

50j

Governor's Task Force on Cheese Pricing

January 2, 1997

The Honorable Tommy G. Thompson
Governor
115 East
State Capitol
Madison, WI 53702

Dear Governor Thompson:

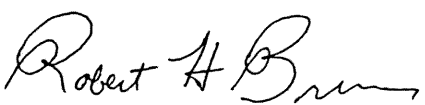
I am submitting the report of the Governor's Task Force on Cheese Pricing.

The report's recommendations address federal milk pricing policy, cheese market information services, and regulatory oversight of the National Cheese Exchange. Addressing these issues will require federal action, and the Task Force urges you to relay these recommendations to the appropriate federal authorities.

The Task Force has also made recommendations regarding the operations of the National Cheese Exchange. We encourage you to forward these recommendations to the Board of Directors of the Exchange. We recognize that the Exchange is a private, non-stock corporation whose by-laws and rules regulating trading are governed by its member-elected board. These recommendations are intended to help improve public confidence in the Exchange and to broaden participation in and access to trading on the Exchange.

On behalf of the members of the Task Force, I would like to thank you for the opportunity to assist you in your efforts to improve the current cheese pricing system.

Sincerely,



Robert H. Burns
Chair

Introduction

The Governor's Task Force on Cheese Pricing was named in May, 1996, amid ongoing concern about the cheese pricing system, and the influence of cheese prices on the price for manufacturing milk. The Task Force's charge was to "make recommendations to improve the current cheese pricing system for the benefit of the dairy industry and consumers."

The Task Force held five meetings between July and December 1996. Membership included dairy producers, cheese makers, dairy marketers, and industry and state leaders. A complete list of members is included in Appendix 1. The meetings were well attended by dairy producers, farm and local media, and representatives from state and federal dairy related groups and agencies.

The Task Force recommendations address the link between National Cheese Exchange prices and milk prices, alternative pricing mechanisms for cheese and milk, cheese market information, and oversight and operating rules of the National Cheese Exchange.

Background

Changes in U.S. dairy policy have resulted in market forces playing a larger role in pricing milk and dairy products. For most of the period from the early 1960s to the late 1980s, federal dairy price supports were instrumental in dairy pricing. Except for brief periods, cheese, butter, and nonfat dry milk prices were at or close to government purchase prices. Consequently, milk prices were driven by support prices, and price changes were small and predictable.

Large milk surpluses and resulting large price support purchases and high treasury costs led to pressures to reduce the role of government in pricing milk. The support price for milk was reduced from \$13.10 per hundredweight in the early 1980s to \$10.10 in the early 1990s. The support program became more of a safety net than a driver of milk prices. Manufacturing milk prices since the late 1980s have been consistently above the federal support level. More important, prices have been considerably more volatile.

With market forces replacing the government as the driver of milk and dairy product prices, attention in the dairy industry focused on how market prices were determined. The Basic Formula Price (BFP) is used in the Federal Milk Marketing Order system to establish minimum prices for milk throughout the U.S. Cheese dominates the use of milk in Minnesota and Wisconsin, where the BFP is derived. Cheese prices are determined in large part by weekly price "opinions" for block and barrel cheddar cheese. These opinions are arrived at by observers

of transactions on the National Cheese Exchange (NCE), a wholesale cash market located in Green Bay, Wisconsin.

Members of the National Cheese Exchange trade cheese by open outcry in weekly trading sessions that last about one-half hour. On an average annual basis, consummated sales on the NCE represent from less than 0.5 % to 2% of annual cheddar cheese production. But the price opinions based on NCE transactions are extensively used as reference prices in purchase contracts and in spot market transactions for all types of cheese.

In other words, trading activity on the NCE has an enormous influence on cheese prices, and, because of the prominence of cheese in establishing the BFP, on milk prices throughout the U.S.

The impact of the NCE on regulated milk prices underlies public policy concerns regarding NCE trading activities. A recent investigation of the NCE involved a comprehensive economic study conducted by researchers affiliated with the University of Wisconsin-Madison Food Systems Research Group at the request of and in cooperation with the Wisconsin Department of Agriculture, Trade and Consumer Protection, under its authority to investigate business practices in the state.

A report released March 19, 1996, detailed the findings of the study.¹ The report concluded that, "As currently organized, the Exchange appears to facilitate market manipulation." The report also concluded that ". . . the National Cheese Exchange was not an effectively competitive price discovery mechanism during 1988-93." Several specific problems with the NCE were identified along with related suggestions for alleviating competitive concerns.

The report stimulated widespread interest and debate about the NCE and cheese pricing, including a Congressional hearing in May, 1996. NCE traders vehemently denied allegations of misconduct. Along with some other industry participants, traders claimed that the Exchange accurately reflected supply and demand conditions for cheese.

In response to waning public confidence in the NCE, especially in its role as a driver of regulated milk prices, Wisconsin Governor Tommy G. Thompson convened a Task Force on Cheese Pricing. Members were chosen to reflect the various perspectives of the dairy industry. The Task Force was charged with making recommendations to improve the current pricing system for the benefit of the dairy industry and consumers, and to remove the link between the National Cheese Exchange price for cheese and the basic formula price for milk.

¹ A copy of the summary report, "Cheese Pricing: A Study of the National Cheese Exchange; Summary, Conclusions, and Policy Initiatives," is included as Appendix 3.

The Task Force sought a general overview of various aspects of the cheese and dairy pricing system before making recommendations for improvement. At their first meeting in July, Task Force members reviewed the background and conclusions of the UW/DATCP report. At the September meeting, members heard information about the operations and structure of the National Cheese Exchange, the cash market for cheese; and the Coffee, Sugar, and Cocoa Exchange, which trades futures contracts for cheese, butter, nonfat dry milk and milk. A representative of the U.S. Department of Agriculture's Dairy Market News Service explained the USDA cheese price reporting series. Task Force members also heard information detailing California's mandatory price reporting system for nonfat dry milk and other dairy products.

During the October, November and December meetings, the Task Force accomplished its charge. It agreed on criteria useful for evaluating proposed recommendations, then discussed the various proposals that had been submitted for consideration by Task Force members. The proposals addressed the structure and organization of the National Cheese Exchange, participation in and access to trading on the National Cheese Exchange, improvements to cheese market information services, and alternative reference prices for milk and cheese. A subcommittee of five Task Force members was formed to finalize the report, which was then sent to all Task Force members for final approval.²

² A listing of all materials provided to Task Force members during their deliberations is provided in Appendix 2. Copies of individual documents listed are available by contacting the Bureau of Trade Practices, Wisconsin Department of Agriculture, Trade and Consumer Protection, P.O. Box 8911, Madison, Wisconsin, 53704-8911, telephone 608-224-4918.

Report Recommendations

Evaluation Criteria

The Task Force agreed on several criteria for evaluating proposals to improve the cheese pricing system. These criteria are based on the characteristics of a perfect market, which, while never observed in real life, provide guidance as to aspects of market structure that lead to desirable market performance. A perfectly competitive market consists of many buyers and sellers who buy and sell a homogeneous product. All participants have full information about the product and prices. Price is driven by supply and demand, thus no individual or firm can influence the price. Market participants are freely able to enter and exit the market.

Posed as questions, the criteria used to evaluate the proposed recommendations were:

- Does the proposal encourage more buyers and sellers to participate in trading on the National Cheese Exchange?
- Does the proposal make it easier for current and potential traders to use the National Cheese Exchange?
- Does the proposal mitigate the potential influence of large traders vis-à-vis small traders?
- Does the proposal expand the amount of market information and equalize its accessibility to traders?
- Does the proposal improve public confidence in the National Cheese Exchange?
- Does the proposal help the market to better reflect supply and demand?

Recommendations

After careful consideration, the Task Force advances these recommendations to improve the current cheese pricing system and to remove the link between NCE prices and milk prices paid to farmers.

In addition to these specific recommendations, the Task Force recommends that the Governor lend encouragement and support to dairy farmers and marketers for efforts to expand demand for dairy products and to increase the value added by producers and manufacturers.

Addressing the Link Between the National Cheese Exchange and Milk Prices

- 1. Recommend that the US Department of Agriculture should no longer use the National Cheese Exchange price in the price adjustor used to determine the basic formula price (BFP) for manufacturing milk. The price of manufacturing milk under Federal Milk Marketing Orders should be based on supply of and demand for milk used in the manufacture of dairy products.**

The USDA could accomplish this by:

- First, substituting the National Agricultural Statistics Service's (NASS) reported national average cheese price for the NCE price in the BFP as soon as the NASS price is available and reliable (mandatory reporting, if necessary for statistical reliability);**
- and revising the weighting in the basic formula price adjustment factor to reflect national production of cheddar cheese, nonfat dry milk and butter.**

And then:

- Begin substituting prices from the Coffee, Sugar and Cocoa Exchange's "BFP Milk Futures Contract," or similar contract prices, for the BFP. A schedule could be developed that increases the weight assigned to the milk futures price as the volume of milk futures contracts traded increases;**

Or:

- Replacing the BFP with a national survey of manufacturing milk prices, less performance premiums and over-order values.**

And simultaneously:

- Moving toward the deregulation of pricing within the Federal Milk Marketing Order System, including elimination of the basic formula price.**

Discussion Points:

- The NCE price was never intended to be an indicator of national supply of and demand for milk. Any of these alternative measures have the potential to be more reliable indicators of market supply of and demand for milk.
- The current BFP is highly influenced by the NCE price in two ways: (1) The base month Minnesota-Wisconsin price series (M-W price) used in the BFP is highly correlated with the NCE price because most of the survey plants make cheese that is priced in reference to the NCE opinion; and (2), Over ninety percent of the weight in the price adjustment factor used in the BFP is based on the NCE price.
- The NCE price results from trading that represents less than two percent of all bulk cheddar cheese transacted nationally. In the short term, the U.S. Department of Agriculture should include a cheese price in the BFP that more broadly represents cheese market transactions, and should weight manufactured milk product prices by the proportion of national production of these products, rather than on Upper Midwest production. In the long term, any federal order price for milk used in manufacturing should reflect markets for all manufacturing uses, not solely cheese.
- The NCE Board fully agrees with removing the NCE price from the calculation of the BFP.
- The USDA recently announced that the National Agricultural Statistics Service (NASS) will begin reporting a probability-based national average cheddar cheese price.
- The newly-reported NASS price would be more broadly based than the NCE price and is expected to include spot and contracted sales prices for bulk cheese. However, the NASS price will continue to move in close concert with the NCE price as long as prices for contracted and spot sales are pegged to NCE opinions.
- The CSCE and the CME recently initiated futures contracts for Grade A milk. These contracts represent possible alternative indicators for manufactured milk value, but Grade A futures prices are characterized by an unpredictable basis relative to the BFP.
- The CSCE is seeking authorization to trade a cash settlement BFP contract. That contract, or a BFP contract on another futures contract market, could potentially encourage broad participation of milk producers, producer cooperatives, users and manufacturers of milk-based products, as well as market speculators, in determining the value of manufacturing milk.

- The futures price could be phased in as a replacement for the BFP as the market achieves sufficient volume to be viewed as a reliable indicator of the market value for manufacturing milk.
- The alternative of replacing the BFP with a national milk price based on a survey of manufacturing plants, less over-order values and performance premiums, is consistent with the Upper Midwest Dairy Coalition's proposal for federal order reform.
- A national price survey would base milk prices on the prices that dairy plants actually pay nationally, not just in the midwest, for manufacturing milk (both grade A and grade B.)
- Deregulation of milk pricing, which would eliminate the need for setting a basic formula price, could allow milk prices to be competitively determined between buyer and seller, according to supply of and demand for milk.

Alternative Price Discovery Mechanisms for Cheese

2. Recommend that the Coffee, Sugar and Cocoa Exchange and/or the Chicago Mercantile Exchange establish a cash market for cheese.

Discussion Points:

- Both these exchanges would provide more frequent (daily) trading sessions than the NCE provides currently.
- These exchanges are currently regulated by the Commodity Futures Trading Commission.
- These exchanges can provide anonymous trading and offer clearinghouse capabilities and other support to members.
- Provides an opportunity for more direct linkage between the cash and futures markets; may improve liquidity in the futures markets and may improve participation in the futures markets.

Improving Market Information:

- 3. Recommend that USDA expand the weekly Wisconsin Assembly Point Price series to a statistically reliable and regional series that would include major manufacturing areas. (Mandatory reporting, if needed for statistical reliability.)**

Discussion Points:

- Improved market information would help buyers and sellers identify trading opportunities and track regional market conditions.
- This series would represent an alternative reference price for contracted cheese sales.
- Weekly and regional cheese market information would be more useful than monthly, national information for cheese buyers and sellers.

Regulatory Oversight of the National Cheese Exchange

- 4. Recommend that the Commodity Futures Trading Commission and the Federal Trade Commission re-evaluate their regulatory authorities regarding the National Cheese Exchange.**

Discussion Points:

- The NCE is a national market and regulation of this market is more appropriate at the federal level.
- State regulation would be ineffective if it merely resulted in the Exchange moving out of Wisconsin.
- The NCE Board has previously requested oversight by the Commodity Futures Trading Commission.

Operating Rules for the National Cheese Exchange

- 5. Recommend to the NCE Board that they consider imposing a limit on the daily price movement of NCE prices.**

Discussion Points:

- There is a strong public interest in the NCE and limits may improve public confidence.
 - Daily limits would allow the industry time to re-evaluate supply and demand factors when market conditions are changing rapidly.
 - However, limits on price movements may limit participation and volume of trading on the NCE.
 - Limits on price movements may cause prices in the short term to be temporarily above or below prices reflecting supply and demand conditions.
- 6. Recommend to the NCE Board that they include one or more public (non-NCE member) members on their board.**

Discussion Points:

- Addition of public members recognizes the public interest in the Exchange as a driver of milk prices throughout the U.S.
 - Public members would offer a broader perspective to the exchange board and could offer expertise that would be useful in establishing policy and trading rules.
 - May improve public confidence in the National Cheese Exchange.
- 7. Recommend to the NCE Board that the identities of buyers and sellers be anonymous during trading.**

Discussion Points:

- Not knowing the identity of the buyers and sellers would mitigate the potential influence of large traders vis-à-vis small traders. Large traders may be perceived as having better information, which could inhibit other traders from taking an opposite position in the market.
- Anonymous trading is common in futures contract markets, which, like the NCE, are national in scope and have broad public scrutiny.
- Anonymous trading may encourage participation in trading on the Exchange.

8. Recommend to the NCE Board that they consider implementing more frequent trading sessions for bulk cheese transactions once remote electronic access is in place.

Discussion Points:

- The Exchange will be implementing remote electronic access to their current weekly trading sessions in 1997. This is a positive first step towards improving participation and access to trading on the Exchange.
- Increasing the frequency of trading on the Exchange to more than once weekly may encourage broader participation in trading on the Exchange (assuming cost effectiveness.)
- More frequent trading may result in less volatile price movements.
- Remote electronic trading facilitates maintaining the anonymity of traders.

Acknowledgments

The Task Force acknowledges the outstanding staff support from the Wisconsin Department of Agriculture, Trade and Consumer Protection during all phases of its deliberations and in preparing this report. Special thanks are due to: Secretary Alan Tracy; Carol Trypus Svenson and Charles Herwig, Bureau of Trade Practices; and Ann Roth and Scott Warner, Office of the Secretary.

The Task Force members also wish to acknowledge the excellent leadership of the chair, Robert H. Burns, in guiding this effort.

Appendicies

Appendix 1

Governor's Task Force on Cheese Pricing Member List

Chair

Mr. Robert H. Burns
President
ConAgra Refrigerated Foods
2000 S. Batavia Avenue
Geneva, IL 60134

Deborah Van Dyk
Schreiber Foods, Inc.
425 Pine Street
PO Box 19010
Green Bay, WI 54307-9010

Mr. Bernard Golbach
President
Master's Gallery Foods, Inc.
328 County Hwy. PP
PO Box 170
Plymouth, WI 53073-0170

Mr. Larry Lemmenes
President and General Manager
Alto Dairy Cooperative
N3545 County EE
PO Box 550
Waupun, WI 53963

Ms. Marsha Glenn
Vice President
Kraft Foods, Inc.
1 Kraft Court
Glenview, IL 60025

Mr. Bill McCoshen
Secretary
Wisconsin Department of
Development
123 W. Washington Ave.
PO Box 7970
Madison, WI 53707-7970

Mr. Wilfrid Turba
Retired Dairy Farmer
N 9617 Turba Court
Elkhart Lake, WI 53020

Mr. Will Hughes
Wisconsin Federation of Cooperatives
30 W. Mifflin
Madison, WI 53703

Dr. Ed Jesse
Associate Dean
Agriculture Hall, Room 146
University of Wisconsin - Madison
Madison, WI 53706

Mr. Jack Sturm
President
A. Sturm and Sons
215 Center Street
PO Box 287
Manawa, WI 54949

Mr. Bob Wagner
President
Weyauwega Milk Products
105 E. Third Ave.
PO Box 410
Weyauwega, WI 54983

Mr. Alan Tracy
Secretary
Wisconsin Department of Agriculture,
Trade and Consumer Protection
2811 Agriculture Dr.
PO Box 8911
Madison, WI 53708

Mr. Bob Thelen
Dairy Farmer
Route 2, Box 39
La Farge, WI 54639

Mr. Gary Anderson
Dairy Farmer
Route 1, Box 184
Cecil, WI 54111

Mr. Richard Gould
President
National Cheese Exchange
130 E. Walnut St.
PO Box 1844
Green Bay, WI 54301-1844

Mr. W. O'Neill McDonald
President
SuperValu - Great Lakes Division
7400 95th Street
PO Box 330
Pleasant Prairie, WI 53158-0330

Mr. Gerald Jaeger
Dairy Farmer
N1387 Rolling Drive
Campbellsport, WI 53010-2250

Mr. Jon Peterson
Dairy Farmer
Route 2, Box 170
Cashton, WI 54619

Darin Von Ruden
Dairy Farmer
Rt 1 Box 23A
Westby, WI 54667

Jim Holte
Dairy Farmer
N2478 CTY H
Elk Mound, WI 54739

Appendix 2

Information and materials associated with and leading to the July 25, 1996 Task Force meeting

- ◆ Letter sent to members of the Governor's Task Force on Cheese Pricing, dated May 14, 1996, from Governor Tommy G. Thompson.
- ◆ Draft of Press release Governor Appoints Cheese Pricing Task Force, dated May 14, 1996.
- ◆ Letter sent to Alan T. Tracy, Secretary of the Department of Agriculture, Trade and Consumer Protection, from Governor Tommy G. Thompson regarding Mr. Tracy's agreement to serve as a member of the Task Force on Cheese Pricing.
- ◆ Introductory letter containing information about the goals of the Task Force, dated July 10, 1996 and sent to the members of the Cheese Task Force from Alan T. Tracy, Secretary of the Department of Agriculture, Trade and Consumer Protection.
- ◆ Cheese Pricing, A Study of the National Cheese Exchange. Mueller, Willard F., Bruce W. Marion, Maqbool H. Sial, and F.E. Geithman. The Department of Agriculture, Trade and Consumer Protection and the Department of Agricultural Economics, University of Wisconsin-Madison. March 1996.
- ◆ Cheese Pricing: A Study of the National Cheese Exchange. Summary, Conclusions, and Policy Initiatives. Mueller Willard F., Bruce W. Marion, Maqbool H. Sial, and F.E. Geithman. The Department of Agriculture, Trade and Consumer Protection and the Department of Agricultural Economics, University of Wisconsin-Madison. March 1996. (Included in this report.)
- ◆ National Cheese Exchange Investigation, Summary Remarks. March 19, 1996.
- ◆ National Cheese Exchange Member list.
- ◆ Agenda for Thursday, July 25, 1996 Governor's Task Force on Cheese Pricing meeting.
- ◆ Map to Prairie Oak Office Building.
- ◆ Preliminary Draft of Proposed Order of the State of Wisconsin Department of Agriculture, Trade and Consumer Protection Adopting Rules, dated March 15, 1996.
- ◆ National Cheese Exchange Investigation, Questions and Answers, March 19, 1996.
- ◆ National Cheese Exchange Investigation, Federal and State Regulatory Authority.
- ◆ Statement of Alan T. Tracy, Secretary of the Department of Agriculture, Trade and Consumer Protection, on bulk cheese market pricing issues, before the U.S. House Subcommittees on Livestock, Dairy and Poultry; and Risk Management and Specialty Crops, May 15, 1996.
- ◆ Submission by National Cheese Exchange, Inc., to the House Subcommittees on Livestock, Dairy and Poultry, and the House Subcommittee on Risk Management and Specialty Crops, May 15, 1996.
- ◆ Statement of Willard F. Mueller, William Vilas Research Professor, Emeritus Department of Agriculture and Applied Economics, University of Wisconsin-Madison, before Joint Hearings of the House Subcommittee on Livestock, Dairy and

- ◆ Poultry, and the House Subcommittee on Risk Management and Specialty Crops, May 15, 1996.
- ◆ Statement of Bruce W. Marion, Professor of Agricultural Economics and Director, Food Systems Research Group, University of Wisconsin-Madison, before Joint Hearings of the House Subcommittee on Livestock, Dairy and Poultry, and the House Subcommittee on Risk Management and Specialty Crops, May 15, 1996.
- ◆ Written testimony of Betsy Holden, Executive Vice President of Karft Foods, Inc. and General Manager of the Kraft Cheese Division, before Joint Hearings of the House Subcommittee on Livestock, Dairy and Poultry, and the House Subcommittee on Risk Management and Specialty Crops May 15, 1996.
- ◆ Tape recording, consisting of two cassettes, of the complete July 25, 1996 Task Force meeting.

Information and materials associated with and leading to the September 19, 1996 Task Force meeting.

- ◆ Summary of Action from the July 25, 1996 Task Force meeting.
- ◆ Minutes from the July 25, 1996 Task Force meeting.
- ◆ Letter, dated September 6, 1996, sent to Task Force members from Bob Burns, Vice Chair, Governor's Task Force on Cheese Pricing.
- ◆ Agenda for the September 19, 1996 Task Force Meeting.
- ◆ Amended Agenda for September 19, 1996 Governor's Task Force on Cheese Pricing meeting.
- ◆ Letter, dated September 19, 1996, from the National Cheese Exchange, Inc., to the Governor's Task Force on Cheese Pricing, concerning the operations and structure of the National Cheese Exchange, Inc..
- ◆ Letter, dated June 6, 1996 to Alan T. Tracy, Secretary of the Department of Agriculture, Trade and Consumer Protection, from Blake Imel, Acting Director of U.S. Commodity Futures Trading Commission, Division of Economic Analysis, regarding the report Cheese Pricing: A Study of the National Cheese Exchange.
- ◆ Letter, dated July 26, 1996, to Alan T. Tracy, Secretary of the Department of Agriculture, Trade and Consumer Protection, from Donald S. Clark, Secretary of the Federal Trade Commission, regarding the report Cheese Pricing: A Study of the National Cheese Exchange.
- ◆ Letter from Richard E. Rominger, Deputy Secretary of the Department of Agriculture, to Alan T. Tracy, Secretary of the Department of Agriculture, Trade and Consumer Protection, regarding the report Cheese Pricing: A Study of the National Cheese Exchange.
- ◆ Responses to Hearing Testimony and Subcommittee Members' Questions. Mueller Willard F., Bruce W. Marion. The University of Wisconsin-Madison. June 18, 1996.
- ◆ Dairy Market News, Week of September 2-6, 1996, Volume 63, Report 36.
- ◆ Dairy Market News, Week of September 9-13, 1996, Volume 63, Report 37.
- ◆ Review of Econometric Findings in the University of Wisconsin Study of Prices on the National Cheese Exchange. Gardner Bruce L. University of Maryland. July 1996.

- ◆ Comments on Bruce Gardner's Review of the University of Wisconsin Study of Cheese Pricing on the National Cheese Exchange. Marion, Bruce W., Willard F. Mueller. University of Wisconsin-Madison. September 19, 1996.
- ◆ News Release, Economist Calls Report on National Cheese Exchange "Seriously Flawed", July 25, 1996.
- ◆ Testimony of James J. Bowe, President of Coffee, Sugar and Cocoa Exchange, Inc., before the Joint Hearings of the House Subcommittee on Livestock, Dairy and Poultry, and the House Subcommittee on Risk Management and Specialty Crops, May 19, 1996.
- ◆ The National Cheese Exchange, Inc. Rules Regulating Trading, July 1996.
- ◆ Tape recording, consisting of two cassettes, of the complete September 19, 1996 Task Force meeting.
- ◆ Video from David Ikari, California Department of Food and Agriculture, shown at September 19, 1996 Task Force meeting.

Information and materials associated with and leading to the October 17, 1996 Task Force meeting.

- ◆ Letter Dated October 9, 1996 sent to Task Force members concerning the October 17, 1996 meeting from Robert Burns, Vice Chair, Governor's Task Force on Cheese Pricing.
- ◆ Map to Ramada Inn, site of Task Force meeting.
- ◆ Agenda for the October 17, 1996 meeting of the Governor's Task Force on Cheese Pricing.
- ◆ Summary of Action from the September 19, 1996 Task Force Meeting.
- ◆ Letters from the State of California Department of Food and Agriculture concerning changes to the current Stabilization and Marketing Plans for Market Milk, received from David Ikari, along with video tape (shown at September 19, 1996 meeting).
- ◆ Graphs showing various price relationships between National Cheese Exchange Prices, Federal Milk Order prices, Wisconsin Assembly Point Spot prices and CSCE futures prices.
- ◆ Recommendation worksheets for members of the Governor's Task Force on Cheese pricing from October 17, 1996 meeting.
- ◆ October 17, 1996 meeting topic outline.
- ◆ Examples of Alternative BFP for the month of April '96, for the month of June '96, and Proposed Phasing-in of Alternative BFP.
- ◆ October 17, 1996 DATCP Rule Proposal.
- ◆ A March 28, 1996 memo from Alan T. Tracy, Secretary of the Department of Agriculture, Trade and Consumer Protection, to the Board of Agriculture, Trade and Consumer Protection concerning the National Cheese Exchange; Hearing Draft Rule.
- ◆ An October 9, 1996 memo from Alan T. Tracy, Secretary of the Department of Agriculture, Trade and Consumer Protection, to the Task Force members regarding proposals for the Task Force discussion.

- ◆ Letter from Jon R. Peterson, Task Force Member, sent to John Norton, Director of the Bureau of Trade Practices, regarding Mr. Peterson's proposals for cheese pricing.
- ◆ Letter, dated October 7, 1996, from Phillip F. Gudgeon, Dairy Producer and Commodity Futures Broker, sent to Jon R. Peterson, Task Force Member, concerning dairy's price discovery system.
- ◆ Letter, dated October 7, 1996, from Bernard V. Golbach, Chairman of Masters Gallery Foods, sent to John C. Norton, Director of the Bureau of Trade Practices, regarding the October 17, 1996 Task Force meeting.
- ◆ FAX, dated October 3, 1996, from Ed Jesse, Task Force Member, to John C. Norton, Director of the Bureau of Trade Practices, containing recommendations and criteria for evaluating proposals for change in cheese pricing.
- ◆ Letter, dated October 1, 1996, sent to John C. Norton, Director of the Bureau of Trade Practices, from John A. Sturm, President of A. Sturm & Sons Inc., concerning proposals on how to improve the cheese pricing system.
- ◆ Submitted recommendations to the Governor's Task Force on the Cheese Exchange by Gary L. Anderson, Task Force Member.
- ◆ CSCE Nearby Cheddar Contract and NCE.
- ◆ Memo, dated March 28, 1996, from Alan T. Tracy, Secretary Department of Agriculture, Trade and Consumer Protection, to the Board of Agriculture, Trade and Consumer Protection, regarding the National Cheese Exchange; Hearing Draft Rule.
- ◆ Tape recording, contained on two cassettes, of the complete October 17, 1996 Task Force Meeting.

Information and materials associated with and leading to the November 14, 1996 Task Force meeting.

- ◆ Letter, dated November 7, 1996 and sent to Task Force members concerning the November 14, 1996 Task Force Meeting, from Robert Burns, Vice Chair, Governor's Task Force on Cheese Pricing.
- ◆ Letter, dated November 1, 1996, distributed to the members of the Task Force on Cheese Pricing from John C. Norton, Director of the Bureau of Trade Practices, regarding an additional meeting in December.
- ◆ Letter, dated November 1, 1996 from Governor Thompson to the members of the Task Force on Cheese Pricing concerning recommendations to improve the current cheese pricing system.
- ◆ Letter, dated November 13, 1996, from Governor Thompson and addressed to Alan T. Tracy, Secretary of Agriculture, Trade and Consumer Protection, and Robert Burns, Vice Chair of the Task Force on Cheese Pricing, concerning the Governor's recommendations.
- ◆ FAX, dated November 13, 1996, from Ed Jesse, sent to John C. Norton, Director of the Bureau of Trade Practices, concerning supplemental Cheese Task Force recommendations.
- ◆ FAX article from the Coffee, Sugar & Cocoa Exchange titled CSCE Files with CFTC to Trade BFP Milk Contact.

- ◆ Memo, dated November 18, 1996, from Ann Roth, Task Force Staff Support, to the members of the Governor's Task Force on Cheese Pricing, regarding establishing a cash contact for the cheese on the CSCE.
- ◆ Letter from Dan Glickman to Senator Feingold, dated October 29, 1996.
- ◆ A letter, dated October 29, 1996, from R.J. Gould of the National Cheese Exchange, Inc. to John C. Norton, Director, Bureau of Trade Practices, Wisconsin Department of Agriculture, Trade and Consumer Protection, concerning the Governor's Task Force on Cheese Pricing.
- ◆ Press release "Governor Expands Cheese Exchange Task Force", dated November 7, 1996.
- ◆ Agenda of the November 14, 1996 Governor's Task Force on Cheese Pricing meeting.
- ◆ Summary of Action for Task Force meeting held on October 17, 1996.
- ◆ Minutes of the October 17, 1996 Governor's Task Force on Cheese Pricing meeting.
- ◆ Statement from Upper Midwest Milk Producers Association, included with the minutes of the October 17, 1996 meeting and distributed to the Task Force members at the November 14, 1996 Task Force meeting.
- ◆ Summary of Preliminary Proposals Still on the Table as of November 14, 1996.
- ◆ Why do Corporations Have More Rights than You? Democracy Unlimited of Wisconsin Cooperative. Madison, WI. Handed out by this group at Nov. 14 meeting.
- ◆ The National Cheese Exchange: Impacts on Dairy Industry Pricing. Hamm, Larry G., Robert March. Dairy Markets and Policy-Issues and Options. Cornell University. February 1995.
- ◆ Tape recording, contained on two cassettes, of the complete November 14, 1996 Task Force Meeting.

Information and materials associated with and leading to the December 5, 1996 Task Force meeting.

- ◆ A letter dated November 26, 1996 sent to the members of the Governor's Task Force on Cheese Pricing from Bob Burns, Vice Chair Governor's Task Force on Cheese Pricing, concerning the December 5, 1996 Task Force meeting.
- ◆ Agenda for the December 5, 1996 Governor's Task Force on Cheese Pricing meeting.
- ◆ Map to the Dane County EXPO Center, where Dec. 5, 1996 meeting was held.
- ◆ Summary of Action from the November 14, 1996 Task Force meeting.
- ◆ Proposal to Replace the BFP submitted by Darin Von Ruden.
- ◆ List of Proposals Adopted at the November 14, 1996 meeting.
- ◆ FAX letter, dated November 25, 1996, from Commissioner, Gene Hugoson of the Minnesota Department of Agriculture, to Secretary Glickman concerning the NCE and pricing of cheese.
- ◆ Information sheet dated November 18, 1996 and titled: "What is New With the Governor's Task Force on Cheese Pricing?"

- ◆ News release, December 5, 1996, from Farm Bureau News entitled Farmers need to Take milk pricing to USDA, according to farmers on Task Force on Cheese Pricing.
- ◆ Letter from Dory Kidder to the Task Force on Cheese Pricing concerning the pricing of cheese.
- ◆ Letter, dated November 11, 1996, from Rod and Pam Olson, Dairy Producers, sent to Robert Burns, Vice Chair of the Governor's Task Force on Cheese Pricing, concerning their proposal for changes in the cheese pricing system.
- ◆ Letter, dated November 26, 1996, from Marvin Zorn concerning the Green Bay Cheese Exchange.
- ◆ The Base Month Minnesota-Wisconsin Price and Basic Formula Price released noon, C.S.T., December 5, 1996, from the Wisconsin Agricultural Statistics Service.
- ◆ News release, dated December 3, 1996, from the United States Department of Agriculture titled USDA Announces Suggested Milk Order Consolidations.
- ◆ Family Farmers vs. Kraft Foods™. UW Greens. Madison, WI.. Handed out by UW Greens at this meeting.
- ◆ Letter from Kevin Kirker to Governor Thompson, dated November 27, 1996, and FAX to John C. Norton, Director of the Bureau of Trade Practices, for distribution to the Task Force members.
- ◆ Letter from John Peterson, received via FAX on December 4, 1996, to the Task Force members regarding his recommendations for improving the system of cheese pricing.
- ◆ Tape recording, contained on two cassettes, of the complete December 5, 1996 Task Force Meeting.

Information received after final Task Force meeting

- ◆ Letter from Richard J. Gould, President of the National Cheese Exchange, dated December 26, 1996, objecting to the proposed Task Force on Cheese Pricing report. This letter is addressed to Carol Svenson, of the Department of Agriculture, Trade and Consumer Protection and Task Force Member.
- ◆ Minutes of the December 5, 1996 Task Force meeting.

**Cheese Pricing:
A Study of the
National Cheese Exchange**

Summary, Conclusions, and Policy Initiatives

A Report of the Food System Research Group,
Department of Agricultural Economics,
University of Wisconsin-Madison

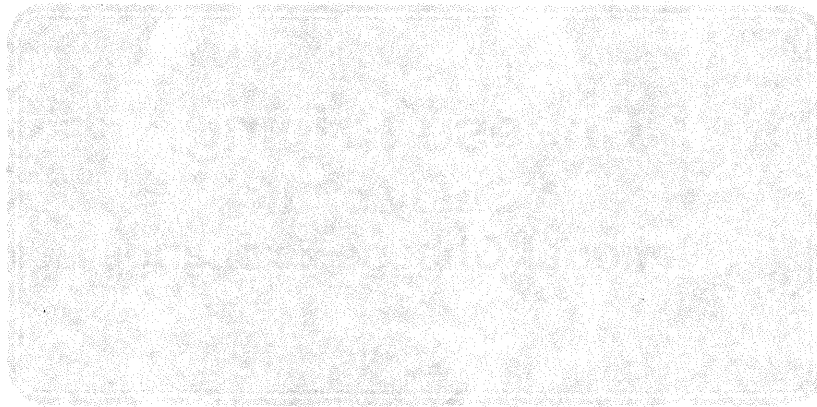
prepared for

the Wisconsin Department of
Agriculture, Trade, and Consumer Protection
Investigation into Cheese Pricing

by

Willard F. Mueller, Vilas Research Professor Emeritus
Bruce W. Marion, Professor
Maqbool H. Sial, Ph.D., Assistant Scientist
F.E. Geithman, M.S., Associate Scientist

March 1996



Summary, Conclusions, and Policy Initiatives

A Report of the Food System Research Group
Department of Agricultural Economics
University of Wisconsin-Madison

prepared for

Agriculture, Trade, and Consumer Protection
Investigation into Cheese Pricing

To all Readers:

This is the Summary and Conclusions chapter of a much longer report on Cheese Pricing. A copy of the complete report may be obtained by writing Ardella Crawford, University of Wisconsin-Madison, Department of Agricultural Economics, 427 Lorch Street, Madison, WI 53706. Tel: 608-263-6383. Email: ardella@ae.agecon.wisc.edu

Copyright © 1996 by Willard F. Mueller and Bruce W. Marion, Department of Agricultural Economics, University of Wisconsin-Madison.

Summary, Conclusions, and Policy Initiatives

A. Introduction

Cheese is the most important manufactured dairy product in the U. S., commanding 85 percent of the milk from Wisconsin and 33 percent of all milk in the U.S. However, the price of cheese has even more effect on the nation's dairy farmers than these figures suggest. Cheese prices largely determine the manufactured grade milk price (previously the M-W price but now the Basic Formula Price), which is the main driver of farm milk prices throughout the country.

In 1992, sales of cheese manufacturers and marketers were about \$16 billion. Bulk natural cheese generally goes from the cheese manufacturing plants to one of two types of converting operations: about three-fourths of natural cheese goes to cut and wrap operations which convert bulk cheese into the form, size and package desired by end-users; the remaining one-fourth goes to processing plants which grind, emulsify and blend natural cheese (usually with the aid of heat) to make processed cheese, cheese foods and cheese spreads.

Most cheese converters market finished natural or processed cheese products to one or more of three main types of customers: roughly 40 percent of all cheese is sold to retail food stores, 44 percent to foodservice, and the remaining 16 percent is sold to other food manufacturers (industrial accounts). Brands such as Kraft, Sargento and Borden are primarily important in cheese sold through food stores. Leading brands of cheese are sold at substantial premiums over private label or store brand cheese. Margins on cheese sold to foodservice and industrial accounts are similar to those on private label cheese.

We estimate that the largest four manufacturers of natural cheese accounted for about 29 percent of total pounds made in 1992. Most of the leading manufacturers are also involved in either cheese processing or the marketing of natural cheese. However, some of the leading processors/marketers make little or no natural cheese (i.e., Schreiber, Borden, Sargento). The largest four marketers of processed and natural cheese account for about 38 percent of the total pounds sold. The Census Bureau reported that in 1992 the four largest cheese companies made 42 percent of the value of all natural and processed cheese shipments. Thus, overall, both cheese manufacturing and cheese marketing are only moderately concentrated.

B. Cheese Pricing and the NCE

The commercial cheese industry in the United States began in the 1840s and by 1870 boasted over 1300 cheese factories, located predominantly in Wisconsin and New York State. Initially cheese factories conducted business individually with dealers. But by the 1870s, so-called "dairy boards" were established, where factory representatives and cheese dealers met and engaged in organized trading. These dairy boards and their successors evolved into the current National Cheese Exchange located in Green Bay, Wisconsin.

The National Cheese Exchange, often referred to herein as the NCE or the Exchange, is a centralized cash auction market trading 40-pound blocks (640-pound blocks were added in 1994) or 500-pound barrels of cheddar cheese in carlots of 40,000 pounds. In recent years the NCE has had 30 to 40 members consisting of cheese manufacturers, marketers, brokers and customers. Trading typically occurs from 10:00 a.m. to 10:30 a.m. each Friday.

During 1988 to 1993 just 0.2 percent of all bulk cheese was traded on the NCE (Exhibit 1). About 90-95 percent of bulk cheese sales involved direct supply arrangements using written or verbal "committed supply" agreements, often one year in duration. Another 5 to 10 percent involved spot market transactions.

Although only a tiny share of all bulk cheese transactions occurs on the NCE, it serves as the primary price discovery mechanism for bulk cheese transactions. Virtually all long-term bulk cheese contracts (not merely cheddar cheese) use so-called *formula price contracts*, which spell out various terms of trade as well as an agreed upon price premium over the closing weekly NCE opinion or price. Spot sales also are priced "off the NCE"; however, premiums are negotiated for each transaction and may vary somewhat from week to week. On committed supply agreements, prenegotiated premiums often apply for extended periods so that transaction prices move in lock-step with NCE prices.

NCE prices are also used in formula pricing some cheese sold wholesale to retailers and foodservice companies, especially private label and weak cheese brands. Historically, this practice tended to "couple" the wholesale price of cheese with the NCE price. Since about 1985, the extent and closeness of such coupling has declined, as some companies adopt wholesale list prices that change infrequently or modify the terms of formula price contracts.

C. Potential Problems of Thin Markets

Because such a small share of total bulk cheese transactions occur on the NCE, it is what market analysts call a "thin" market. Formula pricing and thin markets often go together. As firms adopt formula pricing--i.e., trading off a price established by someone else--the residual market declines in volume. Thin markets like the NCE are primarily a potential problem where they serve as a widely used reference price and hence become highly leveraged. The incentive to influence the NCE would be very different if it were used to price 5 percent of bulk cheese sales rather than the estimated 90 to 95 percent. As it is, during 1988-1993, the price on 0.2 percent of all cheese produced was used in setting the price on 90 to 95 percent. That simple fact creates a great incentive for attempting to influence the NCE.

Economists have identified several possible adverse consequences of thin markets including manipulation of price, incorrect price signals causing misallocation of resources, and increased price volatility due to market illiquidity. Thinly traded markets do not necessarily perform poorly if there is sufficient volume "waiting in the wings" and if no single firm (or group of cooperating firms) is large enough to influence price to its (their) advantage. The critical issue lies in having a sufficient volume of potential traders who will participate in price determination should price depart from the competitive level. Supply and demand in the thin central market may not accurately represent aggregate supply and demand conditions, especially if only a few firms trade in the central market, but virtually all firms use prices generated there in formula price arrangements. Even if a non-trader believes that the central market price is inaccurate, he may continue to use formula pricing since doing so reduces his transaction costs. Thus, for a given product the competitive structure of a thin central market may differ significantly from that of the aggregate market. The cheese industry illustrates this principle since the NCE is far more concentrated than either the buying or selling side of the aggregate market. The nature of competition in a central market is affected when some of its traders enjoy *strategic competitive advantages* over other actual and potential traders. As shown below, such advantages may cause the thinly traded central market to become a submarket within the larger aggregate market, with prices for both set in the central market.

The various stages of the cheese subsector fit the economic definition of moderately concentrated oligopolies. In sharp contrast, NCE trading is highly concentrated in both buying and selling, and it has a dominant seller-trader--Kraft General Foods, Inc., owned by Philip Morris Companies Inc. During 1988-1993, Kraft made 74 percent of all NCE sales and the

next largest seller a mere 6 percent, with the top four seller-traders together accounting for 88 percent. During this period, the leading buyer-trader made 35 percent of all NCE purchases while the top four buyer-traders together came in at 81 percent. The degree of concentration was even greater in barrel trading, which accounted for 68 percent of all NCE sales and often appeared to drive block prices. During 1988-1993, Kraft made 83 percent of all barrel sales, a substantial percentage increase over the 1980-1987 period, when Kraft made only 25 percent of all barrel sales.

D. NCE Functions and Trader Motivations

Essential to understanding the trading conduct on the NCE is the proper identification of its functions: (a) to provide a cash market where members may buy and sell cheese and (b) to establish a "market opinion" price for bulk cheese, based on the day's last sale, highest bid, or lowest offer. There are, however, conflicting beliefs as to the primary reason traders use the Exchange. One view is that leading traders use the Exchange primarily as an alternative outlet or source of cheese; the second view is that they trade primarily to influence NCE prices, which are used in formula pricing bulk cheese bought and sold elsewhere.

If traders use the NCE primarily as an alternative outlet or source of supply, their trading patterns on the Exchange should be similar to those in any *bona fide* cash agricultural auction market: (a) traders that manufacture and sell most of their bulk cheese off the NCE should be mainly sellers on the NCE and (b) traders that normally buy most of their bulk cheese from others off the NCE for processing and marketing purposes should be mainly buyers on the NCE. On the other hand, if firms trade primarily to influence NCE prices, their trading conduct may often be the reverse of that expected in *bona fide* cash agricultural auction markets.

We tested these conflicting hypotheses by examining trading patterns over the 1980-1993 period. During 1980-1987, cheese companies that sold bulk cheese off the NCE were predominantly sellers on the NCE, while cheese marketers that bought bulk cheese off the NCE were predominantly buyers on the NCE--as expected in a *bona fide* cash auction market. This trading pattern was reversed during 1988-1993, when some leading marketers became predominantly sellers and several leading manufacturers became predominantly buyers (Exhibits 2 and 3).

The most significant reversal was that of Kraft, the largest buyer of bulk cheese off the NCE. During the seven years, 1980-1986, Kraft bought 411 loads on the NCE while selling only 175 loads. However, beginning in August 1986, Kraft became *exclusively a*

seller-trader on the NCE.¹ Also, beginning in 1988, three leading agricultural cooperative cheese manufacturers reversed their role, from being mainly sellers to being mainly buyers on the NCE. The cooperatives reversed their trading conduct more than one year after Kraft had become the leading seller-trader, suggesting that their reversals were a response to that of Kraft.

The shift in trading patterns occurred at the same time that the NCE became more important in the cheese price discovery process. During 1980-1987, cheese prices were strongly influenced by the government price support program. There was little opportunity for firms trading on the NCE to have much influence. As support prices declined, cheese prices became more market driven. The volatility and range of cheese prices increased sharply during 1988-1993 (Exhibit 4). In this environment, cheese companies had both greater opportunity and greater incentive to influence prices.

In sum, the trading patterns of leading cheese manufacturers and marketers during 1980-1987 is consistent with the hypothesis that leading traders use the NCE as an alternative outlet or source of cheese. Trading conduct during 1988-1993, however, is consistent with the hypothesis that some leading traders are motivated primarily by a desire to influence NCE prices.

E. Business Characteristics of Leading Traders

Differences in the business characteristics of leading traders help explain why some were primarily buyers and others primarily sellers on the NCE during 1988-1993. Essentially, some traders benefit from higher NCE prices and some from lower NCE prices, other things being the same. To understand this concept, one must determine how an individual company's input costs and selling prices are related to NCE prices.

We examined the business characteristics of the nine leading traders on the NCE, who together accounted for 94 percent of all purchases and 94 percent of all sales during 1988-1993. Five of these traders--

¹ From August 1986 through 1993, Kraft sold 2,043 loads and bought 22 loads. The 22 loads of blocks were evidently purchased for the purpose of influencing the price spread between blocks and barrels on the NCE, not because Kraft needed blocks at the time. Also, on two occasions Kraft bid to buy barrels; neither bid was filled. However, these bids evidently were made to *signal* its approval of an increasing price trend, not because Kraft needed more barrels. See Chapter 5, Section E. Thus, the above buyer-type actions were actually ancillary to Kraft's seller-trading activity, not the actions of a bona-fide buyer-trader.

Kraft, Borden, Alpine Lace, Beatrice, and Schreiber--are primarily cheese marketers; three are agricultural cooperatives and major manufacturers of cheese: Mid-America, Land O' Lakes, and AMPI; and one is a broker: Dairystate Brands.

As cheese marketers, Kraft, Borden, Alpine Lace, Beatrice and Schreiber have certain characteristics in common. They all buy bulk cheese from manufacturers at NCE-based formula prices. NCE prices also largely determine the cost of milk used in making cheese and thus are the dominant influence over the cost of cheese-making in supplier plants.

There are, however, significant differences among these five cheese marketers. Kraft, Borden, and Alpine Lace all sell cheese under their own brand names. Kraft sells about 75 percent of its finished cheese products to retailers under highly differentiated Kraft brands that command significant price premiums over lesser brands. Borden, the second largest marketer of branded processed cheese to retailers, sells nearly all of its cheese under the Borden brand, which also commands a substantial price premium over private label and weaker brands, but a lower premium than Kraft brands.

Beginning in 1985, Kraft quit linking wholesale cheese prices to NCE prices and instead sold its brands at wholesale list prices, which frequently remain unchanged for many months. Since then there has been little correlation between NCE prices and the wholesale prices of either Kraft brands or those brands that often follow Kraft's prices. Although Kraft cannot set list prices entirely independently of other cheese brands, the relative strength of its brands gives it a significant degree of discretion in pricing. Like Kraft, Borden and Alpine Lace also sell finished product to retailers at list prices not coupled to NCE price.

Raw material inputs for processed cheese and finished natural cheese are predominantly bulk natural cheese and other dairy products. These inputs account for roughly 75 to 85 percent of the cost of finished cheese products. Profit margins for these three companies come mostly from the difference between the cost of cheese they buy or make and the wholesale price of finished product they sell. Since the bulk cheese they buy is priced off the NCE, and since the cost of bulk cheese constitutes such a large part of total manufacturing costs, Kraft, Borden and Alpine Lace all have a strong financial interest in lower NCE prices, all else remaining the same. There is also documentary evidence that implies Kraft believed it could influence NCE prices.

Beatrice and Schreiber differ somewhat from the other three marketers in that neither has strong consumer brands for its finished cheese products. Beatrice sells its products predominantly as private label brands and weak company brands to foodservice

companies, food retailers and industrial users. Schreiber, which is predominantly a processor and marketer of processed cheese products, makes a substantial majority of its sales to foodservice customers, particularly fast food chains. Most of its remaining sales are to food retailers, largely as private label or store brands and weak Schreiber brands. Therefore, both Beatrice and Schreiber sell to their customers at wholesale prices that are either formula-priced off the NCE or that compete with products of other sellers that formula-price.

Since Beatrice and Schreiber apparently sell their products at essentially NCE-based formula prices rather than at a-list price, both their buying and selling prices are expected to generally follow the NCE. Thus, their ultimate interest in the level of NCE prices is likely to differ from that of Kraft, Borden, and Alpine Lace. Even though a marketer may buy a good share of its bulk cheese,² the fact that it buys bulk cheese and sells processed cheese and cheese foods at NCE-based formula prices means it may profit from higher NCE prices. Since bulk cheese costs may represent 70 percent or less of the total cost for making *processed* cheese products, an increase in NCE price will increase the wholesale price of the finished products by more than the cost of making these cheeses, all else being the same.

Beatrice and Schreiber also may have other motives for NCE trading. Both were primarily buyers on the Exchange during both 1980-1987 and 1988-1993. Thus, their trading pattern has been consistent with that expected of a cheese marketer who looks to the Exchange as a supplemental source of supply. The NCE is often the lowest cost source of bulk cheese. Thus, both Beatrice and Schreiber have an incentive to buy when NCE prices are below those in the spot market. But the amount they can purchase is limited by how much their bulk cheese needs exceed the amount they get from committed suppliers. Both may also have purchased on the NCE in an effort to prevent decreases in the value of their inventories. However, both also appear to sometimes participate in bidding up prices in rising markets for the apparent purpose of raising NCE prices rather than expecting to buy, since none of their bids are filled. On balance, however, the potential benefit of higher NCE prices to either company seems modest compared to the potential benefits marketers with strong brands may derive from lower NCE prices.

² Beatrice makes between 50 and 75 percent of its total cheese sales needs, although it buys practically all of the barrel cheddar used in making processed cheese. During 1988-1993, Schreiber bought the bulk of its cheese requirements (from committed suppliers, from the spot market, and the NCE).

The three leading agricultural cooperative buyer-traders have two reasons for preferring higher NCE prices. First, the farmer-members of cooperatives benefit directly from higher prices for milk used in making cheese. Second, insofar as cooperatives sell some cheese under private label or weak brands of processed cheese, they have the same interests as Beatrice and Schreiber in higher NCE prices, although the potential benefits from this source are modest.

Since Dairystate is a broker, its interest in NCE prices presumably reflects those of its customers. Insofar as its customers are mostly small cheese manufacturers, it should be primarily a seller on the NCE, as it was during both 1980-1987 and 1988-1993. We are not satisfied, however, that we understand the motivation for much of Dairystate's NCE trading, particularly its activity in prolonged rising or declining price trends when there is little or no real prospect of consummating a transaction.

In sum, the business characteristics of traders determine whether, other things being the same, they benefit from lower NCE prices or higher NCE prices. Based on our analysis of the business characteristics of leading traders, we hypothesize that the leading cheese traders fall into three categories: (a) traders benefitting from lower prices: Kraft, Borden and Alpine Lace; (b) traders benefitting somewhat from higher prices: Beatrice, Mid-Am, Schreiber, Land O' Lakes, and AMPI; (c) a trader with a neutral interest: Dairystate Brands. Thus, if traders use the NCE primarily to influence prices, their interests in the level of NCE prices explain why traders in category (a) are predominantly seller-traders and those in category (b) are predominantly buyer-traders (Exhibit 5).

F. Spot Trading as an Alternative to the NCE

Analysis of the "spot market" provides further evidence concerning the motives of leading traders on the NCE. Whereas the NCE centralizes trading at one location for about 30 minutes each Friday, the spot market is comprised of direct transactions at negotiated prices among cheese companies for the purpose of handling short-term shortages or surpluses. (As used here, the term "spot market" refers only to those spot sales made off the NCE, although the NCE is also a spot market.) During 1988-1993, 5 to 10 percent of *all* manufactured cheese (all types and ages) was sold in the spot market, whereas about 0.2 percent was sold on the NCE. The fact that spot sales substantially exceed NCE sales (even for the types sold on the NCE) raises a question as to whether the NCE is needed as an alternative source of supply and a place to dispose of surplus. Some of those believing this function of the NCE to be essential evidently view it as a market of last resort, a place to which buyers or sellers turn because other

alternatives are unavailable. This rationale for Exchange trading is most plausible for small cheese manufacturers with limited knowledge of market alternatives. However, even small cheese companies rely predominantly on the spot market in disposing of surplus cheese. And brokers selling for small companies use the spot market far more than the Exchange.

Limited knowledge of market alternatives is an implausible reason for large companies to trade on the Exchange. Such companies have quite extensive knowledge of market alternatives and frequent communication with prospective buyers and sellers.

Most cheese companies prefer the spot market because it has substantial advantages over NCE trading, including the following:

- Spot traders are able to establish more precise delivery, age and quality specifications than are NCE traders.
- Spot transactions may occur any time during the business week rather than during the typical NCE trading period of about 30 minutes each Friday.
- NCE sales are F.O.B. within 200 miles of Green Bay. Plants located some distance from Green Bay may often avoid the freight charges associated with NCE transactions by trading in the spot market.
- Spot traders need not pay the 0.25 cent per pound charge assessed to both the buyer and seller on NCE trades.
- Spot market trading provides an opportunity to trade at prices not immediately known to competitors. In competitive markets, firms departing from the prevailing price generally do not wish to communicate this information to others.
- The thinness of the market and its widespread use in formula pricing discourage large cheese manufacturers and marketers from using the Exchange as an alternative outlet or source of supply because doing so may adversely affect the price they pay or receive for contract purchases. Hence, the logical buyers and sellers in competitive cash auction markets are discouraged from using the NCE as bona fide buyers or sellers. Spot trades do not create this conflict because the prices of committed supply agreements are not linked directly to spot prices.

Given this list of spot market advantages, it is not surprising that NCE prices generally have been lower than spot market prices for comparable cheese. The lower prices can make the NCE an attractive, though less reliable, source of supply for buyers who need more cheese than they receive from committed suppliers. Of course, lower prices on the NCE do not

explain why a large company would prefer to sell there. Indeed, it is difficult to identify any reasons why a large company would prefer to sell on the NCE rather than in the spot market, other than to influence the market price.

Kraft's publicly stated reasons for selling on the NCE are that (a) it always builds a surplus into its annual plan, and (b) it must take the entire output of its committed suppliers. But while Kraft always plans for some surplus--and occasionally has unplanned surpluses or shortages--these reasons explain neither its large sales on the NCE nor its exclusive seller-trader status from August 1986 through 1993. Analysis of Kraft's operations reveals that it can--and usually does--manage surpluses in one of three other ways: by reducing the amounts taken from committed suppliers (so-called "deprocurement"), by selling in the spot market, and by selling to the CCC when the option is available. For example, when in 1990-1991 Kraft faced the largest unplanned surplus in recent years, it sold a relatively minor part of the total surplus on the NCE. Most, if not all, cheese sold on the NCE could have been placed in inventory or sold more profitably to the CCC and in the spot market. Instead, Kraft chose to sell on the NCE at prices below the CCC support level. After prices rose above the support level in 1991, Kraft sold on the NCE for the apparent purpose of moderating an upward price trend.

On barrel and block sales for the entire 1987-1992 period, Kraft calculated that it *lost* an average of 2.40 cents per pound on NCE sales, *gained* an average 2.65 cents per pound on spot sales, and *gained* an average of 0.19 cents per pound on CCC sales (Exhibit 6). Thus, there was a net differential of about 5 cents per pound between the loss from NCE sales and the gains from spot sales. (The comparisons include only sales of 40-pound cheddar blocks and 500-pound cheddar barrels, the cheese types sold on the NCE in 1988-1993.) To sell on the Exchange at a loss when other more profitable outlets are available constitutes trading against interest; i.e., it is irrational business conduct unless Kraft expected to influence NCE prices to its benefit. The profit-loss calculus to justify selling at such a loss is straightforward. Although Kraft lost about \$1.5 million on NCE sales during 1987-1992, every 1 cent per pound reduction in NCE prices lowered Kraft's raw material procurement costs by over \$10 million *annually*.

When considering whether or not the NCE as presently functioning is necessary as an alternative outlet, it is important to recall that a fragmented but geographically centralized cheese industry gave birth to the NCE and its predecessors in 1918. Since then manufacturing has become increasingly consolidated, with the number of cheese plants falling from about 4,000 in the early 1900s to 508 by 1987. Only 216

companies had annual sales over \$100,000, the 50 largest of which made 82 percent of all natural and processed cheese shipments. Moreover, in 1920, two years after the predecessor of the NCE was established, Wisconsin accounted for 64 percent of the value of all cheese shipments; by 1994, Wisconsin's share of U.S. cheese production (in pounds) had declined to 30 percent. Over the period, cheese production in the Western Region grew from about 6 percent to nearly 25 percent.

This geographic decentralization of manufacturing and decline in firm numbers, together with improved communications and transportation, has made obsolete a central cash auction market where buyers and sellers physically meet. Other food and nonfood manufacturing industries have demonstrated that they can effectively manage unexpected shortages and surpluses without central cash markets, instead depending entirely on adjustments in supply, trades in spot markets, and inventory adjustments. Viewing the NCE in the context of the evolving cheese industry raises questions as to whether the NCE, as it currently functions, has become an anachronism.

G. Trading Activity of Leading Traders, 1988-1993

During 1988-1993, there was a cyclical pattern to cheese prices each year, caused by seasonal variation in overall supply and demand conditions. Prices typically were lowest in February and March, the beginning of the flush production; prices typically rose thereafter until they peaked in late summer or fall.

Overall supply and demand conditions determine the broad contour of prices over each price cycle. But given the high inelasticity of short-run supply and demand, there often is a range of prices that will clear the market at each point on the cycle. This gives traders with market power a range within which they may influence the price established each week on the NCE. Such traders might not always seek the *lowest* or the *highest* price possible each trading session; rather, they might choose to periodically influence prices over a price cycle when they believe doing so would aid in achieving their profit goals.

Leading traders on the NCE may be divided into two groups based on their differing financial interests in the level of NCE prices, other things being the same. Kraft, Borden and Alpine Lace apparently benefit from lower NCE prices, whereas Beatrice, Mid-Am, Schreiber, Land O' Lakes and AMPI apparently benefit from higher NCE prices, other things remaining the same. During 1988-1993, leading traders in the first group were predominantly seller-traders on the NCE, selling 1806 loads and buying 57 loads. Those in the

second group were predominantly buyer-traders, buying 1947 loads and selling 93 loads. The two groups made 91 percent of all purchases and 86 percent of all sales. The leading seller-trader was Kraft, which made 74 percent of all sales, and the leading buyer-trader was Beatrice, which made 35 percent of all purchases.

Over each price cycle, the seller-traders, led by Kraft, usually traded most actively at price tops, price bottoms, and intermittently when prices were rising. At price bottoms, Kraft sometimes appeared to fill as many bids as required to keep prices at or near the seasonal low. Between a price bottom and the next price top, buyer-traders appeared to bid up the market, often with few consummated sales. During periods of rising prices, the seller-traders, led by Kraft, appeared to signal implicit approval of rising prices by not participating in trading, occasionally signaling explicit approval of rising prices by joining buyers in submitting bids, and signaling disapproval of rising prices by actively selling into a rising market, thereby moderating upward price trends. When seller-traders ceased selling, the upward price trend usually continued. At price tops Kraft often initially filled bids with the effect of slowing or stopping the upward trend. Thereafter, Kraft led in filling bids and in offering to sell as the market topped and began to subside. Once a downward price trend was established, Kraft frequently continued making offers to sell--often joined by Borden and Alpine Lace and sometimes by other traders. Generally, little actual selling was required to maintain a downward price trend, since with prices falling everyone in the marketing chain generally withheld purchasing, thereby delaying inventory accumulation until prices hit bottom. The apparent effect of seller-trader activity, led by Kraft, often was to shape the pattern of NCE prices over a price cycle.

The trading conduct of the two smaller seller-traders, Borden and Alpine Lace, differed from Kraft's in an important respect: whereas Borden made 30 percent of all offers to sell barrels during 1988-1993, it made only 4 percent of all barrel sales. Likewise, Alpine Lace made 30 percent of all offers to sell blocks but made only 5 percent of all block sales. The apparent explanation for these disparities in the pattern of offers and sales is that when buyer-traders began buying heavily, Borden and Alpine Lace generally became inactive, leaving Kraft to assume the losses that usually accompanied heavy selling. Thus, Kraft clearly dominated selling activity on the NCE.

Leading seller-traders were confronted by a small group of buyer-traders, led by Beatrice in barrels and Mid-Am in blocks. The buyer-traders were most active at price bottoms and during upward price trends. At price bottoms they exerted upward pressure on the market by covering offers (usually Kraft's) or making bids (usually filled by Kraft). Whenever Kraft stopped

filling bids at a price bottom, buyer-traders actively bid up prices, usually with few or no sales, sometimes for many successive weeks. The buyer-traders appeared to be a less cohesive group than the seller-traders, since at times some buyer-traders sold when others were buying.

Overall trading patterns imply that the seller-trader activity exerted a downward influence on price, and the buyer-trader activity exerted an upward influence on price. For example, during the days Kraft and the other leading seller-traders were active on the NCE, prices *increased* during only 8 percent of the sessions, whereas they *decreased* during 43 percent of the sessions and *remained unchanged* during 22 percent of the sessions. And in 27 percent of the sessions their selling activity *moderated upward price trends*. The same general pattern existed in block trading as in barrels.

The apparent influence of buyer-trader activity was the mirror image of leading seller-trader influence, but less pronounced in its effect. During the days leading buyer-traders were active, barrel prices *increased* on 45 percent of the days, *decreased* during 30 percent of the days, and *remained unchanged* on 25 percent of the days.

H. Kraft Trading Activity 1990-1992

An in-depth analysis of Kraft's trading activity during 1990-1992 provides insights into the apparent motives and consequences of Kraft's conduct, especially during cyclical price bottoms. For example, after a large price decline during January and the first week of February 1990, prices remained virtually unchanged for two months. The low prices apparently did not fully reflect market fundamentals but rather Kraft's persistent heavy selling on the NCE. Neither Kraft nor the industry had excess inventory at the time. Indeed, the market was quite tight with many cheese companies seeking supplemental supplies in the spot market. Market supplies would have been even tighter had not some companies apparently delayed building inventories because they feared prices might fall even lower. Whereas Kraft incurred losses on its NCE sales during this period, the evidence indicates that it often could have made profitable sales in the spot market.

The evidence does not support the idea that Kraft's large NCE sales during February-March 1990 were motivated primarily by a need to dispose of surplus cheese on the NCE. Kraft documents reveal that its top purchasing officials did not believe a surplus existed or loomed on the horizon. Insofar as Kraft had any short-term supply imbalances, these could have been managed by increasing inventory modestly or by making more spot sales, the predominant methods used by Kraft and other large firms in handling surpluses in periods when price supports were not operative.

Although NCE barrel prices fell 30.5 cents per pound between the January high and the February and March lows, Kraft lowered its average net wholesale processed cheese prices by only 5 cents per pound during the same period. As a result, Kraft's gross profit margins on cheese reached record highs during February and March 1990.

This and other evidence presented in this analysis support the hypothesis that Kraft's trading activity was motivated primarily by a desire to influence NCE prices, not to dispose of surplus cheese. During 1990-1992, Kraft managed its surplus problem predominantly by reducing procurement of bulk cheese, selling in the spot market, and selling to the CCC when available. Kraft's overall NCE sales were *unprofitable*, whereas its spot and CCC sales were *profitable*. There is evidence that Kraft chose to sell cheese on the Exchange at a loss when it could have more profitably made the sales elsewhere. Such conduct constitutes *trading against interest*, the practice of purposely not selling at the profit-maximizing price. In the context of NCE trading, this implies the seller anticipates the unprofitable NCE sales will enhance company profits by lowering prices paid for bulk cheese purchased under NCE-based formula price contracts.

I. Econometric Analysis

In addition to the analyses of trader motives, overall trading patterns, and the in-depth analysis of Kraft's conduct, we made several econometric analyses of NCE prices. The analyses sought to estimate quantitatively the relationship between NCE prices and various independent variables. Two alternative estimating techniques were used in examining the relevant relationships.

The analyses tested the hypothesis that during 1988 through 1993, trading by Kraft and the other leading seller-traders had a negative influence on NCE prices, and that trading by leading buyer-traders had a positive influence on prices. The analyses found a statistically significant *negative* relationship between NCE prices and leading seller-trader activity. The analyses found a very modest *positive*, but *not statistically significant*, relationship between NCE prices and the activity of leading buyer-traders.

The analysis implies that when at least one of the three leading seller-traders, dominated by Kraft, was active each week of a month, the average block and barrel price for the month was 4 to 5 cents per pound lower than if none of these traders had been active during the month. (These estimates are expressed in 1993 dollars.) So, if these traders were active during half of the weeks in a year, block prices would have averaged 2 to 2½ cents less for the entire year.

A separate analysis was made estimating Wisconsin Assembly Point (WAP) prices rather than NCE prices. This was done to determine whether the findings regarding NCE prices were representative of the actual transaction prices for the 90-95 percent of bulk cheese sold under committed supply agreements using NCE-based formula prices. These formulas typically include a premium over the relevant NCE price, with the size of the premium varying somewhat with changes in overall market conditions. Hence, NCE prices do not reflect precisely the actual transaction prices paid under committed supply agreements.

To determine whether this potential shortcoming of NCE prices significantly affected the relevance of our results, we substituted in our estimating equations average WAP prices, which are the prices paid on spot transactions at Wisconsin assembly points. WAP prices generally are higher than NCE prices with the size of the premium influenced by market conditions. Our results using WAP prices are very similar to those using NCE prices. These results indicate that NCE prices are representative of the NCE-based formula prices for bulk cheese sold under committed supply agreements.

In sum, these analyses provide quantitative support for the hypothesis that the leading seller-traders--dominated by Kraft--were successful in reducing NCE prices when they participated in trading. In doing so they lowered the price of bulk cheese sold by cheese manufacturers at NCE-based formula prices. The trading activity of leading buyer-traders, however, had no statistically significant influence on prices.

J. Conclusions

The National Cheese Exchange and its predecessors have been subject to periodic criticisms and questions since their inception. It is easy to understand why. This tiny market in Green Bay, Wisconsin, operates for about 30 minutes each week with trades averaging 0.2 percent of total cheese volume during 1988-1993; yet the NCE price is used to formula-price virtually all bulk cheese transactions. This enormous leverage and the concentrated nature of trading raises questions as to whether the NCE may be subject to manipulation for the benefit of some traders.

During the 1970s and through the mid-1980s, cheese prices were determined largely by government price supports for cheese; prices on the NCE seldom moved far from the CCC price. Thus, there was less opportunity and incentive for firms to manipulate the NCE. As price supports and CCC stocks declined, the role of the NCE in cheese pricing changed. Cheese prices became increasingly market driven, price volatility increased sharply, and in this environment the potential pay-off from *managing* NCE prices increased.

During 1988-1993, the NCE apparently did not perform the functions expected of a *bona fide* cash auction market serving primarily as a supplemental outlet or supply. In *bona fide* cash agricultural auction markets, price determination is the *result* of trading, not the *purpose* of it. However, the evidence presented in this report provides considerable support for the hypothesis that during 1988 to 1993, leading seller-traders and, to a lesser extent, buyer-traders, engaged in trading primarily to influence NCE prices.

There is evidence that in recent years Kraft has been the market leader on the NCE. Whereas Kraft is the leading *buyer* of bulk cheese off the NCE, beginning in August 1986 Kraft became exclusively a *seller-trader* on the NCE. During 1988-1993 it made 74 percent of all barrel and block *sales* on the Exchange. In the important barrel market segment, which accounted for 68 percent of NCE sales, Kraft made 83 percent of all sales. Together with two other leading seller-traders, Kraft accounted for 88 percent of all barrel sales and 70 percent of all block sales.

Analysis of trading conduct during 1988-1993 indicates that Kraft's trading activity appeared to fashion the pattern of NCE prices over each price cycle. Kraft's sales on the Exchange were usually at a loss, whereas when it sold either in the spot market or to the CCC it generally made a profit (or incurred a smaller loss than on the NCE).

While Kraft was the dominant seller-trader on the NCE, it frequently was joined by Borden and Alpine Lace. These three seller-traders were frequently confronted by five leading buyer-traders, Beatrice, Mid-Am, Schreiber, Land O' Lakes and AMPI. The buyer-traders--especially Beatrice and Mid-Am--often appeared to challenge Kraft's conduct at cyclical price bottoms and price tops, and to take turns bidding up prices during rising price trends. Insofar as cooperation occurred among buyers or among sellers, this may merely have reflected a shared interest in the level of prices; we found no evidence of collusive conduct among traders. The buyer-traders were a less cohesive group than the seller-traders, with some buying while others were selling.

The above characterization of trading conduct on the NCE implies that prices were established within the context of bilateral oligopoly, with Kraft acting as the dominant price leader, with two followers, confronted by five leading buyer-traders. Economic theory teaches that what actually happens under bilateral oligopoly depends upon the relative market power of the conflicting parties, including which party exercises price leadership. When power is evenly divided, the resulting prices *may* approximate competitive ones. If one side enjoys greater power than the other, the resulting prices will benefit the holders of greatest power. The study

examined this issue by analyzing the conduct and performance of leading traders.

The analysis indicates that there was an imbalance in market power between buyer-traders and seller-traders, with the balance favoring Kraft and its followers. Kraft is the largest cheese company, the largest buyer of cheese off the NCE, and the leading seller on the NCE, especially in barrel cheddar cheese. We estimate that Kraft used 35 to 40 percent of all barrel cheese made in the United States in 1992,³ practically all of which was purchased under committed supply agreements at NCE-based formula prices. Kraft, in turn, uses this barrel cheese in processed cheese and cheese spreads, where Kraft accounts for about 60 percent of retail sales.

Kraft's large size in the cheese industry and dominance in NCE trading give it several *strategic competitive advantages* over traders and potential traders.⁴ One competitive advantage derives directly from Kraft's position as the largest buyer of cheese off the NCE⁵. Each year Kraft builds some surplus into the amount of cheese it agrees to buy from committed

³ A 1989 Kraft document states that Kraft utilizes [...] percent of the cheese produced in the U.S. Kraft General Foods, Inc., *Cheese Procurement Strategy, Operations*, December 6, 1989, KGF 2948, 2977. In November 1990, Kraft's cheese procurement director estimated that Kraft accounted for [...] percent of total U.S. cheese production. Kraft General Foods, Inc., Wayne Hangartner, "Jerome Cheese Company," November 8, 1990, KGF 3218, 3228. Information has been redacted from the report at this time pursuant to an agreement with Kraft General Foods, Inc., that there will be a subsequent judicial resolution of a good-faith dispute over the trade secret status of the information.

⁴ A firm enjoys a strategic competitive advantage if it can employ strategies not available to other actual and potential market participants. Alexis Jacquemin, *The New Industrial Organization*, The MIT Press, 1987, 107-129; Michael E. Porter, *Competitive Advantage*, The Free Press, New York, 1985; T. Schelling, *The Strategy of Conflict*, Harvard University Press, 1960.

⁵ In an interview, Richard B. Mayer, Chairman-CEO of Kraft General Foods, Inc., reportedly said size "yields a lot of areas of *competitive advantage*" including "incredible purchasing power. Those types of advantages are very, very real." Emphasis added. J. Liesse and J. Dagnoli, "Goliath KGF Loses Steam After Merger," *Advertising Age*, January 27, 1992, p. 17.

suppliers.⁶ In addition, it typically has first call on any excess cheese produced by committed suppliers, thereby controlling whether the cheese is sold in the spot market or on the NCE. Thus, Kraft has various methods of managing its surplus, which gives it the option of selling as much of the surplus on the NCE as best serves its interest.

Buyer-traders apparently do not have similar flexibility. Cheese marketers like Beatrice and Schreiber may plan each year to buy some cheese in the spot market and on the NCE. But the amount they can buy on the NCE may vary greatly from week to week. It is, therefore, risky for such marketers to plan on the NCE as a significant supply source. Since most marketers obtain 90-95 percent of their cheese under committed supply arrangements, this limits the extent to which they can buy cheese on the NCE.⁷ Likewise, when selling on the NCE, Kraft often deals directly with

(fn. 5 cont.)

Kraft included among the implications of being the largest cheese buyer the ability to get better information than others about overall market conditions. Kraft General Foods, *Cheese Procurement Strategy, Operations*, December 6, 1989, KGF 2948, 2990. It included among the strategies to maximize profits: developing superior information systems; establishing inventory strategic reserves; and influencing industry conditions to support Kraft business strategy. *Id.* 2993.

⁶ Kraft buys virtually all its barrel cheese needs from committed or spot suppliers. Kraft also can obtain additional barrel or block cheese from some of its committed supplier plants that can convert from making block to barrels. Such plants are referred to as "balancing" plants. If need be, these plants can supply additional barrels or blocks for trading purposes, thus contributing to Kraft's supply flexibility.

⁷ Of course, one option would be for a trader to buy at a low price on the NCE and sell at a higher price in the spot market. We have no evidence that this occurs frequently, although brokers may occasionally do so. Perhaps the reason for this is that buyer-traders believe the potential rewards are smaller than the potential risks. This is especially true at market tops and in declining markets, when a speculative buyer-trader may end up selling at a lower price in the spot market than he paid on the NCE.

At market bottoms, such speculative trading may be discouraged because continued heavy seller-trader activity may ultimately drive prices down even lower. Finally, other seller-traders that benefit from lower prices would not be inclined to buy on the NCE if doing so threatened to increase prices or slow decreases.

cooperative cheese manufacturers that sell much of their bulk cheese (as committed suppliers or in the spot market) to Kraft and other cheese marketers. Although cooperatives often plan to buy some cheese in the spot market, their needs at a specific time may be quite limited. Since they must ultimately sell any cheese purchased that exceeds their needs, they face the same problem as the proverbial coal mines of Newcastle. Moreover, during 1988-1993, the leading cooperatives did not appear to coordinate their buying efforts on the Exchange. Land O' Lakes was an active seller-trader on a number of occasions. AMPI, the largest cheese cooperative, was the least active of the five leading buyer-traders, and on one occasion sold heavily (while other buyer-traders were buying) on the Exchange, causing an historic drop in prices. Thus, the leading buyer-traders at times appeared to trade at cross purposes, an action which suggests that they constituted a less cohesive group than the seller-traders.

Kraft enjoys another strategic advantage over buyer-traders because of the asymmetry in market information among traders.⁸ Kraft believes that its greater overall size and larger committed supplier base compared to other traders give it superior information regarding the size of industry inventories and overall supply/demand conditions. Other traders acknowledge that Kraft is the best informed trader, commanding the respect of both sellers and buyers. Because of Kraft's superior market knowledge, other traders hesitate to oppose Kraft's view of market conditions as implied by its trading conduct, especially during the turning points at the bottoms and tops of price cycles. When Kraft is active in a down market, traders with coincident interests often join in offering cheese; but traders with

⁸ The literature of strategic behavior includes asymmetry of information among rivals as an important factor conferring strategic advantage to a firm. David Encaoua, Paul Geroski and Alexis Jacquemin, "Strategic Competition and the Persistence of Dominant Firms," in Joseph Stiglitz and G. Frank Matthewson (ed.), *New Development in the Analysis of Market Structure* (1986), p. 55. Economic theory also suggests that asymmetric information facilitates cartel behavior. J.S. Feinstein, M.F. Block, and F.C. Nold, "Asymmetric Information and Collusive Behavior in Auction Markets," 74 *American Economic Review* (June 1985), 441-460. In a recent decision, the British Office of Fair Trading concluded that "asymmetries in information" constituted a significant barrier to entry. M.A. Utton, *Market Dominance and Antitrust Policy*, 1995, p. 130. See note 5 above regarding Kraft's superior market information.

conflicting interests may remain on the sidelines because they suspect Kraft knows better than they such relevant facts as the size of industry inventories and shifts in aggregate supply and demand. A trader contemplating activity contrary to that of Kraft may believe such a strategy involves greater risk than going along with Kraft. Such conduct may also be encouraged by the fact that all leading buyer-traders have much slimmer profit margins than Kraft. The deference shown Kraft because of its superior market knowledge is a classic example of strategic advantage conferred by asymmetrical market knowledge.

Finally, Kraft gains competitive advantage because it buys so much cheese off the Exchange directly from actual and potential Exchange traders, a fact which may explain why important suppliers of Kraft have elected not to participate in trading. Only one (AMPI) of Kraft's leading suppliers during 1991-1992 traded on the Exchange in those years. This suggests that Kraft's leading suppliers were reluctant or unable to challenge Kraft on the NCE even though their interest in NCE price levels differed from Kraft's. No such constraints are placed on buyer-traders for whom Kraft is not a large customer off the NCE. Beatrice, Schreiber, Mid-Am and Land O' Lakes, the leading buyer-traders on the NCE, are not committed suppliers of Kraft, and they sell relatively little of their total bulk cheese output to Kraft. On the other hand, AMPI, an agricultural cooperative, the country's largest cheese manufacturer and a large committed supplier of Kraft, made far fewer purchases on the NCE than did Mid-Am, the nation's second largest cheese cooperative. AMPI's behavior is consistent with the expectation that firms selling relatively large amounts of cheese to Kraft off the Exchange are not likely (or able) to challenge Kraft's conduct on the NCE. Likewise, any trader that has a continuing business relationship with Kraft may cooperate with it on the NCE despite the fact that NCE prices seemingly have a neutral impact on the trader's profitability.

These various strategic competitive advantages are the source of Kraft's ability to exercise price leadership on the NCE. As Michael E. Porter observed, "industry leadership is not a cause but an effect of competitive advantage."⁹ No other trader on or off the Exchange enjoys these advantages, all of which derive

⁹ Michael Porter, *Competitive Advantage*, (The Free Press-Macmillan Inc.), 1985, p. 26. Emphasis in the original. David Encaoua, Paul Geroski, Alexis Jacquemin. "Strategic Competition and the Resistance of Dominant Firms: A Survey," in Joseph Stiglitz and G. Frank Mathewson, *New Development in the Analysis of Market Structure*, MIT Press, (1983) 79, 55-56.

from Kraft's large overall size and unique organizational structure. In this context, Kraft holds the balance of power. Of course, there may be times when supplies are so tight that Kraft is unable to depress prices on the NCE. Indeed, it may not be in Kraft's interest to do so at times, lest price be inadequate to bring forth a sufficient supply. But this only indicates, of course, that there are constraints on Kraft's ability to influence prices, a condition true even for a monopolist.

Kraft's potential influence over industrywide prices would be greatly diminished if it only *bought* from committed and spot suppliers and *sold* any surpluses in the spot market, since then its influence over price would be limited primarily to its buying power in the aggregate cheese market. Since Kraft's cheese requirements account for a quite modest share of total cheese production (approximately 15 to 20 percent),¹⁰ it would have little unilateral control over price.

Thus, the existence of the NCE and the industrywide practice of NCE-based formula pricing greatly enhances or facilitates the use of the power conferred by Kraft's various strategic advantages.¹¹ Since potential traders do not enjoy these advantages,

they cannot effectively *contest* the pricing decisions made on the NCE. This establishes the NCE as an incontestable submarket within the aggregate cheese market. And because cheese in the aggregate market is priced "off the NCE," the ability to influence NCE prices confers influence over industrywide prices.

The documentary evidence indicates that sellers with strong brands not coupled to NCE prices benefit from lower NCE prices, other things being equal. Kraft's conduct on the Exchange, as well as documentary evidence, implies that it believed it could influence NCE prices, and that at times it sold at a loss to accomplish this result. Selling on the NCE at a loss when it could have sold profitably (or at a smaller loss) elsewhere constitutes irrational business conduct unless Kraft expected to benefit from lower prices paid to committed suppliers. That is to say, rational businessmen would not needlessly squander resources in Exchange selling unless they believed doing so enhanced overall profits.

Kraft's former director of procurement rationalized Kraft's behavior on the NCE by explaining that when Kraft has a surplus it first offers cheese to potential spot buyers. When it exhausts this demand, it sells the remainder on the NCE at a loss, if necessary. He acknowledged that in this scenario the NCE might be viewed as a *market of last resort*. If correct, this would be a serious indictment of the thin NCE market as an appropriate basis for formula pricing practically all sales of bulk cheese.

Kraft's use of the NCE as a market of last resort is also irrational conduct for a seller seeking to maximize profits on surplus sales. Economic theory teaches and business experience verifies that sellers in imperfectly competitive markets avoid publicizing prices of distress sales to avoid "spoiling" the market for other sales. This logic implies that a rational seller would make distress sales in the spot market, not the NCE where prices become public immediately. It is rational, however, to treat the NCE as a *market of last resort* if doing so reduces the price at which a *seller* on the Exchange *buys* large amounts of bulk cheese off the Exchange at NCE-based formula prices.

Finally, our econometric analysis provides further support for the hypothesis that during 1988-1993 Kraft and other seller-traders had a significant negative impact on NCE prices. The implication is that at times Kraft enjoyed significant savings in procuring bulk

(fn. 9 cont.)

Steven C. Salop, "Strategic Entry Deterrence," *American Economic Review*, 69 (May 1979), 335-338.

Michael E. Porter, *Competitive Advantage*, The Free Press, New York, 1985. Steven C. Salop (ed.), *Strategy, Predation and Antitrust Analysis*, Federal Trade Commission, Washington, D.C., September 1990.

¹⁰ In a public document Kraft reports that in 1992 it accounted for about 20 percent of all cheese in the U.S., and 40-45 percent of all cheese sold through supermarkets. Dede Thompson Bartlett, Vice President and Secretary, Phillip Morris Companies Inc., to the Reverend Seamus P. Finn, O.M.I., February 24, 1992, enclosures, Kraft General Foods, Inc., "Share of the U.S. Dairy Industry," and "Facts about Kraft's Cheese Business."

¹¹ The NCE, as presently structured, may be viewed as an institution that enhances or *facilitates* the use of unilateral or collective market power. The legal-economic literature on facilitating practices usually discusses them in the context of practices that promote cooperation among competitors and market dominance. The critical point is that the facilitating practice enhances the use of unilateral or collective market power. See Scherer and Ross, *op cit*, 235-274; Donald S. Clark, "Price Fixing Without Collusion," 1983, *Wisconsin Law Review*, 887; Kevin J. Arquit, "The Boundaries of

(fn. 11 cont.)

Horizontal Restraints: Facilitating Practices and Invitations to Collude," Federal Trade Commission, Washington, D.C., August 11, 1992; Randall C. Marks, "Can Conspiracy Theory Solve the Oligopoly Problem?" 1986, *Maryland Law Review*, 387.

cheese because it bought the cheese at NCE-based formula prices. The econometric analysis found that leading buyer-traders had no statistically significant impact on prices. But based on our non-econometric analysis of buyer-trader motives and conduct, we are inclined to believe they did have a modest countervailing influence. At a minimum, had they made no effort to countervail Kraft's leadership, NCE prices might have been lower at times. Thus, we do not imply that there are no constraints on Kraft's influence, but rather that during 1988-1993, the balance of power tilted in Kraft's favor and that at times it benefitted from this advantage.

Farmers have an important financial interest in higher NCE prices, but their cooperatives cannot be indifferent to the effect higher prices may have on milk output. In the absence of control over the supply of milk for manufacturing and without government support programs, the highest price cooperatives may achieve is the competitive equilibrium price. They do, of course, have a strong incentive to prevent NCE prices from going below this price, which may occur if NCE prices are manipulated.

In sum, our analysis of business motives, trading conduct on the NCE, an in-depth analysis of Kraft's conduct on and off the NCE, and a quantitative analysis of NCE prices indicate that the National Cheese Exchange was not an effectively competitive price discovery mechanism during 1988-1993. As currently organized, the Exchange appears to facilitate market manipulation. The main beneficiaries of this situation appear to be Kraft General Foods, Inc., and other seller-traders with coincident interests. The evidence supports the hypothesis that during 1988-1993 Kraft (a) had a financial *motive* for influencing NCE prices, (b) had the *power* to influence prices, and (c) had at times exercised this power for its benefit. We emphasize, however, that we found no evidence of collusion among cheese companies.

This raises the question, did Kraft possess *unilateral* power over prices in NCE trading? To possess unilateral power, a firm must hold a substantial market share in an economic market with significant entry barriers that protect the firm from potential competitors.

Kraft's average share of NCE sales during 1988-1993 was 74 percent, which is well above the range that economists generally consider sufficient to confer unilateral power in a market with high entry barriers.¹²

NCE trading constitutes a separate economic market shielded by substantial entry barriers. These barriers exist because practically all bulk cheese prices in the aggregate cheese market are priced off NCE prices and because actual and potential traders in the aggregate market cannot replicate, at the same cost, the

strategic competitive advantages Kraft enjoys in NCE trading. Therefore, both the actual and potential traders on the NCE apparently cannot successfully *contest* the prices established there, even when they depart significantly from competitive levels.¹³

Thus, during 1988-1993, Kraft enjoyed the two necessary conditions of unilateral power, a large market share in a market with significant entry barriers.

Because these conclusions are based on an analysis of the six-year period, 1988-1993, they may reflect factors *unique* to these years and, therefore, may be an imperfect predictor of the future performance of NCE pricing. There is evidence that beginning in 1990 Kraft engaged in especially aggressive short-run profit maximization, as it substantially increased gross profits for cheese by widening the spread between wholesale net selling prices and bulk cheese procurement costs (Exhibits 7 and 8). During this period Kraft appears to have used the competitive advantages it enjoys in NCE trading to periodically depress bulk cheese prices, perhaps by a greater amount than is sustainable in the future. If so, this does not diminish the apparent consequences of Kraft's conduct during the years studied, nor does it gainsay the need to enhance the NCE's competitive performance. Even short-run price manipulation subverts the market to the detriment of consumers and farmers as well as some industry participants (Exhibit 9).

¹² Economists typically assume firms with market shares exceeding 40-50 percent may possess unilateral market power. George J. Stigler, *The Organization of Industry* , 1968, 228, uses 40 percent in identifying such firms. P.A. Geroski, "Do Dominant Firms Decline," in Donald Hand and John Vickers (eds.), *The Economics of Market Dominance* , 1987, states that "A market share of 40 percent is the conventionally accepted cut-off point" in identifying dominance.

During 1988-1993, Kraft's annual share of NCE sales ranged from 56 percent to 91 percent. Kraft's share apparently varied, in part, depending upon the volume of sales required to achieve its objectives. Each year it very probably could have sold larger amounts on the NCE had this been required to achieve its objectives.

¹³ The theory of contestable markets holds that a firm with a large market share has power over price if entry and exit in a market are made difficult because of significant advantages enjoyed by the dominant incumbent firms. John C. Panzar and Robert D. Willig, *Contestable Markets and the Theory of Industry Structure* , 1982. Also, see text at notes 30-31, Chapter 3, for reasons NCE prices may not be representative of aggregate demand and supply conditions.

K. Public and Private Initiatives to Improve Price Discovery

There are several possible solutions to the problems with price discovery on the NCE. Included in the following discussion are policies and procedures which could be implemented in conjunction with the NCE, as well as suggestions for possible alternatives to the Exchange as a central cash auction market.

In considering alternatives to the Exchange, we are mindful that despite its deficiencies as a price discovery mechanism, the Exchange is widely used by industry participants as a reference price in formula pricing. This function is highly prized by many because it greatly reduces transaction costs. It is, therefore, imperative that any alternative to the Exchange continue to provide this function.

The Problem of Trading Against Interest

As discussed earlier, an anomalous trading pattern has emerged on the NCE in which the leading *sellers* on the NCE are predominantly *buyers* of bulk cheese off the NCE; the leading *buyers* on the NCE are either large agricultural cooperative cheese manufacturers that *sell* bulk cheese off the NCE or large cheese marketers that sell private label brands or weak company brands. This trading pattern appears to be motivated by efforts to influence prices, not to use the Exchange as a residual market.

This behavior may involve what legal-economic analysts characterize as "trading against interest," a phenomenon in which big buyers (sellers) of a product may sell (buy) some of it in one market in a way that depresses (increases) the price in another market where the companies buy (sell) practically all their supplies. Such conduct always raises a question of potential market manipulation.

While both leading buyers and sellers on the NCE may have periodically attempted to trade against interest in recent years, leading seller-traders, dominated by Kraft, appear to have been the main beneficiaries of the practice. Indeed, the conduct of leading buyer-traders during 1988-1993 may have been largely a response to Kraft's seller-trader activity beginning in August 1986. The apparent purpose and effect of Kraft's conduct on the NCE have certain parallels to a classic market price manipulation case involving trading against interest. In *Socony*, the major oil companies used the spot market price of gasoline to formula-price gasoline they sold to jobbers. By purchasing a small amount of gasoline in the spot market, the major oil companies were able to raise spot prices, thereby raising prices to jobbers and consumers throughout the Midwest.¹⁴ The Supreme Court concluded in part:

[T]he fact that sales on the spot markets were still governed by some competition is of no consequence. For it is indisputable that competition was restricted through the removal by respondents of a part of the supply which but for the buying programs would have been a factor in determining the going prices on those markets.¹⁵

Whereas the oil companies manipulated the spot market in order to benefit their selling prices, Kraft sold on the NCE with the apparent purpose and effect of lowering the price it paid for cheese purchased from committed suppliers under NCE-based formula prices.

Unlike the major oil companies, who achieved their purpose by *agreement* among oligopolists, Kraft's conduct seems to involve primarily a *unilateral* action, followed by some cooperating marketers with interests similar to Kraft's. *Unilateral* conduct involving selling against interest also *may* violate public policy when practiced by a dominant trader. For example, in a consent decree the National Cranberry Association, the dominant cranberry marketer, is among other things restrained from, "Purchasing cranberries from others and reselling or otherwise disposing of them to artificially raise, depress or stabilize market price levels of fresh or processed cranberries."¹⁶

Various public and private initiatives may aid in eliminating the market failure problems caused by trading against interest. To be effective, the policies must address the factors that make such trading possible and that give competitive advantage to some traders. Below we discuss possible approaches to the problem.

Prohibiting Trading Against Interest

The courts have approved decrees banning trading against interest where the purpose and effect have been to manipulate prices.¹⁷ We do not presume here to determine whether the apparent trading against interest on the NCE meets the standards of legal proof required for a finding of price manipulation under the Federal or Wisconsin antitrust and unfair competition statutes.

¹⁴ *United States v. Socony*, 310 U.S. 150 (1940).

¹⁵ *Ibid.*

¹⁶ *United States v. Nat. Cranberry Ass'n*, 1957 TC par. 68, 850 (D. Mass 1957).

¹⁷ For example, *Socony* and *National Cranberry Assn.*

The NCE By-Laws have been applied to prohibit trading against interest, although they have been applied only narrowly. In one instance a trader who covered an outstanding offer at a higher price than the last covered offer was reprimanded by the Directors of the Exchange because the trade "was not consistent with the *natural self interest* of buyers to attempt to purchase at the existing or a lower market price."¹⁸ Yet, Exchange president Richard Gould and the NCE Board of Directors have expressed the view that the NCE cannot be manipulated by the "unilateral" action of an individual trader.¹⁹

Trading Limits

A cash auction market may adopt rules limiting the amount of purchases or sales made by a single party. For example, the United States Treasury Department has such a rule in the sale of United States securities: "The maximum award that will be made to any bidder is 35

¹⁸ Minutes for a Special Meeting of the Board of Directors of National Cheese Exchange held on August 31, 1990, 3. Emphasis added. Exchange President Gould wrote this trader that "your company's *trading activity was clearly against its economic best interests* and could easily be interpreted as an intentional attempt to manipulate the market price of 40 pound block." Emphasis added. R.J. Gould to Robert Burns, President, Beatrice Foods, September 21, 1990. For a discussion of this and a similar incident see text at notes 108-111, Chapter 4. The Board viewed this conduct as "detrimental to the interests and welfare of the Exchange." Minutes of a Special Meeting of the Board of Directors of the National Cheese Exchange, August 31, 1990, p. 4. The Board's authority for prohibiting such conduct is Article III Section 4(a) of the NCE By-Laws, which authorizes the Board to suspend a member for "any conduct considered detrimental to the interests or welfare of the Corporation. Suspension in each case shall be for such period of time as may be designated by the Board of Directors not exceeding six months." National Cheese Exchange By-Laws, Article III, Section 4(a), which was amended August 23, 1988, "increasing permissible suspension from two months to six months."

The Exchange president has responsibility for monitoring trading activity for collusion. "Interview of Richard J. Gould," Rosemary Derrio to Matt Frank, Assistant Attorney General of the Wisconsin Department of Justice, March 4, 1988, p. 3.

¹⁹ See Chapter 4, note 100 and text at note 103.

percent of the public offering...."²⁰ This rule was deemed necessary despite the fact that there are about 35 "primary" treasury security dealers, as well as other bidders for a particular security being sold. Moreover, the new security competes with similar securities already available in the market; for example, a new two-year treasury security has competition from already issued securities of similar duration.

This approach may not be practical on the NCE. It clearly could not be applied to trading for individual days. Nor may it be practical if applied to longer periods, since a trader would never know beforehand how much total trading would occur over the relevant period.

Alternative Basis for Formula Pricing Cheese

One alternative for preventing any trader from affecting price by trading against interest is to change the rules of the NCE, or enforce more aggressively the existing rules. Another alternative is to develop some price basis other than the NCE that can be used for formula pricing bulk cheese. From time to time, some members have advocated alternatives. Indeed, apparently some Kraft officials are not wedded to the NCE and have said that Kraft supports the review of alternatives to the NCE, and expects to participate in any alternative.²¹ In our view, however, the required

²⁰ *Sale and Issue of Marketable Book-Entry Treasury Bills, Notes, and Bonds*, Department of the Treasury Circular, Public Debt Series No. 1-93, Section 35622.

May 20, 1992, Saloman, Inc. and Saloman Brothers, Inc., entered into a consent settlement agreement with the Securities and Exchange Commission for allegedly violating the Treasury Department 35 percent rule. Among other matters agreed to in the settlement, Saloman was required to pay \$190 million to the United States and \$100 million for compensatory damages to injured parties. *Securities and Exchange Commission v. Saloman Inc. And Saloman Brothers Inc.*, Complaint and Permanent Injunction and other Relief, May 20, 1992.

²¹ Kraft General Foods, Inc., *Milk Prices, Cheese Prices and the National Cheese Exchange*, author not identified, April 14, 1992, KGF 16948, 16956. A cover page to the document indicates it was forwarded from Wayne Hangartner, Kraft's Director of Cheese Procurement and Inventories, to others in his department, and is identified as "Copy of Presentation to the Dairy Farm Specialists" on 4/14/92. A similar sentiment is expressed in Kraft General Foods, Inc., *National Cheese Exchange (NCE)*, author not identified and undated, KGF 16913, 16917.

industry participation and assistance which would be required to make any fundamental changes may not be forthcoming until some State or Federal authority determines whether trading against interest has occurred and has adversely influenced prices on the Exchange.

In considering alternative bases for formula pricing, it is important to keep in mind that existing problems with the NCE are due to a combination of factors: the Exchange is a *highly concentrated, thin market*, that is highly leveraged in its effect through *formula pricing*; and Kraft enjoys a *strategic competitive advantage* over other actual and potential traders on the Exchange. So long as these conditions exist, the NCE serves to *facilitate* non-competitive behavior. Any alternative basis for formula pricing, to be an improvement, must eliminate or reduce the distorting influence of these problems.

Trading on the NCE is much more concentrated than is cheese manufacturing, cheese converting or cheese marketing. If the industry were to adopt a different price discovery mechanism that encouraged/allowed participation of more members representative of the aggregate market, a more competitive market would evolve. Such a market might be much less concentrated and might reduce the strategic competitive advantages Kraft enjoys in NCE trading, especially if the other initiatives discussed below were adopted.

Price Report for Direct Spot Transactions

Price reports of decentralized spot transactions are used in several commodities as a reference price for formula pricing (see Appendix 7.A, which reviews thin market/formula pricing problems in other agricultural commodities). This system is clearly feasible in the case of cheese. At the present time, Wisconsin Assembly Point prices are reported weekly. However, the accuracy of these reports is not highly regarded by industry members. To replace the NCE as a basis for formula pricing, the spot market price report would need to be substantially improved.²²

(fn. 21 cont.)

On another occasion Phillip Morris Vice President and Secretary stated that Kraft supports "the review of alternatives [to the NCE] and expects to participate in any alternative that may be developed." Dede Thompson Bartlett, *op. cit.*, p. 2. See note 10 above, this chapter.

²² One cheese company has used the WAP price in setting the premiums paid one of its suppliers in Wisconsin.

Such a price report could still encounter thin market problems since the spot market for bulk cheese represents only 5 to 10 percent of total cheese volume, and during tight supply conditions perhaps much less than that. We have not been able to determine the size of the spot market for cheddar cheese which meets NCE standards. We do know, however, that it is significantly larger than the current volume sold on the NCE. Even the largest traders typically trade much more off the NCE than on it, and numerous cheese companies never trade on the Exchange. A report covering spot sales nationally would enlarge the total volume of direct transactions, greatly expand the reporting base and better reflect aggregate market conditions. (The current WAP price report covers only sales in Wisconsin.) Such an enlarged spot price reporting program would better reflect the overall structure of cheese manufacturing and cheese marketing, which is relatively unconcentrated and, therefore, less subject to manipulation. Thus, we believe that thin market problems would be fewer and less influential than those of the NCE.

In order to avoid a thin price reporting problem like those encountered in beef (see Appendix 7.A), it would be essential that the spot market price report be accurate and based on a significant portion of spot transactions. Thus, a mandatory reporting program similar to those used for some products in California may be required.²³

While price reports of spot transactions of bulk cheese appear feasible at the present time, it is well to keep in mind that there are other ways of developing an acceptable reference price. Another alternative is for market news to "simulate or formulate prices for thin markets based upon prices of related products that are traded in less thin or more price-representative markets."²⁴ For example, live broiler prices can be formulated from ready-to-eat broiler prices. And, carcass beef prices can be formulated from boxed beef prices. Thus, if the spot market for bulk cheese should also become too thin over time for reliable price discovery, there may be other ways of developing an acceptable reference price.

Electronic Marketing Systems

Spot market trading might be facilitated by the adoption of an electronic market system. Electronic markets have been tried with mixed success in several agricultural commodities. Although several of the

²³ See text at note 31 this chapter.

²⁴ D.R. Henderson, "Price Reporting in Thin Markets," in Hayenga, p. 120.

markets did not succeed, experience has shown that such markets generally reduced marketing costs, increased prices to sellers and lowered costs to buyers, improved pricing efficiency and increased competition.²⁵ The problems of adapting to an electronic market in cheese may be less difficult than in most other products where such markets are used or have been tried.

An electronic market system might increase spot trading in several ways. It could aid spot traders in identifying the nearest potential suppliers or buyers. Trading volume could also be increased if the electronic market permitted trading in cheeses not meeting the current NCE age and quality requirements; in addition, the frequency of trading could be increased to daily or three times a week.

To succeed, an electronic system must be cost effective. In the 1980s, several electronic markets closed because of high fixed costs and low trading volume; however, enormous strides have been made in computer and communication technologies since then. With current technology, an electronic market for cheese might be less costly than the NCE, when all costs are considered. The market could be supported by all industry participants as is done in some California market reporting programs.

Higher prices to commodity sellers in electronic markets appear to stem in part from increased competition between buyers and in part from reduced transaction costs. Studies of computerized auctions of slaughter lambs,²⁶ feeder cattle,²⁷ and hogs²⁸ found they increased prices to producers.

²⁵ Wayne D. Purcell and T. L. Sporleder, "Will Electronic Markets Continue to Develop?" *National Conference on Electronic Marketing of Livestock*, Chicago, October 4, 1990.

²⁶ James R. Russell and Wayne D. Purcell, "Costs of Operating a Computerized Trading System for Slaughter Lambs," *SJAE*, Vol. 15, No. 1, July 1983, pp. 123-127.

²⁷ Thomas L. Sporleder and Phil L. Colling, "Competition and Price Relationships for an Electronic Market," selected paper, 1986 annual meetings of the AAFA, Reno, Nevada, July 27-30, 1986.

²⁸ W. Timothy Rhodus, E. Dean Baldwin, and Dennis R. Henderson, "Pricing Accuracy and Efficiency in a Pilot Electronic Hog Market," *AJAE*, 71:4, November 1989, pp. 874-882.

Part of the benefit of electronic trading is its anonymity, according to empirical analyses of these markets.²⁹ In oligopolistic markets, traders are more likely to compete on price if their rivals do not know the parties involved and the terms of each transaction. This is in sharp contrast to NCE conditions where each trader's action is immediately known to others. In markets of few sellers, such transparency of trading tends to *facilitate* market manipulation, not competition.

An efficient electronic spot market would not, alone, solve problems arising from persistent and systematic "trading against interest" by a firm with competitive strategic advantages over other actual and potential traders. But this practice would be more difficult if much of the current spot trading were shifted to an electronic market and if other steps were taken to reduce the competitive advantage of some traders, e.g., eliminating advantages deriving from the asymmetrical market knowledge of traders.

The above are merely suggested options in creating an electronic market system that may facilitate and enlarge spot trading. Industry users and others experienced in electronic markets can best determine the adjustments necessary for success in cheese.

Public and Private Actions to Improve Market Information

Accurate market information is an essential prerequisite of competitive markets. Asymmetry in market knowledge is one problem among traders on the NCE. Public information can be improved, however, particularly regarding inventory levels and prices off the NCE.

Many industry personnel interviewed in the course of this study expressed dissatisfaction with current information on commercial inventories, since they regard inventory information as critical in making price decisions. Although government data reflect trends, they do not accurately measure total inventory. Likewise, industry participants question the accuracy and usefulness of Wisconsin Assembly Point prices. This source of spot price information would be improved if it covered spot transactions in all major cheese manufacturing areas.

The Agricultural Marketing Service (AMS), USDA, should be encouraged to improve the quality of estimates and be provided the resources necessary to accomplish this. All the AMS dairy market news

²⁹ Shannon R. Hamm, Wayne D. Purcell, and Michael A. Hudson, "A Framework for Analyzing the Impact of Anonymous Bidding on Prices and Price Competition in Computerized Auction," *NCJAE*, 7:2, July 1985, pp. 109-117.

information programs rely on voluntary responses. We believe that it may be necessary to initiate mandatory reporting programs to obtain accurate information of inventories and prices. Such programs have been adopted for some commodities by the State of California and others.³⁰ For example, California's market reporting program in grapes is mandatory, its costs paid by grape processors and growers.³¹ Similarly, the California State Market News Service has a mandatory program for reporting the price of nonfat dry milk. To insure accuracy, the records of NFDL plants are audited every two months. It is generally acknowledged that the NFDL prices reported for California are much more reliable than those reported for other regions of the country, which are based on weekly phone calls to a relatively few plants by Market News personnel.

Agricultural cooperatives also provide a promising vehicle for obtaining more accurate market information for their members. For example, in 1992, agricultural cooperatives in California and Washington established the Western Cooperative Milk Marketing Association, a marketing agency in common as permitted by the Capper-Volstead Act. This association reports to its members in aggregate form (separately for spot and contract sales) the weekly production, inventory and average prices of nonfat-dry milk and butter. Since these cooperatives represent about two-thirds of NFDL output in the country, this market information is extremely important. The association also sets a minimum price at which members agree to sell their butter and cheese.

A 1992 survey of Upper Midwest Cooperatives indicated that they believed information-sharing on cheddar and mozzarella cheese would have potential for improving their marketing efforts.³² No action has been taken to date.

Cooperative information-exchange efforts have the potential to improve the efficiency of cheese pricing. As noted in our study, the current asymmetry in market information among traders appears to be one source of

³⁰ See Henderson *op. cit.*, p. 122, regarding the legislative authority given the Secretary of Agriculture to mandate information on private trades for cotton.

³¹ State of California, 1992 Food and Agricultural Code, Article 8, section 55601.6.

³² Robert Cropp, *The Feasibility of Joint Activities Among Dairy Cooperatives in the Processing and Marketing of Cheese*, University of Wisconsin Center for Cooperatives, UW-Madison, University of Wisconsin Extension-Cooperative Extension.

Kraft's competitive advantage on the NCE. We recommend that cooperative information-exchange efforts have open membership to qualified cooperatives. Such a system creates the greatest likelihood that such efforts will improve competitive performance in a market.

Futures Trading in Cheese

A futures contract for cheddar cheese was initiated in June 1993. An analysis by Fortenbery and Zapata examined the trading volume of the contract and the degree to which futures prices and NCE prices are interdependent.³³ Co-integration analysis, the technique used by Fortenbery and Zapata, measures the extent to which two markets have achieved a long-run equilibrium. They ask, "Have the cash and futures markets for cheddar cheese achieved the long-run equilibrium expected to exist between two markets pricing the same commodity and utilizing the same market information?"

Most studies of cash-futures relationships in agricultural markets have found that the two markets are closely related, with futures often leading cash markets in price discovery. In the case of cheddar cheese, Fortenbery and Zapata find no evidence that the futures market leads the cash market in price discovery, or vice versa. The two markets for cheddar cheese show substantial independence. And, for the two year period, June 1993-July 1995, the authors find that the cash (NCE) and futures markets for cheese still show no evidence of becoming co-integrated. Fortenbery and Zapata find these results unusual and raise the question of "whether there are institutional or market structure constraints which prohibit the cash and futures markets from behaving in an efficient pricing manner."

There is no indication as yet that the near-term futures contract price will be used instead of the NCE in formula pricing. Indeed, this could hardly be expected since the futures contract is still struggling to survive. Before the cheese futures contract will be considered as an alternative to the NCE for formula pricing, it must become a viable futures market. The dominant role played by the NCE may actually have hindered the early success of futures trading in cheese, as some traders felt "like observers of the few large players who have

³³ T. Randall Fortenbery and Hector O. Zapata, "An Evaluation of Price Linkages Between Futures and Cash Markets for Cheddar Cheese," Working Paper 107, Food System Research Group, University of Wisconsin-Madison, March 1995. The authors have updated this analysis through July 1995.

dictated recent price movement."³⁴ Also, the NCE is too thin a market to be used by futures traders that accept delivery on a contract. For example, when Pizza Hut accepted delivery of a futures contract, it offered three loads of blocks on the NCE. By the end of the trading session, Pizza Hut had reduced its offer 18 times without a sale. Block prices dropped 10.5 cents for the day.

If a viable futures market develops for cheese, it would provide opportunities to hedge risks of market participants, including farmers. It may also improve the price discovery process by increasing the number of market participants. But a futures market, alone, will not solve all market failure problems, particularly those which are structurally based. One need only recall that a thriving gasoline futures market has existed throughout the years since the creation of the OPEC oil cartel in 1973. Similarly, coffee and some other agricultural commodity futures markets have operated successfully in industries with state-run cartels. While such futures markets are useful in hedging risks, they have not brought effective competition to these industries. We emphasize this point lest some mistakenly conclude that all competitive problems in the cheese industry will be solved by a viable futures market.

³⁴ CSCE Daily Dairy Market Report, September 9, 1993, Market commentary. This source reported, in part:

Traders await with trepidation tomorrow's session at the NCE, as the last few weeks have produced large price increases...which resulted in major moves in the futures markets....the reality is that the NCE continues its hold on market participants. At least for the time being, this causes some traders to feel like observers of the few large players who have dictated recent price movement.

[Faint, illegible text, likely bleed-through from the reverse side of the page.]

Exhibit 1. Volume of Cheese Traded on the NCE, 1974-1995

Year	Carloads Sold on NCE ¹	Total Carloads Manufactured ²		NCE as a Percent of:	
		American ³ Cheese	All ⁴ Cheese	American Cheese	All Cheese
1974	43	46,558	73,434	0.09%	0.06%
1975	167	41,499	70,285	0.40	0.24
1976	490	51,345	83,006	0.95	0.59
1977	553	51,179	83,963	1.08	0.66
1978	325	51,977	87,992	0.63	0.37
1979	440	54,857	92,931	0.80	0.47
1980	264	59,528	99,607	0.44	0.27
1981	39	66,203	106,939	0.06	0.04
1982	40	68,980	113,542	0.06	0.04
1983	34	73,296	120,487	0.05	0.03
1984	307	66,279	116,850	0.46	0.26
1985	144	71,381	127,024	0.20	0.11
1986	752	69,954	130,231	1.07	0.58
1987	707	67,916	133,609	1.04	0.53
1988	361	68,914	139,299	0.52	0.26
1989	118	66,814	140,384	0.18	0.08
1990	342	72,269	151,486	0.47	0.23
1991	399	69,228	151,371	0.58	0.26
1992	380	73,412	162,207	0.52	0.23
1993	596	73,120	163,204	0.82	0.37
1994	799	74,425	168,252	1.07	0.47
1995	1151	77,373	172,857	1.49	0.67

Sources: National Cheese Exchange, Trading Activity Minutes, AMS, USDA, 1974-1993.
Dairy Products Summary, NASS, USDA 1974-1993

¹NCE trades include carloads of barrels and blocks sold on National Cheese Exchange.

²American and total cheese manufactured were converted to carloads using 40,000 lbs. per carload.

³American includes Cheddar, Colby, granular, stirred curd, washed curd, and Monterey Jack.

⁴All cheese includes all types of cheese including cream cheese but excluding cottage cheese.

Exhibit 3. Trades on NCE by Primary Type of Business, 1988 TO 1993

---BARRELS & BLOCKS---

Type of Primary Business	Loads Sold										Loads Bought				
	1988	1989	1990	1991	1992	1993	Total	1988	1989	1990	1991	1992	1993	Total	
Manufacturer of Cheese¹															
Mid-America	1	3	0	0	0	0	4	6	3	48	137	132	165	491	
Land O' Lakes	46	2	0	10	12	2	72	57	9	21	0	4	98	189	
AMPI	0	0	0 ⁶	0	0	0	0	30	56	7	20	29	30	172	
Bongards'	32	0	0	0	34	9	75	0	0	0	0	0	0	0	
Sub-Total	79	5	0	10	46	11	151	93	68	76	157	165	293	852	
Marketer of Cheese²															
Kraft	277	107	193	339	258	443	1617	0	0	22	0	0	0	22	
Alpine Lace	0	0	62	16	30	22	130	0	0	0	0	0	3	3	
Borden	2	0	3	18	19	17	59	28	0	0	4	0	0	32	
Beatrice	0	0	0	0	0	0	0	118	13	172	85	165	220	773	
Schreiber	0	0	6	0	0	1	7	78	28	13	123	34	46	322	
Masters Gallery	0	5	2	0	0	0	7	0	0	46	16	0	0	62	
Marathon ³	0	0	35	0	0	0	35	0	0	0	0	0	0	0	
Sub-Total	279	112	301	373	307	483	1855	224	41	253	228	199	269	1214	
Brokers⁴															
Dairystate	3	1	31	3	0	91	129	8	0	1	7	0	13	29	
Northern Wisconsin Produce	0	0	8	2	8	0	18	6	4	10	7	6	0	33	
Schurman	0	0	0	0	0	7	7	0	0	0	0	2	18	20	
Sub-Total	3	1	39	5	8	98	154	14	4	11	14	8	31	82	
All Others⁵	0	0	2	11	19	4	36	30	5	2	0	8	3	48	
Total	361	118	342	399	380	596	2196	361	118	342	399	380	596	2196	

Source: National Cheese Exchange, Trading Activity Minutes, AMS, USDA, 1988-1993.

¹These are cheese manufacturers that sell significantly more bulk cheese than they buy.

²These are cheese marketers that buy significantly more bulk cheese than they sell. Beatrice manufactures more of its total cheese requirements than it buys from other cheese manufacturers. However, off the Exchange it sells very little bulk cheese and buys virtually all of its cheddar cheese, which is the only cheese traded on the NCE (see Chapter 2). Because of this, Beatrice is included among the "primarily cheese marketers group" of traders. Totals for Beatrice include those for Pauly cheese acquired in 1984.

³Marathon is a converter that primarily cuts and packages for marketers like Kraft.

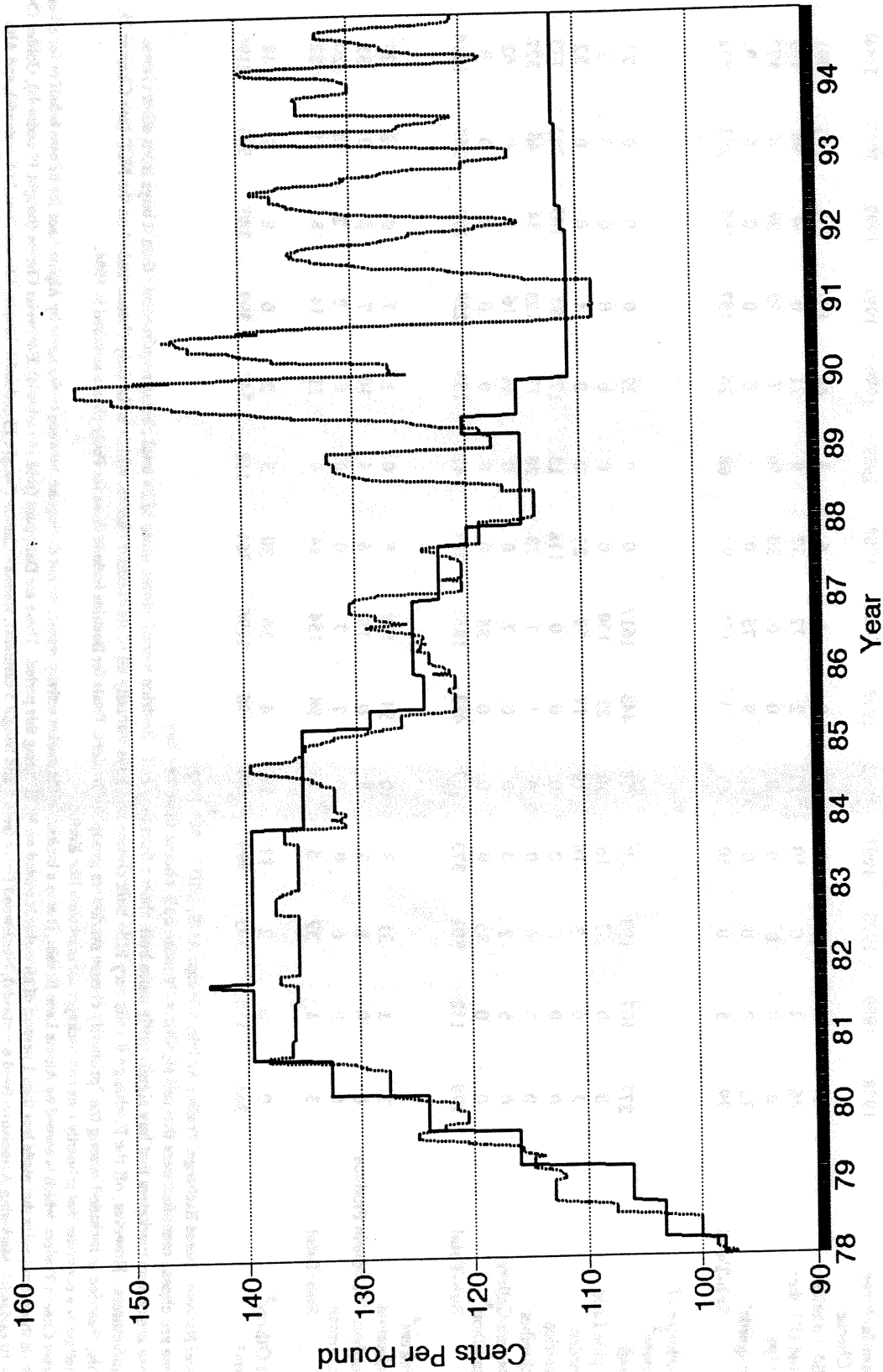
⁴Market Cheese Traders, which is owned by Alpine Lace Brands, is also a broker. NCE market activity reports do not distinguish between trades made by Alpine Lace for its own behalf or for others.

⁵Include those companies that made less than 1 percent of all cartloads traded on NCE during this period. These are Dairygold (sold 14 cartloads), Edelweiss Cheese (bought 19 cartloads), Golden Cheese (sold 10 cartloads), Marketing Association (sold 6 cartloads), Northwood Dairy (sold 6 and bought 5 cartloads), Hermke Cheese (bought 13 cartloads), Empire Cheese (bought 5 cartloads), and Alto Cooperative (bought 6 cartloads).

⁶AMPI sold 10 loads through a broker in 1990.

EXHIBIT 3. TRADES ON NCE BY PRIMARY TYPE OF BUSINESS, 1988 TO 1993

Exhibit 4. NCE and CCC Block Prices Weekly: 1978-94



..... NCE Block Price — CCC Block Price

Exhibit 5.

**Total Loads Traded on NCE
1988-1993**

Company	Benefit Financially if NCE Price is:	Sales	Purchase
Kraft	Lower	1617	22
Borden	Lower	59	32
Alpine Lace	Lower	130	3
Beatrice	Somewhat higher	0	773
Mid-Am	Higher	4	491
Schreiber	Neutral to Higher	7	322
AMPI	Higher	0	172
Land O' Lakes	Higher	72	189
Dairystate	Unclear	129	29

Source: Sales and purchases, Exhibit 3.

**Exhibit 6. Kraft Gains or Losses on Raw Material Cheese Sales:
NCE, Outside Sales, and Government, 1987-1992**

	NCE			Outside Sales			Government
	Loads	Pounds	Loads	Pounds	Loads	Pounds	
	Total Volume (thousands of pounds)						
Blocks	297	11,969	514	20,684	484	20,231	
Barrels	1,214	49,322	717	30,787	1,509	61,666	
Squares ¹	—	—	984	36,290	—	—	
TOTAL	1,511	61,297	2,265	87,762	1,993	81,897	
	Gains or Losses in Cents per Pound						
Blocks	(6.16)		0.80¢			0.62¢	
Barrels	(1.49)		3.89			0.05	
Squares ¹	—		6.15			—	
TOTAL	(2.40)¢		4.09¢			0.187¢	
	Total Gain or Loss						
Blocks	(\$737,797)		\$165,634			\$125,128	
Barrels	(733,335)		1,196,795			27,596	
Squares ¹	—		2,230,437			—	
TOTAL	(\$1,471,132)		\$3,592,866			\$152,724	

Source: Kraft General Foods, Inc., Appendix Table 4.3

¹Squares are 640-pound blocks.

Exhibit 7. Kraft Net Price of Processed Cheese, NCE Barrel Price Monthly, 1989-1991

Dollars Per Pound

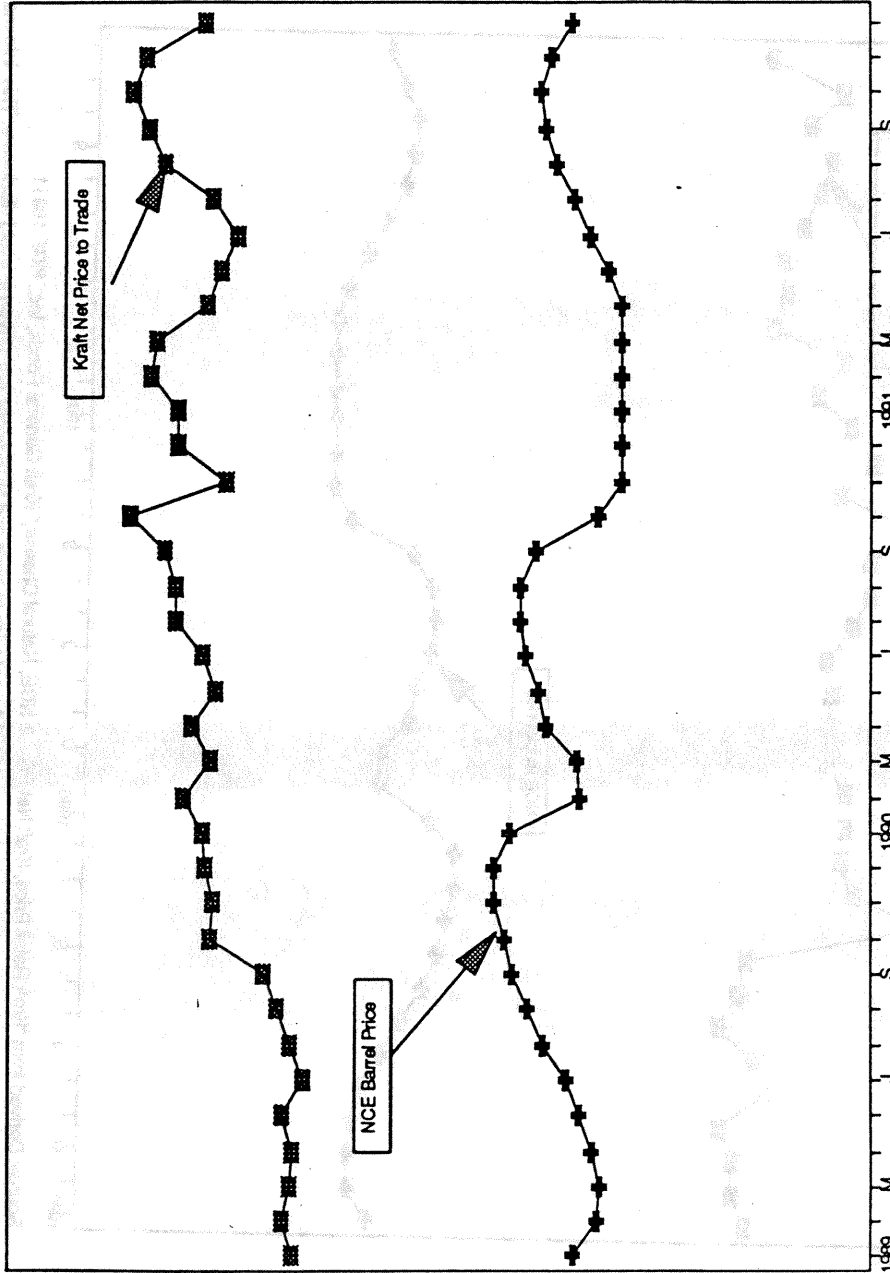
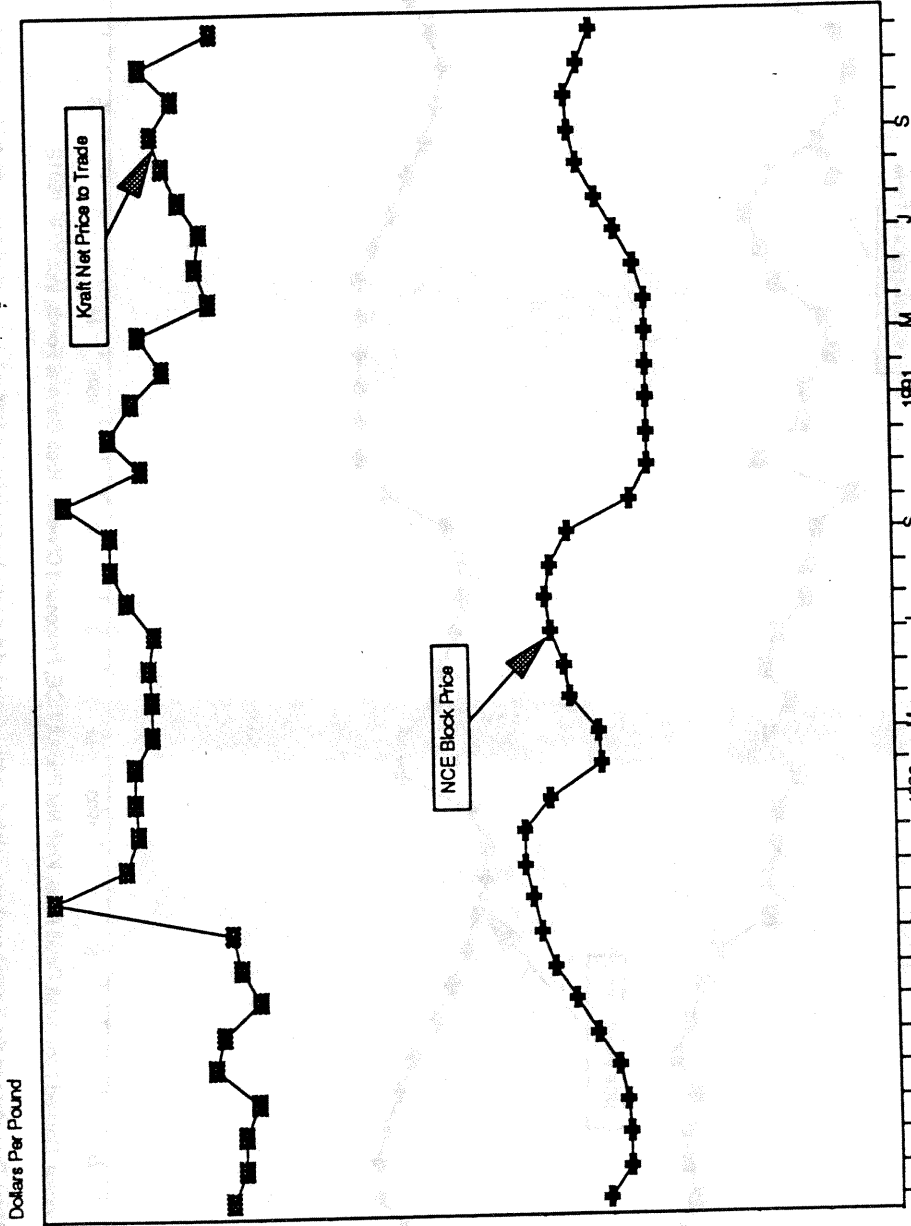


Exhibit 8. Kraft Net Price of Natural Cheese, NCE Block Price Monthly, 1989-1991



Source: Derived from "Kraft Retail Price, Kraft Net Price & NCE, Natural Cheese," Kraft General Foods, Inc., KGF 16911

Note: The values on the Y axis have been deleted and the scales of the net price to trade and NCE prices are altered to avoid disclosure. This information has been redacted from the report at this time pursuant to an agreement with Kraft General Foods, Inc., that there will be a subsequent judicial resolution of a good-faith dispute over the trade secret status of the information.