 308; Food Institute 1994, p. 309). However, adjusting for manufacturer's coupons would lower the RTE price index more than the food-at-home CPI, only if the value of manufacturer coupon related price reductions for RTE cereal increased more rapidly than similar price reductions for foods in the CPI food at home price series.¹¹ Regardless, price trends reported in Figure 2 hold for consumers that do not use manufacturer's coupons and, in fact, 65 percent of RTE cereal volume in 1992 was purchased without a manufacturer coupon (Food Institute 1994, p. 309).

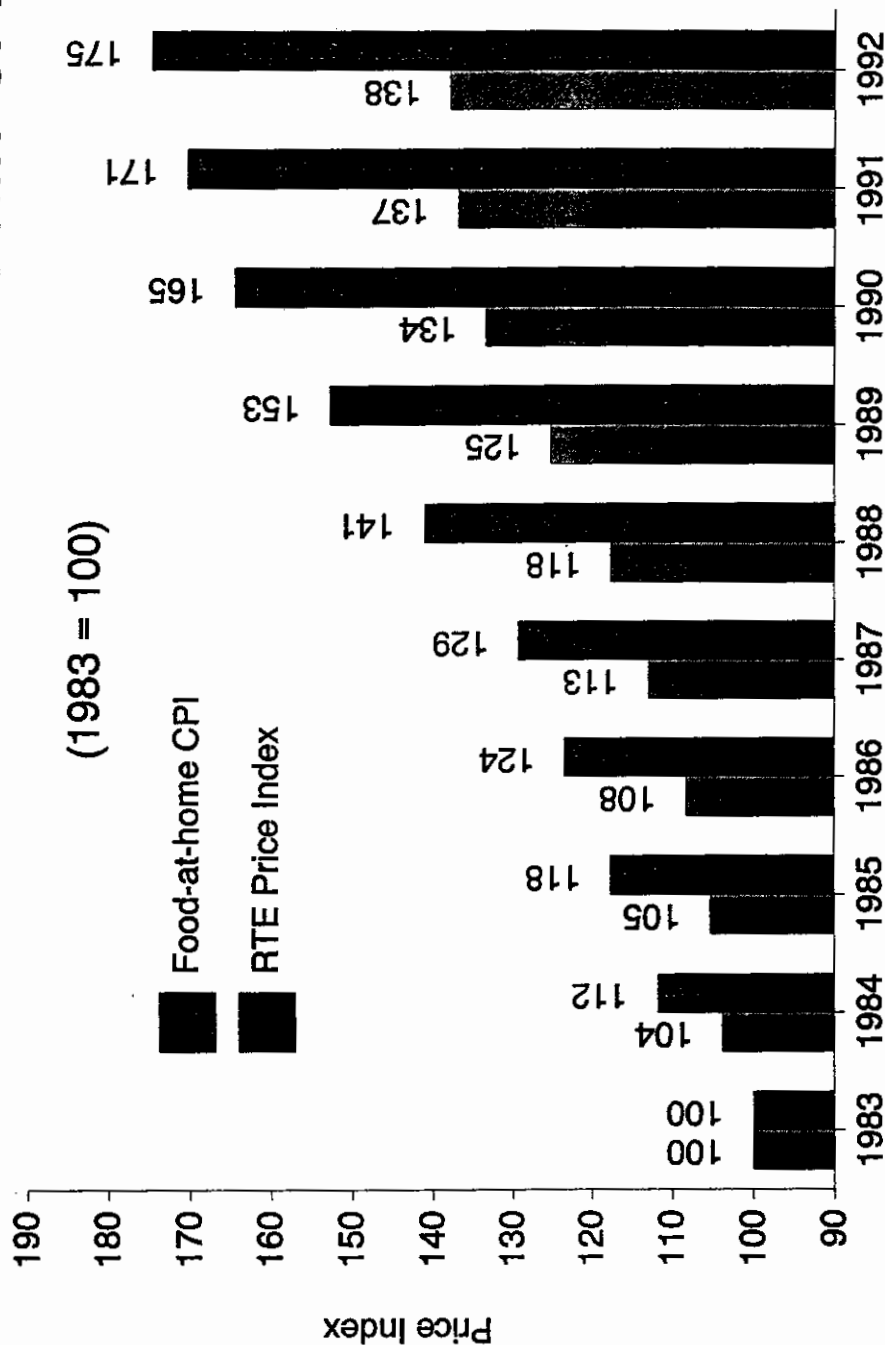
Figure 3 displays the price index trend for the total U.S. over the 1988-1992 period for

¹⁰ Since August 1993 articles on high cereal prices have appeared in several newspapers, including the *New York Times*, *Detroit Free Press*, *Miami Herald*, *Cleveland Plain Dealer*, *St. Louis Post Dispatch*, and the *Salt Lake Tribune*. Television news coverage includes Cable Network News and CNBC News. A packet of the press clippings is available from the Food Marketing Policy Center. At one point the Public Relations Office for Kellogg's was preparing a report for the Kellogg's Board of Directors on the adverse publicity. They called us and asked for our source of information on RTE cereal prices. They were somewhat surprised to find out that the source for the pre 1988 cereal prices in Figure 2 was a Kellogg Company chart submitted to antitrust authorities and subsequently made public by the New York Attorney General when he announced his challenge of the merger. (See also footnote 12, p. 21)

¹¹ Another technical point is that these two price series do not treat retailer coupons in exactly the same fashion. The Consumer Price Index subtracts price mark downs that are actually on the box but subtracts retailer's coupons only if they are actually attached to the product (Bureau of Labor Statistics 1988, p. 172). The RTE Cereal Price Index, at least since 1988, is adjusted for all in-store promotions and redeemed coupons that are distributed locally by the retailer (retail coupons). Thus, it includes price mark downs that are not marked on the box and redeemed retailer coupons that are not attached to the box. We emphasize, all reported RTE cereal prices in this paper are net of local merchandising (trade promotions that often mark down prices and/or offer retailer coupons). Thus, they are, if anything, lower than retail shelf prices.

Figure 2

RTE Cereal Price Index vs Food-at-home CPI

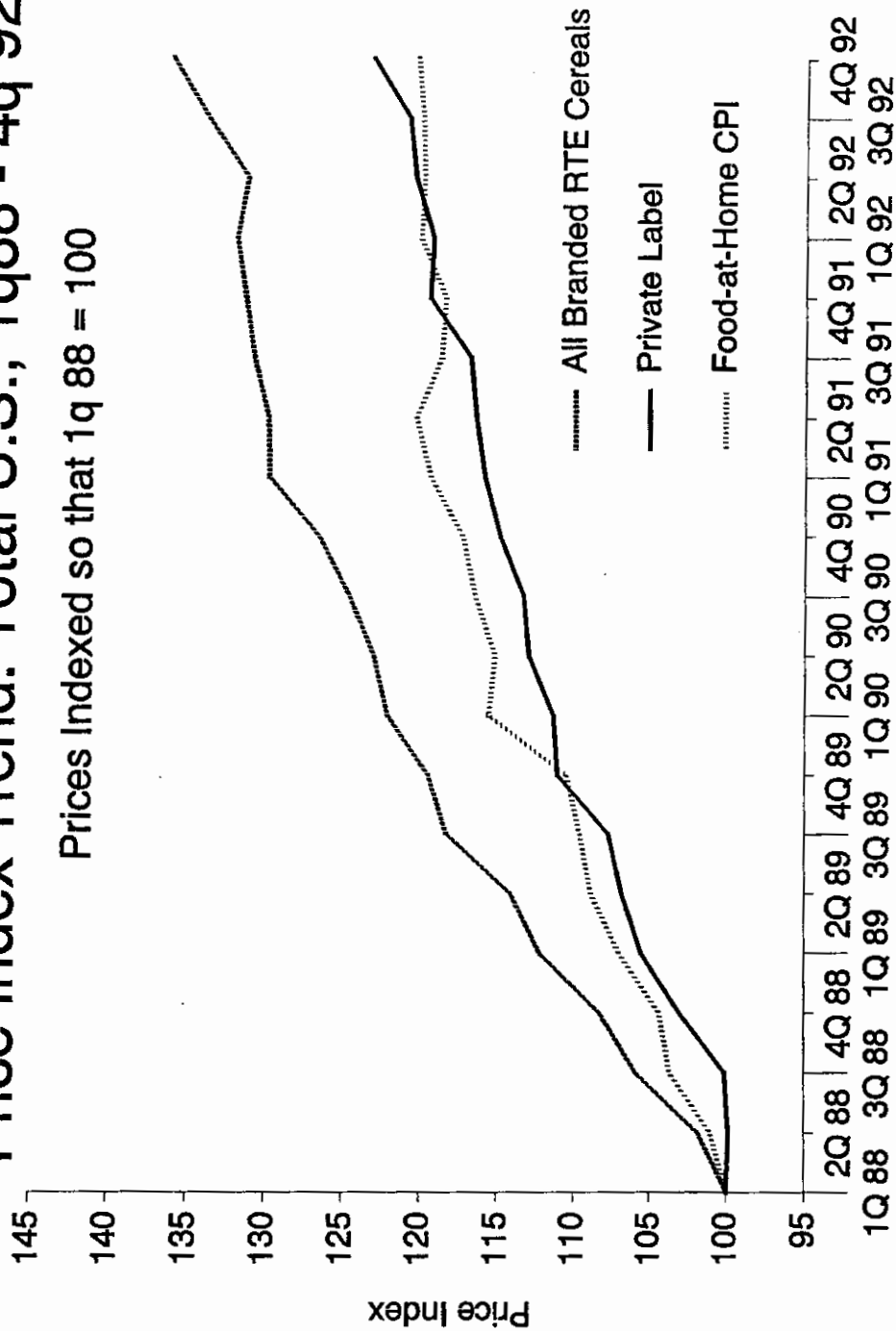


Source: Appendix Table A2; Cotterill, 1993a, Exhibit C.

Figure 3

Price Index Trend: Total U.S., 1q88 - 4q 92

Prices Indexed so that 1q 88 = 100



Source: Appendix Table A3

all branded RTE cereals, private label RTE cereals, and the food at home CPI. When prices are indexed with first quarter 1988 equal to 100, trend lines illustrate percent changes in prices over time. Note that private label RTE cereal product prices tended to increase in a fashion very similar to the food at home CPI during this period. In contrast, the prices of branded RTE cereals tended to increase at a significantly higher rate.

Figure 4 compares the price index for all Nabisco brands to all RTE cereal. One can see that Nabisco brand prices tended to increase in a nearly identical fashion to all RTE cereal until the first quarter of 1990 which registers a significantly higher price increase and initiates a gradual acceleration in Nabisco prices relative to all RTE cereal.

This chart suggests that the Nabisco harvest strategy started in late 1989. In fact annual data obtained from Nabisco and presented as Figure 19 in this paper conclusively confirm that 1990 was the first full harvest year. Over the 1988 to 1992 period, RTE cereals increased in price approximately 30 percent while the Nabisco cereal prices increased approximately 50 percent. These price increases are in the first instance generated by announced list price increases, but they also are net of the actual trade promotion (merchandising) of the RTE cereal industry. Thus, actual merchandising including retailer coupons and price specials such as "buy one get one free" offers do not offset list price increases for Nabisco or all RTE cereals.

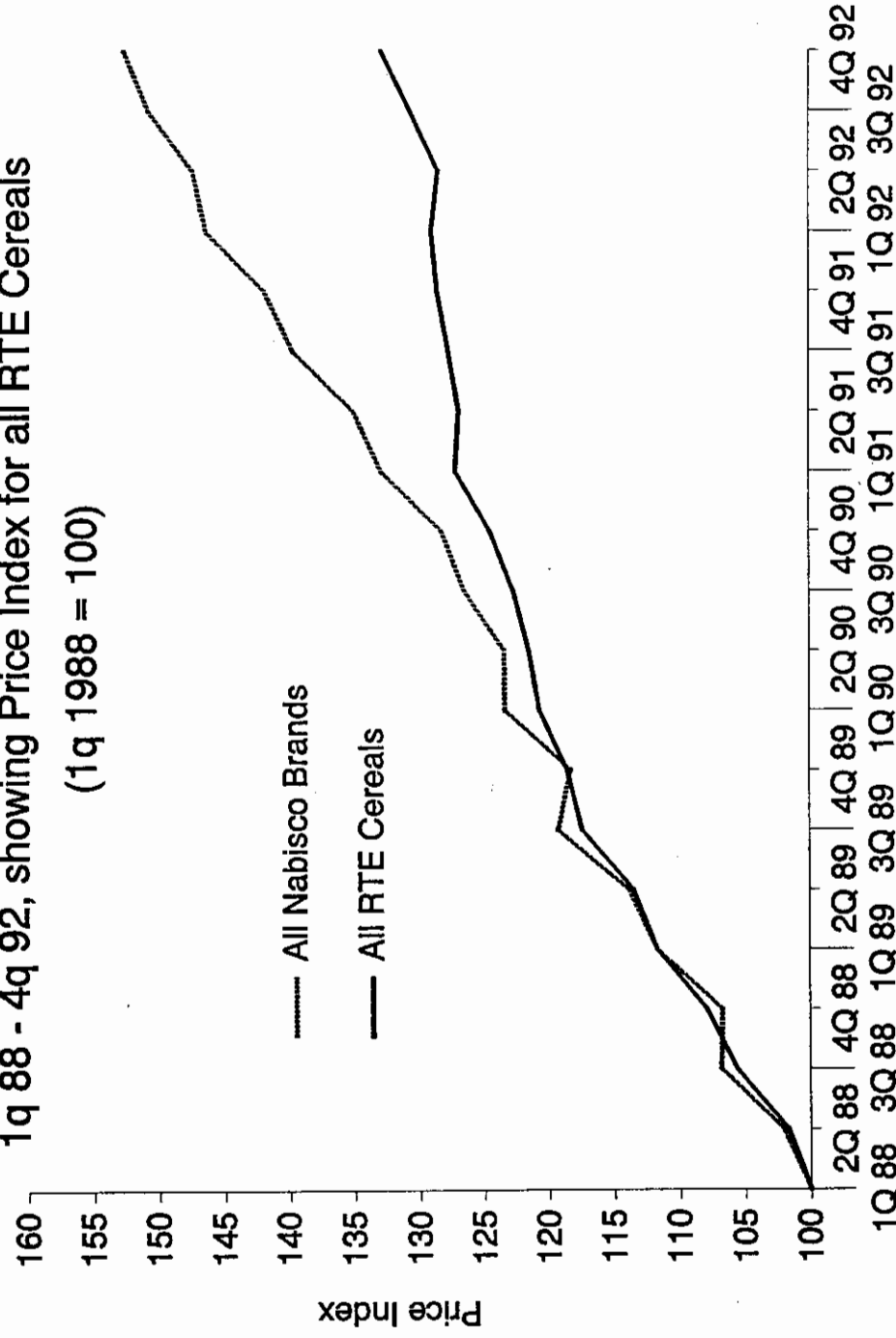
Figure 5 produces the actual price trends for the three Nabisco Shredded Wheat brands; Post Grape Nuts, a major competitor of Nabisco Shredded Wheat; Kellogg's Corn Flakes, the largest market share brand of RTE cereal; and an average price for all private label RTE cereal products. In Figure 5 one can clearly see that private label cereals tend to have the lowest price per pound and that Kellogg's Corn Flakes, a brand that private label cereals have attacked, tends

Figure 4

Nabisco Retail Price Index Trend: Total U.S.

1q 88 - 4q 92, showing Price Index for all RTE Cereals

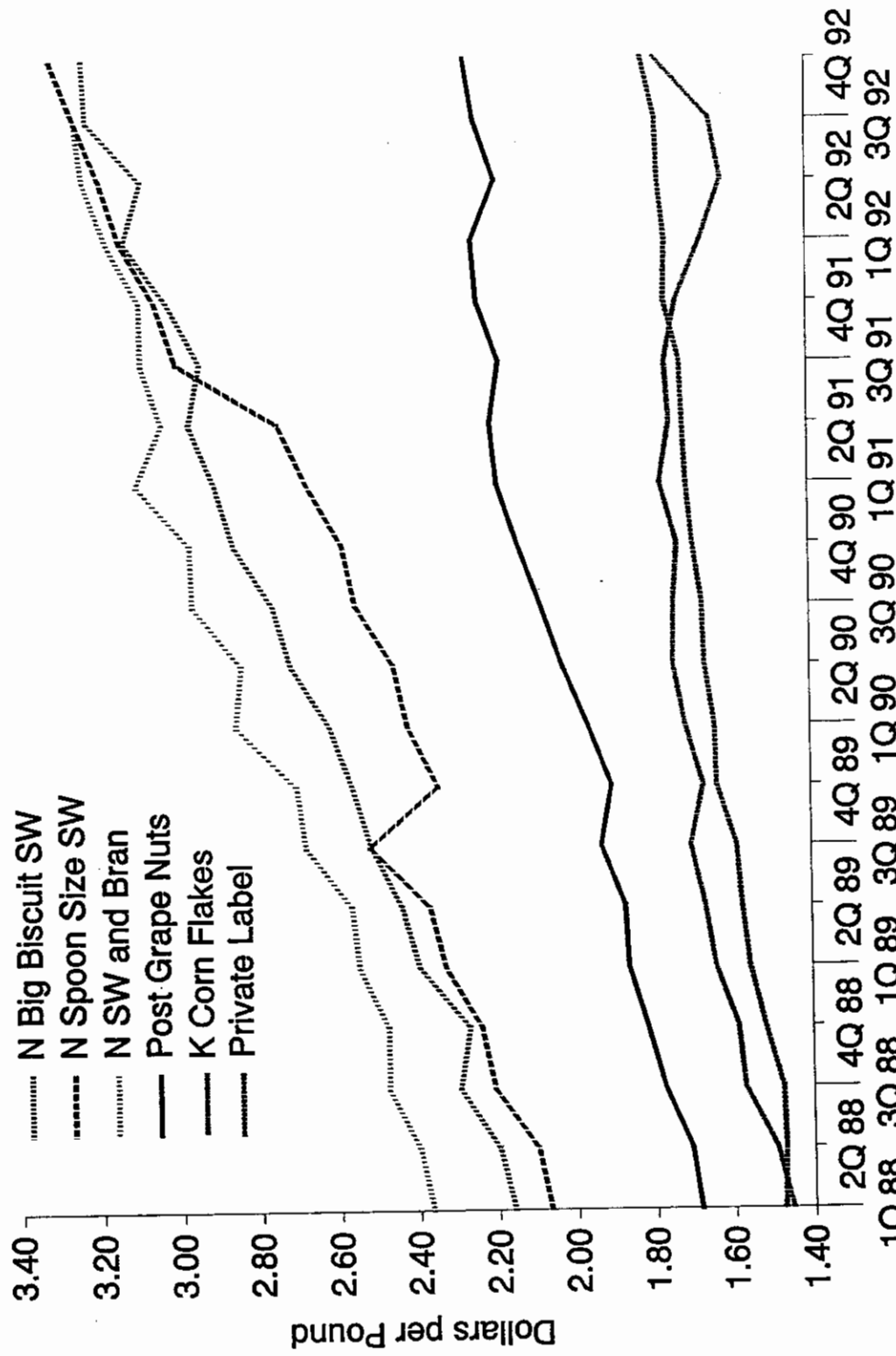
(1q 1988 = 100)



Source: Appendix Table A3

Figure 5

Price Trends: Total U.S., 1q88 - 4q 92



Source: Appendix Table A3

to have a price per pound that is very similar. In other words Kellogg's Corn Flakes competes on price with private label cereals.¹² During the 1992 period Kellogg's Corn Flakes were actually priced lower than private label cereal. To the best of our knowledge Kellogg's and other RTE cereal companies never lowered list prices during the 1988-1992 period. Therefore, these price trends suggest that during the 1992 calendar year, Kellogg's lowered corn flake prices through trade deals and in-store promotions to compete directly on price with private label cereals. In fact, our analysis of merchandising in the next section confirms this.

Note that Grape Nuts has a higher price per pound than Corn Flakes or private label cereal and the Nabisco Shredded Wheat brands have even higher prices per pound than Grape Nuts. This is direct evidence that RTE cereal is a highly differentiated industry. If these cereals were a homogenous commodity, they would have the same price. Note that prices for both Grape Nuts and Shredded Wheat tend to rise relative to private label and corn flakes throughout the period. This suggests that they were not directly affected by pricing actions of private label cereals and at least to a certain extent by pricing actions of major cereal brands such as Kellogg's Corn Flakes. Shredded Wheat and Grape Nuts are in a segment of the market, the simple health and nutrition segment, which is to a large extent insulated from pricing actions in other parts of the RTE cereal market. Finally, note that Spoon Size price "drops down" but then increases at a nearly identical rate with Big biscuit and Post Grape Nuts (parallel slopes) during the first seven quarters of the harvest period (Quarter 4, 1989 to Quarter 3, 1991). Merchandising patterns do not explain this discrete shift. Possibly a temporary change in some

¹² The data for Kelloggs and Post Raisin Bran in Table A3 and Appendix B, Figure B1 tell a similar competitive story. Private label cereals target leading brands including Corn Flakes, Raisin Bran, Rice Krispies, Cheerios, Fruit Loops and Captain Crunch. The IRI Infoscan data base does not provide information on individual private label products.

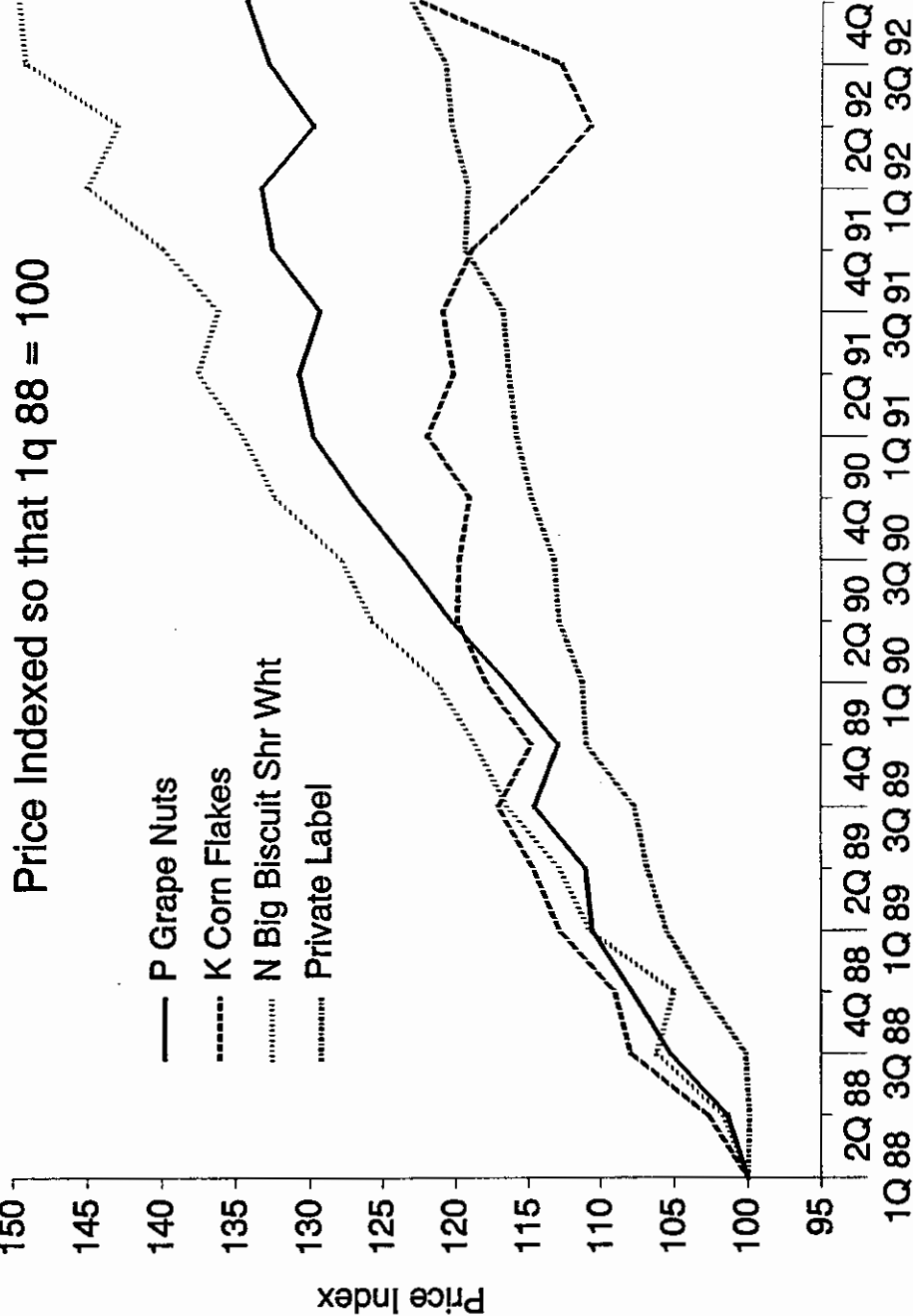
other feature of the product such as box size explains this discrete shift in an otherwise consistently rising price line. We will return to this feature when discussing Figure 7.

Figure 6 indexes prices of selected brands with first quarter 1988 price having a value of 100. This procedure highlights the relative price changes among brands. One would expect that relative as well as absolute price differences among brands say something about economic relationship for two reasons. First, proportional price increases allow us to compare price changes in diverse products, for example when we examined the relationship of RTE cereal prices to the CPI we looked at percent i.e. proportional increases. Second, the RTE cereal industry announced price increases are always in percent terms. Any followship patterns that exist may be clearer when relative prices are charted.

During the period from first quarter 1988 through the first quarter of 1990 there is some visual evidence of limited price interaction among the three cereal brands charted in Figure 6: Big Biscuit Shredded Wheat, Post Grape Nuts, and Kellogg's Corn Flakes. There appears to be a fourth quarter phenomenon. For example, in the fourth quarter of 1988 Nabisco Big Biscuit Shredded Wheat's price actually declines and Kellogg's Corn Flake's price also increases at a slower rate during that quarter. But Grape Nuts registers no change in its rate of increase in price. In the fourth quarter of 1989 Kellogg's Corn Flakes significantly drops in price from its previous quarter and Grape Nuts prices behave in a very similar fashion. In this quarter, the Nabisco Big Biscuit price index continues to steadily increase however, Spoon Size drops (See Figure 7). Price drops below trend in some fourth quarter periods may occur for cereal brands that have excess year end inventory. Perhaps these pricing actions spill over into the market causing others to lower prices, or perhaps they are contemporaneous but independent events.

Figure 6

Price Index Trends: Total U.S., 1q 88 - 4q 92



Source: Appendix Table A3

A different story, however, appears when one examines the Post Grape Nuts, Nabisco Big Biscuit, and Kellogg's Corn Flakes price index trends after fourth quarter 1989. Kellogg's Corn Flakes clearly compete on price with private label cereal, however Grape Nuts and Nabisco Big Biscuit do not after fourth quarter 1989. Grape Nuts pricing tends to follow Nabisco Big Biscuit pricing up in a dramatic fashion and thereafter tends to follow variations in Big Biscuit prices. Prices for these two brands do seem to behave in a parallel fashion consistent with tacit collusion.

Figure 7 displays price indices for Spoon Size Shredded Wheat, Shredded Wheat and Bran and Post Grape Nuts. Nabisco Shredded Wheat and Bran price increases are almost identical to Post Grape Nuts increases throughout the period. The big drop in Spoon Size prices in quarter 4, 1989 constitutes an abandonment of accelerating prices and firmly synchronizes price increases with Post Grape Nuts until a major harvest break out for this brand occurs in the third quarter of 1991. Referring back to Figure 5 one can see that the actual price after this increase is roughly equal to the level of the other two Nabisco brands.

In summary, the prices of individual shredded wheat brands do fluctuate relative to Post Grape Nuts, but a general pattern of followship does seem to exist in the harvest period between Grape Nuts and one or more Shredded Wheat brands at any given time. Nabisco seems to have synchronized Big Biscuit Shredded Wheat and Bran prices with Grape Nuts throughout the harvest period. Spoon Size prices are synchronized with Grape Nuts during the early harvest period. There is no observable systematic coordination between these brands and Kellogg's Corn Flakes or private label.

Followship pricing of the sort demonstrated between the Shredded Wheat brands and Post

Grape Nuts is ordinary in the RTE cereal industry. In a letter to the Federal Trade Commission dated November 30, 1992, Ms. Donna Patterson, retained legal counsel for Kraft General Foods (Post Cereals), describes the general Post pricing strategy as follows:

"...Post's pricing strategy is to maintain price parity with comparable Kelloggs products."
(Patterson 1993, Exhibit A).

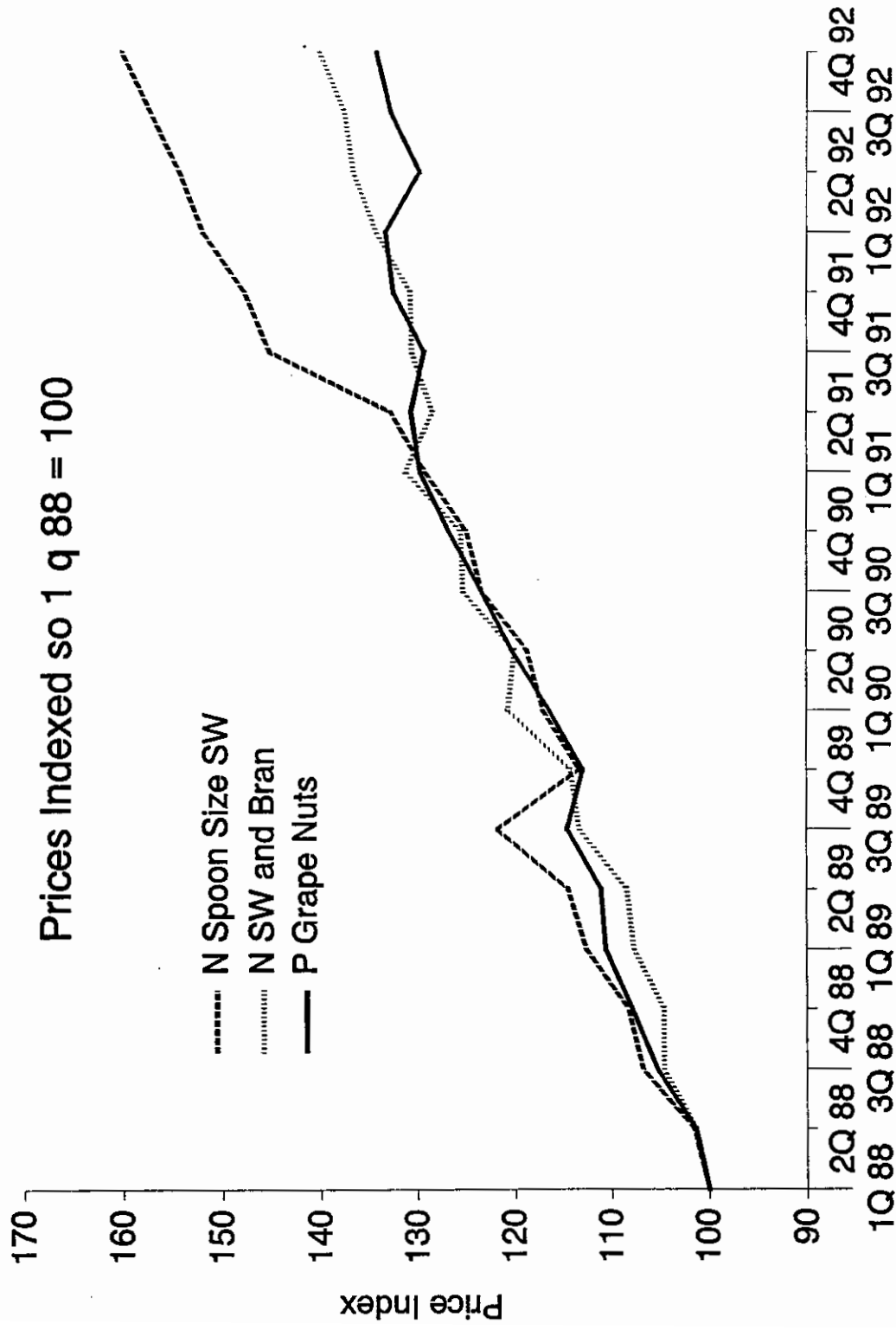
For Grape Nuts the comparable product with which Post seeks to maintain price parity is Nabisco Shredded Wheat, which apparently is a closer substitute than any Kellogg's product in this highly differentiated industry.

Under followship pricing, if other forms of competition in the aggregate also produce followship conduct then one would see relatively constant market shares. Consumers have less desire to switch among brands, even if they are close substitutes, if the aggregate terms of trade for such brands move in tandem. Market shares for Big Biscuit, Spoon Size Shredded Wheat and Bran, and Grape Nuts are graphed in Figure 8 and reported in Appendix Table A10. Note that in the 1990-1992 period when Post and Nabisco price are synchronized, the market shares for both Nabisco and Post remain essentially constant.¹³ Unless there was a sustained increase in advertising or manufacturer coupon activity throughout the harvest period that offset the observed price increases, these brands seem to have very inelastic curves. In other words the observed price increases result in very little loss of market share. Finally, we would expect to find that these brands have high profits when prices are high unless marketing or production expenses offset the price increases (i.e., there was no harvest). In section VII we in fact report high profits.

¹³ The dip and subsequent recovery in Grape Nut's share during late 1988 and 1989 is probably due to the oat bran craze. The fad abruptly ended in January 1990 with the discrediting of prior reports that oat bran reduces cholesterol.

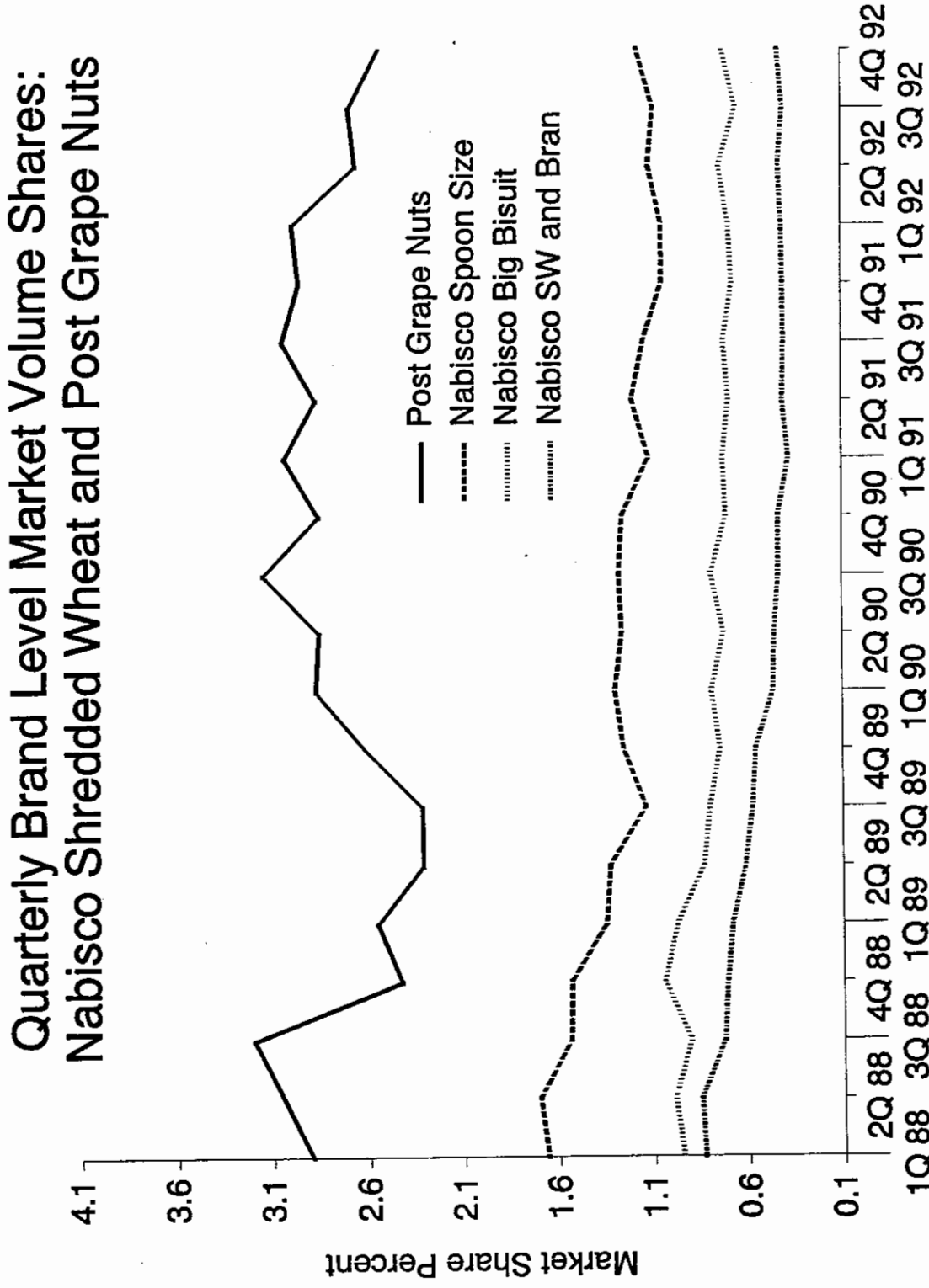
Figure 7

Price Index Trends: Total U.S., 1q88 - 4q 92



Source: Appendix Table A3

Figure 8



Source: Appendix Table A10

VI. Trade Promotion Strategies

The Information Resources, Inc. Infoscan Supermarket Review data base also provides information on the extent of trade promotions at the brand level. We already have established that the net-of-merchandising prices for Post Grape Nuts and Nabisco Shredded Wheat shift dramatically relative to the RTE cereal industry after 1989. An important question is did the merchandising conduct of the manufacturers for these brands change after 1989 when the observed net price conduct changed? Did some form of coordination of merchandising conduct as well as followship list pricing practices contribute to the observed price patterns?

The summary measure of promotion activity is the percent of volume sold with any merchandising. The three components to merchandising are percent sold on aisle end display, percent sold with an A/B feature ad in the local newspaper, and the average percentage price reduction.¹⁴ Figure 9 displays the percent sold with any merchandising for the Nabisco Big Biscuit and Nabisco Spoon Size brands over the twenty quarters ranging from first quarter 1988 through fourth quarter 1992.¹⁵ Vertical lines have been drawn at fourth quarter 1989 and first quarter 1992 to divide the period into three segments. As will become apparent when we investigate merchandising performance for several brands, different patterns of merchandising conduct seem to exist in these different periods. For example, for Nabisco Big Biscuit and Spoon Size Shredded Wheat in the first segment, ranging from the first quarter 1988 through

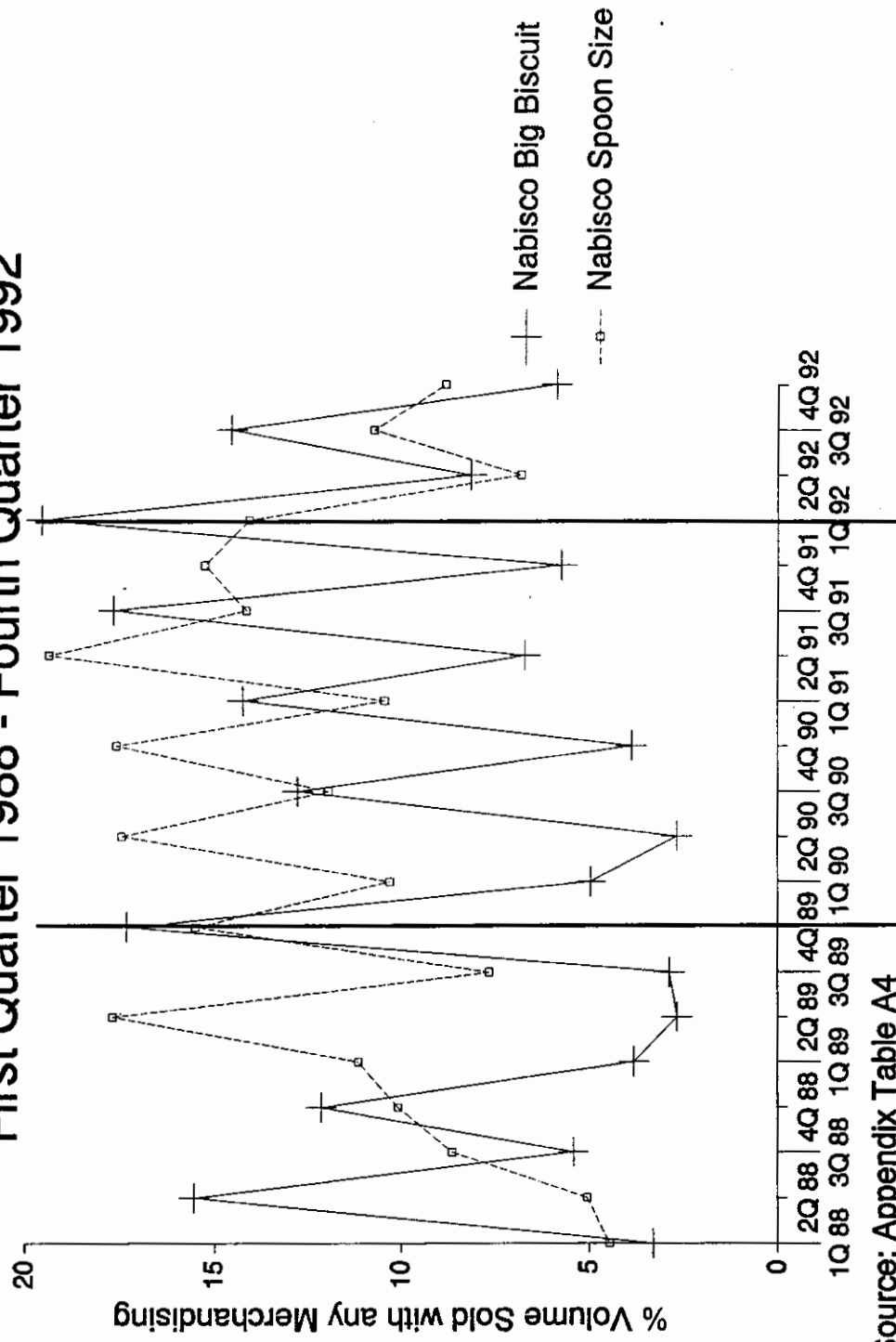
¹⁴ Type A ads are those which feature a picture of a product prominently and often feature a store coupon. A type B ad is a smaller, less prominent ad which still features an illustration of the product. Average percentage price reduction measures the average reduction in price as a percentage of everyday shelf price among all stores with a price reduction.

¹⁵ Shredded Wheat and Bran merchandising is essentially the same as Spoon Size and eliminated here to keep the figures readable. See Appendix B Figure B-2 for a plot of Spoon Size and Shredded Wheat and Bran merchandising.

Figure 9

Percent Sold w/any Merchandising

First Quarter 1988 - Fourth Quarter 1992



Source: Appendix Table A4

fourth quarter 1989, there does not appear to be any pattern in merchandising strategies. However, during the second period a distinct pattern of switching in the level of merchandising exists between the two Nabisco brands. When merchandising tends to be high on Big Biscuit, merchandising tends to be low on Spoon Size and vice versa. In the third segment, calendar year 1992, the merchandising programs of these two brands seem to be harmonized.

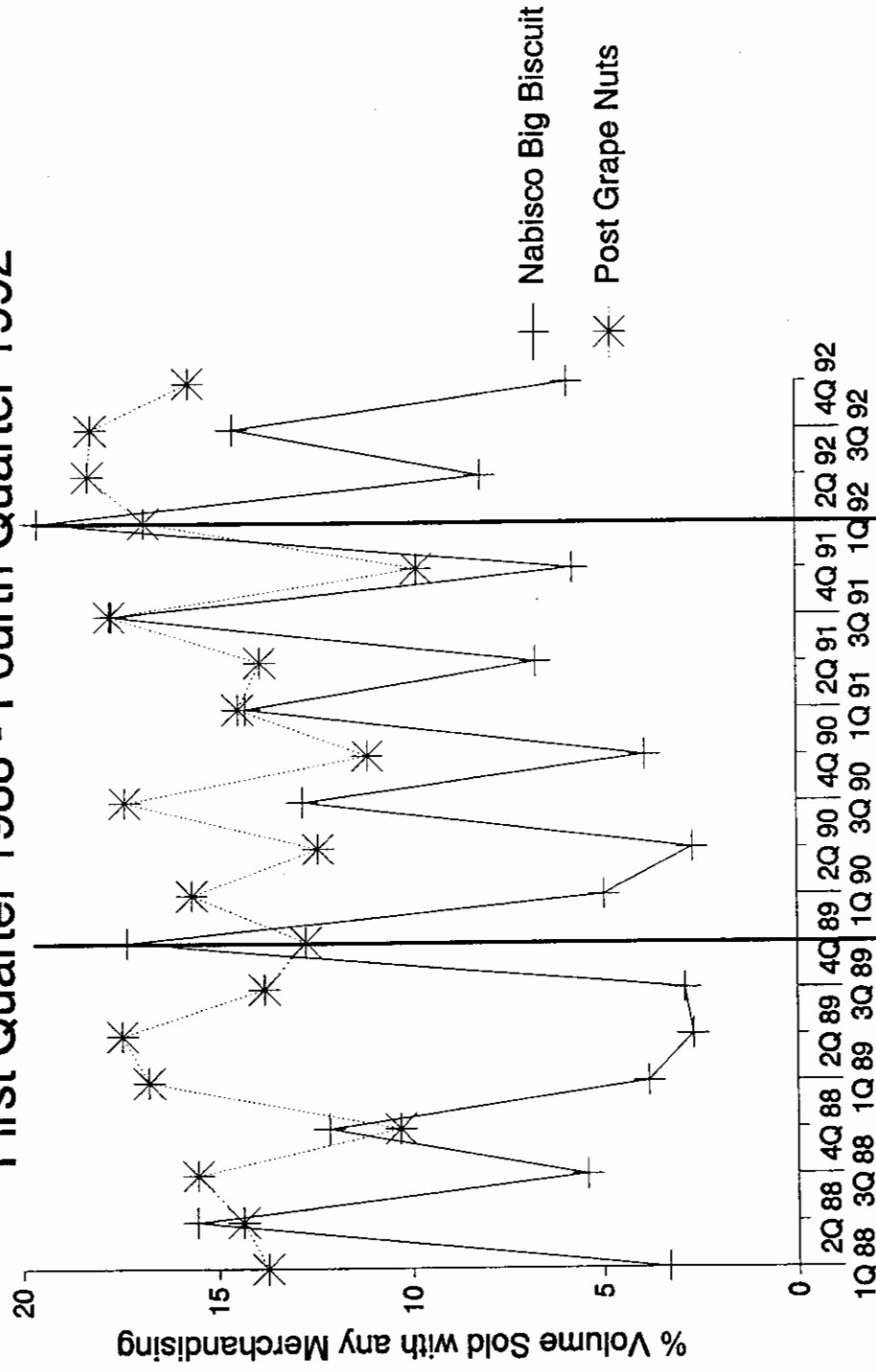
Figure 10 is a similar chart; however, it compares Nabisco Big Biscuit with the Post Grape Nuts brand. Again, in the first period of the chart there does not seem to be any discernible relationship between merchandising strategies. In the second period ranging from fourth quarter 1989 through first quarter 1992 however, a distinct pattern does emerge. Post Grape Nuts merchandising tends to fluctuate in a pattern very similar to Nabisco Big Biscuit and tends to dominate Big Biscuit throughout the period. This suggests that as these two brands elevated their prices in tandem relative to Kellogg's Corn Flakes, private label prices, and all RTE cereal prices, promotions were also synchronized.

Figure 11 reports similar information for Nabisco Spoon Size Shredded Wheat and Post Grape Nuts. Since Spoon Size tended to be contracyclical to the Big Biscuit promotions during the fourth quarter 1989 to the first quarter 1992 period, it also is contracyclical to Grape Nuts promotions in this period. Perhaps Post Grape Nuts directly targeted the Big Biscuit brand with its merchandising or perhaps Nabisco intentionally staggered its promotions and used Big Biscuit as a copy-cat brand. For whatever reason, the presence of highly related merchandising patterns during this period among the three brands is distinctly different from the more chaotic and unrelated merchandising patterns of the preceding 1988 - 1989 period. The presence of these distinct patterns in pricing and merchandising after 1989 do suggest that tacit coordination

Figure 10

Percent Sold w/any Merchandising

First Quarter 1988 - Fourth Quarter 1992

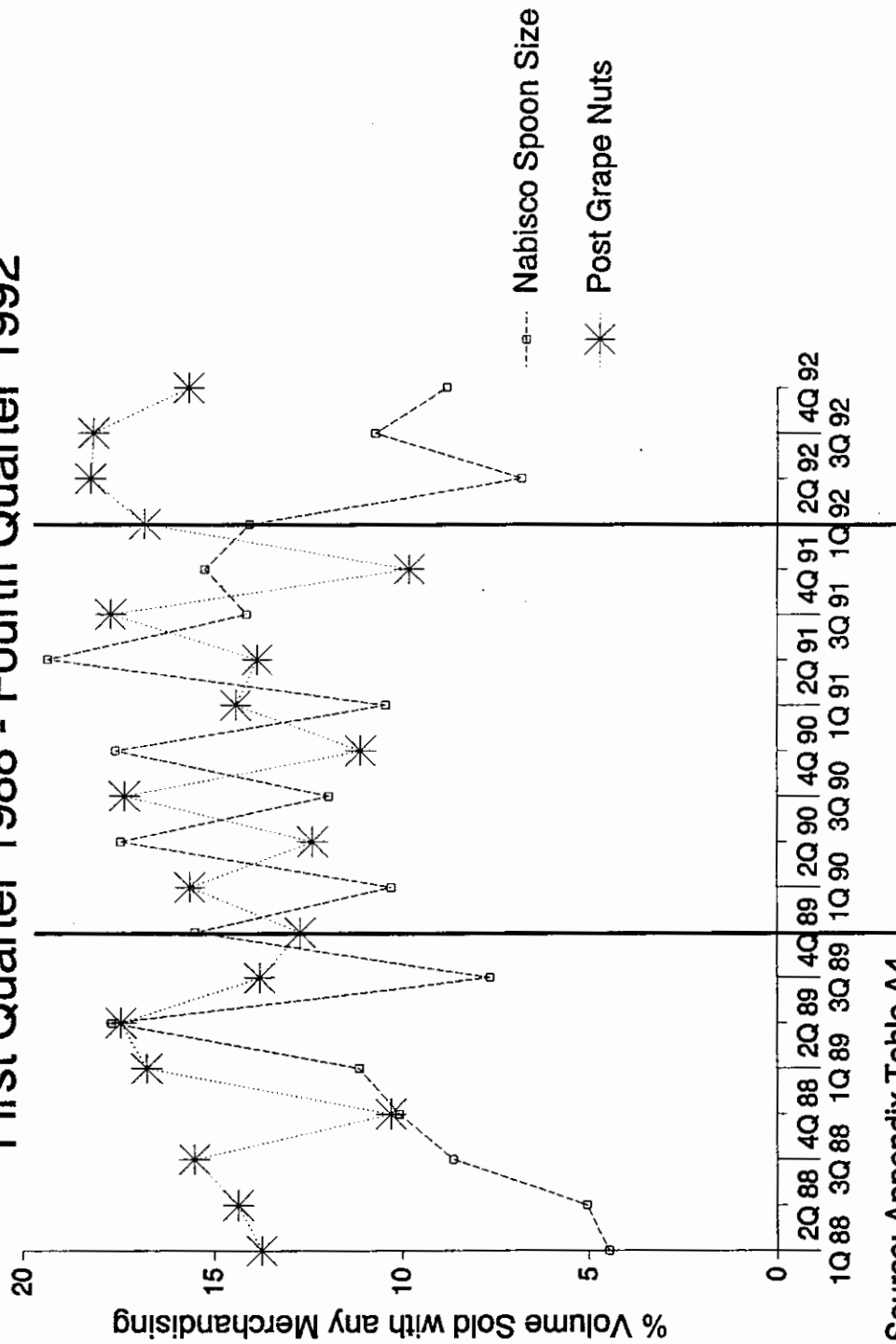


Source: Appendix Table A4

Figure 11

Percent Sold w/any Merchandising

First Quarter 1988 - Fourth Quarter 1992



Source: Appendix Table A4

significantly increased between Post Grape Nuts and Nabisco Shredded Wheat.

The percent volume sold with merchandising did not decrease after 1989. However, given the fact that Grape Nuts and Nabisco Shredded Wheat brand prices increased in tandem and relative to the rest of the RTE cereal industry, if competition with other brands was effective one would expect if anything to see an increase in merchandising to reduce share losses. The observed merchandising patterns between the Grape Nuts and Shredded Wheat brands seems to have effectively limited market share losses to others and reduced rivalry among their own brands to increase their net of trade promotion prices. As we will see in the next section, their profits also are at very high levels during this period.

Let us now continue the analysis of merchandising to see if other leading brands participated in the observed pattern of merchandising coordination. Figure 12 includes General Mills Total on the chart with Nabisco Big Biscuit and Post Grape Nuts.¹⁶ Although the chart is a little messy and hard to read, General Mills Total does not follow the synchronized pattern of Big Biscuit and Grape Nuts during the fourth quarter 1989 to first quarter 1992 period. Also, there appears to be no discernible pattern between General Mills Total and the other brands at other times during that 1988-1992 period. General Mills Total seems, if anything, to offer merchandising levels similar to Post Grape Nuts and somewhat higher level merchandising activity than the Nabisco Big Biscuit franchise.

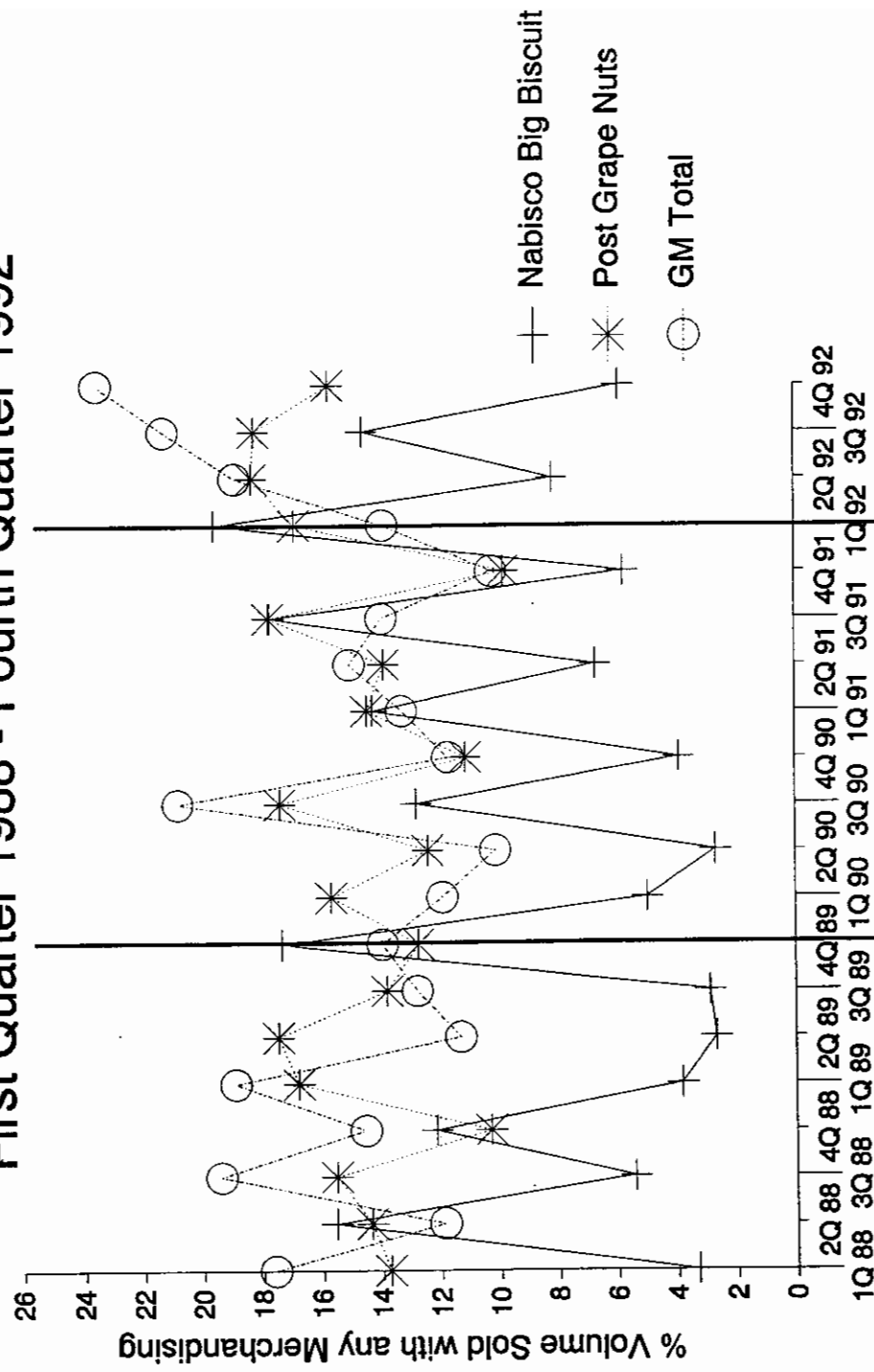
Figure 13 adds Kellogg's Corn Flakes merchandising performance to the Big Biscuit and Post Grape Nuts chart. Perhaps the main conclusion that comes from this chart is that a higher

¹⁶ The price and price index for Total is reported in Appendix Table A3, however we do not chart it. Total is part of the simple health nutrition segment and its net of merchandising prices do increase in a fashion similar to Grape Nuts and Shredded Wheat.

Figure 12

Percent Sold w/any Merchandising

First Quarter 1988 - Fourth Quarter 1992

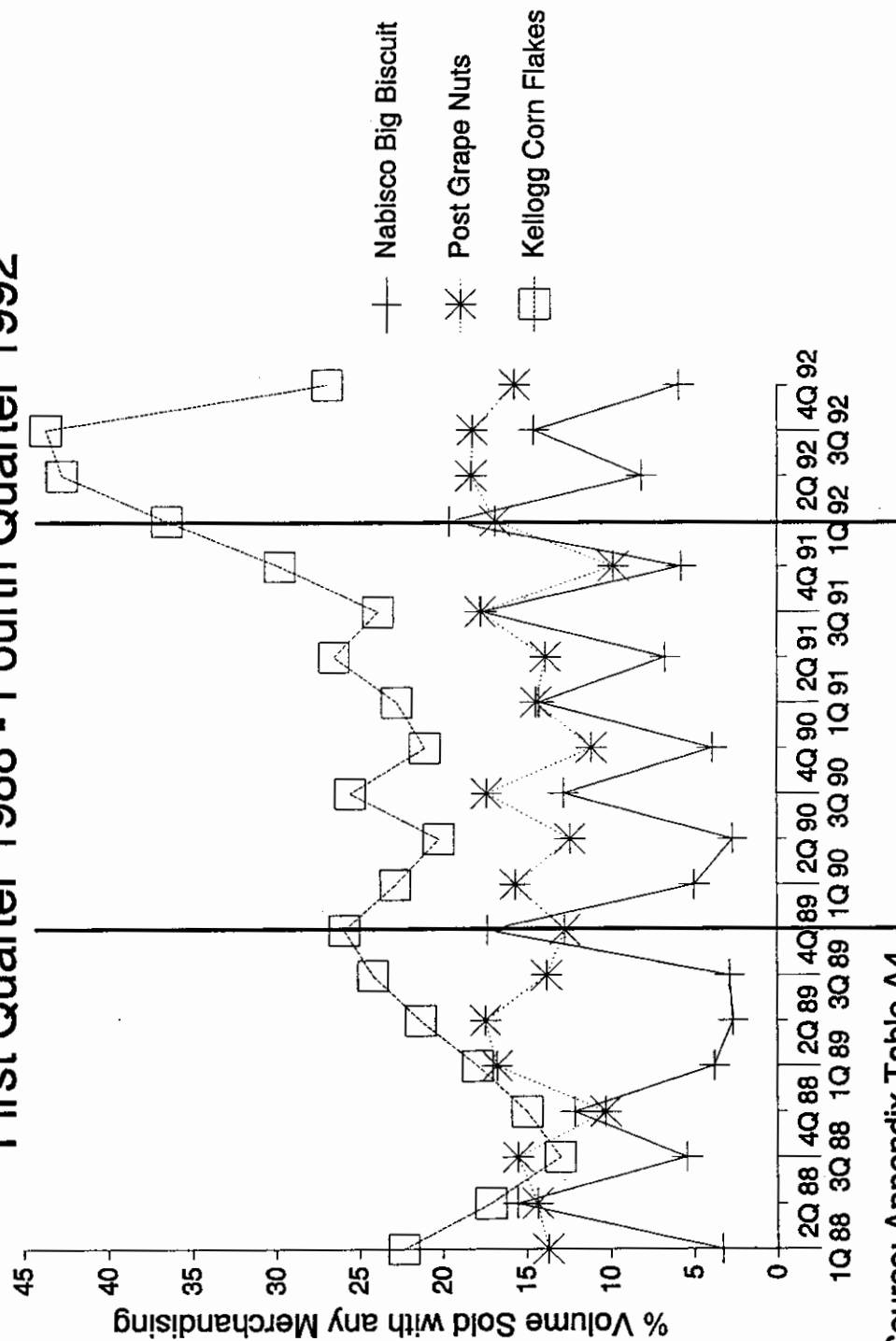


Source: Appendix Table A4

Figure 13

Percent Sold w/any Merchandising

First Quarter 1988 - Fourth Quarter 1992



Source: Appendix Table A4

proportion of Kellogg's Corn Flakes was sold with merchandising throughout the period. Also, in the first segment, the period up to fourth quarter 1989 there clearly is no discernible pattern between the merchandising performances of these three brands. During the second period, fourth quarter 1989 through first quarter 1992, Corn Flakes seem to somewhat follow the merchandising synchronization of the other two brands; however, synchronization is not nearly as close as it is between the other two brands. In the third segment of the period, calendar year 1992, Kellogg's Corn Flakes merchandising behavior explodes and most probably is the major reason why realized retail price dropped below private label prices during much of 1992 (See Figure 6).

Figure 14 reports percent sold with any merchandising for Nabisco Spoon Size, Post Grape Nuts, and Kellogg's Corn Flakes. This chart is produced for comparison purposes to Figure 13 (Nabisco Big Biscuit). Again, the percent of Kellogg's Corn Flakes sold with merchandising is significantly higher than the percent of Grape Nuts or Nabisco Spoon Size sold with merchandising. Also, there appears to be no discernible pattern between Kellogg's Corn Flakes and the merchandising practices of the other two brands during any segment of this five year period.¹⁷

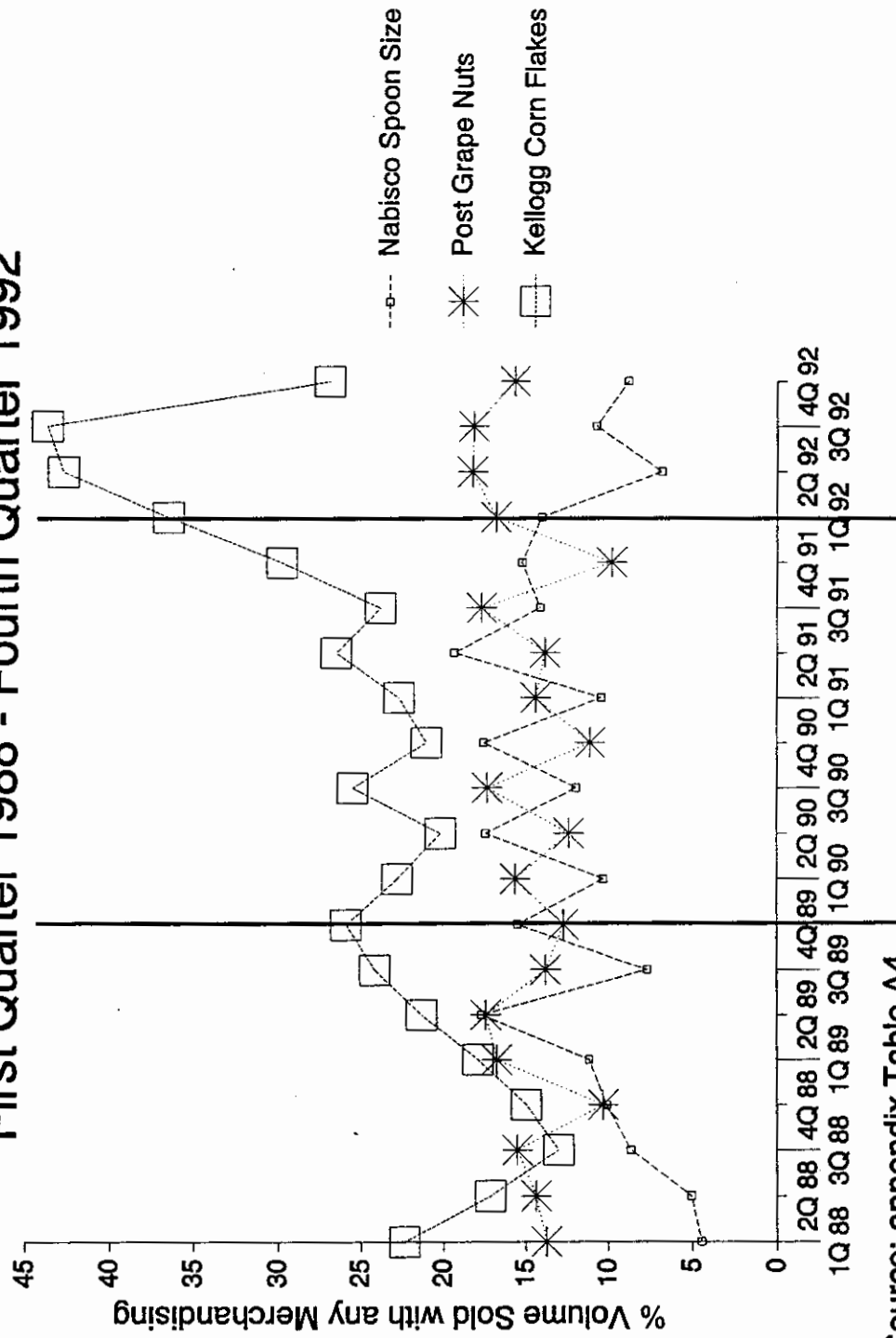
Information Resources, Inc. Infoscan Supermarket Review data also provides information on the quarterly average percent price reduction that was offered for particular brands during the 1988 to 1992 period. Figure 15 reports the average percent price reduction for the Nabisco Big Biscuit and the Post Grape Nuts brands. The price reductions of these two brands seem to

¹⁷ We produced charts for the subcomponents of the merchandising category, the percent of volume sold on display, and the percent of volume sold with feature ads. They tell a similar story but are not included to save paper. The data are included in Appendix Table A4.

Figure 14

Percent Sold w/any Merchandising

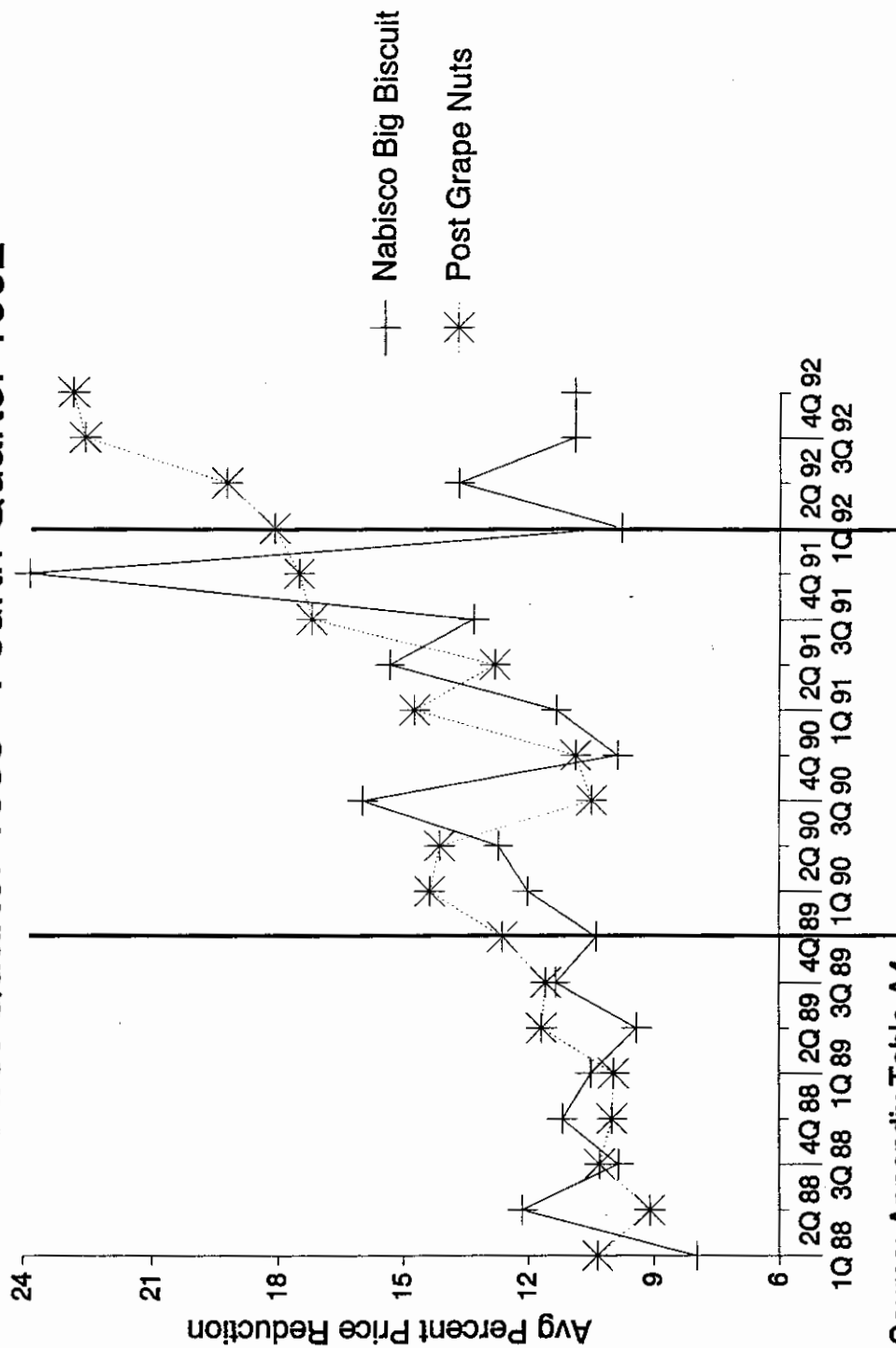
First Quarter 1988 - Fourth Quarter 1992



Source: appendix Table A4

Figure 15

Average % Price Reduction First Quarter 1988 - Fourth Quarter 1992



Source: Appendix Table A4

follow each other in a general fashion until the end of 1991. During 1992, price reductions for Post Grape Nuts accelerated to all time high levels whereas price reductions for the Nabisco Big Biscuit were cut back to the 9-12 percent range. In our opinion since Nabisco probably had made a clear cut decision to sell the harvested franchise in the very near future, they dropped all pretenses of marketing for the long term, and reduced general merchandising activity (Figure 9) as well as percent price reductions during 1992.

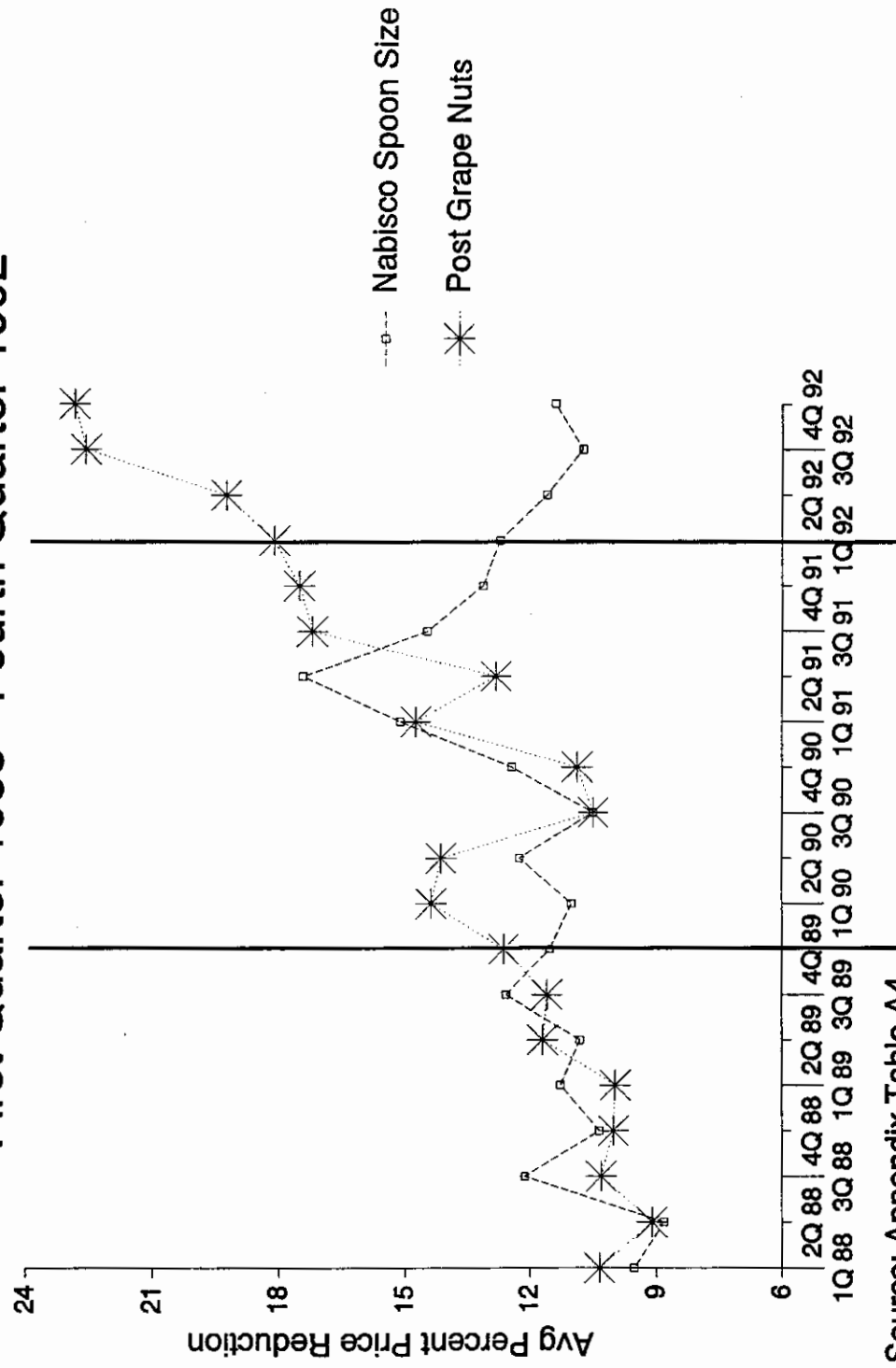
Figure 16 reports average percent price reductions for Nabisco Spoon Size and Post Grape Nuts. The pattern of price reductions is quite similar to that reported for Big Biscuit and Grape Nuts.

Figure 17 reports average percent price reduction not only for Nabisco Big Biscuit and Post Grape Nuts but also General Mills Total. The general trend for percent price reductions of General Mills Total tends to follow that of Nabisco Big Biscuit and Post Grape Nuts throughout the period up to the end of 1991 and thereafter tends to go with Post Grape Nuts towards higher percent price reductions. Again, this documents that as they approached sale of the franchise Nabisco did not offer anywhere near the level of price reduction that other brands offered in 1992. Similar results hold for Nabisco Spoon Size and General Mills Total (Table A4).

Figure 18 introduces Kellogg's Corn Flakes to the chart of average percent price reductions for Big Biscuit and Post Grape Nuts. Kellogg's Corn Flakes percent price reductions differ, at times very dramatically, from either the Nabisco Big Biscuit or the Post Grape Nuts price reductions. This seems to suggest, as have the other data, that Kellogg's Corn Flakes pricing and merchandising strategy is oriented towards competition with brands other than Post Grape Nuts or Nabisco Big Biscuit.

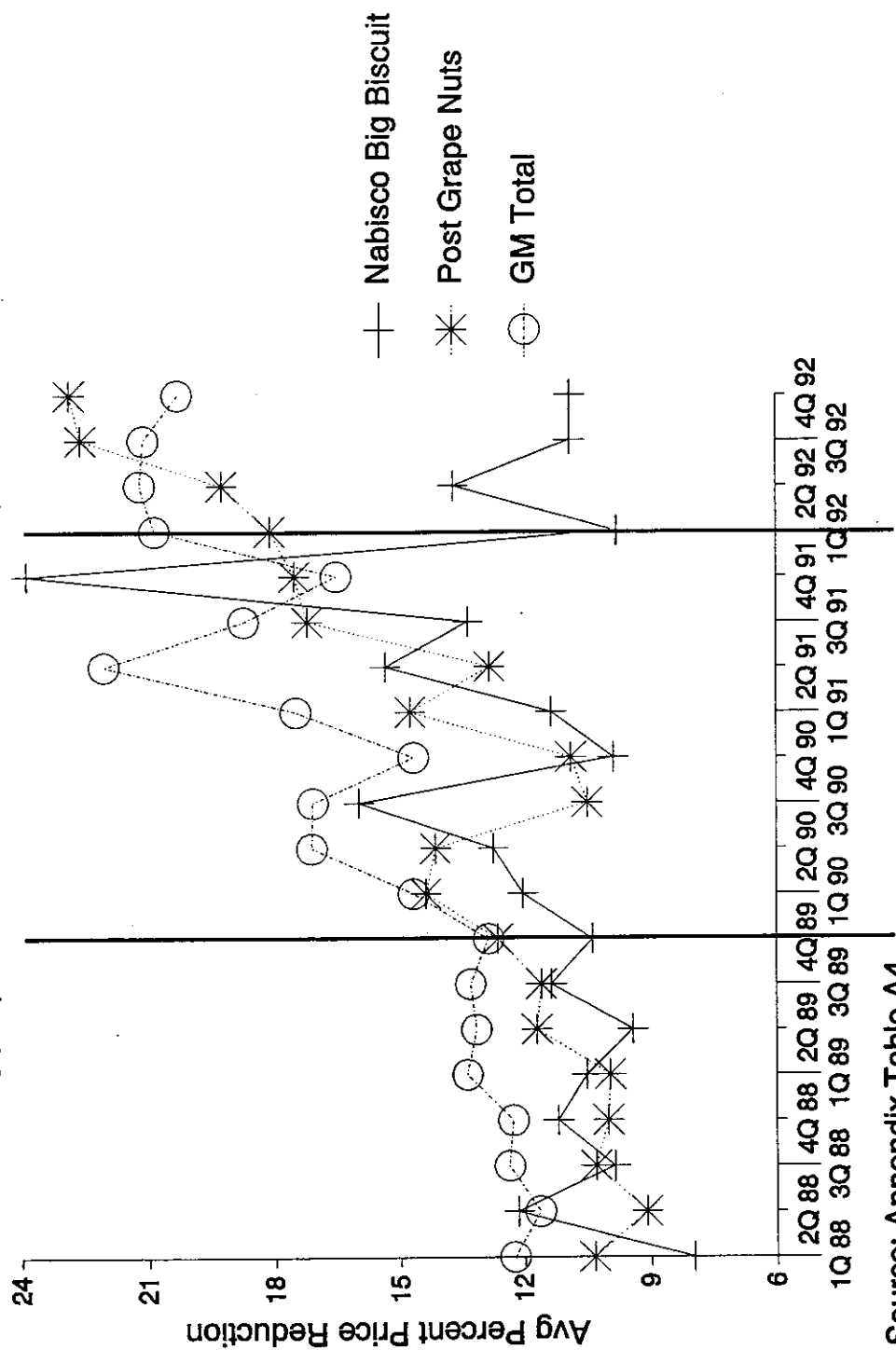
Figure 16

Average % Price Reduction First Quarter 1988 - Fourth Quarter 1992



Source: Appendix Table A4

Figure 17
Average % Price Reduction
 First Quarter 1988 - Fourth Quarter 1992



Source: Appendix Table A4

VII. Profitability of Nabisco RTE cereals and Post Grape Nuts

We expect that, absent substantial increases in production and marketing costs, other than already accounted for trade promotion costs, the profitability of Nabisco Shredded Wheat and Post Grape Nuts increased dramatically during 1990, 1991, and 1992. In other words, pervasive competition does not consume all of the firm's gross margin, and net profits are high. The private label price series is a very good proxy for underlying materials, manufacturing, and distribution costs, since private label products are not marketed; i.e., they are sold with little advertising, and no manufacturer coupons (Connor and Peterson, 1992). Figure 5 documented that the increase in Grape Nuts and Shredded Wheat prices is not explained by increases in underlying industry cost conditions (private label prices). Appendix Table A9 reports advertising expenditures and advertising sales ratios for Grape Nuts and Nabisco Shredded Wheat by quarter for 1988-1991. When examining Post advertising on its Grape Nuts line and Nabisco advertising on its Shredded Wheat line it is clear that increased advertising did not contribute to higher prices and possibly lower short run profits, because advertising did not increase. During 1988 and 1989 Grape Nuts advertising averaged 20.42 percent of sales and it declined to 18.03 percent of sales in 1990-1991. Advertising costs per dollar sales thus decreased by 2.39 cents. As part of its harvest strategy Nabisco slashed advertising, reducing it from 14.12 percent of sales in 1988-1989 to 5.53 percent of sales in 1990-1991. Its advertising cost per dollar sales decreased 8.59 cents. Although we do not have public information on the profitability of the Post Grape Nuts line over time, its profit sales ratio for 1990 was 33 percent of sales (Cotterill 1993a, para 40). **On average even after including the negative impact on profit of all price reductions due to trade promotions, redeemed manufacturers coupons, and all**

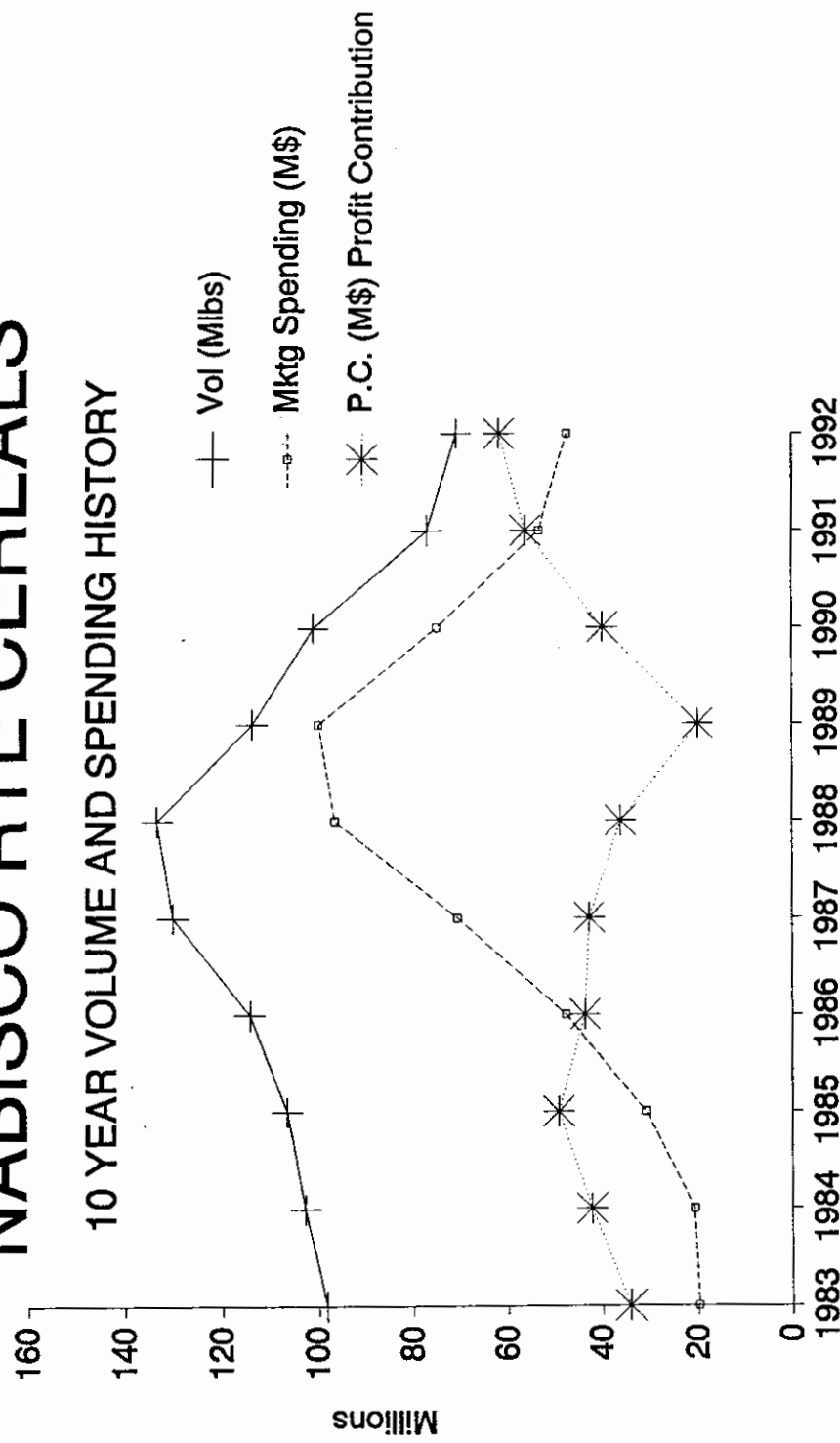
other marketing expenses, 33 cents of every dollar paid to Post for Grape Nuts cereal was business unit profit. Business unit profits include most but possibly not all corporate overhead charges. These figures may be overstated a few cents on the dollar, but the basic message would remain after such adjustments. Profits are extremely high.

Figure 19 provides trend data for profits, marketing, and volume sold, for the Nabisco Shredded Wheat RTE cereal business. This chart shows that after the 1985 acquisition of Nabisco by R.J. Reynolds there was a significant increase in marketing spending in the Nabisco RTE Cereal business segment. This marketing spending includes advertising, trade (retailer based in-store and local market promotion) spending and spending on manufacturer's coupons. The LBO by KKR took place in late 1988 when 1989 marketing plans probably were already in the pipeline. The marketing spending peaked in 1988 and 1989 and thereafter was cut at the same time as Nabisco prices were elevated. Consequently, the volume of Nabisco cereals sold (in pounds) declined through this period. The profit contribution in millions of dollars, however, increased to approximately \$62 million with sales that we estimate were \$231 million in 1992 (Table A7), giving a 26.8 percent profit sales ratio. Moreover, Nabisco Shredded Wheat profit sales ratio in 1990 was 29 percent of sales (Cotterill 1993a, para 40). **This means that business unit profits accounted for 29 cents of every dollar that Nabisco received from the sale of Shredded Wheat in 1990.** In conclusion, the pricing and merchandising conduct that we are able to document in this paper does seem to generate profit sales ratios for Post Grape Nuts as well as Nabisco that are well above the RTE cereal industry average (15-17 percent of sales), and this industry generates profit rates that are well above the competitive norm for U.S. manufacturing industries (Roulston & Company, Inc. 1989).

Figure 19

NABISCO RTE CEREALS

10 YEAR VOLUME AND SPENDING HISTORY



Sources: Cotterill, 1993a, Exhibit B.

VIII. Conclusions

This descriptive analysis of the market share, price, and trade promotion strategy for the leading Nabisco Shredded Wheat brands, Post Grape Nuts, Kellogg's Corn Flakes, and General Mills Total suggests the following. First, cereal brands are highly differentiated. Second, Kellogg's Corn Flakes, the largest RTE cereal brand, a leader in the "All Family" segment, is more directly affected by competition from private label cereal than highly differentiated brands in the Simple Health Nutrition segment such as Nabisco Shredded Wheat and Post Grape Nuts. Third, beginning in late 1989 or early 1990 the Nabisco Shredded Wheat marketers elevated Nabisco prices relative to all RTE cereal and thereafter Post Grape Nuts prices seem synchronized with one or more Shredded Wheat brands. Fourth, beginning in late 1989 or early 1990 the merchandising policies of the Nabisco Shredded Wheat and Post Grape Nuts brands are closely synchronized when compared to the merchandising policies that existed prior to this time for these brands and when compared to the contemporaneous policies of other leading brands. There is little evidence that the merchandising policies for Kellogg's Corn Flakes or General Mills Total were synchronized with Nabisco Shredded Wheat or Grape Nuts. Fifth, the percent volume sold with merchandising, if anything, is lower for Nabisco Shredded Wheat and Post Grape Nuts than it is for Kellogg's Corn Flakes or General Mills Total. Sixth, when Nabisco Shredded Wheat and Post Grape Nuts are offered at a "special" price, the percent price reductions fluctuate but generally are at similar levels that trend upward over the 1988 - 1991 period. These reported price reductions are much lower than those reported for the leading cereal brand, Kellogg's Corn Flakes which was competing vigorously with private label. Finally, during 1992 when Nabisco knew that sale of its RTE cereal operations was imminent,

it seems to have significantly deviated from the coordinated merchandising trends and cut its merchandising levels to secure a final yield from their harvest.

Viewed in its totality, this descriptive evidence suggests that Nabisco Shredded Wheat and Post Grape Nuts were able to tacitly coordinate their pricing and trade promotions in the Simple Health Nutrition segment of the RTE cereal market in a fashion that reduced direct competition between their brands and allowed them to significantly increase their prices and profits above industry norms during 1990, 1991, and 1992. These two brands account for approximately 40 percent of the over \$300 million sales in the Simple Health Nutrition segment (Cotterill 1993a, Para 19).

The ultimate message, however, is even worse news for consumers. If the merger between the Post cereals division of Kraft/Philip Morris and the Nabisco Shredded Wheat cereal business unit is completed, this coordinated marketing behavior between Nabisco Shredded Wheat and Post Grape Nuts will be completely internalized and even more effectively harmonized. The result will be the permanent disappearance of competition between two of the oldest cereal brands in the RTE cereal industry.

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Appendix A

Table A1 Volume Share for 6 Major RTE Cereal Manufacturers, 1st Quarter 1988-4th Quarter 1992

	1988				1989				1990			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kellogg	41.47	41.38	40.85	40.12	39.93	40.43	39.49	38.75	38.27	37.28	36.13	37.75
General Mills	21.86	21.24	20.58	21.59	23.18	23.66	24.36	23.53	24.20	24.50	25.30	23.80
Post	11.94	11.98	12.61	10.93	11.16	10.74	10.11	10.20	10.58	11.27	11.60	11.31
Quaker Oats	8.62	8.39	8.75	8.34	8.61	7.88	8.13	7.62	7.37	7.69	7.82	7.28
Ralston Purina	4.85	5.23	5.36	6.46	5.14	5.35	5.89	7.52	6.21	5.95	5.42	6.46
Nabisco	5.13	5.48	5.35	5.74	4.94	4.67	4.51	4.68	4.92	4.48	4.21	3.81
Private Label	3.38	3.60	3.77	3.94	4.14	4.36	4.68	4.82	5.64	5.83	6.39	6.59

	1991				1992			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kellogg	38.88	37.06	36.05	37.63	37.12	39.12	36.84	34.83
General Mills	24.12	25.30	26.04	24.95	25.72	24.67	25.50	26.46
Post	11.18	11.53	11.53	11.49	11.55	11.61	12.14	11.87
Quaker Oats	7.55	7.20	7.12	6.87	7.23	7.08	7.01	7.22
Ralston Purina	4.68	4.70	4.92	5.47	4.42	4.25	4.53	5.35
Nabisco	3.36	3.33	3.20	2.92	2.98	2.99	2.79	3.01
Private Label	7.27	7.91	8.11	7.68	7.93	7.68	8.13	8.23

Source: I.R.I. Infoscan Data Base. University of Connecticut, Food Marketing Policy Center.

Table A2 Historical Trend of Ready to Eat Cereal and Food at Home CPI

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Food-at-home CPI	99.1	102.8	104.3	107.3	111.9	116.6	124.2	132.3	135.8	136.8
Food-at-home CPI Index (1983=100)	100.0	103.7	105.2	108.3	112.9	117.7	125.3	133.5	137.0	138.0
Price per pound (Nielsen)	1.7	1.9	2	2.1	2.2	2.4	2.6	2.8	2.9	2.9
RTE Price per pound (IRI)						2.4	2.6	2.8	2.9	2.976
RTE Price Index	100.0	111.8	117.6	123.5	129.4	141.2	152.9	164.7	170.6	175.1

Source: New York State Dept. of Law; IRI Infoscan Data Base, University of Connecticut, Food Marketing Policy Center; 1993 *Economic Report of the President*.

Table A3 Total U.S. RTE Cereal Price per Pound and Price Indices, 1988-1992 Quarterly

Quater	1Q 88	2Q 88	3Q 88	4Q 88	1Q 89	2Q 89	3Q 89	4Q 89	1Q 90	2Q 90	3Q 90	4Q 90	1Q 91	2Q 91	3Q 91	4Q 91	1Q 92	2Q 92	3Q 92	4Q 92
All RTE Cereals																				
\$/lb	2.283	2.322	2.412	2.464	2.55	2.591	2.68	2.707	2.756	2.775	2.802	2.844	2.905	2.899	2.917	2.937	2.947	2.936	2.986	3.036
Index	100	101.7	105.7	107.9	111.7	113.5	117.4	118.6	120.7	121.6	122.7	124.6	127.2	127.0	127.8	128.6	129.1	128.6	130.8	133.0
Private Label																				
\$/lb	1.476	1.474	1.478	1.521	1.558	1.577	1.59	1.639	1.643	1.667	1.672	1.695	1.71	1.718	1.724	1.763	1.76	1.777	1.783	1.818
Index	100	99.9	100.1	103.0	105.6	106.8	107.7	111.0	111.3	112.9	113.3	114.8	115.9	116.4	116.8	119.4	119.2	120.4	120.8	123.2
All Branded RTE Cereal																				
\$/lb	2.312	2.355	2.449	2.503	2.593	2.638	2.734	2.762	2.823	2.844	2.880	2.925	3.000	3.001	3.023	3.036	3.050	3.033	3.093	3.146
Index	100	101.8	105.9	108.3	112.2	114.1	118.3	119.5	122.1	123.0	124.6	126.5	129.7	129.8	130.8	131.3	131.9	131.2	133.8	136.1
Nabisco																				
All Nabisco Brands																				
\$/lb	2.146	2.191	2.293	2.291	2.397	2.443	2.559	2.539	2.648	2.649	2.716	2.754	2.853	2.898	2.999	3.046	3.143	3.165	3.238	3.279
Index	100	102.1	106.8	106.8	111.7	113.8	119.2	118.3	123.4	123.4	126.6	128.3	132.9	135.0	139.7	141.9	146.5	147.5	150.9	152.8
Nabisco Big Biscuit Shredded Wheat																				
\$/lb	2.161	2.197	2.295	2.269	2.395	2.439	2.517	2.564	2.621	2.718	2.763	2.861	2.908	2.974	2.945	3.027	3.137	3.092	3.228	3.238
Index	100	101.7	106.2	105.0	110.8	112.9	116.5	118.6	121.3	125.8	127.9	132.4	134.6	137.6	136.3	140.1	145.2	143.1	149.4	149.8
Spoon Size Shredded Wheat																				
\$/lb	2.068	2.1	2.208	2.239	2.329	2.368	2.52	2.345	2.422	2.457	2.553	2.586	2.674	2.747	3.005	3.058	3.146	3.195	3.257	3.317
Index	100	101.5	106.8	108.3	112.6	114.5	121.9	113.4	117.1	118.8	123.5	125.0	129.3	132.8	145.3	147.9	152.1	154.5	157.5	160.4
Shredded Wheat and Bran																				
\$/lb	2.367	2.399	2.476	2.476	2.549	2.567	2.683	2.705	2.858	2.843	2.968	2.973	3.108	3.042	3.094	3.097	3.18	3.237	3.259	3.32
Index	100	101.4	104.6	104.6	107.7	108.4	113.4	114.3	120.7	120.1	125.4	125.6	131.3	128.5	130.7	130.8	134.3	136.8	137.7	140.3
Shredded Wheat Line																				
\$/lb	2.167	2.200	2.295	2.301	2.401	2.434	2.557	2.488	2.564	2.608	2.692	2.738	2.825	2.868	3.002	3.056	3.150	3.170	3.249	3.293
Index	100	101.5	105.9	106.2	110.8	112.3	118.0	114.8	118.3	120.4	124.3	126.4	130.4	132.4	138.6	141.1	145.4	146.3	150.0	152.0
Frosted Wheat Squares																				
\$/lb	2.453	2.28	2.418	2.348	2.475	2.461	2.541	2.603	2.765	2.809	2.962	3.036	3.046	3.156	3.216	3.363	3.477	3.523	3.544	3.597
Index	100	92.9	98.6	95.7	100.9	100.3	103.6	106.1	112.7	114.5	120.8	123.8	124.2	128.7	131.1	137.1	141.7	143.6	144.5	146.6
Fruit Wheats																				
\$/lb	2.178	2.24	2.299	2.325	2.463	2.65	2.785	2.846	2.957	3.021	3.045	3.1	3.205	3.247	3.26	3.371	3.484	3.465	3.562	3.612
Index	100	102.8	105.6	106.7	113.1	121.7	127.9	130.7	135.8	138.7	139.8	142.3	147.2	149.1	149.7	154.8	160.0	159.1	163.5	165.8
100% Bran																				
\$/lb	1.88	1.904	1.991	1.975	2.095	2.135	2.228	2.139	2.189	2.257	2.376	2.374	2.447	2.466	2.498	2.484	2.539	2.588	2.654	2.663
Index	100	101.3	105.9	105.1	111.4	113.6	118.5	113.8	116.4	120.1	126.4	126.3	130.2	131.2	132.9	132.1	135.1	137.7	141.2	141.6
Team Flakes																				
\$/lb	2.342	2.365	2.487	2.468	2.623	2.625	2.776	2.812	2.913	3.011	3.17	3.17	3.305	3.416	3.17	3.393	3.546	3.589	3.596	3.684
Index	100	101.0	106.2	105.4	112.0	112.1	118.5	120.1	124.4	128.6	135.4	135.4	141.1	145.9	135.4	144.9	151.4	153.2	153.5	157.3
Teddy Graham Breakfast Bears																				
\$/lb								2.921	2.94	2.931	2.654	2.489	3.033	3.137	3.127	3.338	3.252	3.338	3.333	2.645
Index ¹								100	100.7	100.3	90.9	85.2	103.8	107.4	107.1	114.3	111.3	114.3	114.1	90.6

(continues)

Table A3 (continued)

Quarter	1Q 88	2Q 88	3Q 88	4Q 88	1Q 89	2Q 89	3Q 89	4Q 89	1Q 90	2Q 90	3Q 90	4Q 90	1Q 91	2Q 91	3Q 91	4Q 91	1Q 92	2Q 92	3Q 92	4Q 92
Post																				
Grape Nuts																				
\$/lb	1.687	1.710	1.776	1.820	1.866	1.874	1.933	1.906	1.965	2.030	2.083	2.140	2.190	2.206	2.183	2.237	2.250	2.191	2.242	2.267
Index	100	101.4	105.3	107.9	110.6	111.1	114.6	113.0	116.5	120.3	123.5	126.9	129.8	130.8	129.4	132.6	133.4	129.9	132.9	134.4
Toasties																				
\$/lb	1.139	1.152	1.167	1.156	1.149	1.128	1.185	1.252	1.291	1.343	1.417	1.439	1.47	1.427	1.429	1.523	1.583	1.565	1.581	1.65
Index	100	101.1	102.5	101.5	100.9	99.0	104.0	109.9	113.3	117.9	124.4	126.3	129.1	125.3	125.5	133.7	139.0	137.4	138.8	144.8
Raisin Bran																				
\$/lb	1.987	1.995	2.08	2.128	2.133	2.125	2.258	2.315	2.356	2.385	2.323	2.312	2.396	2.418	2.417	2.431	2.479	2.445	2.508	2.47
Index	100	100.4	104.7	107.1	107.3	106.9	113.6	116.5	118.6	120.0	116.9	116.4	120.6	121.7	121.6	122.3	124.8	123.0	126.2	124.3
Kellogg																				
Corn Flakes																				
\$/lb	1.457	1.496	1.573	1.589	1.645	1.671	1.706	1.673	1.718	1.747	1.745	1.735	1.777	1.751	1.762	1.733	1.669	1.615	1.645	1.785
Index	100	102.7	108.0	109.1	112.9	114.7	117.1	114.8	117.9	119.9	119.8	119.1	122.0	120.2	120.9	118.9	114.6	110.8	112.9	122.5
Raisin Bran																				
\$/lb	1.963	2.013	2.056	2.063	2.191	2.208	2.316	2.233	2.33	2.33	2.392	2.403	2.424	2.43	2.472	2.393	2.424	2.396	2.435	2.443
Index	100	102.5	104.7	105.1	111.6	112.5	118.0	113.8	118.7	118.7	121.9	122.4	123.5	123.8	125.9	121.9	123.5	122.1	124.0	124.5
General Mills																				
Cheerios																				
\$/lb	2.355	2.378	2.482	2.573	2.634	2.634	2.732	2.822	2.906	2.961	2.935	3.074	3.123	3.082	3.115	3.159	3.22	3.265	3.252	3.245
Index	100	101.0	105.4	109.3	111.8	111.8	116.0	119.8	123.4	125.7	124.6	130.5	132.6	130.9	132.3	134.1	136.7	138.6	138.1	137.8
Total																				
\$/lb	3.003	3.038	3.165	3.244	3.173	3.256	3.409	3.481	3.641	3.628	3.612	3.741	3.86	3.866	3.922	4.05	4.076	4.045	4.103	4.143
Index	100	101.2	105.4	108.0	105.7	108.4	113.5	115.9	121.2	120.8	120.3	124.6	128.5	128.7	130.6	134.9	135.7	134.7	136.6	138.0

¹ Indexed so fourth quarter 1989 is 100.Source: 1988-1992 IRI Infoscan Data Base, University of Connecticut, Food Marketing Policy Center; *Economic Report of the President*, 1993.

Table A4 Percentage of Cereal Sold by Merchandising Techniques, Total U.S. 1988-1992 Quarterly

Quarter	1Q 88	2Q 88	3Q 88	4Q 88	1Q 89	2Q 89	3Q 89	4Q 89	1Q 90	2Q 90	3Q 90	4Q 90	1Q 91	2Q 91	3Q 91	4Q 91	1Q 92	2Q 92	3Q 92	4Q 92
Nabisco Big Biscuit Shredded Wheat																				
Any Merchandising	3.523	2.632	2.81	14.931	4.537	2.759	11.023	3.765	12.261	6.666	15.359	5.832	17.249	7.888	13.107	5.869	3.458	14.367	5.269	11.691
Display	0.599	0.531	0.589	3.947	1.38	0.58	2.732	0.46	2.968	1.785	4.812	1.398	4.595	2.365	2.632	1.843	0.792	3.777	0.951	0.449
Feature Ads	0.093	0.125	0.181	3.068	0.904	0.423	1.759	1.091	2.949	0.644	4.33	0.724	5.261	1.552	4.367	1.121	0.185	3.962	1.244	5.722
Avg. Price Reduction	7.976	12.144	9.86	11.189	10.509	9.414	11.352	10.383	12.028	12.745	16.00	9.881	11.354	15.354	13.347	23.892	9.807	13.711	10.918	10.915
Nabisco Spoon Size Shredded Wheat																				
Any Merchandising	4.203	4.277	8.011	9.501	10.732	17.003	6.277	14.755	8.404	16.74	10.242	17.261	9.728	20.259	13.011	15.021	13.619	6.57	10.425	8.835
Display	0.691	0.687	2.205	1.802	4.15	5.291	2.744	3.794	3.38	4.935	2.189	4.812	2.623	6.843	3.664	2.285	4.89	1.113	1.505	0.769
Feature Ads	0.148	1.089	2.525	1.335	1.998	3.292	0.900	3.916	1.416	2.992	2.048	3.607	2.88	4.986	3.423	4.578	3.294	1.388	3.47	3.734
Avg. Price Reduction	9.527	8.82	12.115	10.352	11.268	10.809	12.576	11.524	11.019	12.256	10.51	12.447	15.121	17.447	14.483	13.146	12.742	11.604	10.76	11.41
Shredded Wheat and Bran																				
Any Merchandising	2.978	1.615	5.117	9.091	8.914	17.658	14.22	15.617	2.617	15.673	5.255	14.337	2.804	16.953	9.126	16.39	13.535	3.666	9.88	7.759
Display	0.216	0.214	1.126	0.617	3.765	5.494	2.343	3.199	1.128	2.449	0.957	2.664	0.689	3.503	2.16	1.591	3.234	0.57	0.917	0.236
Feature Ads	0.177	0.062	1.839	1.537	2.115	3.394	1.974	3.642	0.248	2.746	0.509	2.996	0.437	3.037	2.361	4.955	2.992	0.632	3.332	3.767
Avg. Price Reduction	10.408	10.73	11.926	12.224	14.539	12.082	11.989	12.683	13.291	13.458	12.306	13.025	13.816	17.669	19.01	14.233	11.829	10.138	11.835	11.113
Frosted Wheat Squares																				
Any Merchandising	0	26.634	9.597	29.031	8.804	26.117	10.083	16.789	9.166	19.033	14.609	8.201	22.652	13.585	22.205	7.462	12.058	4.632	11.792	8.357
Display	0	8.906	3.361	8.937	2.535	7.494	3.351	2.951	1.869	3.343	1.968	1.539	8.066	7.056	3.542	2.306	1.154	0.5	0.81	0.636
Feature Ads	0	3.431	1.244	4.699	1.384	5.042	1.154	4.078	1.435	3.804	4.023	1.037	3.564	0.613	3.689	1.63	4.115	1.076	3.242	3.363
Avg. Price Reduction	0	13.922	11.554	14.285	10.079	12.11	12.011	10.531	9.545	11.127	12.661	9.777	20.042	30.909	14.172	24.323	8.781	19.37	10.508	9.992
Fruit Wheats																				
Any Merchandising	18.937	20.708	16.943	24.373	19.687	6.843	15.99	8.578	18.087	7.589	13.15	7.253	18.529	15.582	16.333	6.251	3.281	10.804	11.023	11.636
Display	2.187	2.66	2.23	4.812	3.636	1.304	1.146	0.906	0.748	0.841	0.511	0.687	1.642	0.363	0.65	0.365	0.767	0.035	1.572	0.183
Feature Ads	3.601	4.96	2.414	5.146	4.126	0.955	3.037	1.826	3.47	1.222	3.503	1.101	4.339	1.767	3.189	1.15	0.677	0.841	1.984	4.123
Avg. Price Reduction	12.186	11.5	10.399	12.436	10.113	11.866	9.464	10.368	10.073	11.299	9.17	9.211	10.04	8.486	9.327	8.774	17.483	11.924	9.686	7.932
100% Bran																				
Any Merchandising	2.384	1.039	1.874	19.888	3.357	9.578	4.857	16.919	16.99	14.582	2.124	15.345	12.402	9.365	2.548	15.572	10.777	2.759	2.617	11.203
Display	0.078	0.203	0.099	4.562	1.208	2.208	1.484	1.064	1.431	1.738	0.398	0.472	1.095	0.529	0.07	0.324	0.371	0.166	0.273	0.167
Feature Ads	0	0.042	0.123	3.896	0.458	2.396	0.683	3.873	2.417	2.46	0.152	3.166	2.728	1.923	0.585	3.66	2.689	0.55	1.16	4.867
Avg. Price Reduction	7.922	7.379	8.041	11.579	8.46	10.67	12.869	9.782	10.679	12.793	11.324	8.821	11.379	12.985	11.723	10.156	9.785	11.399	9.945	8.314
Team Flakes																				
Any Merchandising	11.207	14.867	11.855	19.953	15.466	25.419	14.492	18.029	18.267	17.576	0.749	18.078	20.824	4.439	33.996	14.56	13.712	4.048	14.046	5.498
Display	0.146	0.138	0.417	2.736	2.124	4.634	1.378	1.195	1.314	1.685	0.365	0.332	2.458	1.126	14.951	5.566	0.781	0.906	2.208	0.037
Feature Ads	0.884	1.513	1.175	3.343	1.765	4.572	1.478	3.265	2.253	2.447	0.072	2.757	4.324	1.726	3.4	1.755	1.765	0.398	1.962	1.73
Avg. Price Reduction	9.316	8.809	8.616	11.804	8.652	11.5	9.701	11.143	9.159	9.911	16.843	8.782	11.68	10.795	30.93	30.555	10.257	18.892	14.386	10.67
Teddy Graham Breakfast Bears																				
Any Merchandising					28.787	31.943	38.062	38.738	42.433	10.515	7.001	6.39	0	3.101	0	0	0	0	0	0
Display					15.88	17.08	17.259	16.986	20.654	3.531	5.324	0	0	0	0	0	0	0	0	0
Feature Ads					3.4	3.734	7.146	3.642	3.482	0	0	0.451	0	0	0	0	0	0	0	0
Avg. Price Reduction					11.334	12.914	14.193	35.04	43.54	35.35	12.647	64.925	0	19.999	0	0	0	0	0	0

(continues)

Table A4 (continued)

Quarter	1Q 88	2Q 88	3Q 88	4Q 88	1Q 89	2Q 89	3Q 89	4Q 89	1Q 90	2Q 90	3Q 90	4Q 90	1Q 91	2Q 91	3Q 91	4Q 91	1Q 92	2Q 92	3Q 92	4Q 92
Post Grape Nuts																				
Any Merchandising	12.931	13.773	14.849	9.521	14.859	15.263	11.66	11.572	14.289	12.947	15.158	10.099	12.859	12.185	16.031	8.839	15.203	16.406	16.082	13.81
Display	2.416	1.835	2.935	1.572	3.208	3.121	2.722	1.568	3.886	1.623	4.003	1.503	2.855	3.082	5.177	2.431	4.929	5.089	5.923	4.81
Feature Ads	2.644	2.242	3.617	2.835	5.914	4.558	2.808	3.142	5.158	2.966	4.578	2.523	5.486	4.632	6.056	3.654	6.427	7.246	7.082	7.072
Avg. Price Reduction	10.351	9.101	10.305	10.012	9.966	11.691	11.589	12.631	14.377	14.139	10.504	10.889	14.757	12.838	17.226	17.53	18.123	19.269	22.622	22.896
Post Toasties																				
Any Merchandising	44.912	47.414	53.365	57.533	61.933	60.123	58.06	55.816	60.931	57.291	49.523	44.472	46.73	56.029	54.279	41.484	48.248	54.101	51.017	49.125
Display	23.359	23.726	33.654	32.169	36.287	32.349	36.757	32.734	37.656	32.589	24.955	15.109	20.812	27.789	26.017	16.734	26.556	33.728	33.185	24.438
Feature Ads	4.884	5.472	5.503	6.744	6.816	7.095	5.673	4.882	7.218	6.88	6.058	8.064	5.373	5.472	7.484	7.273	8.099	6.935	8.009	13.48
Avg. Price Reduction	17.49	21.001	24.121	24.643	27.097	26.697	27.821	25.512	28.69	27.744	24.419	22.724	23.842	22.731	24.325	20.062	24.259	27.216	29.978	27.262
Post Raisin Bran																				
Any Merchandising	12.912	16.437	19.851	12.093	28.265	31.904	22.824	20.953	22.742	22.009	28.601	30.458	27.31	17.169	19.609	23.666	22.212	23.349	21.673	28.591
Display	2.904	4.869	9.371	4.289	10.837	13.466	10.453	6.089	6.214	7.714	11.499	11.291	9.191	5.917	7.468	8.367	9.517	11.722	9.632	13.187
Feature Ads	2.9	3.019	2.789	1.73	6.326	7.998	5.531	4.955	5.531	5.544	7.871	6.13	9.146	4.972	7.111	8.343	6.876	6.671	7.39	10.052
Avg. Price Reduction	11.505	10.793	11.415	10.414	13.436	23.907	18.025	17.848	12.152	13.504	17.697	14.841	16.017	20.858	22.706	19.058	17.913	27.59	24.583	27.178
Kellogg Corn Flakes																				
Any Merchandising	19.845	13.89	11.572	10.871	15.621	16.232	22.412	25.423	21.56	15.355	22.468	15.974	20.197	21.251	21.097	28.439	33.306	37.499	37.699	20.898
Display	9.246	6.992	5.599	6.728	8.898	9.048	11.697	12.82	12.173	9.412	14.986	12.39	12.533	12.503	11.859	15.914	22.009	25.998	26.839	14.626
Feature Ads	4.232	2.644	2.451	2.646	3.494	3.542	4.972	4.267	3.222	3.503	4.429	4.468	3.124	5.574	5.003	6.457	6.486	7.908	7.888	4.984
Avg. Price Reduction	13.135	12.708	12.077	12.945	12.231	13.635	17.534	16.793	15.382	16.256	16.202	29.267	15.634	16.894	17.176	26.663	31.6	31.956	29.61	22.535
Kellogg Raisin Bran																				
Any Merchandising	11.048	4.269	9.039	5.189	8.849	15.958	7.353	19.187	18.294	11.931	4.437	12.261	12.853	20.585	5.572	28.921	21.812	23.312	26.107	30.078
Display	3.156	1.201	4.974	2.835	3.3	5.484	2.927	8.908	7.677	7.039	2.199	5.195	6.013	10.33	1.382	11.695	11.744	12.962	15.099	17.234
Feature Ads	2.605	0.802	0.421	0.57	2.347	3.025	1.234	1.072	3.802	3.566	0.455	3.601	4.398	5.464	1.011	9.962	4.759	6.744	5.72	9.929
Avg. Price Reduction	10.937	9.637	10.849	10.831	12.992	14.77	12.023	13.471	13.531	25.921	16.753	13.25	14.017	15.76	11.508	27.761	30.751	26.934	29.969	24.071
General Mills Cheerios																				
Any Merchandising	19.515	15.634	17.742	19.222	18.205	23.736	21.017	12.933	18.367	12.855	23.064	11.449	20.732	27.019	22.923	27.732	30.32	30.982	31.019	35.183
Display	10.201	9.148	10.796	8.82	11.363	9.886	12.88	6.248	10.63	7.714	15.374	7.453	13.246	14.724	15.345	15.261	21.083	17.632	21.367	25.833
Feature Ads	3.841	3.269	3.533	2.978	3.263	5.666	4.857	2.736	4.437	2.675	5.154	1.759	4.203	5.652	4.072	5.464	4.523	5.466	5.843	8.968
Avg. Price Reduction	13.665	12.971	13.091	11.716	14.941	21.009	17.274	13.672	18.492	16.704	16.869	14.583	17.692	27.756	21.593	24.156	22.206	25.159	23.637	23.314
General Mills Total																				
Any Merchandising	17.498	12.179	17.322	14.337	18.707	10.468	13.841	13.251	11.962	12.507	22.107	14.482	14.119	14.269	14.447	10.667	14.714	18.667	22.173	24.714
Display	5.623	4.679	6.798	6.687	7.38	3.931	5.039	4.515	3.98	5.249	9.533	6.496	6.111	7.398	7.912	5.394	7.263	8.91	12.222	13.71
Feature Ads	4.152	1.39	4.292	2.279	3.919	2.22	2.773	3.306	3.57	1.636	5.361	2.382	3.253	3.726	2.736	1.726	2.707	4.89	4.488	6.693
Avg. Price Reduction	12.246	11.628	12.361	12.266	13.367	13.149	13.294	12.863	14.679	17.124	17.097	14.677	17.5	22.068	18.742	16.539	20.873	21.223	21.134	20.329

Source: IRI Infoscan Data Base, University of Connecticut, Food Marketing Policy Center.

Table A5 Top 100 Brands of RTE Cereal by Volume Share, 1988

1.	KELLOGGS CORN FLAKES	KELLOGG CO	5.328
2.	FROSTED FLAKES	KELLOGG CO	5.276
3.	GENERAL MILLS CHEERIOS	GENERAL MI	4.200
4.	KELLOGGS RAISIN BRAN	KELLOGG CO	4.194
5.	KELLOGGS RICE KRISPIES	KELLOGG CO	3.348
6.	HONEY NUT CHEERIOS	GENERAL MI	3.154
7.	QUAKER CAP N CRUNCH	QUAKER OAT	2.920
8.	GRAPE NUTS	PHILIP MOR	2.901
9.	FROSTED MINI WHEATS	KELLOGG CO	2.379
10.	POST RAISIN BRAN	PHILIP MOR	2.292
11.	TOTAL	GENERAL MI	2.127
12.	FROOT LOOPS	KELLOGG CO	2.073
13.	NUTRI GRAIN	KELLOGG CO	1.780
14.	QUAKER LIFE	QUAKER OAT	1.650
15.	NABISCO SPOON SIZE SHRED	RJR NABISC	1.610
16.	LUCKY CHARMS	GENERAL MI	1.604
17.	KELLOGGS SPECIAL K	KELLOGG CO	1.597
18.	WHEATIES	GENERAL MI	1.467
19.	KELLOGGS BRAN FLAKES	KELLOGG CO	1.409
20.	QUAKER 100% NATURAL	QUAKER OAT	1.383
21.	GENERAL MILLS RAISIN NUT	GENERAL MI	1.174
22.	KELLOGGS "FRUIT" SQUARES	KELLOGG CO	1.172 ¹
23.	POST FRUIT & FIBER	PHILIP MOR	1.152
24.	KELLOGGS CRACKLIN OAT BR	KELLOGG CO	1.136
25.	KELLOGGS MUESLIX	KELLOGG CO	1.114
26.	GENERAL MILLS TRIX	GENERAL MI	1.090
27.	APPLE JACKS	KELLOGG CO	1.055
28.	ALL BRAN	KELLOGG CO	1.007
29.	NABISCO BIG BISCUIT SHRE	RJR NABISC	0.972
30.	GOLDEN GRAHAMS	GENERAL MI	0.961
31.	FRUITY PEBBLES	PHILIP MOR	0.951
32.	SUPER GOLDEN CRISP	PHILIP MOR	0.940
33.	CRISPIX	KELLOGG CO	0.928
34.	NABISCO FRUIT WHEATS	RJR NABISC	0.900
35.	RALSTON RICE CHEX	RALSTON PU	0.897
36.	KELLOGGS JUST RIGHT	KELLOGG CO	0.881
37.	QUAKER OH S.	QUAKER OAT	0.877
38.	KELLOGGS CORN POPS	KELLOGG CO	0.865
39.	OATMEAL RAISIN CRISP	GENERAL MI	0.841
40.	NABISCO SHREDDED WHEAT W	RJR NABISC	0.786
41.	NUT & HONEY CRUNCH	KELLOGG CO	0.783
42.	KELLOGGS HONEY SMACKS	KELLOGG CO	0.779
43.	KELLOGGS PRODUCT 19	KELLOGG CO	0.768
44.	CINNAMON TOAST CRUNCH	GENERAL MI	0.745
45.	POST 40% BRAN FLAKES	PHILIP MOR	0.732
46.	RALSTON WHEAT CHEX	RALSTON PU	0.693
47.	POST HONEYCOMBS	PHILIP MOR	0.691
48.	RALSTON CORN CHEX	RALSTON PU	0.650
49.	GENERAL MILLS KIX	GENERAL MI	0.644
50.	QUAKER OAT SQUARES	QUAKER OAT	0.642
51.	KELLOGGS	KELLOGG CO	0.612

52.	ALMOND DELIGHT	RALSTON PU	0.607
53.	CRISPY WHEAT & RAISIN	GENERAL MI	0.602
54.	CLUSTERS	GENERAL MI	0.596
55.	COCOA PUFFS	GENERAL MI	0.573
56.	MALT O MEAL	MALT-O-MEA	0.528
57.	COCOA KRISPIES	KELLOGG CO	0.526
58.	COCOA PEBBLES	PHILIP MOR	0.505
59.	TOASTIES	PHILIP MOR	0.484
60.	NABISCO 100% BRAN	RJR NABISC	0.475
61.	NABISCO FROSTED WHEAT SQ	RJR NABISC	0.475
62.	FRUITFUL BRAN	KELLOGG CO	0.455
63.	POST ALPHA BITS	PHILIP MOR	0.454
64.	QUAKER CRUNCHY BRAN	QUAKER OAT	0.451
65.	RALSTON DINERSAURS	RALSTON PU	0.448
66.	FIBER ONE	GENERAL MI	0.436
67.	RALSTON BRAN CHEX	RALSTON PU	0.419
68.	COOKIE CRISP	RALSTON PU	0.351
69.	RALSTON HONEY GRAHAM CHE	RALSTON PU	0.324
70.	FRUITY MMALLOW KRISPIES	KELLOGG CO	0.300
71.	TOASTY OS	MALT-O-MEA	0.292
72.	APPLE RAISIN CRISP	KELLOGG CO	0.281
73.	KELLOGGS COMMON SENSE	KELLOGG CO	0.266
74.	KELLOGGS NUTRIFIC	KELLOGG CO	0.259
75.	COUNT CHOCULA	GENERAL MI	0.228
76.	CRISPY CRITTERS	PHILIP MOR	0.227
77.	MUESLI	RALSTON PU	0.226
78.	SMURFBERRY CRUNCH	PHILIP MOR	0.198
79.	NABISCO TEAM FLAKE	RJR NABISC	0.176
80.	SMORES CRUNCHIN	GENERAL MI	0.172
81.	DUNKIN DONUTS	RALSTON PU	0.166
82.	RALSTON DOUBLE CHEX	RALSTON PU	0.164
83.	POST	PHILIP MOR	0.152
84.	PRO GRAIN	KELLOGG CO	0.147
85.	HEALTH VALLEY	HLTH VALLE	0.142
86.	RALSTON BRAN NEWS	RALSTON PU	0.128
87.	RALSTON GHOSTBUSTERS	RALSTON PU	0.124
88.	FROSTED KRISPIES	KELLOGG CO	0.121
89.	SUN COUNTRY	QUAKER OAT	0.120
90.	POST CROONCHY STARS	PHILIP MOR	0.115
91.	BRAN BUDS	KELLOGG CO	0.111
92.	ICE CREAM CONE	GENERAL MI	0.111
93.	QCPNC CHRISTMAS CRUNCH	QUAKER OAT	0.103
94.	QUAKER PUFFED RICE	QUAKER OAT	0.103
95.	SUNFLAKE	RALSTON PU	0.101
96.	FRANKEN BERRY	GENERAL MI	0.099
97.	QUAKER PUFFED WHEAT	QUAKER OAT	0.099
98.	NORTHERN GOLD FOODS	VITALITY F	0.088
99.	HARTLAND	WHITMAN CO	0.087
100.	NATURE VALLEY GRANOLA	GENERAL MI	0.085

¹ Includes Kellogg's Apple Cinnamon, Blueberry, Strawberry and Raisin Square Cereals

Source: IRI Infoscan Data Base, University of Connecticut, Food Marketing Policy Center.

Table A6 Top 100 Brands of RTE Cereal by Volume Share, 1992

1.	KELLOGGS CORN FLAKES	KELLOGG CO	5.277
2.	GENERAL MILLS CHEERIOS	GENERAL MI	4.966
3.	FROSTED FLAKES	KELLOGG CO	4.860
4.	KELLOGGS RAISIN BRAN	KELLOGG CO	3.377
5.	KELLOGGS RICE KRISPIES	KELLOGG CO	3.185
6.	FROSTED MINI WHEATS	KELLOGG CO	2.921
7.	HONEY NUT CHEERIOS	GENERAL MI	2.919
8.	GRAPE NUTS	PHILIP MOR	2.727
9.	QUAKER CAP N CRUNCH	QUAKER OAT	2.338
10.	TOTAL	GENERAL MI	2.320
11.	FROOT LOOPS	KELLOGG CO	1.958
12.	POST RAISIN BRAN	PHILIP MOR	1.772
13.	KELLOGGS	KELLOGG CO	1.577
14.	LUCKY CHARMS	GENERAL MI	1.446
15.	GENERAL MILLS KIX	GENERAL MI	1.403
16.	WHEATIES	GENERAL MI	1.317
17.	KELLOGGS SPECIAL K	KELLOGG CO	1.307
18.	KELLOGGS CORN POPS	KELLOGG CO	1.219
19.	GENERAL MILLS TRIX	GENERAL MI	1.208
20.	CINNAMON TOAST CRUNCH	GENERAL MI	1.155
21.	QUAKER LIFE	QUAKER OAT	1.148
22.	NABISCO SPOON SIZE SHRED	RJR NABISC	1.110
23.	GENERAL MLLS APPL CINNAM	GENERAL MI	1.072
24.	HONEY BUNCHES OF OATS	PHILIP MOR	1.040
25.	GENERAL MILLS RAISIN NUT	GENERAL MI	1.009
26.	KELLOGGS COMPLETE BRAN	KELLOGG CO	0.986 ¹
27.	GOLDEN GRAHAMS	GENERAL MI	0.965
28.	CRISPIX	KELLOGG CO	0.951
29.	FRUITY PEBBLES	PHILIP MOR	0.936
30.	QUAKER 100% NATURAL	QUAKER OAT	0.912
31.	APPLE JACKS	KELLOGG CO	0.911
32.	KELLOGGS MUESLIX	KELLOGG CO	0.907
33.	KELLOGGS CRACKLIN OAT BR	KELLOGG CO	0.866
34.	RALSTON RICE CHEX	RALSTON PU	0.840
35.	NUTRI GRAIN	KELLOGG CO	0.810
36.	POST HONEYCOMB	PHILIP MOR	0.804
37.	NABISCO BIG BISCUIT SHRE	RJR NABISC	0.710
38.	CLUSTERS	GENERAL MI	0.704
39.	RALSTON WHEAT CHEX	RALSTON PU	0.691
40.	WHEATIES HONEY GOLD	GENERAL MI	0.680
41.	SUPER GOLDEN CRISP	PHILIP MOR	0.668
42.	KELLOGG CINNAMON MINI BU	KELLOGG CO	0.663
43.	RALSTON CORN CHEX	RALSTON PU	0.643
44.	GENERAL MILLS BASIC 4	GENERAL MI	0.640
45.	GENERAL MILLS TRIPLES	GENERAL MI	0.632
46.	COCOA PEBBLES	PHILIP MOR	0.632
47.	QUAKER OAT SQUARES	QUAKER OAT	0.619
48.	COCOA PUFFS	GENERAL MI	0.608
49.	MALT O MEAL	MALT-O-MEA	0.591
50.	POST 40% BRAN FLAKES	PHILIP MOR	0.549
51.	POST ALPHA BITS	PHILIP MOR	0.549

52.	GENERAL MILLS	GENERAL MI	0.539
53.	POST	PHILIP MOR	0.512
54.	COCOA KRISPIES	KELLOGG CO	0.509
55.	ALL BRAN	KELLOGG CO	0.493
56.	BRAND NAME NOT SPECIFIED	KELLOGG CO	0.471
57.	KELLOGGS "FRUIT" SQUARES	KELLOGG CO	0.458 ²
58.	KELLOGGS SMACKS	KELLOGG CO	0.448
59.	QUAKER OAT LIFE	QUAKER OAT	0.445
60.	POST FRUIT & FIBER	PHILIP MOR	0.442
61.	KELLOGGS PRODUCT 19	KELLOGG CO	0.430
62.	NABISCO SHREDDED WHEAT W	RJR NABISC	0.422
63.	COOKIE CRISP	RALSTON PU	0.408
64.	NUT & HONEY CRUNCH	KELLOGG CO	0.400
65.	RALSTON MULTI BRAN CHEX	RALSTON PU	0.394
66.	TOASTIES	PHILIP MOR	0.393
67.	OATMEAL RAISIN CRISP	GENERAL MI	0.388
68.	POST GREAT GRAINES	PHILIP MOR	0.382
69.	ALMOND DELIGHT	RALSTON PU	0.378
70.	FIBER ONE	GENERAL MI	0.352
71.	RALSTON DOUBLE CHEX	RALSTON PU	0.349
72.	CRISPY WHEAT & RAISIN	GENERAL MI	0.336
73.	NABISCO 100% BRAN	RJR NABISC	0.272
74.	KELLOGGS JUST RIGHT	KELLOGG CO	0.264
75.	NABISCO FROSTED WHEAT SQ	RJR NABISC	0.261
76.	FRUITFUL BRAN	KELLOGG CO	0.248
77.	OATMEAL CRISP	GENERAL MI	0.242
78.	KELLOGG ALL BRAN EXTRA F	KELLOGG CO	0.214
79.	POST DINO PEBBLES	PHILIP MOR	0.205
80.	KELLOGGS HONEY SMACKS	KELLOGG CO	0.204
81.	KELLOGGS COMMON SENSE	KELLOGG CO	0.200
82.	CAP N CRUNCH CRUNCH BERR	QUAKER OAT	0.196
83.	MALT O MEAL TOOTIE FRUIT	MALT-O-MEA	0.194
84.	MUESLI	RALSTON PU	0.189
85.	QUAKER CAP N CRUNCH	QUAKER OAT	0.184
86.	QUAKER 100% NATURAL	QUAKER OAT	0.176
87.	RALSTON	RALSTON PU	0.172
88.	QUAKER	QUAKER OAT	0.164
89.	COUNT CHOCULA	GENERAL MI	0.148
90.	SUNSHINE	G F INDS I	0.146
91.	KELLOGGS KENMEI	KELLOGG CO	0.146
92.	HEALTH VALLEY	HLTH VALLE	0.143
93.	GENERAL MILLS OATMEAL CR	GENERAL MI	0.138
94.	MAIZORO	CEREALES I	0.137
95.	MALT O MEAL SUGAR PUFFS	MALT-O-MEA	0.132
96.	KELLOGG NUT & HONEY CRUN	KELLOGG CO	0.129
97.	QUAKER OH S	QUAKER OAT	0.128
98.	QUAKER OAT BRAN	QUAKER OAT	0.125
99.	TOASTY OS	MALT-O-MEA	0.118
100.	KELLOGGS OATBAKE	KELLOGG CO	0.117

¹ Includes Kellogg's Bran Flakes and Complete Bran Flakes.

² Includes Kellogg's Apple Cinnamon, Blueberry, Strawberry and Raisin Square Cereals.

Source: IRI Infoscan Data Base, University of Connecticut, Food Marketing Policy Center.

Table A7 Total Ready-to-Eat Cereal Dollar Sales, RJR Nabisco, 1st Quarter 1988-4th Quarter 1992

1988				1989				1990			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
60,739	67,206	70,471	69,134	67,155	65,565	66,090	62,557	77,161	70,858	68,123	58,093
1991				1992							
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
57,214	58,120	58,793	50,481	58,065	58,278	57,243	57,556				

Note: Sales figures in thousands

Source: I.R.I. Infoscan Data Base, University of Connecticut, Food Marketing Policy Center.

Table A8 Percent All Commodity Volume (ACV) Weighted Distribution for Selected Ready-to-Eat Cereal Brands, 1st Quarter 1988-4th Quarter 1992

	1988				1989				1990			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Nabisco												
Nabisco Shredded Wheat Cereals												
Big Biscuit	99.31	99.30	99.58	99.29	99.55	99.55	99.35	99.50	99.60	99.25	99.01	98.92
Spoon Size	99.69	99.52	99.44	99.47	99.46	99.60	99.02	98.78	99.13	99.03	98.94	98.95
Wheat and Bran	98.46	97.90	97.58	97.30	98.01	96.94	96.65	95.55	94.84	93.76	93.03	92.58
Frosted Wh. Squares	¹	49.04	84.07	91.35	93.36	94.10	92.25	90.97	89.70	87.66	86.25	87.19
Fruit Wheats	95.73	93.38	93.55	92.65	91.21	89.89	87.23	87.09	84.85	82.05	78.69	76.01
100% Bran	97.58	97.41	97.31	96.91	97.23	96.98	96.35	95.58	95.09	95.01	94.27	93.30
Team Flakes	71.76	69.84	66.87	63.70	60.92	63.13	60.29	59.39	58.49	55.60	54.86	54.04
Teddy Graham B.B.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.09	88.48	90.07	75.77	44.06
Post												
Grape Nuts	99.87	99.86	99.90	99.74	99.80	99.37	99.73	99.47	99.39	99.77	99.66	99.42
Kelloggs												
Corn Flakes	99.88	100.00	99.99	99.99	99.96	99.88	99.97	100.00	100.00	100.00	100.00	100.00
Frosted Mini Wheats	99.51	99.65	99.23	99.80	99.80	99.62	99.42	99.42	99.00	99.39	99.48	99.40
All Bran	99.59	99.67	99.17	99.45	99.54	99.56	98.94	97.60	98.15	97.61	97.29	97.26
General Mills												
Total	99.96	99.88	99.94	100.00	100.00	100.00	100.00	99.99	100.00	99.98	100.00	100.00
Fiber One	95.62	95.72	95.65	92.41	91.98	94.98	94.47	91.55	90.65	93.05	94.38	93.94
	1991				1992							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Nabisco												
Nabisco Shredded Wheat Cereals												
Big Biscuit	98.88	99.05	99.12	99.07	99.31	99.31	99.20	99.39				
Spoon Size	98.88	99.11	98.79	98.49	98.93	99.28	99.37	99.33				
Wheat and Bran	92.01	91.26	90.99	90.88	91.54	90.43	89.38	90.31				
Frosted Wh. Squares	87.13	85.65	84.42	81.51	80.76	73.35	72.50	70.18				
Fruit Wheats	74.54	70.84	68.45	63.49	55.27	45.24	41.50	38.81				
100% Bran	93.56	93.97	92.38	92.03	90.14	88.79	85.81	85.11				
Team Flakes	56.91	57.74	56.19	53.43	51.90	45.64	38.93	33.52				
Teddy Graham B.B.	13.59	1.96	0.55	0.34	0.11	0.13	0.12	0.01				
Post												
Grape Nuts	99.55	99.80	99.94	99.92	99.95	99.91	99.88	99.86				
Kelloggs												
Corn Flakes	100.00	100.00	100.00	100.00	100.00	99.99	100.00	100.00				
Frosted Mini Wheats	99.70	99.48	99.64	99.72	99.85	99.96	99.97	99.92				
All Bran	97.79	97.77	97.12	97.25	98.14	97.83	97.95	97.89				
General Mills												
Total	100.00	99.98	100.00	100.00	100.00	99.99	99.99	99.98				
Fiber One	93.85	94.61	94.13	94.51	94.69	94.46	96.13	96.43				

¹ Nabisco introduced Frosted Wheat Squares as a new product in the second quarter, 1988.

Source: I.R.I. Infoscan Data Base, University of Connecticut, Food Marketing Policy Center.

Table A9 National Media Advertising and Advertising to Sales Ratio for Post Grape Nuts and Nabisco Big Biscuit Shredded Wheat Brands

	1988				1989				1988-89
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Avg.
Post Grape Nuts									
Advertising	6429.4	7201.5	4934.4	2376.5	6047.5	6868.7	6325.2	3883.2	5508.3
Adv/Sales	23.87	24.71	15.13	10.22	22.40	27.57	24.66	14.79	20.42
Nabisco Shredded Wheat (Big Biscuit and Spoon Size) ¹									
Advertising	1507.9	6553.4	5610.4	7302.1	5153.9	5643.6	297.4	2370.3	4304.9
Adv/Sales	4.98	20.35	17.83	23.93	16.60	18.94	1.06	9.24	14.12
	1990				1991				1990-91
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Avg.
Post Grape Nuts									
Advertising	5274.3	6186.3	8104.4	6660.7	7607.6	5515.5	7496.8	6806.2	6706.5
Adv/Sales	15.78	17.87	20.73	19.67	19.17	14.47	18.41	18.15	18.03
Nabisco Shredded Wheat (Big Biscuit and Spoon Size) ¹									
Advertising	1791.5	855.4	2751.2	1101.4	1432.6	3014.3	3185.3	54.2	1773.2
Adv/Sales	5.78	2.81	8.45	3.72	4.68	9.27	9.32	0.18	5.53

¹ We assume that reported advertising for Shredded Wheat is for both Big Biscuit and Spoon Size. Nabisco Shredded Wheat with Bran does have separate advertising expenditures.

Source: IRI Infoscane Data Base, University of Connecticut, Food Marketing Policy Center; Leading National Advertisers, Inc.

Table A11 Ready-to-Eat Cereal as a Percentage of Total Cold Cereal Category, 1988-1992

	1988	1989	1990	1991	1992
First Quarter	99.671	99.648	99.705	99.699	99.726
Second Quarter	99.675	99.681	99.751	99.720	99.744
Third Quarter	99.683	99.712	99.748	99.744	99.759
Fourth Quarter	99.630	99.683	99.707	99.720	99.734
Entire Year	99.666	99.681	99.728	99.720	99.742

Source: IRI Infoscan Data Base, University of Connecticut, Food Marketing Policy Center.

Table A12 Total U.S. All RTE Cereals and Private Label Sales in Dollars and Volume (Pounds) Sold, 1988-1992 Quarterly

Quarter	1Q 88	2Q 88	3Q 88	4Q 88	1Q 89	2Q 89	3Q 89	4Q 89	1Q 90	2Q 90	3Q 90	4Q 90	1Q 91	2Q 91	3Q 91	4Q 91	1Q 92	2Q 92	3Q 92	4Q 92
All RTE Cereals																				
Sales (\$M)	1259	1299	1384	1296	1444	1489	1534	1424	1632	1658	1670	1576	1735	1744	1786	1665	1827	1807	1894	1770
Volume (M lbs)	551	559	574	526	566	575	572	526	592	597	596	554	597	602	612	567	620	615	634	583
Private Label																				
Sales (\$M)	27.5	29.7	32.0	31.5	36.6	25.0	42.6	41.6	54.9	58.1	63.7	61.9	74.3	81.7	85.6	76.7	86.5	84.0	92.0	87.2
Volume (M lbs)	18.6	20.2	21.6	20.7	23.5	39.5	26.8	25.4	33.4	34.8	38.1	36.5	43.5	47.6	49.7	43.5	49.1	47.2	51.6	48.0

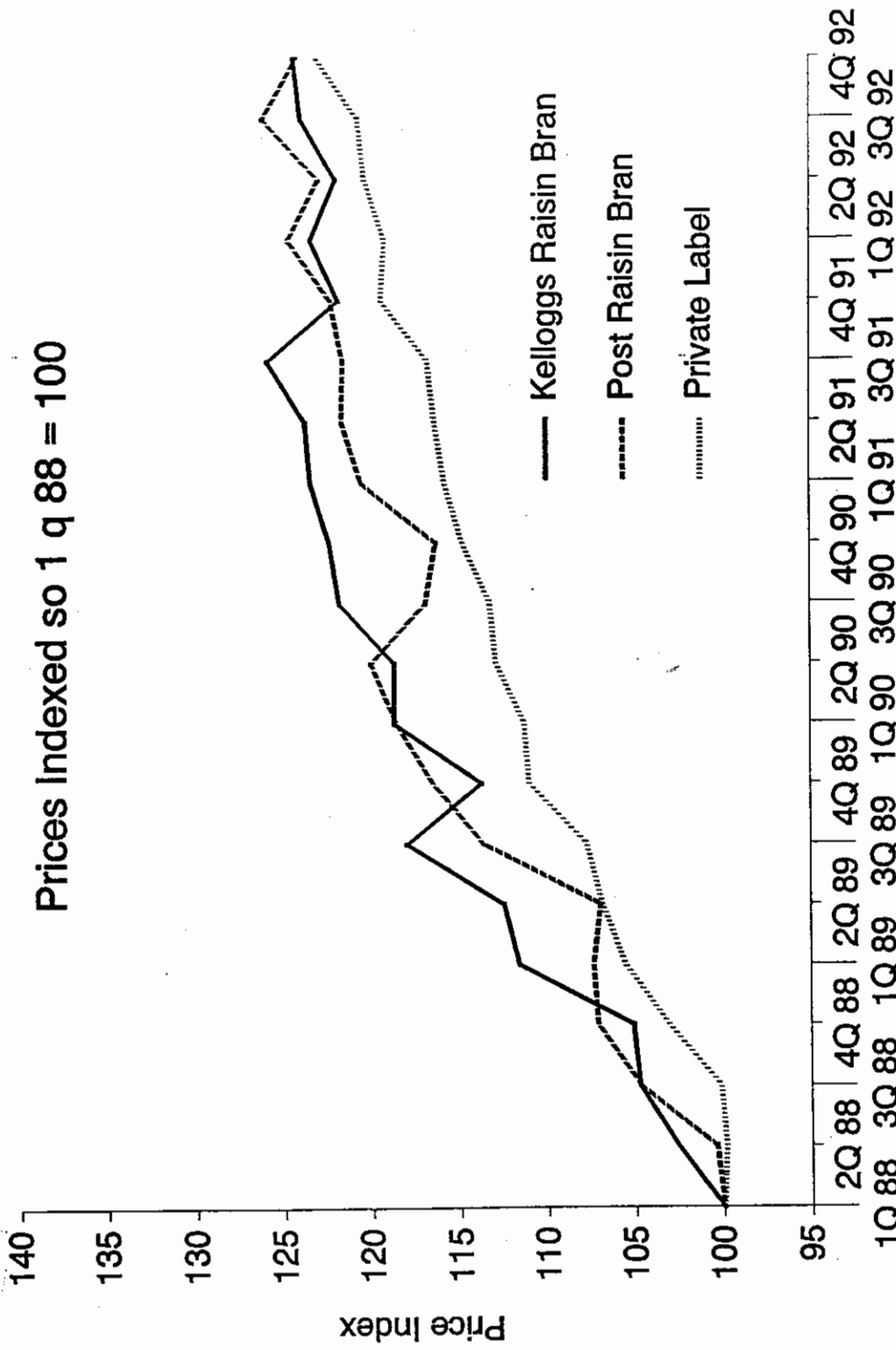
Source: IRI Infoscan Data Base, University of Connecticut, Food Marketing Policy Center.

Appendix B

Figure B1

Price Index Trends: Total U.S., 1q88 - 4q 92

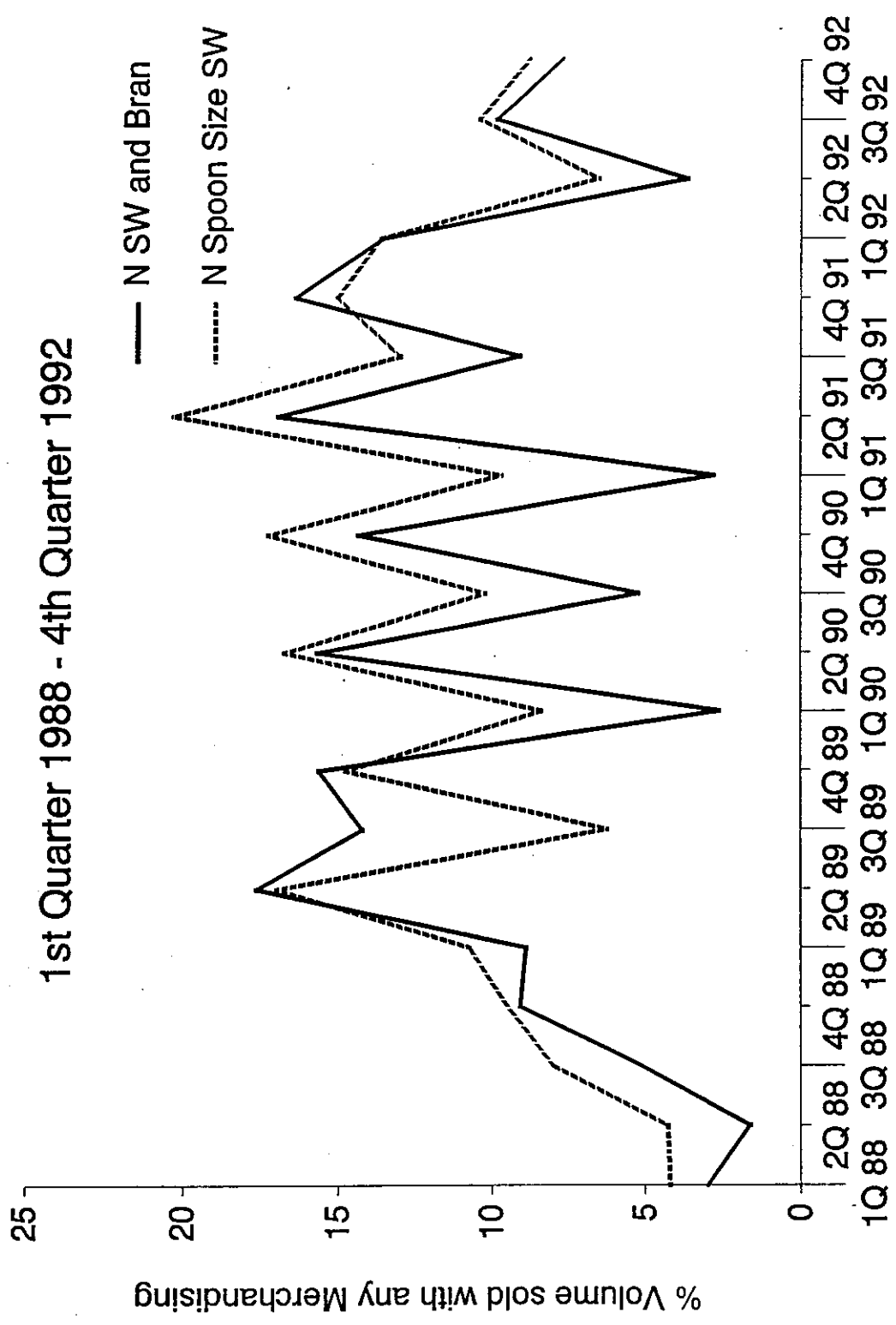
Prices Indexed so 1 q 88 = 100



Source: Appendix Table A3

Figure B2

Percent Sold with any Merchandising



Source: Appendix Table A4