



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

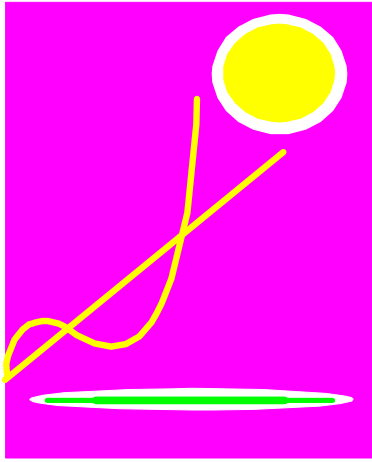
This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



Food Marketing Policy Issue Papers address particular policy or marketing issues in a non-technical manner. They summarize research results and provide insights for users outside the research community. Single copies are available at no charge. The last page lists all Food Policy Issue Papers to date, and describes other publication series available from the Food Marketing Policy Center.

Tel (860) 486-1927

Fax (860) 486-2461

email: fmpc@canr1.cag.uconn.edu

<http://vm.uconn.edu/~wware/fmktc.html>

Food Marketing Policy

Issue Paper

No. 18

October 1998

An Estimation of Consumer Benefits From the Public Campaign To Lower Cereal Prices

by

Ronald W. Cotterill
Andrew W. Franklin

Food Marketing Policy Center
University of Connecticut

Food Marketing Policy Center, Department of Agricultural and Resource Economics,
University of Connecticut, 1376 Storrs Road, U-21, Storrs, CT 06269-4021

An Estimation of Consumer Benefits from the Public Campaign to Lower Cereal Prices

by Ronald W. Cotterill and Andrew W. Franklin*

Abstract

Using monthly IRI scanner data for January 1993 to March 1998, cereal prices declined even after adjusting for trade promotions and reduced manufacturer coupons during the public campaign in 1995 and early 1996, as well as after the industry's announced shelf price reductions in Spring 1996. The gap between branded and private label prices also declined. This was due to unexpected increases in private label prices during the jawboning campaign as well as decreases in branded prices. As predicted by the Dorfman Steiner theorem, branded advertising declined when the price cuts reduced brands price cost margins. Quaker's lower priced bagged copies of other firms' leading brands have grown rapidly and advanced Quaker's market share to over 10 percent, as Kellogg's share continues to decline and General Mills' share is stable. Consumer benefits due to lower prices for the 35-month period commencing April 2, 1995 are 2.633 billion dollars. [Econlit cites: L100, L410, L660]

Key words: jawboning, net of trade promotion prices, price trend lines, branded cereal, private label cereal, advertising, manufacturer coupons.

I. Introduction

Using Information Resources Inc. Infoscan data for breakfast cereal sales through supermarkets we estimate consumer savings on cereal purchases due to the public campaign to lower cereal prices in 1995 and 1996. The call for lower cereal prices hit the national news media on March 7, 1995 with the issuing of "Consumers in a Box" by Congressman Samuel Gejdenson (CT) and Senator Charles Schumer (NY). Press coverage was rapid, comprehensive and included several major national TV news shows and virtually all major newspapers in the nation. A second major publicity push occurred on the anniversary of the effort in March 1996, when a Congressional Cereal Forum organized by Gejdenson and Schumer refocused attention on the issue. A month later on April 15, 1996 Phillip Morris/Kraft broke ranks, admitted that cereal prices were too high, and announced a 20 percent across the board price cut (Greenwald, 1996). Kelloggs followed on June 10th with a 19 percent price cut on two-thirds of its cereals. (Mayer, 1996) General Mills cut price 11 percent on 42

percent of its volume on June 19th (Julien, 1996), and, Quaker cut prices 15 percent on 87 percent of its volume on June 26th (Quaker, 1996). On a market share weighted basis these announced price cuts produce an industry average price cut for branded cereals of 9.66%.

This evaluation effort will answer several questions. Did cereal prices net of trade promotions stabilize in 1995 as suggested in “Consumers Still in a Box” (Gejdenson and Schumer, 1996) or did they go down? How much did prices actually drop in 1996? What were the consumer benefits due to actual observed price drops? Which companies gave back the most on a dollar and percent of sales basis? How much did reductions in the distribution of manufacturers coupons reduce consumer benefits? Did firms reduce advertising expenditures when they cut prices? Finally what is the bottom line estimate for total consumer benefits up to March 1998?

II. Analysis of Cereal Prices: 1993-1998

The Information Resources Inc. (IRI) data set is for 67 four week periods (13 per year) from January 1, 1993 through March 5, 1998. IRI, however, was unable to provide the first three periods for 1995. This gap brackets the March 7, 1995 advent of the public campaign for lower cereal prices. Consequently we have 26 observations (2 years of data) from before the stimulus, approximately 13 observations of industry conduct during this jawboning campaign, and approximately 25 observations after the campaign. The actual split between the last two categories for each firm depends on when it cut shelf prices. The data measure national product movement through supermarkets and mass merchandisers, and prices are net of all in store trade promotions including retailer issued coupons. The IRI data and similar data from the other data utility, A.C. Nielsen, are routinely used by the cereal firms to plan and evaluate marketing strategies and performance. The only monetary benefits not included in this net price measure are price reductions due to the use of

* We would like to acknowledge the helpful comments of James MacDonald; however, responsibility for content rests with the authors.

manufacturer coupons that are distributed directly to consumers. We will estimate such benefits and adjust the IRI based benefits to obtain a complete overview of the monetary impact of the cereal campaign on consumers.

Figure 1 compares an all-RTE cereal price index computed from the IRI data to the Bureau of Labor Statistics consumer price index (CPI) for cereal. Each index is set with the prices from the first quarter of 1988 having a value of 100. This was done for two reasons. That year was the first year that IRI scanner data became available; and the explosive growth phase in private label cereal consumption started at about that time. The initial index values for January 1993 in Figure 1 give an indication of how prices moved over the previous five years. The CPI increased 38.5 percent and, the IRI all-RTE cereal price index increased 28.2 percent over that period. The primary reason for the difference between the series is that the CPI is essentially a shelf price series.¹ It only measures on pack price discounts. The IRI price series on the other hand, is a net price series that includes price reductions due to the redemption of retailer coupons and other trade offers at checkout. Neither series measures the impact of manufacturer coupons. The divergence in the two price series over the 1988 to 1993 period is due to the increase in use of retailer coupons and other off pack discount programs.

During 1993 and 1994 both price indices increase approximately 10 points. This increase represents the continuation and final phase of the long running price promotion spiral that started in 1983 (Gejdenson and Schumer, 1996). Shelf prices were increased at a high rate and a portion was given back via trade promotions. The gap in the all RTE cereal series in Figure 1 indicates the advent of the jawboning effort in March 1995. The vertical line at period 43 identifies April 1996, the month of the first shelf price cut.

The CPI, as noted by the Congressmen in their March 1996 report “Consumers Still in a Box” was essentially flat during the campaign. Note, however, that the IRI all RTE cereal price index for the April 1995

¹ A secondary source for the discrepancy in the two series may be measurement problems associated with the CPI (MacDonald). However, the measurement problem with the food at home CPI was corrected in January 1995, moreover the measurement bias towards over-reporting price increases was small compared to the gap reported here and the impact of trade promotions (*Economic Report of the President*, 1998).

to March 1996 period dropped from 1994 levels. During the campaign for lower prices the cereal industry did more than keep prices, net-of-trade promotions, flat as the Congressmen conjectured (Gejdenson and Schumer, 1996). They responded to the adverse publicity by increasing trade promotion activity and lowering cereal prices. The all RTE price index declined 2.8 percent from December 1994 to March 1996. In April 1996 both price indices in Figure 1 began a steep decline that registers the impact of industry's shift from stronger trade promotion to outright cuts in shelf prices. The CPI drops 6 percent by September 1996 and the all RTE cereal index drops 7.9 percent by October 1996. The total price decline from December 1994, the last observation prior to the stimulus, for the all RTE cereal index is 10.5 percent.

Since the cereal industry did not increase announced list wholesale prices during the April 1996 to March 1998 period, the resumption of a more gradual positive CPI price trend after the 1996 price cuts is most likely due to widening retail margins on cereal. Except for two spikes in the all RTE cereal index due to reduced trade promotions, the price of cereal net- of-trade promotions was essentially flat for the post campaign period. Cereal manufacturers seem to have offset the upward drift in shelf price due to widening retail margins by increasing trade promotions.

Figure 2 decomposes the all RTE cereal price index into its branded cereal and private label components. The contrast is surprising and reveals significant information about private label national brand competition in the industry. First note that private label cereal prices increased less than branded prices during the 1988-1992 period. Private label was up 24 percent and branded cereals were up 31 percent. The national brand private label gap widened even further in 1994, but narrowed dramatically during the cereal campaign. Branded prices dropped 6.2 percent between December 1994 and April 1996. Private label prices register a somewhat surprising opposite performance, increasing 5 percent between December 1994 and May 1996. By the price cuts in Spring 1996 the national brand private label price gap created during the 1988-1994 period

vanished. As the jawboning campaign promoted private label cereals as good value, retailers were increasing private label prices relative to national brand prices.

Subsequent to the national brand price cuts in the spring of 1996 retailer private label price strategy also shifted dramatically. They were forced to cut price and enter a period of intense price competition. Changes in national brand, prices, net of promotion, engender similar changes in private label prices. The expansion phase for private label volume with its pricing discretion appears to have come to an end.

Although we have no information on actual cuts to wholesale list prices of cereal, as explained above the announced weighted average price cuts for all branded RTE cereal at the wholesale level was 9.66 percent. *Supermarket Business* reports that the markup for the cereal category was 35.5 percent (26.2% gross margin) in 1997 [Mehring, p. 4]. At this markup rate, if supermarkets passed 100 percent of the 9.66 percent price cut through to consumers, retail prices would drop on 4.87 percent. In fact the observed retail level average price cut for branded cereals between April and October 1996 was 7.5 percent. Either cereal manufacturers cut prices even more via trade promotions, or retailers passed forward price cuts that were larger than actual dollar cuts received from manufacturers.

Figure 3 probes further into the price strategies of the industry by presenting the average price per pound for each of the five major branded manufacturers and private label cereal over the January 1993-March 1998 period. First note that private label cereal is considerably cheaper than branded cereal. Just prior to the April 1996 price break the national brand-private label price gap was over \$1.50 per pound for General Mills and Ralston and over \$1.00 per pound for the other manufacturers, Kellogg, Post and Quaker. Even with the sympathetic price cut by private label, the cut in national brand prices by all companies except Ralston narrowed the national brand private label price gap after April 1996.

Note that Ralston, a relatively minor branded cereal player with only 3.8 percent of the market in 1994, primarily its Chex line, had an entirely different pricing strategy during this period. In early 1994 the company

decided to harvest its brand franchise in advance of selling it, by raising price above \$3.50/lb. and increasing it, with variation around trend, throughout the period. Ralston sold its branded cereal in 1996 to General Mills with the deal closing on January 31, 1997 (Miller, 1996). As indicated in Table 2, Ralston's all RTE cereal market share declined during this harvest and exit exercise from 4.1 percent in 1993 to 2.6 percent in 1997. Given the dominance of Ralston's harvest and exit strategy, we conclude that the jawboning campaign had no effect on Ralston brands, and thus we drop it from further estimation of consumer benefits.

Finally note in Figure 3 that the price cut leadership of Kraft/Post cereals is very apparent. Kraft/Post prices drop in April 1996 and thereafter. Kelloggs and Quaker, the two firms that have brands that compete most directly with the Post line of cereals drop steeply commencing in June 1996. General Mills whose brands are somewhat insulated from the other three leading companies due to strong product differentiation behind its family of Cheerios cereals and its stronger focus on oat based cereals, was somewhat more cavalier in following the price cuts. GM also resumed gradual net-of-trade promotion price increases during 1996 and 1997 whereas the other three leading companies enforced flat net-of-trade retail prices on the market.

As an initial step towards estimating consumer benefits from the jawboning campaign Figure 4 reproduces the actual price series and two forecasts of what prices would have been but for the intervention. Kraft/Post cereals, the price cut leader, is in panel a. Prices from April 1995, the first period after the intervention, are significantly lower than the 1993-1994 trend line forecast. Kraft's trend line annual growth rate for price was 2.7 percent. The gap between trend and actual prices widens dramatically with the April 1996 announced twenty percent price cut.

Kelloggs, in panel b, and Quaker in panel c of Figure 4 present nearly the same pattern as Kraft/Post. Both have positive price trend lines, with a 5.7 percent annual growth rate for Kelloggs and a 2.7 percent rate for Quaker. The impact gap for Kellogg's trend line becomes very large due to the relatively steep forecast price trend.

General Mills, in panel d of Figure 4, is a different story. During the late 1980's and early 1990's, in part due to the oat brand fad, General Mills increased list prices more rapidly than others and relied more heavily on trade promotions to mitigate the widened price gap. As the demand for oat based cereals cooled, General Mills had to maintain stable prices for oat based products. GM actually did this in early 1994 by reducing shelf prices but recapturing most of the price cut by reducing its high rate of trade promotions. Consequently their prices trend line for 1993-1994 has a very slight downward slope (.2 percent). Nonetheless in 1995 General Mills did deviate from that trend in response to the adverse publicity on cereal prices; and, in 1996 their price cut dropped prices even more. GM, however rebounded aggressively from the price cut. Its prices trend strongly up through all of 1997. Again GM oat based products seem somewhat insulated from the other three leading firms' aggressive price moves.

Table 1 reveals the magnitude of the cut in price, net of trade promotions, for the top four firms and Private Label. Kraft/Post cereals dropped from an average price of \$3.30/lb in December 1994 to \$2.70/lb after the full effect of the 1996 price cut. Consumers paid 60 cents per pound less for Kraft/Post cereals, however their reduced access to coupons offset some of these savings. The 60 cent savings is 18.2 percent of the December 1994 price. Kelloggs provided consumers with the next best net of trade price break. Kelloggs average price per pound dropped from \$3.24 in December 1994 to \$2.84 after their 1996 price cut, a drop of 40 cents per pound or 12.4 percent of the pre-campaign price. Quaker prices dropped 39 cents per pound or 12.9 percent of the pre-campaign price. General Mills, as we have already seen was less responsive with a cut from \$3.53 to \$3.25 for direct savings of 28 cents per pound and 7.9 percent. Private Label prices from December 1994 to after the cut in Private Label prices remained essentially constant moving down only 1 cent to \$1.91 per pound. As with Kraft/Post, reduced access to manufacturer coupons offset some of the savings for General Mills, Kelloggs and Quaker cereals.

III. Tonnage, Sales, Market Share, and Advertising Impacts of the Price Campaign

When the price of a product drops one would expect the physical units sold to increase. Sales would increase if demand is elastic; and, the market share of the firms that lead and participate most in cutting the industry's price level should increase. Breakfast cereal did not conform to these standard predictions, possibly because advertising was reduced, as predicted by the Dorfman Steiner theorem when the price cost margins in an industry fall (Dorfman and Steiner, 1954).

Table 2 provides the volume (in millions of pounds) and dollar sales estimates for all RTE cereal, branded, and private label cereal. All RTE cereal volume peaked in 1994 at 2.617 billion pounds, and thereafter during the price cut years declined until it was 2.499 billion pounds in 1997, 4.5 percent below the 1994 level. Branded cereal volume also peaked in 1994 and declined 5.9 percent during the price cut period. Thus the branded manufacturers cut price and sold less, not more, breakfast cereal. As of March 1998 the adverse publicity about high branded cereal prices has not been entirely neutralized by the price cuts.

This point is corroborated when one examines the private label volume levels in Table 2. Private label volume increased by 22 million pounds (8.8 percent) between 1994 and 1995. The publicity campaign's promotion of private label advanced its sales even as its price continued to rise during 1995. But private label volume was essentially flat in 1996 and 1997. The branded cereal shelf price cuts in 1996 seem to have stopped consumer switching from branded to private label but not to other breakfast options.

Sales of branded and private label cereal in Table 2 behave in a fashion similar to volume over the 1993-1997 period. All RTE cereal sales in supermarkets peaked at 8.128 billion dollars in 1994 and declined 13.4 percent to 7.041 billion dollars in 1997. This drop was due to declines in both price and volume. Branded cereal sales dropped even more, 15 percent, between 1994 and 1997. Private label sales, on the other hand, increased 12.4 percent between 1994 and 1995; and the higher sales level was essentially maintained through 1996 and 1997 as tonnage and price remained flat in those years.

Table 3 reports market shares for 1988 as well as 1993 through 1998 to give a long, as well as short term, perspective on the position of individual firms. Over the past 10 years Kelloggs has lost its dominant position with share declining from 41 percent in 1988 to 31.3 percent in 1998. General Mills has increased over the same period from 21.3 percent to 25.3 percent when one adds Ralston to its 1998 share. Four firm concentration has remained stable above 80 percent throughout the 1988-1998 period. This stable and high level of concentration was aided by Kraft's acquisition of Nabisco Shredded Wheat in January 1993, as well as GM's acquisition of Chex in late 1996.

Note that private label share expanded from 3.7 percent in 1988 to 9.7 percent in 1994. Thereafter during the price campaign and later years private label share continued to expand to 11.1 percent of the market in 1997 and fell slightly to 10.8 percent in 1998. Post cereals was the price cut leader; and, they do seem to have reaped some share gain over 1995. Quaker's gain over the period is due to its innovative move towards bagged cereal which has grown rapidly and accounted for 2.6 percent of all-RTE sales in 1998.

The Congressmen called for a reduction in cereal prices, claiming that this direct consumer benefit could be in part financed by a reduction in the industry's very high advertising expenditures. (Gejdenson and Schumer 1996, 1995) A lower price cost margin due to lower prices leads to a lower optimal (profit maximizing) advertising rate (Drofman and Steiner, 1954). Table 4 indicates that cereal industry advertising did drop from 1994, the year before the jawboning campaign. Total industry advertising declined from 957 million dollars in 1994 to 783 million dollars in 1997, an 18.2 percent drop. Thus nominal advertising expenditures in 1997 were less than in 1988. Kelloggs and Post/Kraft are responsible for the reduction in advertising. As we saw earlier, they are also the firms that reduced prices most.

IV. Calculating Consumer Benefits

Exactly how much consumers saved due to the campaign to lower cereal prices depends on what one assumes prices would have been if there had been no campaign. It also depends on the estimate of how manufacturer couponing changed and the impact on consumers of those changes. Table 5 presents our benefit estimates for three different “but for the campaign” price assumptions. The benefit estimates are only up to March 1, 1998 because they use price and quantity data from our IRI data set which ends then. Also these benefit estimates do not include consumer benefits due to price reductions on cereal sold in small store distribution channels (convenience stores, drug stores).

The first benefit estimate in Table 5 uses the time trend forecast lines from Figure 3 as estimates of what prices would have been absent the jawboning campaign. Dollar benefits from each firm are computed by multiplying each four week period’s price gap times the actual pounds of cereal sold that period and summing over all periods in the benefit interval prior to March 1, 1998. Because Kellogg’s time trend is the steepest it has the largest price gap. This large gap combines with its leading share of sales to generate 1.623 billion dollars in benefits for the 35 month period prior to March 1, 1998. This benefit due to price reduction amounts to 22.2 percent of Kellogg’s forecast sales for the period. Kellogg’s benefits to consumers split into 327 million dollars during the jawboning campaign and 1.296 billion dollars after Kelloggs 1996 shelf price cut.

On a percent of sales basis, Kraft/Post cereals provides the next largest price cut under the time trend scenario. Kraft’s reduced prices allowed consumers to keep 680 million dollars (19.4 percent of sales) prior to March 1, 1998. Quaker’s benefits via price cuts totaled \$288 million and General Mills totaled \$245 million for the period prior to March 1, 1998. Since private label did not reduce price until the 1996 price cut period it only provided consumers benefits via altered price conduct due to the price campaign during the period after the 1996 cuts.

Total consumer benefits from changes in shelf prices and in store trade promotions under the time trend forecast option are 2.869 billion dollars for the 35 month period April 2, 1996 to March 1, 1998. It is commonly known that the cereal firms significantly reduced the level of manufacturer coupons distributed when they shifted to a lower shelf prices. As explained in the appendix we estimate the total industry reduction in coupon benefits for the 35 month period to be 425 million dollars. This gives a benefit, net of all coupon reduction benefit totaling 2.444 billion dollars for the 35 month period prior after April 2, 1995.

How reasonable is this estimate? It depends to a large extent upon the slopes of the price forecast trend lines. Information from an earlier IRI quarterly data set at the Food Marketing Policy Center indicates that branded RTE cereal prices, net of trade promotion, grew at a 6 percent average annual growth rate during the 1988-1992 period (Cotterill et al. 1994) This suggests that the price trend forecast lines in Figure 3 for 1993-1994 do not overstate long term price trends.

The second benefit estimate in Table 5 uses the December 1994 price, the last observed price before the advent of the jawboning campaign as the counterfactual price. The price gap is now the difference between this price and actual observed prices during the benefit period. This method assumes that the industry, but for the jawboning campaign, would have held prices constant throughout 1995, 96, 97 and early 1998. Given this industry's past diet of regular price increases, (Gejdenson and Schumer, 1996; Cotterill, 1999) this is a very strong and conservative assumption for benefit estimation.

Examining the 1995-98 total period benefits column, consumers saved 1.522 billion dollars via lower prices, and received 425 million dollars less in coupon benefits giving benefits net of coupon reduction totaling 1.098 billion dollars. Note that the price cut leader, Kraft, now provides dollar benefits of 529 million, almost as much as the largest firm, Kellogg, and these benefits represent 14.9 percent of Kraft's projected sales. Removing the upside in price projections shifts weight to the firm that led on the downside of actual prices. Given the "zero price increase from the end of 1994" assumption this estimate of consumer benefits slightly in

excess of 1 billion dollars for the 35 month period must be considered a conservative lower bound estimate for actual consumer benefits.

The final estimate in Table 5 looks only at benefits in the period after the announced 1996 price cuts and it takes the price level in the month preceding a firm's 1996 price cut as the counterfactual price. Kraft again has the largest percent benefit rate at 11.5 percent. This compares to their announced 20 percent price cut. Wholesale list prices may have been cut 20 percent, however actual retail prices declined only 11.5 percent possibly because of reduced trade promotions by Kraft and/or less than full pass through of the price cut by retailers. The bottom line for consumers is a 714 million dollar savings for the remainder of 1996, 1997 and the first eight weeks of 1998. Given that this estimate includes no benefits from lower prices in 1995 and 1996 prior to the announced price cuts, it has to be considered a partial estimate of consumer benefits from the jawboning campaign.

In conclusion the middle estimate is a lower bound, conservative estimate of consumer benefits for the 35 months after April 2, 1995 for which we have actual data. Consumers saved at least 1.098 billion dollars on cereal purchases during this period. Given the persistent upward trend in net of trade promotion cereal prices prior to the jawboning campaign, consumers saved more than that, and most likely saved 2.4 billion dollars. Since the sales data used here do not include small stores, the reported benefit estimate are understated by roughly 7.7 percent. Thus, total all channel benefits for the 35 month period are most likely 2.633 billion dollars.

One could project these saving rates forward beyond March 1998 and easily generate additional billions of dollars in consumer benefits. The level of future benefits depends on when and how stiffly the industry increases cereal prices. The continued decline in branded cereal purchases mitigates against stiff increases. In fact, on December 15, 1998 Kellogg's announced its first price increase since 1994. Prices will go up an average of 2.7 percent on about two-thirds of its cereal brands (Balu). Other firms may follow, however this

price increase is modest in comparison to those of the 1980s and early 1990s. More importantly, the move provides no sure fire solution to the competitive threat of lower priced cereals and other breakfast options. *The Wall Street Journal* quotes Goldman Sachs analyst Nomi Ghez, a leading expert on food industries when it states:

“[Kellogg’s] says the ‘price action’ will provide money to invest in product innovation and marketing, which it hopes will stimulate growth in the stagnant cereal category. But if new products aren’t exciting enough, Ms. Ghez believes that price increases generally don’t spur category growth. Often, higher prices encourage consumers to simply switch from high-priced brands to inexpensive private-label cereal. ‘It’s almost a no-win situation,’ she says.” (Balu).

Branded breakfast cereals no longer enjoy the consumer franchise that they owned for most of this century.

Appendix

Estimating the Impact of Manufacturer Coupons on Consumer Benefits

We only have industry and third party estimates of the value of manufacturer coupons for 1993.

FACT: In 1993, two separate sources indicate that the dollar value of manufacturer coupons redeemed was \$440 million, approximately 5% of sales. (Cotterill, 1999)

FACT: AC Nielsen average face value per coupon was: (Ellingson, 1998)

1993	1994	1995	1996	1997
88¢	88.3¢ ^E	78.6¢	75¢	79.7¢

1994 is our estimate and is the midpoint between 1993 and 1995

FACT: IRI Percent Cereal Purchased with a coupon was: (Ellingson, 1998)

1993	1994	1995	1996	1997
39.0	36.13	30.94	24.46	20.87

QUESTION: If we conservatively assume all of coupon benefits reductions after 1994 are due to the jawboning campaign, what is the change in coupon benefits from reduced coupon use?

We assume total dollar coupon benefits in years after 1993 are 1993 benefits (440 Million) times the percent reduction due to lower face values and percent reduction do to lower coupons redeemed as proxied by percent volume bought with a coupon.

So: 1994 estimated coupon benefit = $440 \times 83.3/88 \times 36.13/39 = \386 million
 1995 estimated coupon benefit = $386 \times 78.6/83.3 \times 30.94/36.13 = \312 million
 1996 estimated coupon benefit = $312 \times 75/78.6 \times 24.46/30.94 = \235 million
 1997 estimated coupon benefit = $235 \times 79.7/75 \times 20.87/24.46 = \213 million

Table A1 gives the total dollars paid to consumers and changes in those benefit streams for 1993 to 1997.

Table A1. Total Dollars Paid to Consumers via Manufacturers Coupons and Selected Changes in the Benefit, 1993-1997 (Million Dollars)

	1993	1994	1995	1996	1997	1998*	Total Change in coupon benefits
Coupon Expenditures	440	386	312	235	213		
Index	100	88	71	53	48		
Change from 1994			-74	-151	-173	-27	-425
Change from 1995				-77	-99	-15	-191

* Prorated for 2/13 of a year = 15% of 1997

References

- Balu, R. "Kellogg Increases Prices on Majority of Cereal Brands," *The Wall Street Journal*, December 15, 1998 p. B23.
- Cotterill, R.W. (1999) "High Cereal Prices and the Prospects for Relief by Expansion of Private Label and Antitrust Enforcement," *Agribusiness*, this issue.
- Cotterill, R.W., A.W. Franklin, and L.E. Haller, (1994) *Harvesting and Tacit Collusion in the Breakfast Cereal Industry: A Case Study of Nabisco Shredded Wheat and Post Grape Nuts*, Food Marketing Policy Center Issue Paper #6, University of Connecticut.
- Dorfman R. and P.O. Steiner. (1954) "Optimal Advertising and Optimal Quality," *American Economic Review*, 44, 826-836.
- Economic Report of the President*, USGPO: Washington, February 1998.
- Ellingson, B. (1998) FAX on Cereal Coupons, NCH Nu-World Marketing Limited, Lincolnshire, Il., September 25.
- Gejdenson S. and C. Schumer. (1996) *Consumers Still in a Box*, House of Representatives, U.S. Congress, Washington D.C. March 12.
- Gejdenson S. and C. Schumer. (1995) *Consumers in a Box*, House of Representatives, U.S. Congress, Washington D.C. March 7.
- Greenwald, J. (1996) "Cereal Showdown," *Time*, April 29, (1996).
- Julien. A. (1996) "Cereal Eater's Win as Kellogg Joins the Breakfast Food Fight," *Hartford Courant*, June 11.
- MacDonald, James. (1995). "Consumer Price Index Overstates Food-Price Inflation," *Food Review*, ERS/USDA, Washington, September-December 1995.
- Mayer, C. (1996) "There's a Price War Inside the Box," *Washington Post*, June 11.
- Miller, J.P. (1996) "General Mills Gets Clearance to Buy Chex," *Wall Street Journal*, December 27.
- Quaker Press Release. (1996) June 26.

Table 1 The Drop in Price Per Pound for Breakfast Cereal Due to the Campaign for Lower Cereal Prices.

Manufacturer	Price (\$/pound)		Total Price Cut	Cut as a % of Dec. 1994
	December 1994	After 1996 Cut		
Kraft/Post	3.30	2.70	0.60	18.2
Kellogg	3.24	2.84	0.40	12.4
Quaker	3.02	2.63	0.39	12.9
General Mills	3.53	3.25	0.28	7.9
Private Label	1.92	1.91	0.01	0.5

Table 2. Volume and Sales of RTE Cereal; 1993-1997, Total U.S.

Volume (Million Pounds)	1993	1994	1995	1996	1997
All RTE Cereal	2,576	2,617	2,584	2,537	2,499
Branded RTE Cereal	2,340	2,362	2,306	2,263	2,222
PL RTE Cereal	236	255	277	273	277

Volume Indexed at 1994=100

All RTE Cereal	98.5	100	98.7	96.9	95.5
Branded RTE Cereal	99.1	100	97.7	95.8	94.1
PL RTE Cereal	92.5	100	108.8	107.2	108.7

Dollar Sales (Million Dollars)

All RTE Cereal	7,721	8,128	7,922	7,422	7,041
Branded RTE Cereal	7,289	7,650	7,385	6,885	6,505
PL RTE Cereal	432	478	537	537	536

Sales Indexed at 1994=100

All RTE Cereal	95.0	100	97.5	91.3	86.6
Branded RTE Cereal	95.3	100	96.5	90.0	85.0
PL RTE Cereal	90.5	100	112.4	112.3	112.1

Table 3. Yearly Volume Share of RTE Cereal Manufacturers, 1988, 1993-1998, Total U.S.

Manufacturer	1988	1993	1994	1995	1996	1997	1998 ³
Kellogg	41.0	36.5	35.1	35.1	32.8	32.7	31.3
General Mills	21.3	24.5	23.2	23.0	24.2	23.0	25.3 ⁴
Post/Kraft ¹	17.3	15.2	16.6	15.5	16.8	16.9	17.3
Quaker	8.5	7.4	8.0	7.8	7.9	9.2	10.0
Ralston ²	5.5	4.1	3.8	3.6	3.2	2.6	--
Private Label	3.7	9.2	9.7	10.8	10.8	11.1	10.7
CR ⁴	82.7	83.6	82.9	81.4	81.7	81.8	83.9

¹ In 1988 Post's share was 11.9%, Nabisco's share was 5.4%, they are combined in this table to compare with post merger shares in 1993-1997, the 1988 CR⁴ = 82.7 does not include Nabisco's 5.4% share.

² Ralston Chex line acquired by General Mills in January 1997.

³ 52 weeks ended 11/8/98 [Mehring p. 4].

⁴ includes Ralston.

Table 4. Annual Advertising Levels for Cereal Manufacturers and Cereal Industry, 1988, 1993-1997, (Million Dollars).

Manufacturer	1988	1993	1994	1995	1996	1997
Kellogg	369	315	376	372	304	278
General Mills	210	240	277	252	263	269
Post/Kraft	149	166	218	220	143	150
Quaker	75	62	60	43	80	79
Industry Total	835	810	957	913	800	783
Index (1994=100)	87.3	84.6	100	95.4	83.6	81.8

Source: Competitive Media Reporting, Leading National Advertisers/MultiMedia Watch, various years.

Table 5. Estimated Consumer Benefits Due to Congressional Cereal Price Campaign (Million Dollars, April 2, 1995 to March 1, 1998)

Counterfactual Option: Time Trend

	Pre 1996 cut	% of Sales	Post 1996 cut	% of Sales	95-98 Total	% of Sales
Kellogg ¹	\$327	10.1	\$1,296	31.6	\$1,623	22.2
General Mills ²	\$61	2.8	\$184	5.0	\$245	4.2
Kraft ³	\$62	4.9	\$618	27.5	\$680	19.4
Quaker ⁴	\$41	5.5	\$247	24.8	\$288	16.6
PL ⁵	0	0	\$32	3.5	\$32	3.1
Price Reduction Benefit	\$490	6.6	\$2,378	19.9	\$2,869	14.7
Estimated Reduced Benefits due to Fewer Manufacturers Coupons					<u>-\$425</u>	
Total Benefits net of Coupon Reduction					\$2,444	12.5

Counterfactual Option: Dec 94 price

	Pre 1996 cut	% of Sales	Post 1996 cut	% of Sales	95-98 Total	% of Sales
Kellogg	\$114	3.5	\$519	12.7	\$633	8.6
General Mills	\$47	2.1	\$172	4.7	\$219	3.7
Kraft	\$50	4.0	\$471	21.0	\$521	14.9
Quaker	\$7.6	1.0	\$142	14.2	\$150	8.6
PL	0	0	0	0	0	0
Price Reduction Benefit	\$218	2.9	\$1,304	11.8	\$1,522	7.6
Estimated Reduced Benefits due to Fewer Manufacturers Coupons					<u>-\$425</u>	
Total Benefits net of Coupon Reduction					\$1,098	5.5

Counterfactual Option: 1996 Before Cut Price

	Post 1996 Cut	% of Sales
Kellogg	\$348	7.4
General Mills	\$128	3.2
Kraft	\$269	11.5
Quaker	\$127	10.8
PL	\$33	3.1
Price Reduction Benefit	\$905	6.8
Estimated Reduced Benefits due to Fewer Manufacturers Coupons	<u>-\$191</u>	
Total Benefits net of Coupon Reduction	\$714	5.4

¹ Effective pre price cut period, May 1996

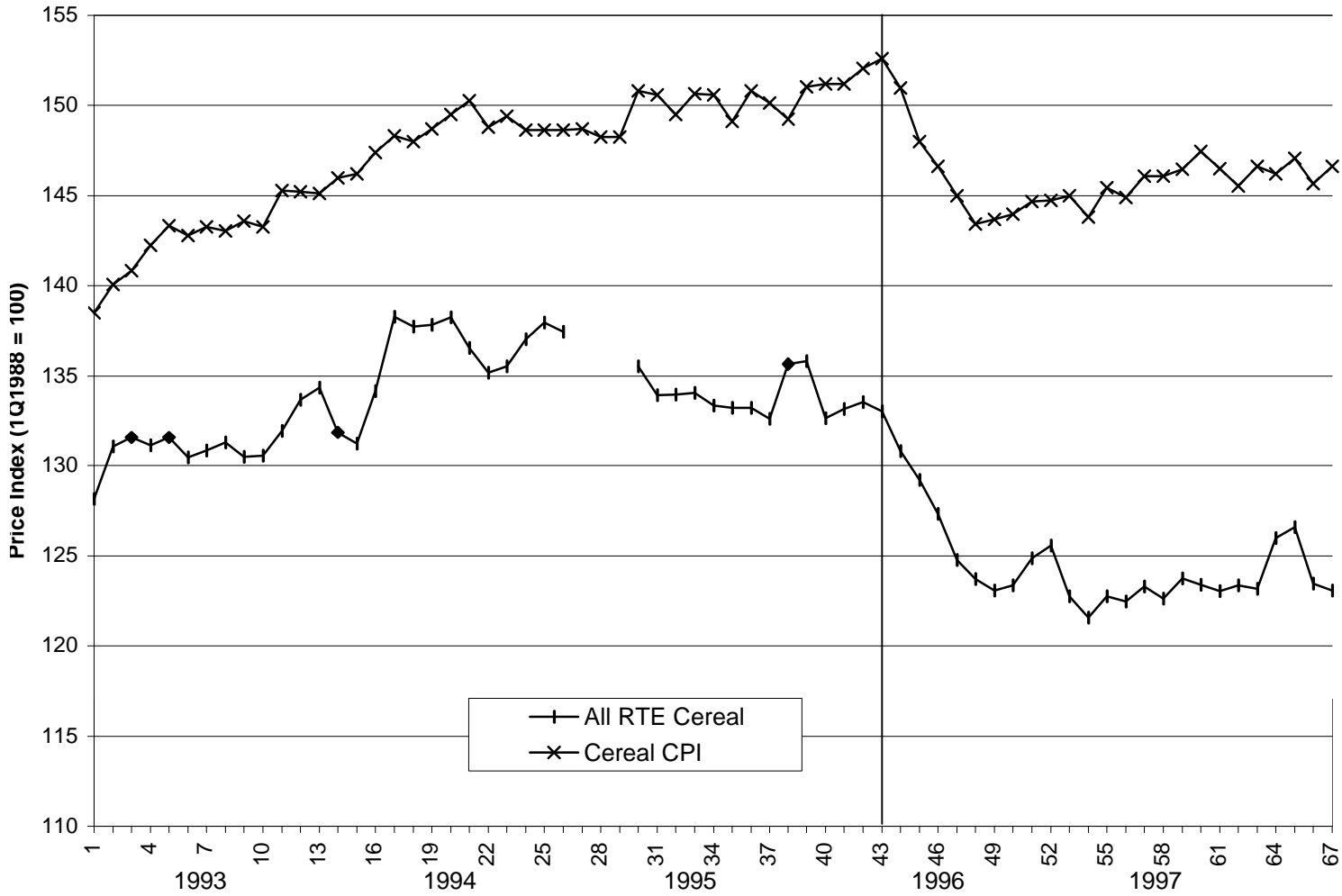
² Effective pre price cut period, April 1996

³ Effective pre price cut period, March 1996

⁴ Effective pre price cut period, June 1996

⁵ Effective pre price cut period, May 1996

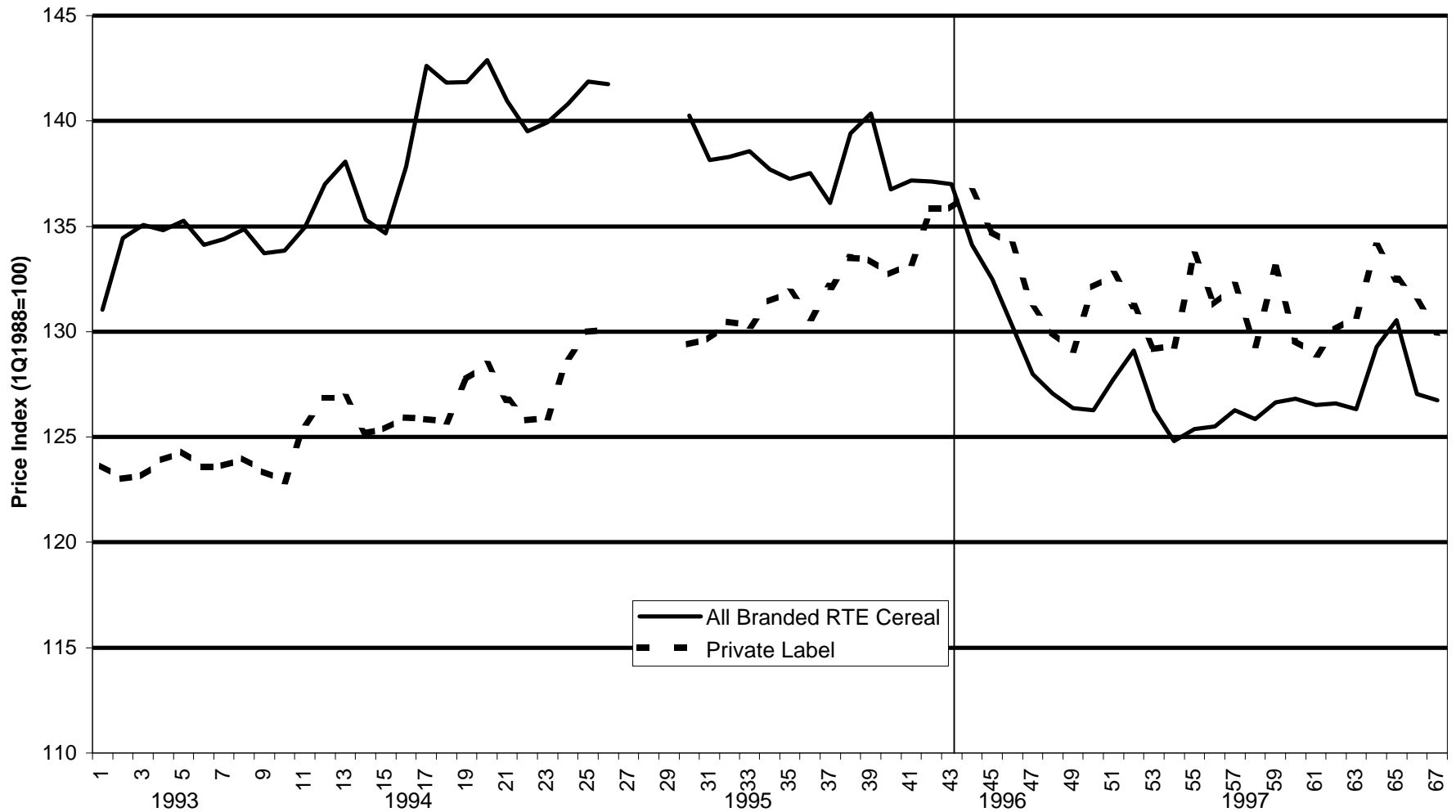
Figure 1 The BLS Consumer Price Index and an IRI Price Index for Breakfast Cereal ^a



^a Observations are four week periods commencing January 1993 through March 1, 1998.

Source: Bureau of Labor Statistics; Information Resources Inc. data base, Food Marketing Policy Center, Univ. of Connecticut

Figure 2. Price Index Trends for All Branded and Private Label RTE Cereal, 1993-1997 ^a

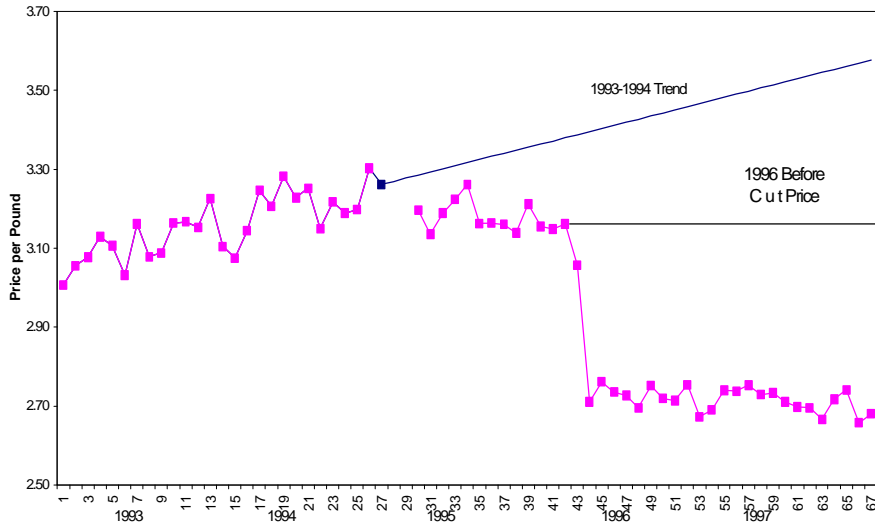


^a Observations are four week periods commencing January 1993 through March 1, 1998.

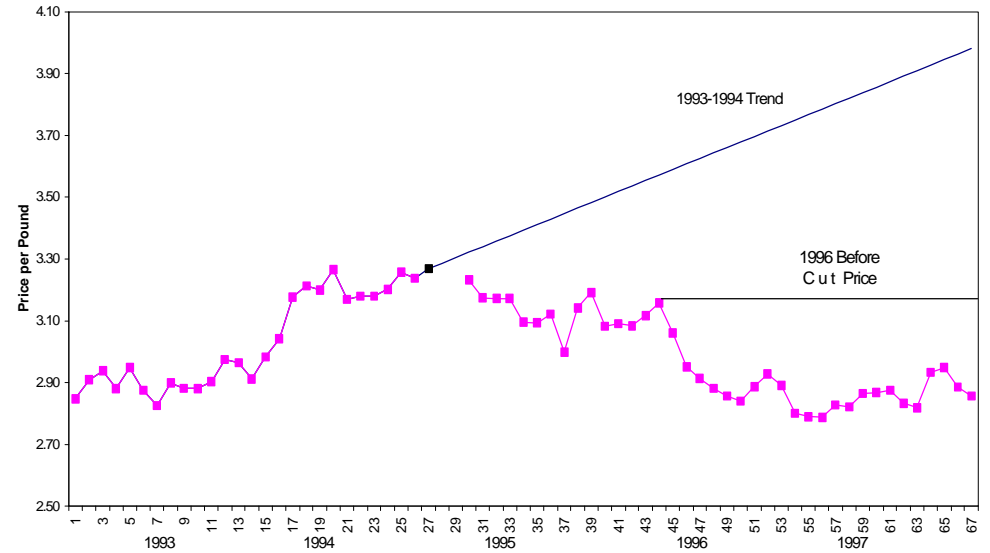
Source: Information Resources Inc. data base, Food Marketing Policy Center, Univ. of Connecticut

Figure 4. Actual and Predicted Prices, January 1993 through March 1, 1998 ^a

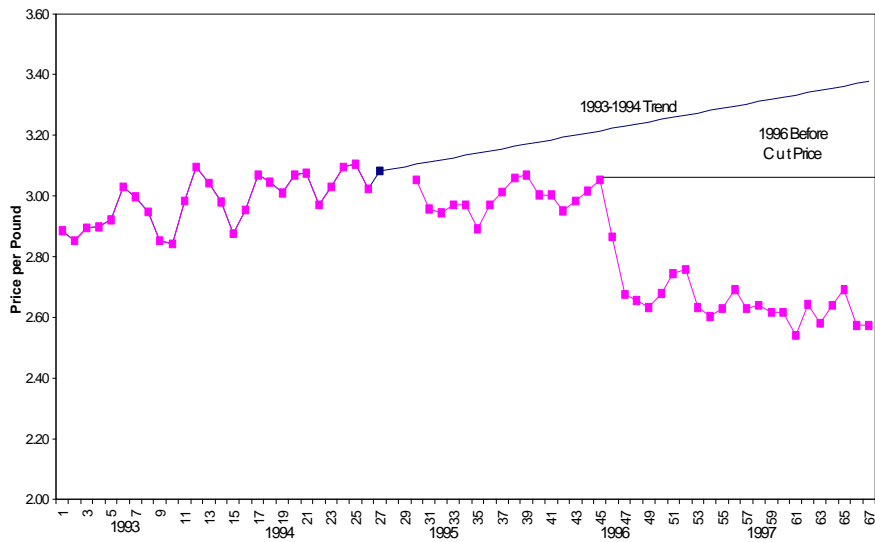
a) Kraft/Post



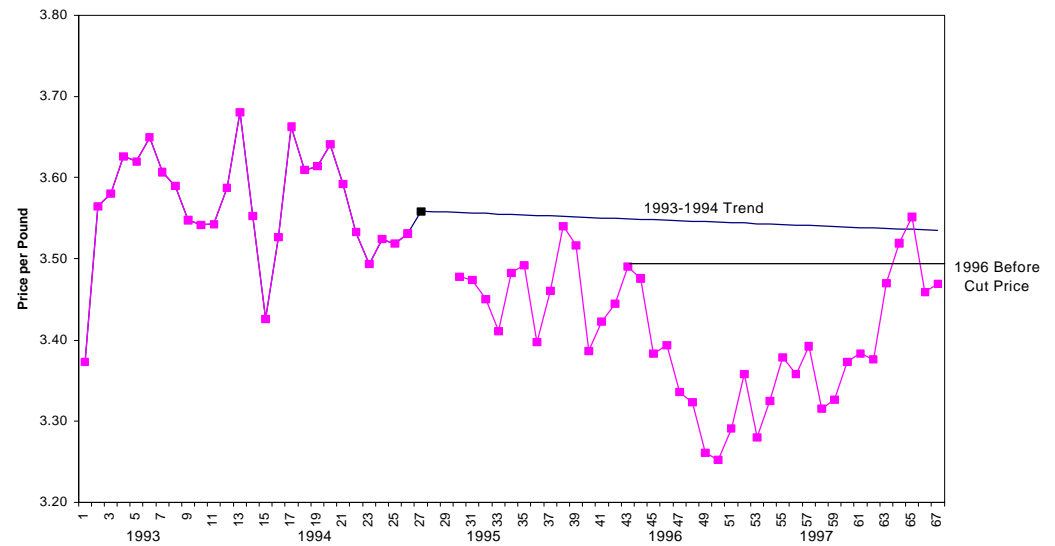
b) Kellogg's



c) Quaker

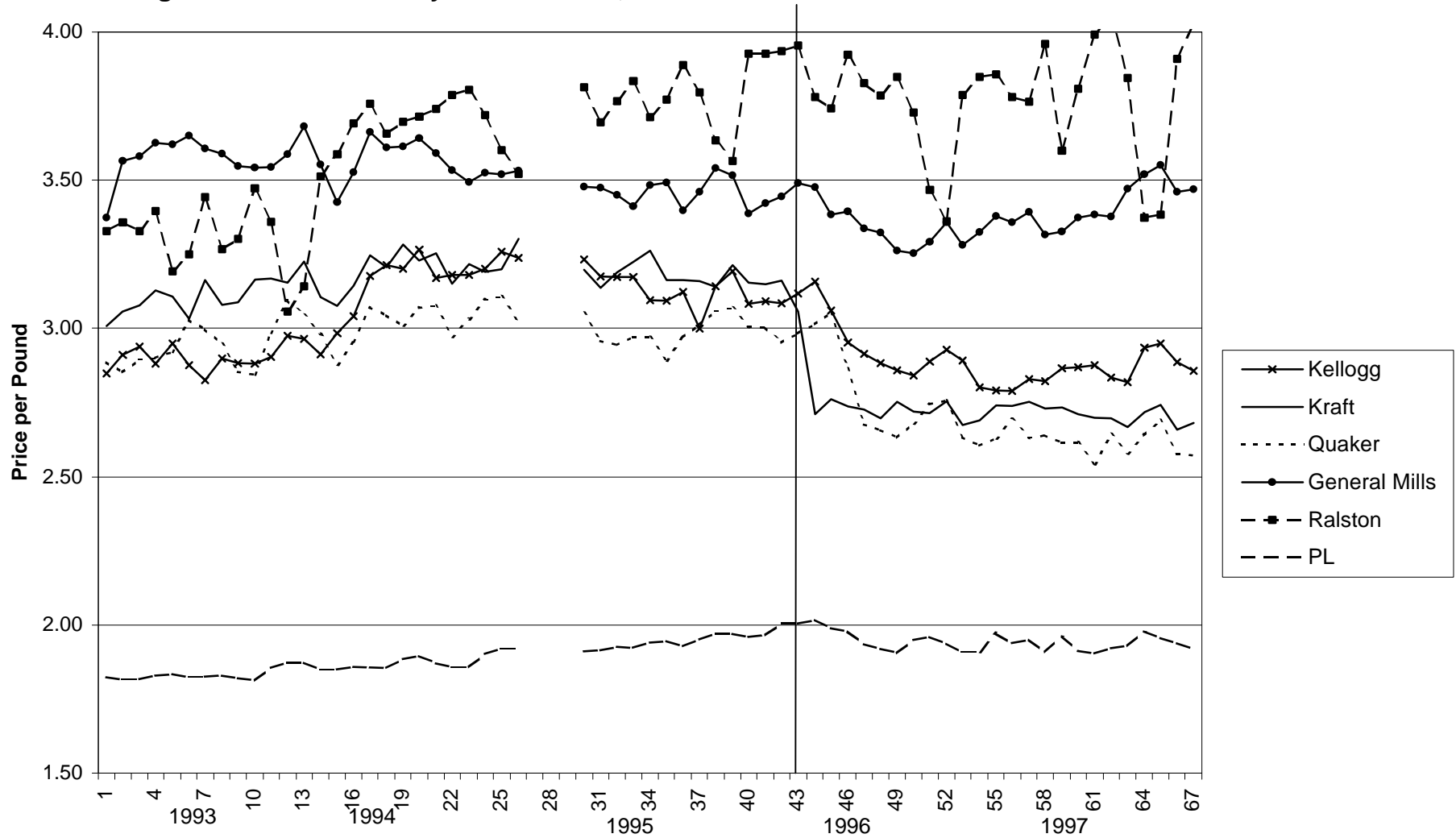


d) General Mills



^a Observations are four week periods commencing January 1993 through March 1, 1998
 Source: Information Resources Inc. database, Food Marketing Policy Center, University of Connecticut.

Figure 3. Price Series by Manufacturer; 1993-1997 ^a



^a Observations are four week periods commencing January 1993 through March 1, 1998

Source: Information Resources Inc. data base, Food Marketing Policy Center, University of Connecticut.