Responses to Hearing Testimony
and Subcommittee Members’ Questions*

by

Willard F. Mueller and Bruce W. Marion**

WP 114 December 1996

*On May 15-16, 1996, joint hearings were held by the Subcommittee on Livestock, Dairy and Poultry and the Subcommittee on Risk Management and Specialty Crops, Committee on Agriculture, U. S. House of Representatives to Review the Trading Practices and Procedures of the National Cheese Exchange. This paper responds to questions and testimony presented at these hearings, and to questions submitted by committee members after the hearings.

**The authors are Vilas Research Professor of Agricultural & Applied Economics emeritus and Professor in the Law School emeritus; and Professor of Agricultural & Applied Economics, University of Wisconsin-Madison.
# Responses to Hearing Testimony and Subcommittee Members' Questions

Willard F. Mueller  
Bruce W. Marion  
University of Wisconsin-Madison

## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. General Comments</td>
<td>1</td>
</tr>
<tr>
<td>A. The Efficient Market Theory and the NCE</td>
<td>2</td>
</tr>
<tr>
<td>B. Does Arbitrage Prevent Manipulation of the NCE?</td>
<td>4</td>
</tr>
<tr>
<td>1. Does Arbitrage Occur on the NCE?</td>
<td>5</td>
</tr>
<tr>
<td>2. The Speculative Trading Hypothesis</td>
<td>6</td>
</tr>
<tr>
<td>C. Is the NCE Primarily a Bona Fide Cash Auction Market or Is It a Place to Influence Cheese Prices?</td>
<td>7</td>
</tr>
<tr>
<td>D. Can the NCE Be Manipulated?</td>
<td>8</td>
</tr>
<tr>
<td>II. Response to Written Testimony of Betsy Holden, Kraft Cheese Division</td>
<td>10</td>
</tr>
<tr>
<td>A. Significance of Kraft Selling to Fill Bids</td>
<td>10</td>
</tr>
<tr>
<td>B. The Assertion that the Cheese Industry is Competitive</td>
<td>11</td>
</tr>
<tr>
<td>C. Entry Barriers and Proper Measure of Concentration</td>
<td>12</td>
</tr>
<tr>
<td>D. Do Leading Traders Successfully Countervail Kraft on the NCE?</td>
<td>13</td>
</tr>
<tr>
<td>E. Significance of Trading Volume</td>
<td>15</td>
</tr>
<tr>
<td>F. Kraft's Rationale for Switching from Net Buyer to Net Seller on NCE</td>
<td>15</td>
</tr>
<tr>
<td>G. Did Kraft Trade Against Interest?</td>
<td>17</td>
</tr>
<tr>
<td>H. Differences in Spot, CCC and NCE Prices</td>
<td>18</td>
</tr>
<tr>
<td>I. Criticisms of the Econometric Analysis</td>
<td>19</td>
</tr>
<tr>
<td>J. Mr. Gould's False Analogy</td>
<td>23</td>
</tr>
<tr>
<td>III. Responses to Additional Questions Submitted by Committee Members</td>
<td>25</td>
</tr>
</tbody>
</table>
Responses to Hearing Testimony and Subcommittee Members’ Questions

Willard F. Mueller  
Bruce W. Marion  
University of Wisconsin-Madison

In responding to testimony and questions, there are some basic points that are relevant to several comments and questions. Rather than reiterate these points several times, we begin our response with some General Comments in Section I. This is followed by responses to other testimony in Section II, and by our answers to additional questions asked us by Members of the Subcommittees in Section III.

I. GENERAL COMMENTS

The perception one has of the NCE strongly influences what one believes is likely or possible. For example, is the NCE a bona fide auction market of surplus cheese, or is it a place where a few firms meet each week to decide the national price of cheese for the following week? Is the NCE an “efficient market” in which manipulation is largely impossible because of arbitrage activities, or is it a market where manipulation is both possible and likely? These and other fundamental questions about the nature of the NCE as a market cut across many questions and comments at the Hearings. What follows are our conclusions as we examine various issues.

---

1 Joint Hearing on Cheese Pricing and the National Cheese Exchange before the Subcommittees on Risk Management and Specialty Crops and Livestock, Dairy and Poultry of the Committee on Agriculture, May 15, 1996.  
Hearings were held on the report: Willard F. Mueller, Bruce W. Marion, Maqbool H. Sial and F. E. Geithman, Cheese Pricing: A Study of the National Cheese Exchange (hereafter this document is cited as “Cheese Report”).

2 Vilas Research Professor Emeritus and Professor, respectively, of the Department of Agricultural and Applied Economics.
A. The Efficient Market Theory and the NCE

Economists often rely on the theory of efficient markets in evaluating the consistency of empirical observations with the predictions of economic theory. But theoretical predictions always depend on the assumptions of the underlying theory. Often the term efficient markets assumes that (1) traders do not have different comparative advantages in information acquisition, (2) traders are risk neutral, and (3) traders motivated by market arbitrage opportunities are sufficiently well financed.

These assumptions are not met among NCE traders. Market information is asymmetrically distributed among traders. Documents indicate that market leader Kraft believed its large size gave it a comparative advantage in acquiring market information, a belief apparently shared by other leading traders.

Cheese companies also appear to be risk averse, as is indicated by the widespread interest in an effective cheese futures market. Also, there is virtual universal use of NCE-based formula-pricing by cheese manufacturers and marketers, which guarantees that a cheese company will receive (or pay) the same price for bulk cheese as its rivals. Should a trader questioning the

---


4 Id, pp. 1584, 1585, 1614, 1615.

5 Cheese Report, Chapter 7 at note 93.

6 As Raikes points out, even if a non-trading user believes that the central market price is inaccurate, he may continue to use it because doing so reduces transaction cost. Cheese Report Chapter 3, text at note 31.
legitimacy of NCE prices decide to challenge Kraft’s price leadership, the trader must assume the risk of failure as well as incur increased information acquisition costs.

Finally, those traders most likely to challenge the accuracy of NCE prices were weaker financially than Kraft, as reflected by the size of their cheese business and by their profit margins. All leading cheese manufacturers and marketers, except for those with strong brands, have small profit margins and operate in an environment of volatile prices, conditions that encourage risk aversion strategies. Competitors to Kraft that have strong brands tend to have similar interests to Kraft regarding NCE prices, and hence are unlikely to counter Kraft’s selling pressure. Traders without strong brands have more vulnerable profit margins, are more likely to want to avoid greater risk, and hence are unlikely to challenge Kraft’s price leadership. Internal company memos and comments indicate the hesitancy to act counter to Kraft or Beatrice.

...[W]hen Kraft starts selling, people start looking at their inventories real carefully. I mean, they have a lot of respect [for Kraft]. You think supplies are tightening, and Kraft’s on that market selling. I assure you the CEO’s are going to their economists and saying, are you damn sure things are tightening?

[The reason] people look [to Kraft] is the respect the industry has for their economists and their ability to forecast. Now they’re the biggest company in the industry, very sophisticated in their forecasting, and they have a lot of human resources dedicated to it. (Cheese Report, Chapter 6 at note 94)

One large trader identified Kraft and Beatrice as market leaders, saying he deferred to their judgement. As he put it,

[Earlier this year Beatrice was bidding--we didn’t feel that the market would be going up, but...we don’t have the clout or the backing of a big inventory to offer a counter opinion. We just kinda sit there and scratch our heads and say, you know, we don’t understand why the market’s going up. And we can only assume that Kraft and the other people who do have these big inventories,...share the same opinion as Beatrice. (Cheese Report, Chapter 4 at note 94)
In sum, there are important asymmetries among NCE traders with respect to market information, risk and financial resources. Economists therefore cannot rely on efficient market theory in judging the appropriateness of NCE-generated prices. Moreover, because Kraft is the beneficiary of these asymmetries, they confer on it important strategic competitive advantages.7

B. Does Arbitrage Prevent Manipulation of the National Cheese Exchange?

Economists look to arbitrage as one weapon for insuring efficient markets. Simply put, arbitrage is the practice of buying in a “cheap” market and selling in a “dear” market. When practiced in sufficient volume, arbitrage will eliminate unwarranted price differentials between markets. Here we examine whether arbitrage in cheese markets prevents NCE prices from going below those warranted by market fundamentals in the aggregate cheese market.

About 90–95 percent of all bulk cheese is sold under committed supply contracts (usually of one-year duration) that are formula-priced off the NCE price. Cheese sold under these supply contracts is generally unavailable for arbitrage purposes. Arbitrage opportunities may exist, however, between the NCE and the spot market.8 If the spot-NCE price differential becomes “excessive,”9 traders may have an incentive to practice arbitrage. We therefore examine whether arbitrage does, in fact, occur in sufficient volume to keep in proper alignment NCE and spot prices.

---

7 Cheese Report, Chapter 7, Section J.

8 As used here, spot sales involve direct transactions at negotiated prices among cheese companies with short-term shortages or surpluses. The spot price is expressed as a premium or discount to the NCE price.

9 Differentials are excessive if they exceed the cost of arbitrage between the markets, plus a return for risk involved in the process.
1. **Does Arbitrage Occur on the NCE?**

The primary question at issue is whether arbitrage is effective in preventing *downward* manipulation of NCE prices. Because brokers, and the parties they represent, are the most likely arbitrageur candidates, we examined the extent of buying on the NCE by brokers and the circumstances in which they made purchases during 1988-1993.

Six brokers bought on the NCE in at least one year during 1988-1993, buying 103 (73 barrels and 30 blocks) carloads of bulk cheese, which represented 4.6 percent of all purchases on the NCE during 1988-1993. (Hereafter we limit the examination to barrels, which accounted for 67 percent of all NCE trades during 1988-1993.)

Brokers made only 26 trades to buy 73 loads of barrels. The trades occurred during 15 (5 percent) of the 313 sessions during 1988-1993. During the 15 sessions, the average spot-NCE price differential\(^\text{10}\) was 1.5¢/lb, during 12 of the sessions the price differential was 2.0¢/lb or less, and during three sessions it was 2.5¢/lb-3¢/lb. In contrast, in the 298 sessions in which brokers did not buy barrels, the spot-NCE price differential averaged 1.9¢/lb and ranged from 3¢/lb to 10¢/lb in 81 (27 percent) of the sessions.\(^\text{11}\) Thus, brokers bought when the price differential between spot and NCE was relatively small, the reverse of what would be expected if arbitrage was being practiced.

We next examined whether broker purchases were associated with a reduction in the spot-

\(^{10}\) The price differential is measured as the difference between the average Wisconsin Assembly Point price announced on Thursday and the closing NCE price on Friday.

\(^{11}\) The spot-NCE price differential for block cheese was 4¢/lb to 10¢/lb during 156 (50 percent) sessions.
NCE price differential during the trading session. This examination revealed that the differential decreased in three sessions, did not change in six sessions, and increased in six sessions.

To summarize:

- The volume of broker purchases was modest, implying that their transactions had virtually no impact on NCE prices.

- The relatively small price differentials existing when brokers bought implies that they were not engaging in arbitrage trading between the NCE and spot markets.

- The fact that broker buying was seldom associated with a narrowing of the price differential between spot and NCE prices implies that if brokers were engaged in arbitrage trading, their trading was insufficient to narrow price differentials.

2. The Speculative Trading Hypothesis

Brokers made virtually all of their purchases in periods when prices were rising, usually at the beginning of an upward price trend. These were frequently periods when Kraft was selling into a rising market, which it apparently did at times to "moderate" price rises. The brokers never bought during periods when Kraft was selling for the apparent purpose of topping the market, triggering or maintaining a price decline, or maintaining a price bottom. Thus, broker purchases did not occur during the latter periods in a price cycle when Kraft traded actively for

---

12 As measured by differences at the end of the prior session and end of the current session.

13 It is unlikely that these three trades were motivated by arbitrage opportunities, since the initial spot-NCE premium was small: the premiums in two trades were less than 2¢/lb and was 2.5¢/lb in the third.

14 Cheese Report, Chapter 5, Section E.

15 This excludes the purchases made during the two sessions when NCE prices were below the support level in 1988.
the purpose of shaping the pattern of prices.16

The pattern of broker purchases supports the hypothesis (suggested by some traders) that they bought primarily for speculative purposes in a rising market, anticipating that when an upward price trend got underway, the trend would continue long enough for the broker to make a purchase and dispose of it at a profit. If so, their expectations were realized, since in all but one case prices were higher within two weeks after a broker purchase.17

C. Is the NCE Primarily a Bona Fide Cash Auction Market or Is it a Place to Influence Cheese Prices?

While the NCE satisfies both of these functions, to some degree, we believe it is mainly the latter, a place where a few firms meet each week to establish cheese prices for the following week. The most compelling evidence in this regard is the perverse trading pattern on the NCE during 1988-93, and the circumstances in which the shift in trading patterns occurred.18 These trading patterns represent rational business conduct when viewed as strategic trading designed to maximize profits in the contract market. The participants on the NCE perceive trading activities as strategic action. The internal documents of large competitors of Kraft describe the NCE and trading activities as follows:

...Kraft seems to be taking the position that they will sell to prevent a panic market

16 Cheese Report, Chapters 5 and 6.

17 This exception occurred when the NCE price was below the support price.

In one instance, a broker bought early in a session and sold later in the same session. In another instance, a broker that bought in one week sold in the next. We did not identify any other instances where a purchasing broker subsequently sold on the NCE. This implies that the remaining purchases were made for the use of a specific client or were sold in the spot market.

18 Several big buyers (led by Kraft) off the NCE became sellers on the NCE when prices rose above price supports beginning in 1986 (Cheese Report, Chapter 5, Appendix A).
run up but will not stop an orderly market rise. (Cheese Report, Chapter 6 at note 55)

It appears that Kraft is continuing to over commit for both blocks and barrels so that they are in a position to cover their commercial orders as well as influence and trade at the Exchange. (Cheese Report, Chapter 6 at note 56)

The cheese available, especially barrels, continues light—with Kraft’s selective selling moderating the rise in markets. (Cheese Report, Chapter 6 at note 57)

Kraft selective selling continues to moderate the upward movement. (Cheese Report, Chapter 6 at note 59)

One source reported that Kraft might try to work on the barrel market today (Cheese Report, Chapter 6 at note 4).

A significant event occurred today. When the block was bid to $1.27 Kraft entered a bid for four cars of blocks at $1.27 and for five cars of barrels at $1.24/pound—Kraft’s message to the industry was that they were not going to sell any blocks or barrels at this point in time. (Cheese Report, Chapter 6 at note 71)

It looks like Kraft covered bids at the NCE on Friday [March 2] to moderate short term market pressures, while building their inventories for the fall. (Cheese Report, Chapter 6 at note 16)

Wayne [Kraft’s cheese purchasing director] believed that they will have more available in future weeks and that they don’t want to carry more than they need for their requirements[,] however, he wanted to have some trading inventory. (Cheese Report, Chapter 5 at note 20).

Beatrice and Schreiber will be on one side of the camp, whereas Kraft will be at the other side of the camp as to how they perceived the prices. (Cheese Report, Chapter 4 at note 93)

They [Kraft] buy a lot of their product based on the barrel market [NCE opinion]. Kraft doesn’t always sell their finished product based on the market at all; they have a fixed price. So as they are a bigger offerer on the Exchange and they drive...the cost lower for them, they’ve enhanced their margins because they sell at a fixed price. (Cheese Report, Chapter 4 at note 32)

**D. Can the NCE be manipulated?**

If Kraft attempted to depress NCE prices, what is to prevent other traders from
buying to counter Kraft's selling influence and to take advantage of a low-price opportunity? Why wouldn't a broker buy cheese on the NCE and turn around and sell it on the spot market? If the NCE membership represents 85 to 90 percent of the cheese industry, isn't national supply and demand represented by potential traders "waiting in the wings" even if these are not actual traders? These and other questions raise the question of whether the NCE can be manipulated.

The above quotations of other market participants suggest those participants believe the NCE can and is being manipulated to some extent. And, while Kraft maintains it cannot, the report developed by McKinsey & Co. for Kraft senior management clearly indicates the McKinsey consultants thought Kraft could influence NCE prices (e.g., one of the McKinsey's options for Kraft on the NCE was "Actively sell into the market to reduce price." A second option was "Sell no cheese on the Exchange, allowing prices to increase further...."). It is inconceivable to us that McKinsey & Company would suggest novel options that Kraft management had never implemented (Cheese Report, Ch. 6, fn. 28). It is similarly inconceivable that McKinsey & Co. would suggest options that Kraft management considered either impossible, unethical or illegal. Kraft management may not have followed the McKinsey recommendations. However, it is very clear from the McKinsey Report that its authors thought (1) the NCE price could be influenced, and (2) that Kraft had the power to influence the NCE price by its trading activity.

---

19 Kraft's former director of cheese procurement and inventory testified at the hearings that he did not follow these options. See our comments in Chapter 6 at note 28.
II. RESPONSE TO THE WRITTEN TESTIMONY OF BETSY HOLDEN, EXECUTIVE VICE-PRESIDENT AND GENERAL MANAGER OF KRAFT CHEESE DIVISION

Here we respond to several issues, characterizations and criticisms appearing in Kraft's written testimony. All references to this testimony are cited as Kraft.

A. Significance of Kraft Selling to Fill Bids (Kraft p. 7)

Kraft states that any allegation of manipulation by Kraft must address the fact that “Seventy percent of Kraft’s sales from 1988 to 1992 were agreements to sell cheese at the price bid by another member.” Kraft contends that such sales could not have manipulated prices because another member had already determined the value of the cheese. This reasoning ignores the context within which Kraft filled bids as part of an overall strategy of shaping the pattern of each price cycle. As illustrated in Report Figure 5.1a - 5.1c, Kraft filled bids (F) primarily during two phases of a price cycle: (1) at price bottoms, with the effect of maintaining the bottom for several weeks, and (2) during the subsequent price rise, where the effect was to “moderate” the rise. In some years, Kraft also filled bids at price tops, with the effect of topping the market shortly before triggering a price decline that Kraft maintained with successive offers (O) and reduced offers (R) to sell. There are only two ways to exert a negative impact on NCE prices: by

---


21 Figures 5.1a - 5.1c display only Kraft’s activity. For other leading traders’ activity, see Appendix Figures 5.1a - 5.2e.

22 See Cheese Report Chapter 5, Section E and Chapter 6, Section C.
filling bids and by making offers. Kraft used each of these, as appropriate, in shaping the pattern of prices over each price cycle.

B. The Assertion that the Cheese Industry is Competitive (Kraft pp. 8-10)

Kraft asserts that because cheese manufacturing and marketing is only moderately concentrated, it is impossible to manipulate the NCE because “the members of the NCE are the same buyers and sellers that operate in the cheese industry as a whole” and that “85 percent of the cheese industry’s manufacturing capacity is represented on the NCE” (Kraft, p. 8). This reasoning ignores the fact that the NCE is a relevant submarket that is distinct from the aggregate cheese market. Although all NCE traders operate in the aggregate market, few of those in the aggregate market ever trade on the NCE. Indeed, the same five leading seller-traders and five leading buyer-traders made 96 percent of all sales and 93 percent of all purchases on the NCE during 1988-1993.\(^{23}\) These same traders made 95 percent of the sales and 95 percent of the purchases during 1980-1987\(^{24}\) and more than 95 percent of the sales and purchases in 1994-1995.\(^{25}\) This illustrates that the same small handful of traders dominated trading activity over the

\(^{23}\) Cheese Report, Table 4.2.

\(^{24}\) Cheese Report, Table 4.1.

\(^{25}\) The main difference in trading patterns during 1994-1995 and during 1988-1993 is that although Kraft’s sales share decreased in 1994-1995, its two fellow seller-traders with coincident interests, Borden and Alpine Lace, increased their sales shares. As a result the combined sales of the three represented about 64 percent of NCE sales in 1994-1995. Additionally, Land O’ Lakes became a seller-trader during these years, giving these four firms about 72 percent of all sales in 1995. The conduct of Land O’ Lakes may reflect that, historically, it has had the strongest consumer brands of the cheese cooperatives, and accordingly has aligned itself more closely with Kraft than have either Mid-Am or AMPI. This may reflect that Land O’ Lakes maximizes profits at the cooperative level rather than maximizing the joint profits for farmer-members and the cooperative. Also, Land O’ Lakes, the largest butter marketer, occupies a dominant position on the Chicago Butter Exchange similar to that which Kraft occupies on the NCE.
past 16 years. The remaining sales and purchases were scattered among a few companies.

Although there were over 30 members of the NCE during these years, many medium and large cheese manufacturers and marketers never traded, or traded only insignificant amounts, on the NCE. This reflects the fact that these companies really do not have an incentive to trade on the NCE except to influence prices; if they have surplus cheese, they sell it in the spot market.  

C. Entry Barriers and Proper Measure of Concentration (Kraft pp. 8-10)

Kraft states that there are no barriers to entry on the NCE because membership costs only $600 a year, and there are no legal restrictions limiting trading. Kraft further argues that the increase in total trading in 1994 and 1995 is evidence that the NCE is “an easy market to enter or exit” (Kraft p. 9). Not true. As documented in Answer B above, the same small group of companies dominated trading in 1994-1995 as during 1980-1993. The relevant barrier to entry is not the cost of membership on the NCE or legal restrictions, but whether an entrant can trade without being disadvantaged relative to the most advantaged trader(s). As summarized above in I.A, the NCE does not meet the requirements of efficient markets, and Kraft enjoys significant competitive advantages in trading.

Kraft further states, “Even assuming the NCE is an isolated market, the proper measure of concentration is the capacity to trade.” Kraft states that the proper measure of concentration on the NCE is the total capacity of all 35-40 members, since “each member is equally able to trade.”

---

26 Report, Chapter 4, Section D.

27 Kraft states (Kraft, note 10) that industry participants do not invest in sunk costs. Our reference is to the costs that a company would have to make in order to not be at a strategic competitive disadvantage to Kraft. To accomplish this, firms must replicate the business characteristics that confer advantages on Kraft (Cheese Report, Chapter 7, text at notes 4-9).
By this measure concentration of the NCE is very low: HHI = 500.

This claim is based on an erroneous interpretation of the Justice Department Merger Guidelines. When, as here, the great bulk of short-term purchases and sales of cheese companies is constrained by long-term contractual agreements, it is most appropriate to measure concentration of actual transactions among actual market participants.²⁸ The basis for doing so here is buttressed by the fact that during the 16-year period, 1980-1995, the same small group of companies dominated trading.

When measured appropriately, NCE trading was extremely concentrated during 1988-1993: average seller concentration HHI = 5990; average buyer concentration HHI = 2729 (Cheese Report, Tables 3.3 and 3.4). Both seller and buyer concentration were well above the Justice Department threshold for identifying “highly concentrated markets” that are presumed “to create or enhance market power or facilitate its exercise.”²⁹

D. Do Leading Traders Successfully Countervail Kraft on the NCE? (Kraft 11-13)

Kraft asserts that other leading traders are large, sophisticated companies that recognize their self-interest and act accordingly (Kraft p. 11). True, those whose interests coincide with Kraft’s generally follow its lead, and some traders with conflicting interests may attempt to

---

²⁸ The Justice Department Merger Guidelines, 1992, Sec. 1.3, 1.4. The Merger Guidelines state explicitly that the Agency “will not include” a firm’s “sales or capacity to the extent that the firm’s capacity is committed so that it would not be available to respond to an increase in the price in the market” Id, Sec. 1.41.


²⁹ Merger Guidelines, 1992, Sec. 1.51
counter Kraft’s moves. Leading cooperative cheese manufacturers, whose interests often conflict with Kraft’s, apparently sought to countervail Kraft by becoming buyers on the NCE beginning in 1988. But merely recognizing one’s interests does not translate into achieving them. The amount cooperative manufacturers can buy on the NCE is limited because they are themselves net sellers of bulk cheese off the NCE. And though some other companies, e.g., Beatrice, may at times be opportunistic buyers of low-priced NCE cheese, their purchases also are limited in a given week, because they rely predominantly on long-term supply contracts for their surplus.

Kraft also disagrees that it has superior market information and asserts that, if it does, this would enhance competition and price discovery, not the contrary. Wrong on both counts. Kraft’s large, integrated operations from milk procurement to selling finished cheese to food retailers gives it superior knowledge of industry conditions. Indeed, a Kraft *Cheese Procurement Strategy* document states that among the implications of being a large buyer is the “Potential for better information of the industry as a whole.” It therefore included among its profit maximizing strategies the development of superior market information of supply and demand (Cheese Report, Chapter 6, note 93). Other cheese companies acknowledge Kraft’s superior information of market conditions (Cheese Report, Chapter 6 at note 94).

Nor is there support for Kraft’s contention that its superior information enhances competition and price discovery. Both efficient market theory and empirical analyses demonstrate that asymmetry of market information confers competitive advantages on firms with superior market information.30

Nor is Kraft correct in claiming that if NCE prices are artificially low they would be raised because buyers would acquire the low price cheese and sell it at a profit. In essence, the claim assumes that arbitrage is effective in preventing price manipulation on the NCE. For an examination of this hypothesis, see I.B. above.

E. Significance of Trading Volume (Kraft, pp. 15-16)

Kraft’s entire discussion in this section misrepresents our position. We never claim that Kraft always sought to lower price. Rather, our hypothesis (as suggested by trading patterns and trader motives, and as supported by our empirical analysis) is that Kraft sought to shape the pattern of NCE prices over each price cycle. In years when supplies are short, as Kraft assumes in its example, we would not expect it to “keep price unchanged,” as Kraft states we do (Kraft, p. 15). We recognize that Kraft must operate within the constraints of overall supply and demand conditions, as must any firm with market power.

F. Kraft’s Rationale for Switching from Net Buyer to Net Seller on NCE

Kraft gave two reasons for “switching” from a net buyer to a net seller on the NCE: (1) When price supports became inoperable in the late 1980s, Kraft could no longer dispose of surpluses to the CCC, and (2) Kraft then had to increase its committed supply of current manufacturing cheese to assure having an adequate short run supply. “As a result, in some years Kraft found itself with excess cheese....” (Kraft p. 17).

This raises two questions:

1. Why did Kraft become an exclusive seller on the NCE beginning in August 1986, not 1990-1991 when it had surpluses?

2. Why did Kraft sell so much surplus cheese on the NCE rather than deal with the problem in other ways?
1. Why Did Kraft Become a Seller-Trader in August 1986?

We acknowledge, as the Cheese Report documents, that Kraft had surplus raw material cheese during parts of 1990 and 1991. But this does not explain why Kraft was exclusively a seller on the NCE from August 1986, through 1993. From January to July 1986, when NCE prices were below the support prices, Kraft was exclusively a buyer on the NCE. Then, when prices rose above support levels on July 25, 1986, Kraft stopped buying and, beginning on August 22, 1986, became exclusively a seller-trader.\(^3\) It stretches credulity that Kraft's supply-demand situation changed so abruptly.\(^3\) It also stretches credulity that Kraft, during a 7 1/2 year period, never found it needed cheese and turned to the NCE to fill that need. Rather, Kraft's conduct beginning in August 1986 is consistent with the hypothesis that Kraft sold on the NCE in an effort to influence prices (Cheese Report, Chapter 5, Appendix A and Figure 5.3).

2. Why Did Kraft Sell Surplus on NCE Rather than Elsewhere?

Acknowledging that at times Kraft had unanticipated surpluses, why did it sell so heavily and persistently on the NCE? There are many disadvantages in selling on the NCE compared to alternative ways of dealing with a surplus problem.\(^3\) Indeed, it is difficult to identify any business reasons why a large company would ever sell on the NCE, other than to influence price (Cheese

---

\(^3\) Kraft bought 22 loads of blocks during August-October 1990. However, these purchases were made to influence the block-barrel price spread, not because Kraft needed cheese at the time; it was leading the market down during the period (Cheese Report, Chapter 5, Section E).


\(^3\) The alternative methods used by Kraft and other companies in dealing with surpluses include selling in the spot market, increasing inventories, and deprocurement, i.e., adjusting the amount accepted from suppliers (Cheese Report, Chapter 6).
Report, Ch. 4, Sec. D). Kraft justifies its persistent NCE sales with “a market of last resort” rationale; namely, it only sells on the NCE when a higher price is unavailable elsewhere. If correct, this constitutes a serious indictment of the NCE as a legitimate reference price for formula-pricing practically all bulk cheese sales. The price of “distress” sales is not an economically rational basis for formula-pricing 90 to 95 percent of sales in the contract market.

Finally, the market of last resort rationale runs counter to profit maximizing conduct and business experience in other industries, where sellers dispose of “distress sales” in spot markets to avoid public disclosure, lest the lower prices “spoil” the price for other sales.

G. Did Kraft Trade Against Interest? (Kraft, p. 19-24)

Kraft dwells at length in attempting to explain its persistent unprofitable NCE sales. In his testimony, Wayne Hangartner, Kraft’s former Director of Cheese Procurement and Inventories (who accompanied Ms. Holden), attempted to discredit Kraft’s own contemporary calculations (prepared according to Hangartner’s specifications) showing that during April and May 1991 Kraft had losses of 1.7¢/lb on NCE sales, whereas it had gains of 1.9¢/lb on spot sales and 1.1¢/lb on CCC sales (Cheese Report, Chapter 6, at note 48). He testified that the profit calculations for the CCC were in error because the cheese Kraft contracted to sell the CCC did not meet quality standards, and that Kraft ultimately took a loss on the sales. (He said the calculations for spot and NCE sales were accurate.) Mr. Hangartner further opined that the Professors didn’t understand what all industry members knew, namely, that given identical prices, it was more profitable to sell on the NCE than to the CCC.34

34 The additional costs of selling to the CCC evidently are reflected in the 2¢/lb differential in CCC and NCE prices. Kraft claims that “sales to CCC involve transaction costs of about 2 cents per pound” (Kraft prepared statement, p. 24).
This *ex post facto* explanation doesn’t stand scrutiny. First, when Kraft made the decision to sell cheese to the CCC in April and May 1991, it didn’t know it was selling off-grade cheese—hence the original Kraft calculations showing a profit. Second, other cheese companies obviously did not agree that it was less profitable to sell to the CCC than the NCE. From December 1990 through April 1991, Kraft sold 115 loads on the NCE and *all* other traders sold only six loads (two loads by Kraft’s fellow seller-trader Borden, and four loads by a broker). In contrast, *all* other traders sold 30 million pounds (750 loads equivalent) to the CCC during this period. Obviously, these other companies did not agree with Hangartner’s assertion that it was more profitable to sell on the NCE than to the CCC during this period.

Kraft cannot explain away the indisputable fact that month-after-month during 1987-1992 (the period for which Kraft prepared calculations), Kraft sold at a loss on the NCE while selling at a profit in the spot market and to the CCC (Cheese Report Chapter 4, Table 4.3, and Chapter 6). Nor can it explain why virtually no sizable company, other than Kraft and its two fellow seller-traders, *ever* sold large amounts on the NCE during 1988-1993. None of Kraft’s post hoc explanations can dispute the fact that Kraft purposely and consistently *chose* to sell on the NCE at a loss.

**H. Differences in Spot, CCC and NCE Prices** (Kraft, pp. 21-23)

Kraft argues that the persistent differences in the profitability of its NCE, spot, and CCC sales was caused by differences in “quality and other characteristics” and “distribution costs borne by the buyer and Kraft.” We acknowledge that such differences may exist for some transactions. But this does not explain the persistent differences in the *profitability* of Kraft’s sales to the various outlets. If this were an efficient market and Kraft a rational profit-maximizing seller, such
differences would be reflected in prices that equalized profitability among these outlets.

This has not happened! Why? A rational, profit-maximizing business does not needlessly squander resources. Kraft’s conduct is rational only when viewed as a strategy of incurring losses on NCE sales so as to increase profits by reducing the cost of its contract cheese bought off the NCE. The Report documents this process in a detailed examination of Kraft’s conduct during 1990-1992 (Cheese Report, Chapter 6). Thus, the persistent differences in profits between NCE sales and both spot and CCC sales is evidence that the NCE is not an efficient market and that Kraft does not seek to maximize profit on NCE sales.

I. Criticisms of the Econometric Analysis (Kraft 25-28)

Kraft contends that our econometric analysis is incorrect because it does not distinguish between the effects of Kraft’s sales and its uncovered offers. This separation is essential, says Kraft, because “uncovered offers cannot artificially depress prices below true value.”

1. On the NCE, uncovered offers and unfilled bids are the major reasons for changes in the NCE “opinion,” i.e., the closing price of each session. Kraft acknowledged the legitimacy of such offers in the prepared testimony of Betsy Holden when she explains how the opinion is established when the last action of the NCE is an unfilled offer: “In this circumstance, the uncovered offer best approximates the market price for cheese traded on the NCE. A similar logic applies on the reverse side to unfilled bids” (Kraft p. 5).

The great majority of trading activity involved uncovered offers and unfilled bids. Table 3.2 of the Cheese Report shows that, for the six years studied, consummated trades accounted for only 15 percent of all trading activity; the
remaining 85 percent were uncovered offers and unfilled bids. And, for those activities that resulted in a price change, 90 percent were either uncovered offers or unfilled bids. To focus only on completed trades would be to ignore the vast majority of trading activity and of price changes. Indeed, of the 313 trading sessions in 1988-1993, no barrels were traded in 181 (53 percent) sessions, and no blocks were trading in 194 (62 percent) sessions. Nonetheless, the price established in each session was used in setting the price for virtually all bulk cheese under contract.

2. Kraft apparently misunderstands our econometric model. The model was developed to explain NCE prices that are used in pricing 90-95 percent of all bulk cheese. Thus, several variables are included to capture national supply and demand factors. In addition, variables to measure leading buyer and seller trading activities are also included. If the NCE price is totally determined by supply and demand, we would expect the trading variables to be insignificant. In that case, we would conclude that firms have been unable to manipulate NCE prices.

Since the purpose of our model is to explain NCE prices and since uncovered offers and unfilled bids account for 90 percent of the price changes on the NCE, it would be absurd to focus only on completed trades. Clearly, those using NCE prices in formula-pricing bulk cheese recognize this fact of life.

Kraft’s contention that “uncovered offers cannot artificially depress prices below true value” may be true if one is referring to the perfectly competitive markets of economic theory textbooks where there are atomistic buyers and
sellers, perfect information, and perfect mobility of resources. However, this hardly describes the National Cheese Exchange which is highly concentrated in both buying and selling and has imperfect information. In perfectly competitive markets, price leadership and strategic actions are impossible. On the NCE, Kraft is a clear dominant seller and frequently acts as the price leader. The NCE is a small numbers market in which three sellers and five buyers accounted for over 90 percent of barrel and block sales, on average, during 1988-1993. Strategic behavior is the norm.

The NCE can best be thought of as a highly concentrated market with a dominant firm facing a concentrated oligopsony. Economic theory and empirical research indicates that the outcome of such markets will often not be a competitive price—the "true value" referred to by Kraft. Rather prices will depend upon the relative bargaining power of sellers and buyers, and whether there is a dominant firm price leader. A massive number of empirical studies indicates that highly concentrated markets generally do not produce competitive prices.\textsuperscript{35} Thus, while Kraft's contention seems plausible initially, it does not stand up under more careful analysis.

3. The results of Kraft's econometric model are reported in Exhibit 5 of Kraft's prepared testimony. The model distinguishes between those sessions when Kraft made sales and those when it made only uncovered offers. This model yields a

statistically significant negative coefficient on uncovered offers but not for sales. Kraft infers from these results that it could not have manipulated prices because "uncovered offers are offers at too high a price."

This is nonsense. As noted above, Kraft acknowledges that when the NCE opinion is based on an uncovered offer, this "best approximates the market price for cheese traded on the NCE." The universal use of such prices in formula-pricing 90 to 95 percent of bulk cheese should leave no doubt as to their legitimacy.

We treat Kraft activity involving sales and uncovered offers the same because we are testing the hypothesis that Kraft activity on the NCE is designed to shape the pattern of prices over each price cycle. Consider what happens during the periods when Kraft leads prices in the downward phase of a price cycle (Cheese Report, Chapter 5 and Figures 5.1a - 5.1c). It begins at the price top by filling bids. It then makes offers, which are initially filled. But once a downtrend is established buyer-traders cease buying and Kraft can accomplish its purpose by making offers and reduced offers. These are the sessions with the greatest price declines. In contrast, during the initial sessions, when Kraft meets the greatest buyer-trader resistance to its leadership, NCE prices typically are little changed. These facts explain why Kraft's model treating sales and unfilled offers differently has a much larger and statistically more significant coefficient on Kraft's offers than on its sales. Our model does not make the artificial distinction between Kraft offers that are filled and offers that are not filled. This is why our negative
coefficient on Kraft activity is smaller than Kraft's uncovered offer variable and larger than its covered offer (sales) variable. Simply put, ours is a somewhat weighted average of the two.

4. Finally, Kraft presents results of a so-called "expanded model." Without more information, we do not know the variables included, nor the way variables are measured. We emphasize, however, that Kraft has not commented on our expanded model. This model has a separate variable that includes the trading activity of Kraft and the other leading seller-traders, Borden and Alpine Lace, whose interests coincide with Kraft's. We also have a separate variable for the five leading buyer-traders. The results of the model support the hypothesis that the seller-traders, led by Kraft, have a statistically significant negative impact on prices, and that the buyer-traders have no statistically significant impact on prices. We believe this model tests relevant hypotheses and is correctly specified.

Kraft also criticizes our model because it uses monthly data rather than weekly data. We believe that it was most appropriate to use monthly data because weekly information was available for the NCE-based but not for the other variables. Hence, since NCE prices could be expressed in months, we deemed it most appropriate to develop a technique based on monthly data.

J. Mr. Gould's False Analogy

We do not comment on the prepared testimony of Richard J. Gould, president of the National Cheese Exchange, because it parallels some issues discussed by Kraft.

In testifying before the committees, Mr. Gould contended that the NCE is really little
different than other auction markets. Using his time-tested example, Gould said that trading cheese on the NCE is like trading AT&T stock on the NYSE. Whereas annual NCE cheese sales average about 0.2 percent of all manufactured cheese, daily AT&T stock sales on the NYSE average about 0.2 percent of total outstanding shares of AT&T stock.

While the analogy has a kind of common sense appeal, it does not stand scrutiny. First, Mr. Gould compares annual NCE sales with daily AT&T sales. Second, whereas 2-4 million AT&T shares are traded daily, no cheese is traded during most NCE sessions. And third, whereas thousands of individuals trade AT&T shares, the same small group of companies traded on the NCE during the entire 16-year period, 1980-1996 (see II.B. above).

AT&T trading would better resemble NCE trading if one individual would make about 75 percent of all trades each year, and that individual would have better market information and other advantages over other traders. Of course, these conditions would be sufficient cause for the NYSE to delist AT&T stock, as well as cause bells to ring at the Securities Exchange Commission.

---

III. RESPONSES TO ADDITIONAL QUESTIONS SUBMITTED
BY COMMITTEE MEMBERS

Q1.  Your econometric analysis combined sales and uncovered offers in one variable. Explain why the econometric analysis in your study did not use separate independent variables for sales and uncovered offers.

A.  See II. I. above.

Q1A.  Did you run any regressions in which sales and uncovered offers were separate independent variables? If so, what were the results?

A.  No.

Q1B.  If a regression with sales and uncovered offers as separate independent variables shows that only uncovered offers are statistically significant, how is it possible to infer that the uncovered offers caused artificially low prices on the NCE, given that uncovered offers are offers to sell at too high a price?

A.  We have answered this in some detail above at II.I. Basically, we disagree with Kraft’s contention that “uncovered offers are offers to sell at too high a price,” and that therefore NCE prices based on uncovered offers cannot be used as the price of cheese. As Kraft witness Betsy Holden put it, if there is an uncovered offer below the last price at which a trade was consummated on the Exchange, “the uncovered offer best approximates the market price for cheese traded on the NCE. A similar logic applies on the reverse side to unfilled bids” (Kraft, p. 5). The proof of the pudding on this point is that virtually all contract cheese transactions are reference priced off the NCE weekly opinion, whether the opinion is based on a transaction, an unfilled bid or an uncovered offer. For the entire cheese industry, the price of bulk cheese each week is based on NCE prices, even though during 1988-1993, there were no barrel sales in 58 percent of the NCE sessions and no
block sales in 62 percent of the NCE sessions.

Q2. **Your econometric analysis analyzes Kraft’s trading activity, but does not factor into the equation the trading activity of other traders. False indications of statistical significance sometimes are found because important variables are not included in econometric analysis. Why did you not include the trading activity of other participants on the NCE in your econometric analysis?**

A. In our complete model, we have factored in the trading activity of Kraft, the two other leading seller-traders, and the five leading buyer-traders. See our discussion of the econometric model in II.I. above.

Q3. **Dr Keith Collins of the U.S. Department of Agriculture criticized your econometric analysis’s treatment of the variable for Kraft’s trading activity. He stated that the variable did not weigh Kraft’s activity based on how active Kraft was on the National Cheese Exchange. He noted that the variable did not distinguish between whether Kraft was shooting a “BB gun” or unleashing a “nuclear weapon.”**

A. We do not understand that Dr. Keith Collins made such a criticism of our econometric analysis. As we recall, he was responding to a member’s question regarding the advisability of using a weighted sales variable, in which the member used the quoted words in the above question. Dr. Collins answered by saying, in effect, “that would be an alternative way of measuring the variable.” He never said it was a superior or even a preferred measure.

We believe that weighting each session by the volume of Kraft sales is a totally inappropriate way of measuring Kraft’s impact on NCE prices. Typically, Kraft’s sales are largest during its initial effort to top a market, to trigger a price decline, to maintain a price bottom, and to slow a price rise (Cheese Report, Chapter 5). For example, once Kraft has established a downward price trend, buyer-traders generally stop covering offers, and Kraft may maintain the trend with offers alone. It would be wrong to weight
Kraft's initial activity more heavily than subsequent activity during the downtrend. The reason Kraft's sales are larger initially is that it is meeting some resistance. Once the resistance is overcome, Kraft may pursue its strategy without meeting further resistance. Therefore, to measure Kraft's success in shaping the pattern of prices over each price cycle, it is most appropriate to use a binary variable that measures whether Kraft is active in a session.

Q3A. Why did you define Kraft's trading activity in the manner you did?
A. We did not differentiate between those trading sessions during which Kraft made sales (by filling bids or having its offers covered) and those sessions in which all its offers were left uncovered. We believe this measure of Kraft's activity is the most appropriate definition for testing the hypothesis that the net effect of Kraft's total trading activity had a negative impact on NCE prices, as discussed in the above answer. For a discussion of the econometric model, see II.I. above.

Q3B. Did you run any regressions using the approach suggested by Dr. Collins? If so, what did the results show?
A. We did not run any regressions that used weighted sales, the approach suggested by Kraft, because there is no defensible hypothesis for doing so. See II.I above.

Q4. Your testimony references trading by Pizza Hut on May 13, 1994, a day in which the market fell by around 10 cents. Pizza Hut attempted to sell three carloads that day. You state that this is evidence of the "thinness" of the Exchange.

Q4A. Is it your position that the National Cheese Exchange is never liquid enough to handle the sale of three carloads of cheese without significantly affecting the market price?
A. We would never be so foolish as to say never. The NCE may occasionally be sufficiently
liquid that significant volumes are sold with little if any change in prices. But these tend to be exceptions. Indeed, in 84 percent of the weeks during 1988-1993, ten or fewer carloads of barrels were sold. In only 8 percent of the weeks were over 20 carloads sold, which totalled nearly 50 percent of all barrels sold during this six-year period. During 58 percent of the weeks, no loads of barrels were sold. Thus, very small volumes are the rule, not the exception on the NCE.

Table 3.2 in the Cheese Report also documents that price changes on the NCE usually occur without any completed trades. Only 10 percent of the price changes for either barrel or block occurred with trades; the remaining 90 percent occurred without trades. Figure 3.1 indicates the large price movements that occur on the NCE with few or no trades. This is a very volatile market.

Q4B. During the week of May 20, 1994, the week after the example cited in your testimony, 23 carloads of block cheese were sold on the Exchange (including four by Pizza Hut). Block prices declined by only 0.25 cents. During the week of June 13, 1994, 23 more carloads of block cheese were sold on the Exchange and prices rose by .05 cents. How are these examples consistent with your apparent assertion that the Exchange is too "thin" to handle sales of three carloads of cheese?

A. May 20, 1994

NCE trading on May 20, 1994, is an example of strategic trading by several participants. Following the NCE opening at 10:30 a.m., successive offers to sell were made--driving down prices. During the first 18 minutes of trading, block prices dropped 2.75¢/lb, with no block sales. Kraft offered both barrels and blocks, and Pizza Hut had unsuccessfully offered four loads of blocks. At 10:19 a.m., Beatrice, shortly joined by Mid-Am, began buying blocks until the two had purchased 23 loads, causing block prices to rebound to
$1.195/lb by the close—this was 0.25¢/lb below the opening price. During the price rise, Pizza Hut sold its loads of blocks.

Significantly, the reversal of block prices occurred after Kraft had stopped offering blocks at 10:18 a.m. This suggests that Beatrice and Mid-Am interpreted Kraft’s inaction as a signal that it would not resist a rise in price. However, Kraft’s trading in barrels, the only such trader, did have the effect of lowering barrel prices 2.75¢/lb during the session. Only one of Kraft’s barrel offers, involving one load, was covered.

In sum, trading in barrels on June 20, 1994, supports the thin market hypothesis, whereas the unusual pattern of block prices seems better explained in terms of strategic actions.

June 17, 1994

The question incorrectly identified the date of this trading session as June 13, 1994.

June 17, 1994, was the initial week of an upward price trend. (NCE prices had bottomed during the prior four weeks.) It is not uncommon in the initial days of such an upward price trend for the leading buyer-traders to acquire cheese as they initiate and maintain an upward trend (Cheese Report, Chapter 5). This trend did not peak until September 1994.

The trading activity on June 17 apparently was strategically motivated. Beatrice, Mid-Am and AMPI, were the sole buyer-traders on June 17 and in succeeding weeks. They bid up NCE prices with the implied approval of Kraft, which did not participate in trading on June 17 nor in succeeding weeks. This scenario occurred frequently in upward
price trends. If Kraft did not sell into rising prices, buyer-traders interpreted such inaction as implicit approval of the rise (Cheese Report, Chapter 5, Section E).

Q5. Your study references the Department of Justice/FTC Horizontal Merger Guidelines as authority for the proposition that the NCE is a concentrated market.

Q5A. The Horizontal Merger Guidelines require a “relevant market” to be defined before concentration can be measured. Explain how, consistent with the Merger Guidelines, the National Cheese Exchange can be defined as a “relevant market.”

A. The Merger Guidelines cannot be used for auction markets where the price being determined is used to formula-price 90 to 95 percent of the transactions in the aggregate market, as is the case with the NCE. The Merger Guidelines rely on the cross elasticity of demand (or supply) between alternative product and geographic markets. But this requires that firms respond to a hypothetical monopolist’s action because of the degree of substitution. In the cheese industry, committed sale prices are locked to the NCE, and not because of cross elasticity of demand, but because that is the industry’s conventional practice.

To use the DOJ procedure for the NCE, one would have to ask: If Kraft was a monopolist on the NCE, could it profitably reduce cheddar barrel and block prices by a “small but significant and nontransitory” amount. Such a price reduction would have no effect on the supply of cheese to Kraft under committed supply arrangements, since these are formula-priced off the NCE. A drop in the NCE could affect the supply of cheese Kraft is able to buy in the spot market. Although the spot market price tends to move parallel to the NCE price, at times the two prices may diverge substantially (I.B. above).

To calculate the profitability of a price drop by a monopolist on the NCE one
would have to calculate the impact of such a price drop on the monopolist’s procurement costs, especially that purchased under committed supply arrangements. We estimated that if Kraft was successful in reducing the NCE price by only 1 cent per pound, it would save over $10 million annually in raw material procurement costs (Cheese Report, Chapter 7, Section F). We believe there is compelling evidence that Kraft was successful in depressing NCE prices below a competitive level.

Q5B. Can you cite any antitrust precedent for defining a centralized cash exchange as a separate “relevant market”? If not, what basis is there for defining the National Cheese Exchange as a “relevant market”?

A. No, we are not familiar with such an antitrust precedent. We believe that our answers to 5A above and 5C below provide a basis for defining the NCE as a relevant market.

Q5C. The Merger Guidelines require a market definition to be expanded if sellers find it unprofitable to raise prices by 5 percent because buyers would react to the price increase by substituting supply from elsewhere. In defining the National Cheese Exchange as a separate “relevant market,” is it your view that buyers of cheese on the Exchange would not substitute spot purchases if the price on the Exchange rose by 5 percent in relative terms?

A. Although the Justice Department will in most instances use a price increase of 5 percent, in applying the SSNIP standard, the increase actually used “will depend on the nature of the industry, and the Agency at times may use a price increase that is larger or smaller than five percent” (Section 1.11). Here, a difference of less than 5 percent is appropriate because bulk cheddar cheese is a commodity with narrow profit margins. Hence, a price difference for bulk cheese in the order of 1 to 3 cents per pound has a very significant impact on net profits.

In the case of the NCE, the question is whether, if Kraft and fellow seller-traders
depress NCE prices by 1 to 3 cents, cheese manufacturers would divert supplies to the spot market. But, the perverse trading pattern on the NCE since 1988 makes this impossible since cheese manufacturers such as the large cooperatives have been buyers not sellers on the Exchange.

In addition, competitive reactions to a drop in the NCE price must consider the consequences of the formula pricing arrangement in cheese. A very small drop in NCE prices can have a huge effect on Kraft's procurement costs because committed supply prices are tied to the NCE (see Q5A).

There also is strong evidence that arbitrage is not effective in preventing significant price differences between NCE and spot market prices (see I.B.1).

Q5D. The Merger Guidelines provide that capacity to sell, and not actual sales, is the proper measure of market share in many circumstances. Explain why, consistent with Merger Guidelines, capacity to sell is not the proper measure of market share on the NCE?

A. It is inappropriate to apply the "capacity to sell" standard in examining whether the NCE is a relevant market. See II.C. above.

Q6. Please describe the amount and source of all funding of the Cheese Pricing Study.

A. Is the Food System Research Group a private organization? Please describe the organization.

B. Did either of you receive any compensation specifically for researching and producing the Cheese Pricing Study? If so, describe the amount and source of this compensation.

C. Do either of you receive compensation from the Food System Research Group? If so, describe the amount and source of this compensation.

A. The Food System Research Group (FSRG) is a small research group within the
Department of Agricultural and Applied Economics of the University of Wisconsin-Madison. The Group has existed for roughly 20 years and has conducted a large number of research projects on the organization and competitive performance of the U.S. food system.

In recent years, the Group has relied on annual special grants in the USDA budget for most of its funding. In addition, the University of Wisconsin provides the salary of Professor Marion, Director of the Group, from state funds, as well as providing offices and other facilities.

Because the four authors of the Cheese Pricing Study were involved in several research efforts during 1992-1995, we cannot provide a precise figure on the cost of that study. However, we do know the salaries paid from the FSRG budget to all those who worked on the Cheese Pricing Study and have estimated the portion devoted to that.

<table>
<thead>
<tr>
<th>Salaries Paid by U of Wis Food System Research Group 1992-1995</th>
<th>Estimated Portion Devoted to Cheese Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mueller $247,400</td>
<td>$191,000</td>
</tr>
<tr>
<td>Marion 74,000</td>
<td>56,000</td>
</tr>
<tr>
<td>Sial 116,800</td>
<td>88,000</td>
</tr>
<tr>
<td>Geithman 191,700</td>
<td>124,000</td>
</tr>
<tr>
<td>Hengehold 28,000</td>
<td>28,000</td>
</tr>
<tr>
<td>Crawford 74,600</td>
<td>37,000</td>
</tr>
<tr>
<td>Total $732,500</td>
<td>$506,000</td>
</tr>
</tbody>
</table>

The Cheese Pricing Study was one of the research efforts of the Food System Research Group at the University of Wisconsin-Madison. Professors Mueller and Marion were employed by the University to conduct this and other research.
Q7. Keith Collins of the U.S. Department of Agriculture noted in his testimony that if the industry replaced the NCE with spot transactions as a reference price for off-exchange transactions, the industry would likely be more susceptible to manipulation (and concerns about the integrity of the referenced prices), not less. It would appear easier to manipulate individual spot transactions (or to be dishonest) in reporting prices of such transactions) than to manipulate trading on the NCE. Dr. Collins's argument also is consistent with the great mistrust of the Wisconsin Assembly Point prices expressed at the hearing. Explain why replacing the NCE with spot transactions would not increase the risk of manipulation.

A. The question mischaracterizes Dr. Collins' point regarding the possible manipulation of a reference price based upon spot transactions. Dr. Collins was clearly referring to the current Wisconsin Assembly Point prices, not an expanded and more accurate spot market price report. Dr. Collins commented, "...the Wisconsin Assembly Point price might also be suspected of manipulation at some point" (Collins, prepared testimony, p. 6).

In Chapter 7 of the Report, we make it clear that the current WAP would not be an acceptable alternative to the NCE (see Price Report for Direct Spot Transactions). However, a national spot market price report is clearly feasible. The USDA National Agricultural Statistics Service (NASS) already collects monthly production data from nearly all cheese manufacturing plants. It would be a relatively minor step for NASS to collect weekly price information on spot sales from these same plants. If necessary, such price reports could be made mandatory as is the case for some products in California.

Such an enlarged spot price report would better reflect the overall structure of cheese manufacturing and marketing, which is relatively unconcentrated, and therefore less subject to manipulation. To influence the NCE, a company only needs to affect a tiny portion (0.2%) of the total market for 30 minutes each week in Green Bay, Wisconsin.
To influence a national spot price report, as we envision it, a company would have to influence 5 to 10 percent of the total cheese market during every day of the week and in all geographic areas. Manipulation would be much more difficult. Also, the transparency of all NCE trading facilitates price manipulation, whereas the participants in individual spot trades are not reported publicly.

Q8. **Why is it that no participant on the National Cheese Exchange agrees with your conclusion that the Exchange has been manipulated? Is it not likely that at least one trader on the NCE would complain about manipulated prices if in fact it was occurring?**

We disagree with the statement that “no participant on the National Cheese Exchange agrees with [our] conclusion that the Exchange has been manipulated.” Only a minority of members have expressed their views publicly. However, this question is related to a more general point made by Dr. Keith Collins in his testimony:

> Given the broad use of Exchange prices by the cheese industry and the apparent lack of interest in developing an alternative price discovery mechanism, it would seem that cheese market participants believe that Exchange prices provide an ‘acceptable’ indicator of market conditions for cheese. (Collins, prepared testimony, p. 4)

The primary reason cheese companies and their customers use NCE prices for formula pricing is that the practice reduces transaction costs and ensures that buyers and sellers pay and receive the same price as their competitors. There currently is no viable alternative. This is not unique to the cheese industry. In many commodity markets, formula pricing is commonly used and strongly embraced. There are several points that need to be noted:

1. The continued use of a reference price may primarily stem from industry custom, the lack of better alternatives, and uncertainty by the industry regarding the adequacy of a particular reference price. The NCE has been used for formula
pricing bulk cheese for decades. Although the NCE has been much criticized (Cheese Report, Chapter 3), until our Cheese Report, there was no empirical evidence that NCE prices did not appropriately reflect national supply and demand. And, over the years, there have not been viable alternatives for formula pricing cheese.

Formula pricing in the beef industry provides a useful comparison. For decades, the Yellow Sheet was used to formula price wholesale beef carcasses and primal cuts. Only after a study revealed major shortcomings to the Yellow Sheet procedures was an alternative developed (USDA's "pink sheet"). With both buyers and sellers aware of the weaknesses of the Yellow Sheet and the availability of a superior alternative, the industry gradually shifted to the Pink Sheet for reference prices.

b. There is enormous inertia associated with prevailing formula pricing systems. Both buyers and sellers are accustomed to existing systems. Even if individual companies are dissatisfied with a reference price, they are unlikely to try to change unless several of the leading companies take the initiative.

c. The notion of eliminating a reference price, such as the NCE, on which the industry has relied for decades can be a terrifying idea to industry participants. Until a superior alternative reference price is available, we expect the largest companies in the industry will continue to use and defend the NCE.

d. Even if there is a belief among certain traders that the NCE is manipulated and sometimes fails to reflect appropriately aggregate supply and demand, there is little
incentive to speak up. Firms that are primarily cheese manufacturers and the farmers that supply them are the ones most likely to be hurt by depressed NCE prices. For example, AMPI, the nation’s largest cheese manufacturing cooperative during 1988-1993, would be a logical candidate to speak up. But Kraft is AMPI’s largest customer. Would AMPI risk offending its major customer and upset a comfortable industry arrangement? In addition, the major traders on the NCE have been dealing with each other week in and week out for years. Would agreeing with our report be viewed as betraying the “family” that has met weekly for years in Green Bay, Wisconsin?

e. The unanimity of responses by some leading companies during the course of interviews suggests that they may have discussed with the Exchange president and others the “strategy” to follow in response to the investigation by the Wisconsin Department of Agriculture. This inference is supported by an internal memorandum of Kraft which stated, in part:

The National Cheese Exchange (NCE) is under investigation by the Wisconsin Department of Agriculture.... There are also rumors that Congress, the House Subcommittee in Livestock Dairy and Poultry, may hold a hearing on the NCE. We have met with the NCE to discuss a strategy and we plan to meet with other members when appropriate. (Cheese Report, Chapter 4, note 7)

One must be naive to believe that efforts were not made to present a united front in this matter. For example, in a response to a 1989 investigation by the Wisconsin Justice Department, NCE president Richard Gould made various suggestions to NCE members “to counteract attempts to portray the NCE as being
involved in some sort of evil scheme to either raise or lower cheese prices.”

(Richard J. Gould, president, National Cheese Exchange, “To All Members of the NCE, April 21, 1989.”) Among President Gould’s suggestions were:

- Those who rely on Exchange transactions...should become members of the NCE and support it by paying dues and attending trading sessions....

- Avoid statements and correspondence that imply that certain individuals on the Exchange are responsible for a change in cheese prices. Do not try to take credit for a change in the cheese market....

- Attend trading sessions and utilize the facility of the Exchange for filling your needs and disposing of your surplus. The more trading volume we have, the less our critics can use the “thin market” argument....

Q9. If prices were manipulated on the NCE lower than proper pricing for cheese, explain why no buyer “arbitraged” the artificially low NCE price by snapping up the bargain cheese and reselling the cheese at market prices. Would that not have been a profitable strategy? Why would there not have been at least one buyer able to identify the bargain cheese and enjoy profits from acquiring cheese in this manner?

A. See the discussion at I.B. above.

Q10. Kraft seems to suggest in their testimony that the NCE is neither a thin nor a concentrated market because there are lots of traders “waiting in the wings” who have the capacity to trade. Is this an accurate statement or is there a difference between the legal capacity to trade and practical capacity to trade since some NCE members like Foremost and Sargento simply avoid trading.

A. As we explain in IIB. above, there is no factual basis for the claim that there are many traders “waiting in the wings” with the capacity to trade on the NCE. There is a wide gulf between the legal capacity to trade and the practical capacity to trade, as demonstrated by the fact that the same small group of traders has dominated trading over the 16-year period, 1980-1995. Numerous large and medium-size companies never have traded on the NCE in any significant volume during this period.