An Assessment of the Feasibility of Alternative Contractual Arrangements for Dairy Products

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Abstract

The purpose of this paper is to disclose the findings of research focused on alternative contractual arrangements between the manufacturing, wholesaling and retailing sections of the dairy industry. To gather the information for this research thirteen companies were interviewed. These companies have core businesses in four different areas: food manufacturing (2), processors (8), retail grocery chains (2) and fast food industry (2). This report is organized into three areas 1) information gathered in a general discussion with the participant and is organized according to the companies core business 2) the purchase of a specific dairy product and 3) the selling of a specific dairy product. The conclusions summarize the similarities and differences between the buyers and sellers of the same product. The purchasing section covers the purchasing of raw milk, cream, cheese, butter, nonfat dry milk, and packaged milk. The selling section covers raw milk, cream, cheese, butter, nonfat dry milk, packaged milk and ice cream. The summary section compares the interest in contractual relationships of buyers with that of sellers for a specific dairy product.

Introduction

Change has been rapidly increasing in the world today and few industries have changed as much as agriculture. Every part of agriculture has or is undergoing change. One of the major forces behind this has been a change in federal government farm policy, reducing and/or removing price supports and overall government involvement in farm marketings. The dairy industry is a prime example. Federal dairy policy has undergone dramatic evolution within the past 20 years. From 1950 until 1981, dairy products and, in turn, farm level milk prices were supported at relatively high levels under the federal dairy price support program. As a result, little price or market risk existed in the dairy industry. Since 1981, the government has drastically reduced the federal dairy price support program. The support price, which was $13.10 per hundredweight in 1981, was reduced to $10.10 per hundredweight by 1990. The support price in 1999 was $9.90 and is scheduled to be eliminated by January 1, 2000. Without these high support levels, the market determines product and on-farm prices. This has resulted in increased volatility and uncertainty in dairy product and farm-level milk prices (Appendix A).

Under the Federal dairy price support program a government agency, Commodity Credit Corporation (CCC), would purchase cheese, butter and nonfat dry milk at established prices. These purchases established a price floor. When the individual commodity prices would rise above the support prices the CCC would resell products purchased into the market. This program provided opportunities for all parts of the industry. The intent of the program was to keep small family farms in business by providing a "guaranteed" price floor. This floor price also helped some farms expand. The price support program also helped to protect dairy processors and marketers. The program provided an outlet for surplus products at an established price level. The program was also advantageous to consumers and those who served consumers by providing price stability that would not have existed without the price support program.

This federal price support program protected milk processors because of the way the farmer pricing system worked. Basically farmers produce milk that is collected by processors. These processors then create products. The prices of these products are primarily based off of three commodity style products that were purchased under the federal dairy price support program; cheese (40 pound cheddar cheese block or barrel), Grade AA butter, and nonfat dry milk. The values for these products are determined, in general, by a cash trade on the spot market. Only a very small percentage, less than two percent, of the actual product is handled through this spot market trade. Prices established in the spot market are used in a formula called the Basic Formula Price (BFP) to determine the Federal Milk Marketing Order minimum prices. These federal order prices are the value that proprietary plants are required to pay Grade A producers for the milk they produced. In summary, producers produce milk for 30 days without a price. Then about 15 days after they are done producing that month's milk they find out what it was worth based off of the value of the products from the previous month. The CCC purchase price established a floor price under manufacturing use milk. The manufacturing milk value (M-W 1960 to 1995 and BFP

1995 to current) moved the minimum prices under federal milk marketing orders. Hence all dairy producers Grade A & B were supported by the price support program.

This type of pricing system allowed dairy manufacturers to set their costs, for the most part, after the value of dairy products were determined, allowing them to build a margin for their overhead and operating costs. However, within the last decade the dairy subsector has seen the impact of reducing the federal dairy price support program. It has created greater price fluctuations than ever witnessed before. When market prices move quickly, the price changes to the producers may not allow the processors' costs to adjust as quickly as the product values change. This impacts a processors margins. Manufacturers are being forced to increase their market savvy to find new markets for their products or attempt to store products in hopes that the price will rebound so they can recover their costs. These marketing challenges are not limited to the processors alone, but are seen throughout the dairy subsector. At the farm level, where investments have been made in land, cattle, feed, and buildings, producers do not know if they will receive a reasonable return on their investment and/or labor or cash flow. Companies that provide the products to customers are also facing extreme challenges to provide not only reasonable prices but also consistent prices. Price volatility has increased the marketing and pricing risks facing each part of the dairy subsector.

This federal policy shift in-and-of-itself would have led to change, but another driving factor has been domestic consumers demands. U.S. incomes have been climbing; unemployment has been low and falling, leading people to have more disposable income and this has changed their eating habits. Consumers are demanding high quality, consistent products at low prices. These demands are forcing changes backward from consumers to producers to meet consumers' demands. The challenge that this presents to agribusiness is enormous. A solution to this challenge is to increase coordination within the food system.

Coordination is important in all industries, but it is especially crucial to agribusiness because much of agribusiness requires large capital investment in fixed assets. These investments range from land, to buildings, to processing plants, and/or processing equipment. What makes agribusiness unique is that in some instances these assets cannot be utilized year-round because of production patterns or cycles. Every time a plant or processing equipment is not being run, or not running at capacity, inefficiencies result. Increased coordination can improve marketing and food processing efficiency. However, maximizing efficiency is difficult, when each producer independently makes production and marketing decisions – especially since food processors desire a specific quality and quantity of a commodity, to be produced for a given time period. Having this level of coordination enables food processors to better utilize processing, storage, and manufacturing facilities and, by extension, improves efficiency. It also enables processors to better fulfill the demands of consumers with a more consistent supply of high quality food products at lower costs.

These changes are reshaping the agricultural subsectors, by changing the vertical coordination within each subsector. Whether through contractual arrangements or vertical integration, coordination between food producers and food processors has been going on for decades. Vertical integration involves a company expanding its operations either forward or backward to have more control over a product. A grain elevator adding a flourmill to

produce wheat flour is an example of forward vertical integration. An example of backward integration would be a flourmill purchasing an elevator to help in procuring grain. Another type of vertical coordination is contractual arrangements. An example of a contract arrangement would be an elevator contracting with a farmer to buy 3,000 bushels of corn for fall delivery. A more detailed contract could be between a grain processor contracting with a farmer, for 3,000 bushels of high oil corn to be delivered in September. These contracts can be written with increasing detail to help both the user and producer improve coordination.

The poultry subsector has seen both of these ideas used to increase coordination. Practically all broilers are raised under contractual arrangements with vertical integration by feed suppliers or poultry processors (Drabenstott). The dominate example is a poultry processing plant that has expanded their processes to include manufacturing finished products, then marketing these products under a brand name to consumers. To improve efficiency and increase quality these companies have integrated backwards by purchasing hatcheries, and in some cases feed mills. Then they contract the production with growers. The processing company supplies the chicks and the feed, while growers are responsible for providing a building to house the birds and provide day to day care of the birds until they are ready to be processed. This vertical coordination allows the company to control the type of product they produce and the timing of its production. Ultimately they can maximize efficiency of their processing plants and hopefully better meet the needs of the consumers. While this model is not perfect, since there are other plants making similar decisions, which could overburden the market, it has created a very competitive marketplace that provides high quality and consistent products to consumers at affordable prices.

Vertical integration by feed suppliers and meat processors in hog production and/or contractual arrangements with hog producers is also accelerating (Reynolds and Reilly). Processing plants are working to establish contracts with growers for the production of hogs. From 1991 to 1994 the percent of market hogs produced under contract almost doubled, moving from 8.9 percent to 16.6 percent (NPPC). While the level of coordination currently seen in the pork industry is not as advanced as that of the poultry industry, recent actions mirror the poultry industry. One of the barriers for the pork subsector is the biological production time frame. It takes longer for a hog to be ready to market than it does to have a broiler ready for processing. This increases the challenge for processors who need to properly schedule production of hogs to meet their processing capacity and the demands of the final consumers.

The dairy subsector has seen some vertical integration occurring, as changes in industry structure, most notable are mergers and consolidations among dairy cooperatives and investor owned dairy companies. In order to better manage challenges related to fluid milk and dairy products production, processing, and marketing the dairy subsector may follow the trend towards increased coordination like that witnessed in the poultry, and pork subsectors.

While increased coordination helps improve efficiencies it is not a sufficient solution for the challenges of price volatility. As mentioned earlier the change in federal dairy policy has increased the level of price volatility and uncertainty within the dairy subsector. This increased price risk has prompted the industry to seek potential risk management solutions.

The dairy industry turned to a time-tested vehicle: futures and options contracts. The first attempt to establish a futures market in dairy was by the New York Coffee, Sugar, and Cocoa Exchange (CSCE). The CSCE merged with New York Cotton Exchange on June 10, 1998 to form the New York Board of Trade. The CSCE established cheese and nonfat dry milk futures and options contracts in June of 1993. The close correlation between cheese and milk prices led some to believe that producers and cheese manufacturers could use cheese futures and options to protect milk prices and the value of inventories; respectively. However, the fact that dairy producers did not understand the inherent link between milk price and cheese price and because the dairy industry, in general, had little understanding of price risk management, cheese futures contracts gained slow acceptance. Prior to 1993 the only type of contract that existed in the dairy subsector was membership contracts with dairy cooperatives. Since 1993, the industry has seen the start of dairy futures which allows contracts to be written to improve coordination without the price risk associated with those contracts. These quantity and/or price contracts between dairy producers and dairy cooperatives or investor-oriented dairy processors are continuing to be developed. It is possible that potential gains from increased coordination and interests in contractual relations between dairy producers and dairy processors may allow opportunities for the industry to change and help all factions improve in marketing efficiency and decrease price risk.

Futures markets are designed to be financial tools to exchange risk, but in order for this to occur there must be a mechanism that ties the trade to the risk being offset. For most futures markets that is a delivery mechanism that calls for some preset amount of the traded product to be delivered to a certain location by a set date. This delivery mechanism has hampered efforts to develop the cheese futures market. In most futures markets less than 2 percent of contracts actually end in delivery. Most positions are offset with an opposing trade (i.e. if originally bought then offset with a sale and vice versa). Delivery becomes a big concern in markets with little trading activity. The fear is once a position is entered an offsetting trade will not be available and delivery will be required. Fears were particularly acute for dairy producers selling cheese futures to protect against falling milk prices. If producers were unable to offset their position, they would be required to deliver cheese – a product they do not produce and would have to purchase. The delivery issue and the fact that the contract was relatively large (equal to about 420,000 pounds of milk) were too large a hurdle to clear, and trades all but ceased.

With lackluster trading in cheese, the CSCE introduced fluid milk contracts in September 1995, and the Chicago Mercantile Exchange (CME) followed in June 1996. This contract, like cheese and nonfat dry milk contracts, was a delivery contract. It was thought this would be ideal for producers, since they could use it as a marketing tool and the contract would set the minimum farm pay prices under the Federal Milk Marketing Orders (FMMO), the Basic Formula Price (BFP). The BFP is the estimated weighted average pay price for Grade B (manufacturing grade milk) milk by butter, milk powder, and cheese plants located in Minnesota and Wisconsin. The BFP sets the minimum price for Grade A (fluid quality) milk used for Class III, (milk used to make cheese) in the FMMO. The BFP serves as a mover of the minimum pay prices of the other classes of milk, Class I (beverage) and Class II (soft manufactured products). In the early life of the fluid milk contract, the contracts did track the BFP. However, as milk supply was limited in the summer and fall of 1996 the fluid contract traded at a significant premium to the BFP. During this time the contract appeared to

be tracking the value of an extra load of Grade A milk in the Upper Midwest available to be shipped to the deficit Southeastern fluid milk market.

The fluid milk futures have three major drawbacks. First, most producers have contracts with their current milk buyer for all of their marketable milk, thus delivery on the futures contracts is still a problem. Second, the contract delivery time is only five days before the end of the month, still a problem for delivery since producers produce a percentage of the milk daily, not large amounts at the end of the month. Finally, because the fluid milk contract sometimes reflected the BFP and at other times extra shipments (spot market), considerable basis risk existed. Basis is the difference between the cash price, in this case farm pay prices, and the futures price. When basis moves against producers who sold contracts they saw more futures losses than cash gains. Unpredictable basis led many producer users to decide this was not the ideal tool for them to use to protect farm milk prices.

Basis problems with the fluid milk futures contract and delivery concerns with the cheese and/or milk futures contracts led the industry to develop a cash settled futures contract tied to the Basic Formula Price (BFP) as announced by the United States Department of Agriculture (USDA). A cash-settled futures contract does not require delivery of the underlying commodity. Instead, any gain or loss in the position is simply adjusted with cash to an index. This cash settled BFP contract began trading at the CSCE in April 1997 with the contract size of 100,000 pounds and at the CME in July 1997 with the contract size of 200,000 pounds. The CME later developed a 50,000 pound put option called a mini put and 100,000 pounds options, both were attempts to provide trading opportunities for smaller traders (especially smaller dairy operators). The NYBOT introduced a large BFP contract in April 1999 that was 200,000 pounds like the original CME contract. BFP futures have enjoyed more success than their predecessors have, largely because most people in the industry understand the BFP and its impact on milk prices. This includes producers, processors, cooperatives, and even end users. Cash settlements have put to rest concerns about unwanted deliveries.

The need for risk management in the butter market brought about the introduction of butter futures contracts from both exchanges. The butter contract is a physical delivery contract, meaning it requires delivery of butter if held until the end. The CME began trading butter in September 1996, and the CSCE began in October 1996.

The success of the cash settled BFP futures led the CME to develop a cash-settled cheese futures contract. This contract, which began trading in October 1997, settles to the National Agricultural Statistics Service (NASS) 40-pound block cheddar cheese price (a survey of cheese transitions across the country) for the last week of the contract month. This contract is currently being changed to settle to the monthly average price.

The NYBOT continued trading the original nonfat dry milk contract. In March 1998, they changed from 11,000 pounds to 44,000 pounds contract. In November 1998, the CME introduced a nonfat dry milk and dry whey futures contracts to the dairy complex. Both contracts were for 44,000 pounds. These contracts have not been as successful as the BFP

futures, but the Exchanges continue to provide them in hopes that they will be used by the industry.

Futures markets provide dairy producers and processors an opportunity to offset price risk. Further, milk buyers can use the futures market to offer cash forward contracts to their patrons/producers. Cash forward contracts allow producers to lock in a milk price before they produce the milk. The first cash forward milk contracting program began when Alto Dairy Cooperative and Blimling and Associates, a dairy consulting firm in Cottage Grove, Wis., received a grant from the Wisconsin Department of Agriculture, Trade and Consumer Protection. The grant called for a pilot study on the use of the cheese futures contracts to offer cash forward contracts to Alto's dairy producers. This pilot study ran from August 1, 1994, through September 30, 1996. Alto's success led other dairy cooperatives to offer cash forward contracts. Only a limited number of private processors, however, currently offer cash forward contracts. The limited number is because of FMMO provisions, which require non-cooperative milk buyers to pay their producers at least the established federal order minimum price. Therefore, if the contract price with a producer is less than the minimum federal order price at the time of delivery, the milk buyer is forced to pay the higher federal order price.

Cash forward contracting allows the producer an alternative pricing mechanism. Until futures began trading, dairy producers only had one pricing option: which milk buyer to choose. With the advent of dairy futures trading, producers could hedge their production. An advantage of forward contracting is that it allows a producer to price his/her future milk production and not worry about maintaining a futures trading account. Currently, many producers belong to a cooperative, in hopes that the cooperative will pay them the maximum possible for the milk. Producers may now choose to belong to a dairy cooperative to take advantage of cash forward contracts.

The same advantage that has been made available to producers with the start of dairy futures trading has been made available to the other parts of the dairy subsector. Processors and retailers could enter into cash forward price contracts by using the futures to offset their risk. This would allow processors to establish a set manufacturing margin and allow retailers to budget prices for upcoming promotional offers. One of the complaints about the existing futures market contracts is that companies, such as processors or retailers, are larger and unable to trade large percentages of their business with few trades. Currently companies need to do many more trades than producers to establish a small percentage of protection.

In summary the dairy industry is facing major changes. These changes are from federal government policy changes, to increasing high standards from consumers, as well as structural changes with in the industry. The result of these changes and the biological factor of the industry is price volatility, which makes managing businesses and coordinating products extremely challenging.

Purpose

The purpose of this paper is to disclose the findings of research focused on alternative contractual arrangements between the manufacturing, wholesaling and retailing sections of the dairy industry.

Objectives

This study focused on three objectives.

1) To determine the amount of cash forward pricing that currently exists among businesses involved in the production, handling, and/or marketing of major dairy products

2) To determine the interest in cash forward pricing that currently exists among businesses involved in the production, handling, and/or marketing of major dairy products

3) To determine the differences or similarities in cash forward pricing interests between the various buyers and sellers that currently exist among businesses involved in the production, handling, and/or marketing of major dairy products.

Hypothesis tested

Few dairy firms have participated in cash forward pricing either on the buying or selling side of their firm. However, these firms are interested in using price risk management tools, including forward contracts, in their future buying and selling strategies.

Methodology

Thirteen companies involved in the dairy industry were interviewed. These companies have core businesses in four different areas, food manufacturing (2), processors (8), retail grocery chains (2) and fast food industry (2). One company was counted once as a processor and once as a grocery chain because they have a core business in each area. The focus of the interviews was to learn about different participants' use of and interest in risk management tools focusing primarily on forward pricing of dairy products. Because of the many different dairy products, the questions focused on higher volume products. On the purchasing side these included: raw milk, cream, cheese, butter, and nonfat dry milk. The products sold included: raw milk, cheese, packaged milk, cream, butter, nonfat dry milk and ice cream.

The selection of companies was not random. An attempt was made to involve companies that represent subsectors of the dairy industry from farm milk procurement to the final consumer. Each selected, prospective participant was contacted to see if they would

participate. Due to some companies views about the sensitivity of some questions or corporate polices, they were not willing to participate. To increase the number of participants they were assured that their responses would be kept confidential. When they had agreed to participate they were provided with a list of questions that served as a guide for the personal interviews. Some participants completed the questionnaires and returned them and were contacted to discuss their responses. Other companies provided the information either by an onsite interview or phone interview. This process provided the participants an opportunity to clearly communicate their feelings about the questions and to relate how the questions applied to the individual company's operations. The questions were outlined into three categories. 1) Questions related to the company's use of dairy futures, and/or interest in dairy futures and the participant's opinions (Appendix B). 2) Questions focused on the purchase of a specific dairy product (Appendix C). 3) Questions focused on the selling of a specific dairy product in a specific marketing channel (Appendix D).

The information has been summarized in this report in a tabular format. Because of the low number of participants this study may not be completely statistically sound. Yet it is the opinion of the researchers that the information is a representative cross-section for the dairy products selected. No company names are used in the report, in compliance with the commitment made to ensure the anonymous participation of the companies. In situations where information could jeopardize the companies' identity, such information was not disclosed. The core business area is not disclosed, when only one participant from a particular group is represented.

This report is organized into three areas 1) general information on risk management and organized according to the companies core business 2) risk management in the purchase of a specific dairy product organized by product and 3) risk management in the selling of a specific dairy product organized by product. The conclusions summarize the similarities and differences between the buyers and sellers of the same product.

General Information in regards to use of futures markets and Participants' Opinions

Each participant was asked general questions about their company. These questions focused on the company's business, their use of nondairy futures, dairy futures, their beliefs and support of futures markets, and their current buying/selling challenges. This information was compared and contrasted with similar types of participants according to the companies core business area. There were four core business categories: 1) food manufacturers, 2) processors, 3) fast food companies, and 4) grocery retailers.

Food Manufacturers

In this study food manufacturers were represented by two companies that used dairy products in their manufacturing of food products. However, their final products were not predominately found in the dairy case, or seen as a "dairy" product when purchased by consumers. Possible products could include baby formula, candy, cake mixes, frozen foods, icing, or soups.

The two participants in this category had used nondairy futures solely to protect buying prices (Table 1). Nondairy futures markets would include grain, meats, energies, etc. They had been using these markets for greater than twenty years. Both agreed that these markets had worked the way they expected them to. One made the following comment: "futures markets have allowed us to protect ourselves from upward moving price risk ...and to know our costs in advance." The other company had also successfully used the futures markets as a hedging mechanism. Only one indicated they could use nondairy futures more, and the reason why they did not was because of management limits.

Both participants had used dairy futures to protect buying prices. The participants had used BFP, cheese, butter and nonfat dry milk futures contracts. One company indicated dairy futures markets had worked the way they had expected. "The futures lacked the volume originally hoped for, but still function like other futures markets." The other participant did not agree and said "The dairy futures contract prices are whipsawed by the cash cheese and butter prices at the CME." Both did agree that their use had been a success with one commenting, "we have been able to hedge a certain percent of our purchases." The other had also been able to hedge successfully. Both also agreed that they could use the dairy futures markets more. Both participants thought the futures markets were not liquid, which limited their ability to get in and out, as well as restricting the amount of trading they desired to do.

Both participants commented that a major concern currently facing their company was price risk. One said "the threat of rising prices", while the other said "inability to protect ourselves from extreme price risk in dairy ingredients" was the major concern. Each was attempting to utilize futures and options, as well as other risk management tools to combat these challenges.

Table 1 Two Food Manufacturers General Information on the use of Futures and Their Opinions

Has your company used nondairy futures markets?	Yes	Yes
How many years has your company used nondairy futures markets	Greater than 20 years	Greater than 20 years
Purpose of using nondairy futures markets?	Protect Buying Prices	Protect Buying Prices
Have the nondairy futures markets worked as you expected them to?	Yes	Yes
Worked Comments	Futures Markets have allowed us to protect ourselves from upward moving price risk in the above commodities and to know our costs in advance	Futures markets serve as a hedging mechanism to protect input costs.
Would you call the company's use of nondairy futures a success?	Yes	Yes
Success Comments	We continue to use these markets for hedging.	Has served as a hedging mechanism
Could the company use nondairy futures markets more?	Yes	Yes
More use Comments		Management controls prevent further use
Has your company used dairy futures?	Yes	Yes
Dairy Futures		
Product 1	BFP	BFP
Years for Product 1	Since beginning	Since beginning
Product 2	Butter	NFDM
Years for Product 2	Since beginning	Since beginning
Product 3	Cheese	Butter
Years for Product 3	Since beginning	Since beginning
Purpose of using the dairy futures markets?	Protect Buying Prices	Protect Buying Prices
Have the dairy futures markets worked as you expected them to?	No	Yes
Worked Comments	Interest has been minimal. The dairy futures contract prices are whipsawed by the cash cheese and butter prices at the CME	The market lacked the volume hoped for, but it functions like other futures markets.
Would you call your company's use of the dairy futures a success?	Yes	Yes
Success Comments	We have been able to hedge a certain percent of our purchases	We have been successful in hedging.
Could your company use the dairy futures markets more?	Yes	Yes
More use Comments	Dairy futures markets could be used if they were more active and liquid. Inability to enter an exit contract with ease - open interest needs to grow more.	illiquidity
Do you personally believe in the dairy futures markets?	Yes	Yes
Are there individuals within your division, other than yourself, that have a strong opinion of the dairy futures markets?	Yes	Yes
What is their opinion?	Positive	Positive
Do you know if senior management has an opinion of the dairy futures markets?	Yes	Yes
What is Senior Management's opinion?	Positive	Positive
What is the biggest buying/selling challenge that your company currently faces?	Inability to protect ourselves from extreme price risk in dairy ingredients.	The threat of rising prices
What is being done to deal with that challenge?	Use of futures; physical inventory positions; importing of dairy ingredients; move processing outside of the U.S.	futures/options

These companies appeared to be experienced traders from their long-term use of nondairy futures. They both appeared to be very interested in seeing the dairy futures markets develop, as seen from the internal support of dairy futures markets and their use of the dairy markets since the beginning. It would seem that these companies had a lot of trading knowledge that could be utilized to further develop the dairy futures markets. Both were, however, wary to do so until liquidity problems are overcome.

Processors

Processors included companies that add value to dairy products by further processing and/or packaging them. There were a total of eight companies in this category making it by far the largest category involved in the research. It is also the most diverse group. Some produce products that are ready for consumers, while some produce products that are sold to other companies for further processing and packaging or marketing. Some of these companies also participate in activities other than processing. But they are included here, because processing is their core business. However, one processor is also listed as a grocery retailer in the selling section of the paper. This is because retailing was how they marketed a large share of the product they processed.

Five of the eight companies in this category had used nondairy futures (Table 2). Their use was across the board, ranging from the grain complex to meats to energies and more. There was a wide range of years that they had used nondairy futures, from two to twenty years. All five using nondairy futures, had used them to protect buying prices. In addition, two had used nondairy futures to protect selling prices and two had used them to protect inventory values. All the companies responded that their use of nondairy futures markets had worked the way they expected. One participant said, "they provide the financial tools to manage the risk of price volatility." Another company said "we have a very structured system in place to manage risk. Therefore, our risk management programs work as expected most times." All but one called the use of nondairy futures a success. The one, who did not think nondairy futures trading had been successful, commented that they "do not fully understand all the ways to utilize [the futures markets]." The other companies indicated their success was judged by the effectiveness of their hedges in the futures markets. Two of the five indicated they could use nondairy futures more. The three participants that said they could not use the futures more all agreed that there were no other nondairy products that in their business that were available to trade. Each of the two, which indicated that they could use the markets more, had a reason why they did not. These reasons included thin market, management limits, still learning new tools, and lack of human resources.

Six of eight companies in this category had used dairy futures. Five companies had used BFP, butter and cheese futures. One company had only used butter while another had only used BFP. Obviously these markets had been used fewer years than the nondairy futures, because of lack of availability until recent years. Two companies had been involved since the beginning and four had two or less years of experience. Five companies had used the markets to protect buying prices, four to protect selling prices and three had also used them to protect inventory values. There were mixed reviews of whether these markets had worked as expected. Two participants said yes, one said no, and two responded yes and no. In the comments to explain the reason for indicating whether or not the futures markets had

Table 2 Eight Processors General Information on the use of Futures and Their Opinions

Has your company used nondairy futures markets?	Yes	Yes	Yes	Yes	Yes	No	No	No
Product 1	Soybeans	Fuel	Orange Juice	Grains	Soy complex			
Years for Product 1	12 years	2 years	10 years	>10 yrs	15 yrs			
Product 2			Soyoil	Meats	Corn			
Years for Product 2			10 years	>10 yrs	20 yrs			
Product 3			Heating Oil	Coffee				
Years for Product 3			10 years	>10 yrs				
Purpose of using nondairy futures markets?	Protect Buying Prices	Protect Buying Prices	Protect Selling Prices, Protect Buying Prices, Primarily Buying Prices	Protect Buying Prices, Protect Inventory Values	Protect Selling Prices, Protect Buying Prices, Protect Inventory Values			
Have the nondairy futures markets worked as you expected	Yes	Yes	Yes	Yes	Yes			
Worked Comments	Able to put on effective hedges	Locked in fuel costs below market price - can control fuel costs	Able to use the markets for effective hedging	We have a very structured system in place to manage risk. Therefore, our risk management programs work as expected most times	They provide the financial tools to manage the risk of price volatility			
Would you call the company's use of nondairy futures a	Yes	Yes	Yes	Yes	No			
Success Comments	Buyers and sellers that allow for easy entry and exit	Locked in fuel costs below price a year ago	Able to trade at the volumes needed with out moving the market	A necessary tool to managing margins	Don't fully understand all the ways to utilize			
Could the company use nondairy futures markets more?	No	No	No	Yes	Yes			
More use Comments	No other nondairy products to hedge or markets to hedge them in	No futures available for the other items needed to hedge	Using as many commodities as available with company's product mix and are fully hedging what is availabe	Internal policies limit our use of futures somewhat (e.g. options, cross hedges)	Learning about OTC derivatives, energy markets. Need for human resources to get done and specialize in			
Has your company used dairy futures?	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Product 1	Butter	Butter		BFP	Butter	BFP	BFP	
Years for Product 1	2 years	2 years		2+ years	2+ years	Since beginning	1 year	
Product 2	BFP			Cheese	Cheese	Cheese		
Years for Product 2	2 years			2+ years	4 years	Beginning - but no more		
Product 3	Cheese			Butter	BFP	milk		
Years for Product 3	2 years			2+ years	4 years	few times		
Purpose of using the dairy futures markets?	Protect Selling Prices, Protect Buying Prices, Protect Inventory	Protect Selling Prices, Protect Buying Prices, Protect Inventory		Protect Buying Prices	Protect Selling Prices	Protect Selling Prices, Protect Buying Prices, Protect Inventory	Protect Buying Prices	

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Table 2 Continued

Have the dairy futures markets worked as you expected them to?	Yes	No		Yes & No	Yes	Yes & No	Yes	
Worked Comments	The number of buyers and sellers has been less than expected creating a one sided market and will probably continue as long as the government price support program remains in place	Too thinly traded		Milk - yes - BFP contract works well cash settled Butter yes - low volume, but physical settled works ok Cheese - no - no natural short - needs to go back to physical settlement	They provide the opportunity to manage risk	BFP yes, others no		
Would you call your company's use of the dairy futures a success?	Yes	Yes		Yes	No	Yes	Yes	
Success Comments	Tool to protect cost	Hedging tool -- able to sell current product at a price that makes sense -- Increases flexibility in selling		We are better able to mange our margins through a variety of risk management tools	not enough liquidity	What we have done with it so far has worked well. Would like to move to the point of being able to lock in margins for our company		
Could your company use the dairy futures markets more?	Yes	Yes		Yes	Yes	Yes	Yes	
More use Comments	Limited market open interest	Too thinly traded		We do not have approval for cross-hedges - need increased volume in markets	Market breadth/liquidity	Lock in Margins	Expand use to include protecting margins and protecting inventory values	
Has your company considered using the dairy futures?			Yes					Yes
Why has the company chosen not to use dairy futures?			Liquidity -- Amount needed would move the market					The conservative nature of the company - don't understand how futures could help them in their operations
Do you personally believe in the dairy futures markets?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Are there individuals within your division, other than yourself, that have a strong opinion of the dairy futures markets?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
What is their opinion?	Positive	Positive & Negative	Positive	Positive	Positive	Positive	Positive	
Do you know if senior management has an opinion of the dairy futures markets?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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Table 2 Continued

What is Senior Management's opinion?	Positive	Positive & Negative	Positive	Positive	Positive & Negative	Positive	Positive	Negative, Rather we don't
What is the biggest buying/selling challenge that your company currently faces?	Lack of Open Interest -- No other major challenges	Price (maintaining margin)	Volatility of Market - Cost a lot in some categories	Managing our margins on cheese to our retail customers	Being able to buy/sell product so that company has an acceptable profit margin	Competiton for member milk - Competing nationally when selling, especially with West		Don't know the cost until after done buying product
What is being done to deal with that challenge?		Constantly Monitoring	Looking to butter futures - buy butter to protect prices	Increase risk management through available tools and also changing business practices	Continual effort to mange both the buying and selling equations by individual business unit teams	Efficiencey in operations to maximize pay prices - - increased services to buyers and consistent high quality products		Estimate butterfat differentials, FMMO reform will help some

worked the way they expected them to work, there are no complaints of the BFP futures, but some complaints of the other dairy futures (cheese and butter). Two complained that the butter futures were too thinly traded. One commented that cheese should return to a physical settlement, instead of the current cash settlement. One commented that the market was "one-sided" and expected it to stay that way as long as the federal dairy price support program existed. One company who felt the futures markets had worked as expected said the following: "[dairy futures] provide the opportunity to manage risk." All but one called the use of dairy futures markets a success. Those that called the market as success, credit the market for serving as an effective hedging mechanism. One company used the futures as an alternative marketing channel. The only nonsuccess was due to liquidity problems. Liquidity was the top reason given for not using the dairy futures more by four of the six respondents. There were two companies that would like to lock in their companies' margins, but had not been able to do so with the current futures markets. The limited liquidity had prevented these companies from trading at desired levels for such activities.

Of the two companies that had not used the dairy futures both had discussed getting involved. One had not been involved because of liquidity concerns. They felt the "quantity needed would move the market." The other claimed the conservative nature of the company had been a challenge, and that "they did not understand how futures could help them in their operations."

All but one of the participants saw real potential in the dairy futures markets. Each participant indicated their company's senior management had a strong opinion of dairy futures. Four were positive, two were both positive and negative and one was negative. The company with a negative opinion from senior management indicated that management was conservative and would prefer the company did not use futures.

Each company was asked about their biggest buying/selling challenge. Several companies had challenges either related in some way or another to, or could be helped by, futures markets. The company with the participant that did not believe in dairy futures said their challenge is they "don't know the costs until after done buying the product." This is a situation that proper use of the futures markets could help. Three companies listed maintaining margins as a challenge. Again a properly executed risk management program including dairy futures could help these companies lock in margins on products they produce.

This was a diverse group of companies, but subdividing them allows for a more critical examination. One division would be between those that had used nondairy futures and the ones that had not. It would seem logical that if a company had used nondairy futures they would naturally use the dairy futures, however one company defies this logic. It was very clear from the interview with this company that they were interested in using the market to put their knowledge to use, but they did not believe the dairy futures markets were mature enough for them to enter. Their major concern was that they would unduly influence the market in trying to establish the position they needed in the market. This concern is a legitimate concern in the short-run, because if the company moved the price higher than sellers thought it should be sellers would begin to sell, slowing the upward movement and the reverse if the company attempted to sell into the market. Part of the concern would still remain, could the company get an acceptable amount before they had moved the price to a

level that was no longer desirable to buy or sell? One has to wonder if all companies took this approach would the market ever survive, would it ever grow enough to allow such companies to participate? It would seem the other participants faced the same problem, but had chosen to participate even if on a greatly reduced scale as compared to their needs, to provide support to the market in hopes that it will grow.

Three companies had not used nondairy futures and all but one had used the dairy futures. These three seem to be reasonably content with their experience in dairy futures. This is good considering that they either had to learn how to use the markets and/or hire someone with that knowledge, since they could not internally "reposition" people to utilize nondairy futures trading skills in dairy futures.

All but one of the companies in this category had an interest in seeing the dairy futures markets grow and develop. These companies were interested in being involved and from the interviews they were interested in becoming more involved. They were interested in the opportunities that developed futures markets could provide, such as price risk management, as well as, margin management. The one company which did not have an interest in the futures markets was unclear how the market could help them, because of this and their conservative nature, they had no interest in getting involved.

Fast Food

Two companies had their core business in the fast food industry. Neither company had used the futures markets directly (Table 3). However, both had reduced price risk for their non-dairy business. One company had language in their supply contracts which requires the supplier to supply fixed prices for a portion of a months business done with that supplier. The fast food company did not force the supplier to use the futures markets, but they communicated the price that they wanted to protect in the futures markets, what percent of their business for a particular product they wanted to protect, and what month(s') business they wanted this protection for. The supplier then had the choice whether or not to enter the futures markets. However, once the opportunity to trade at the level specified by the buying company had occurred in the futures markets it was the supplier's risk. The fast food company then used the futures price given to the supplier to determine the price for the product they purchased. Suppose the company purchases corn, as a hypothetical example. The company would call the supplier and say, "I want to protect $2.20 bushel corn for 75 percent of August needs." The supplier would then have to decide how they want to offset that risk. They can do whatever they need to, but once the futures markets provided an opportunity for the supplier to purchase August corn at $2.20 they would be obligated to use $2.20 as the corn price for 75 percent of the supply to the purchasing company. If the futures markets never provided the opportunity the supplier would not be obligated to the $2.20 price.

The other company simply negotiated to get the most competitive price. Then the suppliers are obligated to whatever is agreed upon in the contract, and it is the suppliers responsibility to use whatever hedging mechanism they feel necessary to protect their commitment whenever they choose. In essence both companies end up with cash forward contracts from their suppliers, despite approaching these contracts in two different ways.

Table 3 Two Fast Food Companies General Inforamtion on the use of Futures and Their Opinions

Has your company used nondairy futures markets?	No	No
Has your company used dairy futures?	No	No
Has your company considered using the dairy futures?	Yes	Yes
Why has the company chosen not to use dairy futures?	Depend on suppliers to utilize futures at our request	Not Widely Traded Need expanded activity
Do you personally believe in the dairy futures markets?	Yes	Yes
Are there individuals within your division, other than yourself, that have a strong opinion of the dairy futures markets?	Yes	Yes
What is their opinion?	Positive	Positive
Do you know if senior management has an opinion of the dairy futures markets?	Yes	No
What is Senior Management's opinion?	Positive	
What is the biggest buying/selling challenge that your company currently faces?	Contract modification - seller resistance to use futures as selling/pricing mechanism	
What is being done to deal with that challenge?	repetition communication --- Contractual language that it is profit neutral	

From the researchers' point of view one approach is just as viable as the other and there are no clear advantages to either approach.

The company with language that required suppliers to provide fixed prices in its nondairy supplier contracts was in the process of putting similar language into their dairy supplier agreements. The participant said these suppliers feel very uncomfortable with the futures markets and are resisting these changes. One of the areas of resistance was that their suppliers were fearful that the use of the futures markets would impact their margins and they would lose money. It is the researchers' opinion that such an arrangement should not significantly impact suppliers' margins. Since the buyers would tell the supplier when to take a position in the futures markets and then the price established in the futures markets would be used in the formula for their purchase price instead of the cash market price. This should work well since the most actively traded market is the BFP futures and it is cash settled, meaning there should not be a difference between the price the futures settles at and the price used by the industry. The other reason why it should work, is the close correlation between the BFP and the products that this company purchases (cheese and packaged milk). There is a close correlation between the cheese price and the BFP because over 90% of the BFP is milk used to make cheese. There is also a close correlation between the BFP and the cost of milk used for packaged milk because the minimum price established by Federal Orders is moved by the BFP. Therefore, their suppliers should have little risk with this type of arrangement if they properly use the futures markets.

Neither company had a direct interest in the dairy futures markets, but both could see the value that a well-established dairy futures market could provide. They saw this benefit as being able to utilize cash forward contract with their suppliers.

Retail

There were two participants in this category. One was a grocery chain. The other was a processor who also had a grocery chain. The processor's general information was included in the processor group.

The grocery chain had used neither nondairy nor dairy futures (Table 4). The company had a centralized buying unit, which negotiated all supply arrangements with each supplier. The company did not use nondairy futures. The company did not use any cash forward price contracts for any of their dairy purchases or use the dairy futures. The company did like the fluctuating dairy prices because in general their margins can erode over time and significant increases in costs allowed them the opportunity to raise priced and provided an opportunity to adjust margins. The processor/retail had not used the dairy futures market either. The company was also very hesitant toward any cash forward contracting for fear of not being price competitive with other retailers.

Table 4 One Grocery Retailer General Information on the use of Futures and Their Opinions

Has your company used nondairy futures markets?	No
Has your company used dairy futures?	No
Has your company considered using the dairy futures?	No
Why has the company chosen not to use dairy futures?	Do not physically purchase any product, they simply arrange the suppliers from which their distributors buy and deliver to their stores
Do you personally believe in the dairy futures markets?	Can't Relate because they have no need to use
Are there individuals within your division, other than yourself, that have a strong opinion of the dairy futures markets?	Can't Relate because they have no need to use
What is the biggest buying/selling challenge that your company currently faces?	To Increase sales by 20% next 3 years
What is being done to deal with that challenge?	#1 or 2 in each division - marketing leader --- doing this by category management and aggressive merchandising

Summary of General Information

The participants in this research were a diverse group. They provide a glimpse into the movement of dairy products, post-producer, until they are in the hands of the final consumers. The group could be slightly skewed in the fact that most (all but one) of the participants has a favorable opinion of the dairy futures. Eight mentioned that others in their division (some also had the support of senior management) had strong positive opinions regarding the dairy futures markets. These companies were supportive of the dairy futures and looked for their use to continue to develop and grow. Seven participants also had broad experience with futures other than dairy. This helped to provide a knowledge base to work from in the use of dairy futures. Seven companies were involved in trading dairy futures and have their nondairy trade experience to draw upon to help them develop dairy trading. Almost every company that made any negative comment about the dairy futures talked about the lack of liquidity in the market. These companies were concerned with the liquidity on one or more of the following levels: inability to trade the volume they desire and/or inability to enter and exit as desired.

Purchasing of Dairy Products

There were six different purchasing groups. Each group focuses on the purchase of one dairy product. The products discussed include raw milk, cream, cheese, butter, nonfat dry milk, and packaged milk.

Raw Milk

A food manufacturer and seven processors interviewed in this research purchased raw milk (Table 5). One of the processors purchased all of its milk needs from dairy producers. One did not purchase any milk from producers, rather purchased all of it from suppliers. The others purchased raw milk from both suppliers and producers. The first part of this discussion involves comments from companies who purchased raw milk from other companies. Discussion of companies who purchase from producers and their relationships with producers follows.

Purchasing Raw Milk from Suppliers

One of the many issues with purchasing raw milk from other companies was the availability of product. Four of seven participants shared that they had limited suppliers. These limited suppliers were a result of the cost associated with transporting raw milk long distances. Further, in some parts of the United States, only one or two buyers purchase milk directly from farmers (i.e. Florida, areas of Texas, Utah, and New Mexico) to sell to other companies. In these areas the raw milk buyer is a cooperative. Thus there were only one or two existing companies to purchase from.

Table 6 Count of six raw milk purchasers' rank of factors considered in the decision to purchase raw milk

	First	Second	Third
Product Availability	2	0	0
Product Availability & Price	2	1	0
Product Price	0	1	1
Quality	1	2	1
Past Relationship	1	1	1

From Table 6 there does not seem to be a clear opinion of what was universally important in determining which company to purchase raw milk from. Product availability was first factor considered by two companies. Product availability and price was first for two and second for one. Product price was second for one and third for another. Quality was the first factor by one company, second factor by two and third factor by one. Past relationship was first, second or third factor by one company.

While participants did not highly rank their past relationships with suppliers when making a decision of where to purchase raw milk they still seem to be committed to their suppliers. The company that changed the most frequently would change suppliers in less than five years. The other buyers were committed to their suppliers longer term with talk from some participants of being with the same supplier as many as 20 years. This may have something to do with limited companies to purchase from in a given geographical area. Another possibility could be that suppliers and buyers had worked out an arrangement that

Table 5 Purchasing and Contractual Arrangement of Raw Milk Purchases by Seven Purchasers

Number of Sources	4 to 6	1 to 3	7 to 10	10 to 15	7 to 10	4 to 6	4 to 6
Suppliers Proportional size (annual Sales)	larger	smaller	smaller	smaller	smaller	smaller	smaller
Rank the following factors in the order you consider them when making purchasing decisions.							
Product Availability			1				1
Product Availability & Price	1			2	1		
Product Price					2	3	
Quality	3		2	1		2	
Past Relationship	2			3		1	
COMMENTS		Location supply & milk availability	Need Quality Location and availability are reasons for choice Lack of alternatives	1 - Quality of our Product comes first 2 - the amount of volume available and price is a factor 3- Most of the milk is bought through a broker	Supply contracts with coops in areas where our plants are We need both a consistent supply of milk, but also at a price competitive with other areas of the country		Limited location availability
How often do you change sources?	Relationships are long term	Long Term Relationships	Limited Sources - so rarely change	annually	< 5 years	rarely	>15 years
What are the reasons for changing sources?	Price or service issues would be the main cause. This makes the assumption that raw milk from any source would be similar quality.	Lower supply cost at location	Service or lack of competitive pricing	Wherever availability of milk is and what the price is	Farmers - lease/join mainly for price reasons Coops - don't change much - more for price reasons	Quality, Price, philosophical differences	Price
What is the current pricing procedure?	Based off the F.O. Class pricing system	BFP based pricing (PROBABLY FMMO pricing)	Modified Contract - Monthly Announcement -- 1 yr for x pounds	Current pricing is based off Basic formula prices or multiple component pricing	Paid monthly - USDA announced class price and CA class prices	Plant premium plus FMMO class Price	FMMO & each area has a service charge mechanism
Percent of product purchased under each type of purchase arrangement?							
Contract	100%	100%	100%	67%	95%	90%	100%
Spot	0%	0%	0%	33%	< 5%	10%	0%
Contract Description	Written -some include volume language which might define and maximum and minimum volume	Written with volume language	Both Written and oral about 75 contain volume language with some having specific volumes and other having established range	Written annually with monthly volumes	Written with different volume arrangements	Written with volume language	Some are written contracts which sets the service charge - some are gentlemen's agreements

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Table 5 Continued

Do you like how the contract arrangements are working?	Yes	Yes	Yes	Yes	Yes & No	Yes	Yes
Why are the contracts good?	We get the volume of product we need when we want it. Because fluid milk is perishable, this is one of the most critical issues. The supplier handles the balancing of the milk supply	Secure Supply	Have security for needs	Our company is able to secure a volume of milk for a period of time	We know we have a supply of milk	Beneficial to both parties	Balance milk in problem times - service is good
What are the problems with the contracts?		Price - does not allow us to take advantage of spot market when it would be advantageous			We don't know what the price is until after we use it (make product)		Don't agree with need to inflate cost of milk and encourage excess milk production which adversely affect consumption (this is in relation to compact and other farmer price "enhancing" programs)
What changes would you make to the contracts?	We would also like to have forward pricing mechanisms for fluid milk. The BFP futures contract has helped somewhat, but there is still not a lot of liquidity in the far out months. We would like to see the USDA permit forward contracting on fluid milk between farmers and end users. Cooperatives could facilitate this in situations where the producers do not ship to a proprietary plant.	Would like to reduce amount of milk purchased under contract and use spot market	Attempting to procure more directly from producers		Cash Forward pricing opportunities would be nice	Make annual modifications	Moving toward purchasing more milk directly
Do you like how the spot market arrangements are working?				Yes	No	Yes	
Why is the spot market good?				Our company is able to purchase additional milk, at a lower price		Price and non volume commitment	

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Table 5 Continued

What are the problems with the spot market?					Increases raw material costs -- question as to whether you can find product or not		
What changes would you make to the spot market arrangements?				NONE	Trying to limit use	NONE	
Under the contract arrangements do you currently purchase your inputs for a certain period at a set price (fixed not floating with the market)?	No	No	No	No	Yes	No	No
How long have you been doing this?					Started in 1997		
What percent of your purchases have a set price for the following months?					up to 1 year		
Who initiated this program					We requested it		
Are you interested in purchasing your inputs or more inputs for a certain period at a set price(fixed not floating with the market)?	Yes	Yes, if the price is competitive	No	Yes	Yes	Yes	Yes
What percent of your purchases would you want to purchase at a fixed price?	100%	75 -100%		Less than 25%	75 -100%	Less than 25%	100% if made sense
For each month in advance what percent of your purchases would you like to have priced in advance of purchase?		Would like to purchase in either quarter or annual contracts as much as one year in advance					
1 month				<25%		<25%	100%
2 month				<25%		<25%	100%
3 month				<25%		<25%	100%
4 month				<25%		<25%	100%
5 month				<25%		<25%	100%
6 month				<25%		<25%	100%
7 month				<25%		<25%	100%
8 month				<25%		<25%	100%
9 month				<25%		<25%	100%
10 month				<25%		<25%	100%
11 month				<25%		<25%	100%
12 month	50%-100%			<25%		<25%	100%
More than a year	25%-75%						

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Table 5 Continued

Comments					Depends on price		Canada has an annual milk price, but would be very interested if it was an industry standard, but not until. Concerned about fixing costs then the market dropping and getting undercut by competition

provided benefits for each other. When asked what would be a reason for changing sources the most frequent response, given by all seven, was price. Service was mentioned by two companies, as reasons for changing sources, and quality was mentioned once.

Four companies purchased 100 percent of their raw milk and two companies purchased 90 percent or more through some type of contract, while one company only purchased two-thirds under contract. Each company that used contracts had some that were written, but two had some commitments that were not written. Of those that had contracts, only one had mixed feelings on how they worked; the rest like the way they worked. The company with mixed feelings liked knowing they had a supply of milk, but did not like the fact that they "did not know the price of their raw milk purchases until after they have used it." Five respondents liked the current agreement because it allowed their companies to maintain a volume of milk for their operations. Two companies expressed the use of forward pricing milk as an option for changing the current purchasing arrangement and help fix pricing problems. Two company were trying to procure more milk directly from producers, rather than buying milk from companies to overcome supply problems.

Three companies used spot markets to procure raw milk. Spot markets allow users to purchase products at reduced prices when plants are at or near capacity, or there is excess product, but require premiums to purchase when raw milk is in short supply. One company purchased about one-third of their raw milk this way while two other companies purchased less than 10 percent of their needs through spot markets. Two of the three companies liked the way this purchase option worked. They liked it basically because it allowed them to get additional milk when they wanted. Neither of these participants wanted to make changes to their spot purchases. The company that did not like the spot markets indicated that using the spot market "increased raw material costs." The participant went on to say there was also a question of available product when using the spot market. This company was attempting to limit their use of the spot market to remedy the problem.

One company had an opportunity to purchase raw milk through a cash forward contract up to one year in advance with their suppliers. Cash forward contracts provided buyers with a price for raw milk for a future delivery resulting in a fixed, not floating with the market, price. Six of seven participants expressed an interest in being able to lock in a purchase price in advance through cash forward contracting (Table 7). Further, the company with a program would like to contract a higher percentage than currently contracting through such a program. One company was extremely concerned about the competitiveness of prices associated with cash forward contracts. The companies interested in cash forward contracts had interests that ranged from less than 25 percent to 100 percent of their purchases. Two wanted to forward contract less than 25 percent of their purchases. Two wanted between 75 and 100 percent of their needs. For one of these companies the timeframe would depend on the price and the other company would be interested in an annual price, if it was competitive. Two were interested in 100 percent commitments. One of these wanted 100 percent for a year and said that it was a "novel idea" and would like to see an annual price, but only wanted to forward contract if it became an industry standard. They only wanted to participate with the industry out of concern that fixing their cost would not allow them to be competitive if prices moved down. The other company that wanted 100 percent wanted 50 to 100 percent for one year in advance and 25 to 75 percent for more than a year in advance.

Table 7 Interest by Seven Processors in Cash Forward Contracting Raw Milk Purchases

Are you interested in purchasing your inputs or more inputs for a certain period at a set price(fixed not floating with the market)?	Yes	Yes, if the price is competitive	No	Yes	Yes	Yes	Yes
What percent of your purchases would you want to purchase at a fixed price?	100%	75 -100%		Less than 25%	75 -100%	Less than 25%	100% if made sense
For each month in advance what percent of your purchases would you like to have priced in advance of purchase?		Would like to purchase in either quarter or annual contracts as much as one year in advance					
1 month				<25%		<25%	100%
2 month				<25%		<25%	100%
3 month				<25%		<25%	100%
4 month				<25%		<25%	100%
5 month				<25%		<25%	100%
6 month				<25%		<25%	100%
7 month				<25%		<25%	100%
8 month				<25%		<25%	100%
9 month				<25%		<25%	100%
10 month				<25%		<25%	100%
11 month				<25%		<25%	100%
12 month	50%-100%			<25%		<25%	100%
More than a year	25%-75%						
Comments					Depends on price		Canada has an annual milk price, but would be very interested if it was an industry standard, but not until. Concerned about fixing costs then the market dropping and getting undercut by competition

Each respondent was somewhat skeptical of what percent of their purchases to forward price because their decision would be made on the specific price. Three of the companies who wanted fixed prices said that if a supplier could provide fixed prices they would do more business with that company. One company said a supplier would not get more business, because they probably could not do any more business with that supplier. The other company was undecided because of the many contingencies, which would need to be considered.

Purchasing Raw Milk from Farmers

Six of eight purchased raw milk directly from farmers (Table 8). Four of these had a program available to allow producers to forward contract their milk price. They all had monthly contracts available to producers, and three had annual contracts available. Two companies provided monthly, quarterly, semiannual and annual contracts for producers to forward price their milk. One of the companies that bought directly from farmers, but did not have a forward contracting program, because of Federal Milk Marketing Orders (FMMO) provision requiring proprietary companies to pay producers FMMO minimum prices. However this participant believes change of this provision is coming. The other company which did not have a cash forward contracting program felt that having such a program was not an issue for the producers they purchase from.

Table 8 Cash Forward Contracts provided to Dairy Producers by Six Raw Milk Buyers

Core Business	Processor	Processor	Processor	Processor	Processor	Processor
Coop or Non- Coop	Non-Coop	Coop	Non-Coop	Coop	Non-Coop	Coop
Do you currently offer a forward price program to the farmers?	No	Yes	Yes	Yes	No	Yes
How long are the contracts that you currently offer farmers?		Monthly Annually	Monthly Quarterly Semiannual Annually	Monthly Quarterly Semiannual Annually		Monthly
Why not offer a forward price program to farmers?	FMMO regulations				Not an issue to have forward price contracts	

Purchasing Raw Milk Summary

Since raw milk is an essential ingredient in the production of most commodity dairy products one would think it would be critical to processors. This logic appears to align with the findings of this research since the majority of their raw milk purchases were the result of a supply contract, which generally included volume clauses. It would appear that this is to ensure they have a supply of milk for their processing plants. Five companies made a comment to confirm this theory. They listed supply reliability as one of the benefits of their supply arrangements. The largest use of spot market was only one-third of one company's needs, and that company was also procuring milk directly from farmers, so the spot market was an even smaller fraction of their total needs. Given that raw milk was such a crucial factor in production, it was surprising that one company did not have an interest in cash forward contracting. However this company's concern of fixed price contracts was the competitiveness of the price. The participant indicated that if the price was competitive they would be interested in contracting 75 to 100% of purchases for a year. Three of five companies interviewed were interested in cash forward contracting the majority of their milk purchases. One wanted to contract 75 to 100 percent of their purchases and two wanted 100 percent of purchases to be forward contracted. Yet, one of these companies did not want to be a leader in making that type of commitment. They were more interested in seeing it become an industry standard before they got involved. This company was concerned about remaining price competitive with forward contracts.

If raw milk is an essential ingredient for these companies, it is probably one of the larger cost components to their production costs. Therefore it was not surprising to see that these companies had an interest in forward pricing a large percent of their milk purchases. However, it would not make sense for a company to forward contract their inputs if they were unable to ensure that these costs would allow them to produce a product that they could sell at a profit. Depending on the product, it may be possible to contract the selling price of dairy products with the company's customers through use of cash forward contracts, allowing the company to lock in a margin. For example, a company could contract to sell cheese to a fast food company or a food manufacturer customer. Companies unable to contract with customers could damage their bottom line by using forward contracts for a large percentages of their input costs, because they do not know that they will be able to market their products in a way that will cover their costs. Yet, in other instances they may produce a product that is sold at retail with little price fluctuation. This is the case for

companies who produce products not purchased in dairy case (i.e. baby food, frozen dinners, etc.) For these companies, if the price they use to forward contract is at a level that allows them to produce the product at or below customers price desire, it is understandable to have forward contracts on a larger percentage of their milk costs.

Cheese

Seven companies interviewed purchase cheese; four processors, two fast food companies, and one retailer (Table 9).

As seen in Table 10, five companies indicated that product quality was their first concern in determining where to source cheese; two companies ranked quality second. Product price was first concern for two companies and second for three. Product availability and price was first concern for one company and third for two companies. The different responses do not appear to be related to the company's core business area.

Table 10 Count of seven cheese purchasers' rank of factors considered in the decision to purchase cheese

	First	Second	Third
Product Availability	0	0	2
Product Availability & Price	1	0	2
Product Price	2	3	0
Quality	5	2	0
Past Relationship	0	1	2

There was notable variation between the amount of time between changing suppliers. The one company that changed suppliers most often changed suppliers every one to two years. Four companies changed suppliers anywhere from two to five years. The sixth company indicated it was rare that they would change suppliers. Logic would say that the longer-term relationships most likely exist where there are few suppliers, and those with many suppliers are less committed. But simple observation, as opposed to statistical test, does not seem to bear this out for the participating companies. There does not appear to be any relationship between the number of suppliers to the length of supply relationships. So one cannot conclude because a company has few suppliers they will be longer-term relationships, nor that shorter-term relationships occur when a company has many suppliers. This appears to be in contradiction to the results provided Table 10. However Table 10 is looking at purchasing a load of cheese as opposed to making supply commitment.

When participants were asked what would be a reason for changing suppliers each response contained concerns for some aspect of the cheese quality. Price was a part of four companies' response, while one responded that they seldom changed because of price. There does not appear to be an observable relationship between the reasons for changing sources and the frequency of changing sources.

Three of seven companies purchased 100 percent of their cheese through some type of contract or relationship. Two other companies used this type of arrangement to purchase

Table 9 Purchasing and Contractual Arrangements of Seven Cheese Purchasers

Core Business	Processor	Processor	Processor	Processor			
Number of Sources	7 to 10	>15	>15	4 to 6	1 to 3	4 to 6	1 to 3
Suppliers Proportional size (annual Sales)	Smaller	Smaller	Smaller	Smaller	Smaller	Larger	Equal or Smaller
Rank the following factors in the order you consider them when making purchasing decisions.							
Product Availability	4			3	3	4	
Product Availability & Price	3	1	3			5	
Product Price	2			2	2	1	1
Quality	1	2	1	1	1	2	1
Past Relationship	5	3	2			3	
COMMENTS		We procure the highest quality product available - the price has to be competitive with other available products					
How often do you change sources?	1 to 2 years	> 5 years	Long term relationships (> 5 years because of satisfaction) - varieties have limited availability - consistency	3 to 4 years	2 to 3 years	5 year terms	Rarely
What are the reasons for changing sources?	Quality or Price	Price, quality	Quality (#1) Systems (logistics), Price	Quality - price	Competitive situation, Quality, Service	Quality - Business - Rarely price	Food Safety
What is the current pricing procedure?	Market Based	Priced date of make - based off avg. weekly cheese price at CME	Float with cheese market, BFP, or combination maybe including butter	CME market plus differential	Competitive situation,	Formula based	Proprietary - involves modified float
Percent of product purchased under each type of purchase arrangement?							
Contract	65%	95%	0%	0%	100%	100%	100%
Spot	35%	< 5%	100%	100%	0%	0%	0%
Contract Description	Written and include volume language	Written with volumes open ended			Written Contracts	Written Contracts	Written Contracts
Do you like how the contract arrangements are working?	Yes	Yes			Yes	Yes	Yes
Why are the contracts good?	Core Supply is covered	We have the best suppliers in the business - we get consistently high quality products			Simple -- Know what to expect on vender side	Competitive -- maintenance margin	Know the business and have a strong working relationship
What are the problems with the contracts?	Limits opportunity to take advantage of spot buys						

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Table 9 Continued

What are the problems with the contracts?	Limits opportunity to take advantage of spot buys						
What changes would you make to the contracts?	lower price	Increase capability of forward pricing			No changes	Good - fully integrating futures possibilities into contracts.	
Do you like how the spot market arrangements are working?	Yes	Yes, but don't do much because quality varies	No Choice Industry standard	No			
Why is the spot market good?	Allows to purchase more at lower price (flexibility)		like flexibility and opportunit to negotiate premiums				
What are the problems with the spot market?		No quality control		Volatility of market makes marketing plan difficult			
What changes would you make to the spot market arrangements?			None, current arrangment allows us to respond to price changes in pricing to customers (don't get caught)	Pre-announced pricing, like is currently used for Class I & II milk in FMMO. This would allow us to know the cost of raw materials			
Under the contract arrangement do you <u>currently</u> purchase your inputs for a certain period at a set price (fixed not floating with the market)?	Yes	Yes	No	No	No	No	No
How long have you been doing this?	2 years	3 years					
What percent of your purchases do you current purchase at a set price (fixed not floating with the market)?	Less than 25%	Less than 25%					
What percent of your purchases have a set price for the following months?							
How far into the future do you provide set prices for customers?	Quarterly Price	Varies by type of cheese from 3 to 12 months					
Who initiated this program	We requested	We requested					
Are you <u>interested</u> in purchasing your inputs or more inputs for a certain period at a set price(fixed not floating with the market)?	Yes	Yes	Yes	Yes	No	Yes	Yes
What percent of your purchases would you want to purchase at a fixed price?	Between 50% and 75%	Between 75% and 100%	Unsure	Between 25% and 50%		Between 25% and 50%	Depends on Strategy

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Table 9 Continued

For each month in advance what percent of your purchases would you like to have priced in advance of purchase?	Stay away from 100% because of customers		Concerns about being able to get commitments from buyers	50% for six months	More comfortable riding ups and down of the market -- feel they are able to be more competitive moving both directions - Able to take advantage of down markets to increase margins	Less than 1 year (3 to 6 months)	Would be interested in a certain number of pound as opposed to a time period
Comments	Have 3 quarters -- stay away from annuals	Varies with product - up to 12 months	Depends on price				
If a supplier offered a forward price would that supplier get more of your business? (provided they could supply you with more)	Yes	Yes	No	No		No	if provided a competitive advantage
Why not?			Need to be able to fix prices to customers -- would be interested in fixed margins	Because price may not be competitive		Going to be required to do business with our company	

65 percent and 95 percent of their purchases. The other portion of these companies' purchases and 100 percent of the remaining two companies cheese purchases were procured through spot market purchases. There appeared to be a difference between purchasing practices and the company's core business activity. The retail and fast food companies purchased 100 percent through written contracts and did not use the spot market. This seems logical because they are not interested in purchasing bulk commodity style cheese and preparing it for their needs, which is what would happen if they purchased product on the spot market. Since processors are geared to utilize bulk commodity cheese they are able to effectively use spot markets as a procurement tool

All five companies who had contracts with their suppliers had written contract. These contracts may have price language included, but it would be a formula for pricing as opposed to a fixed price. These companies like the way the arrangements were working. Two companies indicated that they knew what to expect from this arrangement. A processor said "we have the best suppliers in the business – we get consistently high quality products." This processor purchased 95 percent of their purchases from this type of arrangement. The other processor who used this arrangement liked the fact that they had their core supply covered. This participant went on to say that these arrangements "limits [their] opportunity to take advantage of spot [market] buys." Two companies wanted to change the arrangement to integrate some type of forward pricing mechanism. One company wanted to change the contract to provide lower prices.

Four companies used the spot market as a procurement method. Three companies liked the spot market, and one did not. Two companies liked this procurement tool, because it allowed them flexibility in purchasing and allowed them to purchase more at a potentially lower price. One of these companies went on to say they like the fact that they were better able to respond to price changes through use of the spot market. The other company liked the spot market for what little they used, but did not like the fact that they had little control over the quality of the product. The one company that did not like the spot market, disliked the price volatility of the market. This company purchased all their cheese through this channel. The participant's only suggestion was to change cheese pricing to pre-announced pricing, like what was used for beverage milk in the FMMO.

Two of the seven companies purchasing cheese had used cash forward contracts. One had used forward contracts for three years while the other had used them for about two years. Both had used them for less than 25 percent of their purchases. One company receives quotes from their customer and determines whether or not to contract. The other provided quotes to customers and allows suppliers decide if they want to contract. One had forward contracts that provide a quarterly price and the other had contracts which provided prices for three to 12 months in advance. Both programs were the result of the buyers requesting them.

The companies who had fixed prices available were interested in purchasing more of their cheese through such arrangements and four other companies were interested in having cash forward contracts available (Table 11). Each company wanted to use forward contracts for a different percent of their cheese purchases. The participants assumed that the prices would be fair and competitive to provide responses to this question. Two companies wanted cash forward contacts, but did not know how much they would contract if given the

Table 11 Cheese Buyers Interest in Cash Forward Contracting Cheese Purchases

Are you interested in purchasing your inputs or more inputs for a certain period at a set price(fixed not floating with the market)?	Yes	Yes	Yes	Yes	Yes	Yes	No
What percent of your purchases would you want to purchase at a fixed price?	Between 25% and 50%	Depends on Strategy	Between 50% and 75%	Between 75% and 100%	Unsure	Between 25% and 50%	
For each month in advance what percent of your purchases would for the like to have priced in advance of purchase?	Less than 1 year (3 to 6 months)	Would be interested in a certain number of pound as opposed to a time period	Stay away from 100% because of customers		Concerns about being able to get commitments from buyers	50% for six months	More comfortable riding ups and down of the market -- feel they are able to be more competitive moving both directions - Able to take advantage of down markets to increase margins
Comments			Have 3 quarters -- stay away	Varies with product - up to 12 months	Depends on price		

opportunity. One company was unsure what percent to contract because they did not know what level of commitment they could get from their customers. Another was interested, but the decision of how many pounds to purchase would depend on their purchasing strategy when the decision was made. Two companies were interested in forward contracting 25 to 50 percent of their purchases. One wanted to forward price 50 to 75 percent of their purchases another company was interested in contracting 75 to 100 percent of their purchases. It is interesting to note that no company said they wanted to forward price less than 25 percent, they all seem to be interested in forward pricing a significant portion of their purchases. One company was interested in having prices for three to six months in advance. Another was interested in six-month forward pricing. One wanted nine months forward pricing, but wanted to stay away from annual commitments. Only one company was willing to go twelve months and going that far would depend on what type of cheese being contracted. One company would only be able to say the type of commitment when they knew the price. The company that was not interested in having cash forward contracts said they were "more comfortable with riding the ups and downs of the market" and did not want to be locked in. They felt they were more competitive moving both directions and were "able to take advantage of down markets to increase margins."

Three of six companies indicated that if their supplier would provide fixed forward contracts they would do more business with that supplier, however one company hedged this comment by saying "if it provided a competitive price advantage." Three companies indicated they would not do more business with a supplier just because they provided cash forward contracts. One said they expected all their suppliers to provide this opportunity. Another said the price would have to be competitive for them to do more business with a supplier not just because they provided forward pricing. The other company was not as interested in fixed prices as they were in fixed margins, which would also require price commitments from their customers.

One participant was in the process of incorporating language into their supply contracts that would require the suppliers to provide fixed prices based off of the futures markets. The language would give the buyer the right to contract suppliers and requested suppliers to buy a set percentage of a particular month's business in the futures market. Once the futures provides that opportunity the buyer used that price in the price formulas, instead of the market price. The supplier had the option to use the futures to protect themselves or any other risk management mechanism they choose, but were only going to get paid what the

formula using the futures price provided. The participant said that the suppliers were fearful of this type of language. The suppliers were afraid that using this agreement would cut into their margins, resulting in decreased profits.

Cream

Six companies interviewed purchased cream. All of these companies were processors. Three purchased from less than six suppliers, while the others purchased from more than ten suppliers, with one purchasing from over 100 suppliers (Table 12).

Four companies ranked quality the number one factor considered when deciding where to purchase cream, two ranked past relationship as the number one reason (Table 14). Three ranked product availability and price as second, and two ranked this criterion third. A single company ranked product price and quality second or third. Past relationship was ranked second once and third twice.

Table 14 Count of six cream purchasers' rank of factors considered in the decision to purchase cream

	First	Second	Third
Product Availability	0	0	0
Product Availability & Price	0	3	2
Product Price	0	1	1
Quality	4	1	1
Past Relationship	2	1	2

All but three of the companies that purchased cream seemed to be committed to their cream suppliers. Three companies seemed very interested in finding the most competitively priced cream available, while three companies seemed to be committed to their supplier for an extended term (greater than five years).

When participants were asked what would be a reason for changing suppliers they all included price in their response. Four companies mentioned quality, while three mentioned product availability.

Three companies purchased 100 percent of their cream by using the spot market. Two purchased 25 percent of their purchases on the spot market and the remaining company only purchased one percent of their purchases on the spot market. Three companies used supply arrangements. Two of these companies had written contracts and one had both written contracts and oral agreements, to procure cream. These contracts did not included fixed prices, some included fixed multiples, while others were simply supply arrangements. One company purchased 99 percent of their cream through contracts while the other two used contracts for 75 percent of their purchases. Notice there are two separate groups. One group relied predominately on the spot market, while the other group purchased the majority through supply contracts. There does not seem to be any logical explanation for this division.

Two of the companies that had supply contracts said they liked the way the arrangements were working. One credited the arrangements with providing them a consistent quality supply of cream to keep their plants operating efficiently. The other one liked the fact that their contract provided a fixed annual multiple. One of the companies that

Table 12 Purchasing and Contractual Arrangements of Six Cream Purchasers

Company (this line will be deleted)	E	H	F	J	L	K
Sources	Greater than 10	Less than 6	Greater than 10	Greater than 10	Less than 6	Less than 6
Suppliers Proportional size (annual Sales)	Smaller	Smaller	Smaller	Smaller	Smaller	Smaller
Rank the following factors in the order you consider them when making purchasing decisions.						
Product Availability	4		5			
Product Availability & Price	3	2	2	3	2	
Product Price	2		4			3
Quality	1	1	1	1	3	2
Past Relationship	5	3	3	2	1	1
How often do you change sources?	As often as necessary to get the best price (may be 2 to 6 times annually)	where ever cream is available	> 5 years	Some consistent suppliers, some could be week or months, suppliers can choose to quit supplying	> 5 years	rarely ever
What are the reasons for changing sources?	Price & Outlook	Price and availability of cream	Quality, Price, Availability	Price, quality, systems	1) supply 2) Quality 3) Price	Quality, Price, philosophical differences
What is the current pricing procedure?	Cream - Butterfat basis - Grade AA (can't tell)	A multiplier times the AA market published in Cheese Market news	AA market times multiple	AA -9 plus multiple	AA - 9 time factor	multiplier over AA
Percent of product purchased under each type of purchase arrangement?						
Contract	0%	0%	75%	0%	99%	75%
Spot	100%	100%	25%	100%	1%	25%
Contract Description			Some are written and some verbal - some include defined volumes		Written contracts which set the multiple	Written Contracts
Do you like how the contract arrangements are working?			Yes & No		Yes	Yes
Why are the contracts good?			Most have worked well		Fixed multiplier for year round	Consistent quality supply keeps production efficient
What are the problems with the contracts?		Volumes are not large enough for contracts	inability to change programs when market conditions require a change		Make sure the plants uphold their agreement - police the agreement to make sure they are not shorting their orders and selling to others	
What changes would you make to the contracts?			more volume flexibility		No	No
Do you like how the spot market arrangements are working?	Yes	Yes	Yes	No Choice	Yes	Yes

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Table 12 Continued

Why is the spot market good?	Know that purchases are being made at the most competitive price	The small volumes work well on the spot market	very flexible	Don't have to take production - which allows flexibility	Know product cost - makes production easier - temptation to take advantage of market fluctuations	non volume commitment and - pricing
What are the problems with the spot market?	More work to purchase product			Sometimes get it sometimes don't - multiple changes based on demand. Competing products can pay more than butter -- butter is at the bottom of the totem pole	If FMMO could be more like California pricing	
What changes would you make to the spot market arrangements?	Like to purchase at a set price for a minimum of a quarter at a time			Would like an opportunity to forward contract to lock in margins		
Under the contract arrangement do you **currently** purchase your inputs for a certain period at a set price (fixed not floating with the market)?	No	No	No	No	No	No
Are you **interested** in purchasing your inputs or more inputs for a certain period at a set price(fixed not floating with the market)?	Yes	No	Yes	Yes	Yes, if it is industry standard for fear of having the price drop and getting undercut	Yes
What percent of your purchases would you want to purchase at a fixed price?	100%		Less than 25%	Depends on price	100% if it is the industry standard	Less than 25%
Comments	Like to contract a minimum of a quarter at a time			Concerns about being able to get commitments from buyers		
For each month in advance what percent of your purchases would you like to have priced in advance of purchase?	up to a year in advance		All options open			Annual price
If a supplier offered a forward price would that supplier get more of your business? (provided they could supply you with more)	Yes		Yes	Yes	No	Yes
Why not?					Not unless extremely below market	Would depend on contingencies
Comments	Suppliers are unwilling to take risk don't want to use the futures markets					

liked the arrangement had some concerns about the need to police the agreements to ensure that suppliers were not shorting their commitment and moving product to other buyers on the spot market when it was economically advantageous to do that. The other company that has contracts with their suppliers, had both positive and negative feelings. They felt that most contracts had worked well, but they went on to say the problem was "inability to change programs when market conditions require a change." The two companies that said they liked the contracts and would make no changes, while the company with mixed feelings would like to increase the volume flexibility of the contracts.

Five of the six companies that used the spot markets like the way this procurement tool had served them. The sixth indicated they had no choice, it was industry standard. Each company had their own reason why they liked this procurement method. One company liked it because it worked well for their small volume needs. Two liked the flexibility of the spot market, allowing them to purchase cream when they wanted it and not requiring them to take it when they did not need it. One company liked purchasing on the spot market because this procurement method allowed them to know their cost. One company's complaint against using the spot market, was product availability saying, "sometimes you get it and sometimes you do not." This company was also troubled by the fact that some companies were able to pay more for cream than others because of the product they were producing. This caused the price to change more than they desired and had prevented them from purchasing at times. They relied on the spot market for all of their purchase needs. The only suggested change was for the FMMO pricing system be more like the California pricing system, which sets minimum fat and solids - not fat prices.

None of the companies had purchased any cream through cash forward contracts. Five of the six had an interest in cash forward contracting (Table 14). It seems understandable that the one company that did not have an interest currently purchased 100 percent of their product on the spot market and could not use contracts because of small volumes. If this company purchased more cream they would be interested in cash forward contracts. One company was interested in forward contracting 100 percent of their purchases at an annual price. One company was interested in forward contracting 100 percent of their

Table 14 Six Cream Buyers' Interest in Cash Forward Contracting Cream Purchases

Are you interested in purchasing your inputs or more inputs for a certain period at a set price(fixed not floating with the market)?	Yes	No	Yes	Yes	Yes, if it is industry standard for fear of having the price drop and getting undercut	Yes
What percent of your purchases would you want to purchase at a fixed price?	100%		Less than 25%	Depends on price	100% if it is the industry standard	Less than 25%
Comments	Like to contract a minimum of a quarter at a time			Concerns about being able to get commitments from buyers		
For each month in advance what percent of your purchases would for the like to have priced in advance of purchase?	up to a year in advance		All options open			Annual price

purchases only if this type of pricing was an industry standard. Two companies were interested in using forward contracts on less than 25 percent of their purchases. One of these companies wanted an annual price, while the other one was interested in keeping their timing options open to align forward contract prices and marketing strategies. One company was hesitant on what amount of their purchases they would contract for fear of not being able to get price commitments from their customers to cover the cost that they would be locking in with such an agreement. Four of the participants would increase volumes with a supplier that provided a competitive cash forward contracting opportunity, while one would not unless the price was "extremely below market."

It is interesting that all but one of the companies wanted to forward contract, while two of these companies used the spot market to purchase 100 percent of their cream purchases. One of these companies wanted to purchase 100 percent with an annual forward contract. The interest of four of five willing to do more business with suppliers that provide fixed price contracts would provide aggressive suppliers with an opportunity to increase their business volume and/or customer base. One cream purchaser said "suppliers are unwilling to take risk and do not want to use the futures markets." This participant was not optimistic that cash forward contracting opportunities would be available in the near future, because of supplier resistance.

Butter

Three companies interviewed purchased butter. Two of the companies were processors the other was a food manufacturer.

When asked to rank which was the most important factor considered when choosing where to purchase butter, each company ranked quality first (Table 15). For the second factor each company had their own opinion with one saying, product and price, another price, and one past relationship. Two indicated that product availability and price was third and one ranked past relationship third. There does not appear to be any relationship in the number of suppliers and their ranking. One company said they maintain an eligible pool of suppliers. Another company said they would change suppliers as often as necessary to get the best price, while the other one almost never changed suppliers.

Table 15 Count of three butter purchasers' rank of factors considered in the decision to purchase butter

	First	Second	Third
Product Availability	0	0	0
Product Availability & Price	0	1	2
Product Price	0	1	0
Quality	3	0	0
Past Relationship	0	1	1

When asked what would lead them to change suppliers, each had a different response (Table 16). Two companies mentioned price as their reason. Two companies also mentioned product availability. Other mentioned factors were quality and price outlook.

Two companies purchased the majority of their butter through written supply contracts with their supplier. Both companies' contracts contained language that governed the number of pounds purchased. One company purchased 90 percent through this type of

Table 16 Purchasing and Contractual Arrangements of Three Butter Purchasers

Number of Sources	5 to 6	10 to 15	5 to 6
Suppliers Proportional size (annual Sales)	Larger	Smaller	Smaller
Rank the following factors in the order you consider them when making purchasing decisions.			
Product Availability		4	
Product Availability & Price	2	3	3
Product Price		2	
Quality	1	1	1
Past Relationship	3	5	2
COMMENTS			
How often do you change sources?	We keep a pool of eligible suppliers	As often as necessary to get the best price (may be 2 to 6 times annually)	Almost never
What are the reasons for changing sources?	Quality problems, uncompetitive pricing, unavailability of product when pricing is attractive	Price & Outlook	Product Availability
What is the current pricing procedure?	Most product pricing is based on CME spot Market	Propreitary	AA adjusted for transportation
Percent of product purchased under each type of purchase arrangement?			
Contract	98%	0%	90%
Spot	2%	100%	10%
Contract Description	Written contracts with defined volume language and specified time		Written supply contracts with volume language which may be specified pounds or all the supplier produces
Do you like how the contract arrangements are working?	No		Yes
Why are the contracts good?			supply assurance and confidence of adequate quality supply
What are the problems with the contracts?	Inability to forward price. Suppliers want a volume commitment but refuse to commit to a price		Suppliers don't necessary fill quantity
What changes would you make to the contracts?	Industry utilization of butter futures as a price discovery mechanism would allow buyers to forward price based on futures		Move to fixed quantity contracted -- some customers use consistent volumes and need to align supply contracts to ensure meeting customers needs
Do you like how the spot market arrangements are working?	No	Yes	Yes

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Table 16 Continued

Why is the spot market good?		Know that purchases are being made at the most competitive price	Time when needed it is available -- good to fill in times of shortfall
What are the problems with the spot market?	The market is fine for buying or selling butter, but it is too thin of a market to be the price discovery mechanism for all the dairy fat in the country	More work to purchase product	May not fill the need
What changes would you make to the spot market arrangements?	The market needs more participants.	Like to purchase at a set price for a minimum of a quarter at a time	Trying to convert current contracts to fixed volume contracts
Under the contract arrangement do you **currently** purchase your inputs for a certain period at a set price (fixed not floating with the market)?	No	No	No
COMMENTS	We have consistently requested but sellers refuse to do fixed price contracts. They have no way to hedge their input costs because their suppliers (the dairy farmer) refuse (and/or are prevented by regulations) to forward price		
Are you **interested** in purchasing your inputs or more inputs for a certain period at a set price(fixed not floating with the market)?	Yes	Yes	No. Learned to deal with volatility and use it to expand profitablity
What percent of your purchases would you want to purchase at a fixed price?	Between 75% to 100	100%	
Comments		like to contract a minimum of a quarter at a time	
For each month in advance what percent of your purchases would you like to have priced in advance of purchase?	75% for 10 months	up to one year in advance	
If a supplier offered a forward price would that supplier get more of your business? (provided they could supply you with more)	Yes, if pricing was fair and competitive	Yes	
Why not?			
Comments		Suppliers are unwilling to take risk don't want to use the futures markets	

arrangement and the other purchased 98 percent. "Supply assurance and confidence of adequate quality supply" was the way one company described the way their arrangements were working. However, this company was not purely satisfied and indicated that the suppliers did not always supply the quantity they needed. The other company did not like the arrangement for the following reason "inability to forward price. Suppliers want a volume commitment but refuse to commit to a price." This participant offered the following solution, "industry utilization of butter futures as a price discovery mechanism would allow buyers to forward price based on futures." The other company was trying to move toward fixed quantity contracts to ensure they get the amount of product they need when they need it.

When it comes to spot market purchases, one company relied on this procurement mechanism for 100 percent of their butter purchases while the other two companies only used it for 2 percent and 10 percent of their purchases. Two companies liked this procurement method while the other company did not. One liked it because it allowed the company to purchase butter "when it is needed – good to fill in times of shortfall," however they went on to say they "may not be able to fill their needs." To remedy this problem, the company was trying to move toward more fixed volume contracts. One company that did not like the spot market indicated "the market is fine for buying or selling butter, but it is too thin of a market to be the price discovery mechanism for all the dairy fat in the country." This comment alludes to the fact that the transactions that occur at the CME are utilized by the USDA under the FMMO to establish a butterfat differential, which is used to value all dairy fat (butterfat). This company recommends that more companies participate in the spot market to help increase the price accuracy. While this could increase price accuracy for their business, the CME spot market is generally a market of last resort.

None of the participating companies have had the opportunity to purchase butter with cash forward contracts from their suppliers. One company indicated "We have consistently requested but sellers refuse to do fixed price contracts. They have no way to hedge their input costs because their suppliers (the dairy farmer) refuse (and/or are prevented by regulations) to forward price." This company and one other were interested in cash forward contracting with their suppliers. This company wanted to contract between 75 percent and 100 percent of their butter purchases, while the other company wanted to contract 100 percent of their purchases. This is interesting since the other company purchases 100 percent of the butter purchases by using the spot market. Both companies were interested in extended timeframe forward contracts. One company was interested in ten-month forward pricing, the other wanted annual pricing. Both of the companies who would like to utilize cash forward contracts said that if the pricing were fair and competitive, a supplier who provided cash forward contracts would receive more of their business.

With only three participants purchasing butter, it is difficult to draw any clear conclusion. It is increasingly difficult with these three because they were no points in the interview in which all three companies agreed. Where two agreed the third always seem to have a different opinion and it was a different company that diverged each time.

Nonfat Dry Milk

There were six companies interviewed that purchased nonfat dry milk, one food manufacturer and five processors. Two purchased from less than three suppliers, while three others purchased from four to six suppliers (Table 17). One purchased from six to ten suppliers. No company purchased from more than ten suppliers.

Quality was either the first or second factor that purchasers considered when deciding where to purchase nonfat dry milk. Three companies rated this factor first while three rated it second (Table 18). Availability, product price, and past relationship were each mentioned by a company as the first factor considered in choosing where to purchase. Product availability and price was the second factor for two companies while product price was second for one company. Past relationship was the third factor for three companies' decision.

Table 18 Count of six nonfat dry milk purchasers' rank of factors considered in the decision to purchase nonfat dry milk

	First	Second	Third
Product Availability	1	0	0
Product Availability & Price	0	2	1
Product Price	1	1	1
Quality	3	3	0
Past Relationship	1	0	3

The participants' commitment to their current suppliers varied greatly. From the responses, five of the six companies appeared to have shorter-term relationships with their suppliers and were more comfortable looking for alternative sources, while one indicated they never changed sources. It is unclear why the majority seemed to be flexible on their supplier, and one seems to be indefinitely committed. It is also unique that these companies generally relied on fewer suppliers than some of the other products considered in this research. Yet, the number of suppliers did not seem to influence companies' commitment to suppliers.

Quality, product availability and price were each mentioned by four companies as reasons for changing sources. One company said that price was only occasionally a reason. One company mentioned service as a reason for changing suppliers.

Two companies purchased 100 percent of their product through a contract arrangement with their suppliers. These contracts were all written and defined volumes. Two companies had contracts which also included the price. One company purchased 75 percent and another 50 percent under the same type of supplier arrangements. Three of the four liked the way these arrangements were working. One company that used this arrangement for 50 percent of their purchases said it "secures a percentage of our volume needed for the year." The other company purchased 100 percent under supply arrangements and said it provided them with an "annual supply of good quality product." One company who purchased 100 percent through supply arrangements used them for three to six month commitments. They liked their arrangements, but wanted to manufacture enough on their own to meet their needs. The company that did not like the contract arrangements disliked the inability to forward price on majority of ingredient needs. This participant suggested that "an active futures market would allow for more forward contracting..."

Table 17 Purchasing and Contractual Arrangements of Six Nonfat Dry Milk Purchasers

Sources	4 to 6	4 to 6	6 to 10	4 to 6	Less than 3	Less than 3
Suppliers Proportional size (annual Sales)	Larger	Smaller	Smaller	Smaller	Larger	Smaller
Rank the following factors in the order you consider them when making purchasing decisions.						
Product Availability		4				1
Product Availability & Price	2	3		2		
Product Price		2	1		3	4
Quality	1	1	2	1	2	2
Past Relationship	3	5		3	1	3
COMMENTS				1 - Quality of our Product comes first 2 - the amount of volume available and price is a factor 3- Most product is purchased through a broker	If no relationship - no business	
How often do you change sources?	Whenever necessary for quality or other business reasons	Fairly Often	Shop around, but fixed for a time frame	Whenever it is necessary	Never	As needed because of availability
What are the reasons for changing sources?	Poor quality, uncompetitive pricing, failure to provide service	Price and Quality	Price -- occasionally Availability and Quality	Product availability	Quality, nondelievery, price	Product availability
What is the current pricing procedure?	Various pricing methods including market indices, flat pricing, and spot pricing	Utilization of Published "mostly market"	Call for best prices	Contract - Published Price for the previous week of shipment from USDA Dairy Market News Report	Based off of the California Average	market plus fee
Percent of product purchased under each type of purchase arrangement?						
Contract	75%		100%	50%	100%	
Spot	25%	100%		50%		100%
Contract Description	Written contracts with defined volume language and specified time		Written, including volume and price	Written, including volume and price	Written, including specified volume	
Do you like how the contract arrangements are working?	No		Yes	Yes	Yes	
Why are the contracts good?			These are 3-6 month contracts	It secures a percentage of your volume you need for the year	Annual supply of good quality -- Good delivery of product -- Fair pricing	
What are the problems with the contracts?	Inability to forward price on majority of ingredient needs, suppliers want the buyers to commit to contract volumes for a year without any commitment on pricing					

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Table 17 Continued

What changes would you make to the contracts?	An active futures market would allow for more forward contracting, cooperatives who manufacture butter/powder and other dairy ingredients should be more aggressive in working with customers and farmers to forward price milk		Changes would be to do their own		No changes	
Do you like how the spot market arrangements are working?	No	Yes		Yes		Yes
Why is the spot market good?		Know that purchases are being made at the most competitive price		You are able to negotiate for lower pricing on the remainder of you volume you need		Consistent - helps to maintain a current supply
What are the problems with the spot market?	Various indices are used. The way that USDA reports NFDM prices is often subject to a lot of questions. Prices are not weighted averages. A single high or low priced sale can impact these prices.					
What changes would you make to the spot market arrangements?						none
Under the contract arrangement do you <u>currently</u> purchase your inputs for a certain period at a set price (fixed not floating with the market)?	Yes	Yes	Yes	No	No	No
How long have you been doing this?	One year	Last year			Have had the opportunity, but did not find the price attractive at the time	
What percent of your purchases do you current purchase at a set price (fixed not floating with the market)?	Less than 25%	Less than 25%	100%			
What percent of your purchases have a set price for the following months?	15 percent for 9 months	1 Quarter	Normally 3 to 6 months			
How far into the future do you provide set prices for customers?						
Who initiated this program	We requested it	We requested it	Industry Standard			
How is the Price determined	Negotiation	Support	quoted from supplier			
Are you <u>interested</u> in purchasing your inputs or more inputs for a certain period at a set price(fixed not floating with the market)?	Yes	Yes		Yes	No	No

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Table 17 Continued

What percent of your purchases would you want to purchase at a fixed price?	Between 75 % and 100%	100%		Less than 25%		
For each month in advance what percent of your purchases would you like to have priced in advance of purchase?						
1 month				<25%		
2 month				<25%		
3 month				<25%		
4 month				<25%		
5 month				<25%		
6 month				<25%		
7 month				<25%		
8 month				<25%		
9 month				<25%		
10 month	75			<25%		
11 month				<25%		
12 month		100		<25%		
More than a year						
Comments						
If a supplier offered a forward price would that supplier get more of your business? (provided they could supply you with more)	Yes	Yes		Yes		

Three of the four companies that used spot markets liked how the spot markets were working. One liked the fact that they could use it to negotiate a lower price than what they had contracted. Another company commented that it helped their company to keep their inventory current. The company that did not like the spot arrangement disliked how the prices were calculated using the USDA reports. USDA reports do not take into account weighted averages, so the price could be impacted by a single "extreme" transaction.

Four of the five companies had cash forward contracts available, however, only three have used them. Those that had used forward pricing contracts had only used them within the last year. Two of three purchased less than 25 percent of their needs through the use of cash forward contracts, while the other one purchased 100 percent. Each company contracted a different timeframe. One contracted between three to six months while another contracted for three months. The other company contracted for nine months. One company indicated this type of program was an "industry standard" the other said the programs were established after they requested it from their suppliers. The one company, which had not used cash forward contracts, said they "did not find the prices attractive." One of the two companies that did not currently have a forward contracting program available was interested in having one. This company would like to purchase up to 25 percent of their purchases through this type of contract. Two of the four that did have a program available would like to contract more volume. One would like to contract 75 percent of purchase for 10 months out and the other 100 percent for 12 months out. These two companies and the one company that wanted to have forward contracts, would each do more business with a supplier, if they could provide cash forward contracts.

It is not surprising to see that companies had begun cash forward contracting nonfat dry milk. When one studies the price movement of dairy products involved in this research, the price of nonfat dry milk moves the least. Even though the price moves the least that does not mean there is no price risk associated with it, because four of the six companies that purchase nonfat dry milk use forward contracts or would like to forward contract. If these companies had their way, three of the four would forward contract greater than 75 percent of their purchases, with two going for 100 percent. It is unclear how these companies will react when the prices support, which provided the price stability for nonfat dry milk, no longer exists. It is the opinion of the researchers that one of the two following outcomes are most likely. 1) Those that need price stability for their customers, or can cash forward contract with their customers will continue to want and use cash forward contracts. 2) Since the elimination of price supports could increase price movement, therefore increasing the risk associated with making cash forward contracts on inputs but not final products, those buyers in this situation will be less interested in using forward contracts.

Packaged Milk

Packaged milk was purchased by the two grocery retailers interviewed and by two fast food participants. Two companies purchase from less than six suppliers and two from more than six suppliers (Table 19). The number of suppliers did not appear to be related to the core business of the buyer.

Table 19 Purchasing and Contractual Arrangements of Four Packaged Milk Purchasers

Core Business	Fast Food	Fast Food	Retailer	Retailer
Sources	Less than 6	More than 6	More than 6	Less than 6
Suppliers Proportional size (annual Sales)	Larger	Smaller	Smaller	Smaller
Rank the following factors in the order you consider them when making purchasing decisions.				
Product Availability	4			
Product Availability & Price	5			1
Product Price	1	2	2	
Quality	2	1	1	2
Past Relationship	3	2	3	3
COMMENTS				
How often do you change sources?	Long relationships 10-20% change (5 - 10 year relationship)	Rarely	2 to 3 years	> 5 years
What are the reasons for changing sources?	Going out of business, business failure, quality problems (rare price)	Major Food Safety issued If business is purchased the relationship will be re-evaluated	Competitive situations Quality and service	Service, quality, price
What is the current pricing procedure?	Formula based Pricing	Formula based Cost	Formula bases with negotiations	Raw materials plus packaging plus service fee
Percent of product purchased under each type of purchase arrangement?	100%	100%	100%	100%
Do you like how the contract arrangements are working?	Yes	Yes	Yes	Yes
Why are the contracts good?	Competitive -- maintenance margin	Know our business and meet the needs	simple - know the price and what to expect from the vendor	Parameters are well defined - fair for both sides
What are the problems with the contracts?				
What changes would you make to the contracts?	Good - fully integrating futures possibilities into contracts.	Look at industry as it is consolidating and learn how to leverage company's system	No change	No change
Under the contract arrangement do you currently purchase your inputs for a certain period at a set price (fixed not floating with the market)?	No	No	No	No
Are you interested in purchasing your inputs or more inputs for a certain period at a set price(fixed not floating with the market)?	Yes	Yes	No	No, unless industry standard
What percent of your purchases would you want to purchase at a fixed price?	Between 25% and 50%	Relative to marketing strategy at a particular point in time		
For each month in advance what percent of your purchases would you like to have priced in advance of purchase?	Less than 1 year (3 to 6 months Primarily)			
Comments			More comfortable riding ups and downs of the market	
If a supplier offered a forward price would that supplier get more of your business? (provided they could supply you with more)	No			
Why not?	Pushing for all suppliers to use futures language if not willing get zero business must be sophisticated enough			

Quality was the top factor for two companies in determining where they purchased, while product availability and price were each a top concern for one company (Table 20). Product price and quality was the second factor for two companies and past relationship by one. Three companies indicated that past relationship was the third factor they considered in determining where to purchase packaged milk.

Table 20 Count of four packaged milk purchasers' rank of factors considered in the decision to purchase packaged milk

	First	Second	Third
Product Availability	0	0	0
Product Availability & Price	1	0	0
Product Price	1	2	0
Quality	2	2	0
Past Relationship	0	1	3

Buyers of packaged milk products tended to have extended relationships with their suppliers. The shortest timeframe that a supplier serviced one of these companies was two years. The next shortest timeframe before changing suppliers was five years. The other two companies said they rarely changed suppliers. Both mentioned major food safety concern or quality problems would lead them to change suppliers. One fast food company indicated that if a supply company was purchased by another company they would reevaluate their relationship with that supplier. Both retailers listed quality, service and price as reasons for changing suppliers.

Participants purchased 100 percent of their package milk under some type of arrangement, whether contract or informal relationship, with their suppliers. These arrangements provided for a pricing formula, as well as volume language. They each like how those arrangements were working, but have different reasons why they like them. Two indicated that they knew what to expect from their suppliers and the suppliers knew what to expect from them. One felt that the arrangement was competitive and helped them maintain their margin. The other said the parameters were well defined and the arrangement was beneficial to both sides. One company wanted to integrate futures language into their supplier contracts which would provide for fixed pricing based off the futures market. Another company wanted to leverage their system to take advantage of the consolidation that was occurring in the dairy industry. The other two did not want to make changes with their current arrangements.

None of the participants had the opportunity to cash forward contract with their suppliers. The fast food companies were interested in having that opportunity available to them, while the retailers were not. One fast food company wanted to contract between 25 and 50 percent of their needs for less than one year (primarily three to six months), while the other said it would depend on their marketing strategy at any point in time. One company was incorporating language into their supplier contracts which would require the supplier to purchase BPF futures when requested by the buyer to cover the percentage of the needs for a particular month. Once that price became tradable in the futures markets the buyers would use that BFP price in their formulas to determine what they would pay their suppliers for product. The suppliers would not be forced to purchase the futures contracts, but would be paid as if they had.

One grocery retailer said their company is "more comfortable riding ups and downs of the market" and did not want to be locked in because they needed to stay price competitive when market moves either direction. Both retailers expressed a concern for being able to stay competitive on a local level. They were concerned that if they entered into the cash forward contracts on their purchases and the competition did not, they could be severely disadvantaged if the price would drop, because they would have to drop the price on the shelf to match their competitor, resulting in lost margin.

It is interesting to look at these two groups, retailers and fast food, both of which sell product directly to end consumers, yet have very different perspectives on locking in a price. One of the possible explanations for this is that packaged milk is not a large percentage of a fast food company's revenue, while packaged milk is a larger percentage of a grocery stores revenue. Milk is sometime used by grocery stores to attract customers, so they must be competitive with milk prices or they could possibly loose some of their customers. Since it is also one of the highest turnover items in the store, they possibly do not mind changing their price, while a fast food store may not want to go through the effort to change the price on milk when they sell such a small amount daily. Another possible explanation is the forward pricing provided by the FMMO provisions provide retailers the cost for packaged milk almost two months in advance.

In order to do business with one of the fast food companies, suppliers are going to be forced to learn about risk management. This could provide an opportunity for suppliers to expand their customer base if their current suppliers do not meet the companies requirements.

Summary of Purchasing

There were five different purchasing groups. The products included were raw milk (8 companies), cream (6 companies), cheese (7 companies), butter (3 companies), nonfat dry milk (6 companies), and packaged milk (4 companies). The majority purchased products from companies which were smaller in relation to the company's annual sales. But this did not seem to have any impact on whether or not the company provided forward contracts. In looking across products, there did not appear to be any relation between number of suppliers and the length of time a buyer would use a particular supplier. In most products the buyer and supplier had relationships which had existed for more than two years. Many had relationships which lasted over five years.

There did not appear to be any relationship between the companies' procurement methods (spot vs. contracts) and buyers interest in cash forward contracts (Table 21). Further there did not appear to be any relationship between the level of purchases using contracts and the level that companies were interested in cash forward contracting. Each product had several companies that were interested in cash forward contracting and at least one that was not interested. Each product also had varying levels of interest in contracting. Packaged milk was the only product where no company was interested in contracting 100% of their purchases. There is not clear reasoning for why this was the only product. In all other products the majority of the buyers that were interested in cash forward contracting wanted to contract 50 percent or more of their purchases. This finding provides support for the idea that buyers are interested in cash forward contracting and they understand what impact it could have on their business and are interested in contracting more than a "test." They are ready to make significant commitments.

With current suppliers, only one raw milk purchaser had the ability to cash forward contract and currently were only able to contract less than 25 percent of their purchases. This company wanted to contract 75 to 100 percent of their raw milk purchases. Two cheese purchasers had cash forward contracts, and like the raw milk purchasers procured less than 25 percent under contract. One of these companies wanted to cash forward contract 50 to 75 percent of their purchases while the other wanted to cash forward contract 75 to 100 percent. Three nonfat dry milk purchasers had cash forward contracts available to them. One of these companies was able to purchase 100 percent of their purchases at a fixed price, while the other two purchased less than 25 percent under cash forward contracts. These two companies wanted to purchase significantly more, but had not been able to. Cream, butter and packaged milk purchasers had not had an opportunity to cash forward contract their purchases. From these results alone it would appear by the limited availability of cash forward contracts that buyers have a higher comfort level with cash forward contracting than sellers do.

Table 21 Summary of Dairy Product Purchasers' Responses to Purchasing Arrangements

	Number of Suppliers	Length of relationships	Contract/ relationship purchases	Interest in Forward Contracts	Percent to Forward Contract	Length of Forward Contracts
Raw Milk	4 to 6	Long Term	100%	Yes	100%	1 year
	1 to 3	Long Term	100%	Yes	75 to 100%	Depends
	7 to 10	Rarely	100%	No		
	10 to 15	Annually	67%	Yes	<25%	1 year
	7 to 10	< 5 years	95%	Yes	75 to 100%	Depends
	4 to 6	Rarely	90%	Yes	<25%	1 year
	4 to 6	> 15 years	100%	Yes	100%	1 year
Cream	>10	Often	0%	Yes	100%	1 year
	<6	As Needed	0%	No		
	>10	> 5 years	75%	Yes	<25%	Depends
	>10	Varies	0%	Yes	Depends	Depends
	<6	> 5 years	99%	Yes	100%	
	<6	Rarely	75%	Yes	<25%	1 year
Cheese	4 to 6	5 years	100%	Yes	25 to 50%	3 to 6 months
	1 to 3	Rarely	100%	Yes	Depends	Set pounds
	7 to 10	1 to 2 years	65%	Yes	50 to 75%	3 quarters
	>15	> 5 years	95%	Yes	75 to 100%	up to 1year
	>15	> 5 years	0%	Yes	Depends	Depends
	4 to 6	3 to 4 years	0%	Yes	25 to 50%	Six months
	1 to 3	2 to 3 year	100%	No		
Nonfat Dry Milk	4 to 6	As Needed	75%	Yes	75 to 100%	10 months
	4 to 6	Fairly Often	0%	Yes	100%	1 year
	7 to 10	Shop Around	100%	Currently Does		
	4 to 6	As Needed	50%	Yes	<25%	1 year
	<3	Never	100%	No		
	<3	As Needed	100%	No		
Butter	4 to 6	As Needed	98%	Yes	75 to 100%	10 months
	10 to 15	As Needed	0%	Yes	100%	1 year
	4 to 6	Almost Never	90%	No		
Packaged milk	<6	5 to 10 years	100%	Yes	25 to 50%	3 to 6 months
	>6	Rarely	100%	Yes	Depends	Depends
	>6	2 to 3 years	100%	No		
	<6	> 5 years	100%	No		

Selling of Dairy Products

This section focuses on the selling of dairy products. The discussion is organized according to seven dairy products and examines how sellers would like to sell their dairy products and their perceptions of how buyers would like to purchase such products under contractual arrangements. This section of the research was difficult because of the variety of packaging that existed for a product and the multiple marketing channels, which these products travel through to consumers. Efforts were made to note differences between the marketing channels.

Raw Milk

There were two processors interviewed who sold raw milk. The buyers of this milk were other processors, or value-adding companies, such as cheese processors or milk bottling plants.

Both companies changed their selling prices monthly. One company had received requests for about two years from their customers to provide cash forward contracts. It was this company's opinion that their customers would like to contract 25 to 50 percent of their purchases for 12 months into the future. The participant went on to suggest that they would expect that the buyers would possibly go as high as 100 percent if the prices were right for 12 months in advance. The other company had not had requests from their customers for cash forward contracts. Neither company had provided cash forward contracts to their customers. One indicated that current Federal Milk Marketing Order (FMMO) provisions did not allow cooperatives to market raw milk below the established federal order minimum price. However this participant felt that the federal order provisions could change in the next three to four years.

Only one of the two companies was interested in providing cash forward contracts to their customers; the same company that had received requests from their customers for two years. The other company did not have an interest in providing cash forward prices to their customers.

Both companies indicated that they had passed the increased costs of raw milk onto their customers as they had experienced them. One felt that the volatility of the market had caused them to change prices more often than they had wanted, while the other was not concerned about having to change prices that often. This difference could possibly be attributed to one or two things, or possibly a combination of the two. First, the company who indicated they had changed prices more than they wanted to had customers who had requested cash forward contracts, which could lessen price changes. The other company was not worried about changing the price frequently, possibly because they had not felt this pressure from their customers. Secondly, the one who was not worried about changing the price would like to see the prices change monthly, as required under federal orders provisions. The company that was uncomfortable changing the price would prefer to change prices quarterly. It is unclear whether this difference between the two companies was cause by these reasons, but it seems logical that the difference would be related to these points.

Table 22 Two Raw Milk Sellers' Selling Practices and Perceptions

Core Business	Processor	Processor
Customer	Value-adding/processing	Value-adding/processing
How frequently do you change prices to your customers?	Monthly	Monthly
Have your customers asked for forward price contracts?	Yes	No
How long have they been asking?	2 Years	
What percent of their business that they do with you do they want to contract?	Between 25% and 50%	
How far into the future do they want to have a contract price?	12 months	
What percent of their purchases would they to forward contract	some would go 100% for 12 months	
Do you provide forward price contracts to your customers?	No	No
Would you like to provide forward price contracts to your customers?	Yes	No
Comment	FMMO limit on Coop selling below FMMO price (could change in 3-4 years)	
Have you passed the bulk of the increased costs in recent times on to your customers or have you swallowed the increased costs in hopes that there will be a better day?	Passed	Passed
Has the historical pattern caused you to change prices to your customers more than you have wanted?	Yes	No
Have you changed prices more than your customers have wanted?	Yes	Yes
If you had control how often would you change your prices?	Quarterly	Monthly
If your customers had control how often would they want the prices changed?	Annually	Annually

Both companies agreed that if their customers had control the customers would probably like to see the price change annually. It is unclear why both believe their customers would like annual prices, since only one company has had requests for cash forward prices. Cash forward contracts could be written to allow buyers to have an annual price, based on monthly averages. Then the sellers could use monthly or quarterly prices, for internal budgeting, which would allow them to have their desired quarterly or monthly price changes. Cash forward contracts would be a way for the both the buyers' desires and the sellers' desires to be met.

Processor Cheese

There were six processors who sold cheese to other companies and not directly to consumers. However, it should be noted that when these processors sell their products to buyers some products may be in a form that is ready for distribution to consumers. That is the case for those who sell to retail, food service, and wholesale buyers. A challenge for this part of the research is in the variability not only in the customer, but also in the cheese type, being discussed and in how the cheese might be packaged. The packaging could range from bulk cheddar for further processing to an individually wrapped pound of American cheese slices consumers can find in the dairy case.

Three companies changed prices to their customers as often as market prices changed. Two companies' price changing pattern depended upon the type of cheese and packaging. One company's most frequent change was weekly, while the other was monthly. For one of these companies the price change depended on how close the cheese was to a commodity style product and where it was being sold, whether to a retailer or a food service buyer. The final company changed prices monthly.

Five of the six companies had received requests from their customers for cash forward contracts. The longest standing request has been made since the beginning of cheese futures trading, which started in 1993. The most recent request had been within the last year. Two companies pointed out that food service customers did not like price volatility and would like more stable prices. Another company indicated that their larger volume customers were more interested in cash forward contracting than their smaller customers.

Each company had a different opinion of what percent of cheese purchases their customers wanted to forward contract for a particular time frame. Two companies felt that their customers would like to contract no more than 25 percent of their purchases. One of these participants felt, if the price and timing were right, their customers might be interested in increasing their cash forward contracting up to 100 percent. Another company felt their customers would like to contract between 50 and 75 percent of their business and another between 75 and 100 percent. The final company mentioned that it would depend on the selling strategies of their customers and the season for that product, because of the variance in the customers and cheeses. There was a wide variation in the time frames these companies felt their customers wanted to contract. One company felt their customers would be interested in contracting by quarters, as far as three quarters of a year out. Three companies felt their customers were interested in annual prices, while the final company felt their customers were interested in a variety of time frames up to and beyond one year.

Table 23 Six Processors Selling Cheese - Selling Practices and Perceptions

Customer	Retail & Food Service	Food service - Wholesale - Value-adding/processing	Retail & Food service	Retail - Food service - Value-added/processing	Retail - Food Service - Wholesale - Value-adding/processing	Retail - Wholesale
How frequently do you change prices to your customers?	Weekly with the market	Weekly with the market	Ranges from monthly to annually depending on the product	Everything but daily - dependent on how close to commodity style cheese it is and where it is sold - Deli track CME weekly -- Shelf (dairy case) monthly - still depends on type of cheese	Weekly with the market	Monthly
Have your customers asked for forward price contracts?	Yes	Yes	Yes	Yes	Yes	No
How long have they been asking?	last half year	1 to 2 years	varies with product - up to 2 years	since futures began trading	Last 2 year	
Comments		Larger volume customers are more interested than smaller volume customers, and those customers that provide price lists to their customers are more interested in fixed prices		Food service wants to contract 100%	Food service does not like price volatility	
What percent of their business that they do with you do they want to contract?	Less than 25%	Less than 25%	Between 75% and 100%	Depends on customer	Between 50% and 75%	
How far into the future do they want to have a contract price?	Next Quarter up to 3/4 of a year	Annual price	all time frames up to and beyond a year	Annual price	Annual price	
What percent of their purchases would they to forward contract	up to 100% if contracted basis is fair		Could be as much as 100% of time	Depends on Customer and season -- buying verses selling strategies - anywhere from 25% to 50%	50% for the first six months and variable after that to 1 year	
Do you provide forward price contracts to your customers?	Yes	Yes	Yes	Yes	No	No
How long have you provided this option?	three-quarters of a year	2 years	5+ years - not sure when started	2-3 years		

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Table 23 Continued

How long have you provided this option?	three-quarters of a year	2 years	5+ years - not sure when started	2-3 years		
What percent of your business is done with this type of contract?	Less than 25%	Less than 25%	Between 75% and 100%	Less than 25%		
How is the price determined?	BFP Futures	We use the BFP futures Based on where the BFP futures is trading we will offer a cheese price based on BFP plus a margin		BFP futures or internal formulas		
Has this program increased your customer base?	No	No	Yes	No		
How far into the future do you have a contract price?	1 year	10 months out	Depends on products - all time frames up to and beyond a year	1 year		
What percent of your business is contract at each time period?	Less than 10% for the next quarter and less than 5% beyond that	Varies by the time of year from less than 10% to about 25%	Between 75% and 100% Depends on product	Majority of contracting is less than 6 months in advance, some do go as much as 12 months		
Would you like to provide forward price contracts to your customers?					No	No
Comment					Waiting on FMMO reform and removal of government supports	Don't want to ge caught offering a price and have costs go up
Have you passed the bulk of the increased costs in recent times on to your customers or have you swallowed the increased costs in hopes that there will be a better day?	98 Passed 97 Swallowed	Passed	Swallowed	Passed	Passed	Passed
Has the historical pattern caused you to change prices to your customers more than you have wanted?	No	No	Yes	Yes	No	Yes
Have you changed prices more than your customers have wanted?	Yes	No	Yes	Yes	Yes	Yes
If you had control how often would you change your prices?	Quarterly	Daily	Quarterly - depends on individual product	Annually	Monthly	Annually

Four of the six companies interviewed provided some type of forward contracting option to their customers. One company had offered cash forward contracts for five years. Two had this program available to their customers for two or more years. One company had only provided such a program within the past year. The programs that had been around for less than three years were contracting less than 25 percent of the business with contracting customers, while the program that had been around for five or more years was contracting for 75 to 100 percent of customer purchases. Three of the contracting programs linked the cheese price to the BFP futures.

Two of the programs offered their customers prices as much as a year in advance, while another company offered customer prices ten months in advance. One company's offerings to customers depended on the product, and contracting prices could range up to and beyond a year in advance. There did not appear to be any clear relationship between the amount of time into the future that suppliers provided cash forward prices and the percent that had been contracted.

The company with the oldest program was the only participant who felt the forward contracting program had increased their customer base. The reason for this program having apparent success in larger volumes and increased customer base, while the newer ones have not, is not clear from this small sampling. It is possible that as the newer (less than three year old) programs develop customers will become more comfortable with this type of contractual arrangement and become more interested in buying larger volumes under this type of arrangement. Customers' increasing understanding of risk management may allow companies that provide more sophisticated risk management tools, such as cash forward contracts, an opportunity to increase their customer base, however this conclusion is not clearly supported by this research.

The companies that had not offered forward contracts did not have an interest in providing such contracts to their customers. One participant expressed a concern about the FMMO reform changes that were underway and the termination of the federal government price support program. This participant felt that the industry needed to adjust to risk management before such tools could be successfully implemented. FMMO reform and the federal dairy price support program were holding the industry back from using risk management tools. The other participant was concerned about offering a cash forward contract and having the cost of cheese go up, thereby hurting margins.

Five companies had passed the bulk of recent raw material cost changes onto their customers, while two companies had attempted to swallow at least part of the increased raw material costs to remain competitive. One of the five companies passed the costs in 1998 but swallowed them in 1997. It was not clear what lead some companies to swallow cost increases while others did not.

Three companies indicated that they had not changed prices more often than they wanted to, even with the recent price volatility, while three indicated that they had. One possible relationship, could be between the frequency of price changes and how market volatility had impacted that. It appears that the companies that changed prices weekly were less concerned about the recent price volatility, while those that attempted to change prices

less frequently were more sensitive to making adjustments. Five of the six felt they had changed the price more frequently than their customer had liked.

Two companies were interested in setting prices quarterly, but one company hedged that comment with "[it] depends on the product." One company that did not offer the cash forward contracting program to cheese customers would like to see prices change monthly, while the other one would like to see an annual price. Another company also wanted to see prices change annually. One company was interested in seeing cheese prices change daily. Three companies indicated that their customers would probably like prices to change annually. One was unsure of what their customers wanted, again, depending on the product, but felt price changes could range from monthly to two years. The final company felt their customers would like the prices to change quarterly or semiannually.

According to the participating cheese selling companies, cheese buyers were interested in cash forward contracts from their suppliers. Four of the six companies had made strides to provide these contracts. However the use of these contracts seemed to be limited, with the exception of the one company that has offered cash forward contracts for several years. From the information provided the cash forward contracting programs were very similar, with only two differences; 1) time the program had been provided 2) the price formulation. If the oldest program was successful just because it was the oldest, the companies with newer programs need to be prepared for their program to grow. If the success of the oldest program is because of its competitive prices maybe the companies with a newer program should consider making changes to their price setting calculations.

Consumer Cheese

This section discusses cheese sales among those companies who sold cheese products directly to consumers. There were four participants surveyed. These included two fast food companies and two retail grocers. The customers for these companies were consumers who chose to purchase food at fast food restaurants and grocery stores.

The two fast food companies each changed their selling prices one to two times per year, while the grocers change their prices almost monthly. It should be noted more than the cheese cost would influence fast food companies to change prices; cheese is only part of the raw material costs for their products. One grocer noted that they would only change the price if the price change was large enough to warrant the effort of changing the price label.

The fast food participants both felt their customers had an interest in stable prices. Both said that "customers expect price stability." One company went on to say the only price change customers wanted to see was lower prices. Neither fast food company felt they provided their customers with stable prices, even though they only changed their prices twice per year, which is much less than most of the other price changes seen within the dairy industry. Each company has swallowed the increased cheese costs in attempts to protect consumer demand. However some price increases were so dramatic that they were not able

Table 24 Selling Practices and Perceptions of Four Companies Selling Cheese to Consumers

Core Business	Fast Food	Fast Food	Retailer	Retailer
Customer	Fast food customer	Fast food customer	Grocery Store Customer	Grocery Store Customer
How frequently do you change prices to your customers?	Rarely (1-2 times per year)	Rarely (2 times per year)	Monthly as Costs change	Price changes slower than monthly, if the change is large enough to warrant changing
Have your customers asked for forward price contracts?	Yes	Yes	Consumers would like price stability, but understand we can not provide fixed prices	Yes
How long have they been asking?	Customers expect long-term price stability	customers expect price stability, Customers only want prices to go down		consumers expect price stability and have always expected it
Do you provide forward price contracts to your customers?	No	No	No	Yes
How long have you provided this				Over one year
What percent of your business is done with this type of contract?				Between 75% and 100%
How is the price determined?				try to keep competitive with marketplace
Has this program increased your customer base?				No, because customer expect it
How far into the future do you have a contract price?				Proved price for 12 weeks, depending on the type of cheese.
What percent of your business is contract at each time period?				Between 75% and 100% of cheese
Would you like to provide forward price contracts to your customers?			If it was an industry standard	

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Table 24 Continued

Have you passed the bulk of the increased costs in recent times on to your customers or have you swallowed the increased costs in hopes that there will be a better day?	Passed some trying not to hurt customer demand	Swallowed some costs and have passed some on	Passed increased costs on	No, swallowed some cost increases to remain competitive
Has the historical pattern caused you to change prices to your customers more than you have wanted?	No	No	Yes	No
Have you changed prices more than your customers have wanted?	Yes	Yes	Yes	No
If you had control how often would you change your prices?	Semiannually	find a level and establish it there and not change it	Annually	Annually
If your customers had control how often would they want the prices changed?	Semiannual or annual	Multiple years unless moving down	Annually	Annually
	The price changes have been especially difficult in the summer time and when attempting to run seasonal promotions			

to fully protect the consumers from price changes. Surprisingly they each felt they had not changed prices more than they wanted, but both agreed they had change prices more than their consumers wanted. One reason they may not have felt they changed prices more than their customers had wanted was because they had attempted to protect their consumers from increased costs and knew that price changes were necessary. One company felt that if they had control, they would change prices semiannually. This company felt their customers would like prices to change either semiannually or annually. The other fast food company had a different view. They felt they would like to find a price that appealed to consumers and leave the price there and not change it. This company felt that customers would like the price to say the same for multiple years, unless it was moving down.

Both retailers felt their customers wanted stable prices. One participant said "consumers expect price stability and have always expected it." The other participant said that "consumers would like price stability, but understand we cannot provide stable prices." One retailer indicated that they provided consumers with stable prices. They offered this for 75 to 100 percent of select cheeses. They provided price stability for 12 weeks, depending on the type of cheese, but still try to stay competitive with the local marketplace. This participant did not feel that providing stable prices had increased their business because "customers expect it." In order to provide such stability this retailer had swallowed some increased costs to remain competitive. The other retailer, did not provide fixed prices to consumers, but was only interested in doing so if it was an industry standard. This retailer was concerned that setting prices could allow competition to undercut them and causing them to loose market share. This retailer had passed the bulk of increased cheese costs onto consumers. Both grocery retailers wanted to see prices change annually and felt their customers would also like to see prices change annually.

It was interesting to note the different viewpoints between the fast food companies and the retailers, who felt their customers did not want prices to change. This retailer felt they provided their customer with stable prices because they kept the prices the same for 75 to 100 percent of selected cheese for 12 weeks at a time. The fast food companies did not feel they offered their customers stable product prices, even though they only changed price twice per year, which would be approximately 36 weeks between price changes. The grocer that provided 12 week "fixed prices" did adjust them as needed to remain competitive with the local competition.

The predominate opinion of these four companies was that consumers wanted the best deal at the lowest price, but also did not want to see the price changing. This is a difficult challenge when these companies purchase products from an industry, which is so dependent on nature, and can be impacted by so many variables. The only way these companies will be able to meet the demands of their consumers, and still achieve an impressive income statement will be through aggressive risk management of costs. These companies will need to utilize their knowledge to establish a fair price to consumers then look for opportunities to contract product from their suppliers at a cost that allows them to serve consumers at a profit. Again because of the volatile nature of the dairy industry this may be a challenge, but if their suppliers offered extended term (minimum of 1 year) contracts they could possibly find an opportunity to lock in prices long term on the low point in the price cycle.

Cream

Two processors who were interviewed sold cream; both sold to other processors or value-adding companies. Both companies changed prices to their customers weekly. Neither company had requests for cash forward contracts from their customers. One said that their customers had requested a fixed multiple. Cream is generally priced off of the Grade AA market, and the multiple is what adjusts cream values to balance the market. For example, when cream is in short supply the multiple goes up, but when there is excess cream, the multiple goes down.

Neither company had provided customers with cash forward contracts. Both companies had the same concern with offering cash forward contracts. They indicated they needed to cover their costs and remain price competitive. One company was willing to offer such contracts if it were an industry standard. This would mean they would be on a level playing field with their competitors. The other company was not interested, because the necessary risk management tools to offer such contracts for cream were not available.

Both companies had passed the increased cream cost onto their customers. One company felt that price volatility had caused them to change prices to their customers more often than they wanted while the other did not seem concerned about frequent price changes. However, they both agreed that they had changed prices more often than their customers would have liked. One company like the current system of weekly price changes. This company also felt their customers would like weekly price changes, but wanted the multiple to remain fixed. The other company had a very different view. They wanted to see prices change annually and felt their customers would also like to have prices change annually.

Table 25 Two Cream Milk Sellers' Selling Practices and Perceptions

Core Business	Processor	Processor
Customer	value-adding/ processor	value-adding/ processor
How frequently do you change prices to your customers?	Weekly off market	Weekly off market
Have your customers asked for forward price contracts?	no, but asked for fixed multiplier	No
Do you provide forward price contracts to your customers?	No	No
Would you like to provide forward price contracts to your customers?	No	Depends
Comment	No risk management tools available to effectivly offset the risk associated with offering cash forward contracts	Only if it was industry standard (afraid price will not be competitve and will be undercut)
Have you passed the bulk of the increased costs in recent times on to your customers or have you swallowed the increased costs in hopes that there will be a better day?	Passed	Passed
Has the historical pattern caused you to change prices to your customers more than you have wanted?	No	Yes
Have you changed prices more than your customers have wanted?	Yes	Yes
If you had control how often would you change your prices?	Present system is fine	Annual
If your customers had control how often would they want the prices changed?	comfortable with weekly, but they would like a fixed multiple	Annual

Butter

Three processors who were interviewed sold butter. Two sold butter to retail and food service companies, while two sold butter to value-adding and/or other processing companies. Two companies changed their prices weekly if the cost of butter changed weekly. One changed butter prices monthly for consumer packaged butter, while changing prices weekly to their food service customers.

Two of the three companies had received requests from their customers for cash forward contracts. These requests had come from companies whose core business was either retail or food service. One company had received requests for two years and the other for one year. The third company had not had any inquires from their customers for cash forward contracts. One company that had received requests for cash forward contracts felt their customers wanted to contract up to 25 percent of their purchases, while the other company indicated that some of their customers would like to contract up to 100 percent of their purchases. This company continued on to say that the total interest in forward contracts would amount to a small portion of the company's total business. The other company that had received requests felt that their customers would have increased contracting interest during the fall of the year. Both companies indicated that their customers would like cash forward contracts for a year or more.

Only one of the three companies offered cash forward contracts to their butter customers. This company has had such a program available for less than half a year. They have currently contracted less than 25 percent of customers' business. This was inline with what this company felt their customers wanted to contract. They currently offer customers the opportunity to price product as much as two months in advance. The price that was used in these contracts was negotiated between them and their customers. This company could not measure any increased sales because of the offered cash forward contracts.

The two companies that did not provide cash forward contracts both had mixed feelings about offering a program. One had an interest in providing a program to their food service customers, but felt the rest of their customer base really lacked an interest in forward contracting. Both companies were concerned about the volatility of the butter market and the risk of price changes and inability to protect themselves.

All three companies indicated that they had passed the bulk of increased costs onto their customers. They also agreed that market changes had caused them to change prices more than they had wanted to and more often than their customers had wanted. They did not agree on how often the butter price should change. Two companies indicated that if they had control they would change butter prices monthly. The other company wanted to change prices less frequently with quarterly price changes. They also differed in opinions on how often their customer would like to see the butter price change. Two companies felt their customers would like to see prices change annually, while one believed their customers wanted monthly prices. The difference between the companies' opinions appears to be related to the type of customers they serve. The two that had received requests for cash forward contracts, are the companies who felt their customers wanted prices to change annually.

Table 26 Three Butter Sellers' Selling Practices and Perceptions

Core Business	Processor	Processor	Processor
Customer	Retail - Food service	Value - Adding/Processing - Retail - Food service	Value - Adding/Processing - Retail - Food service
How frequently do you change prices to your customers?	Weekly as cost changes	Less than monthly packaged - food service weekly	Weekly as cost changes
Have your customers asked for forward price contracts?	Yes	Yes	No
How long have they been asking?	1 year	2 years	
What percent of their business that they do with you do they want to contract?	Less than 25%	only a fraction of company's business, but some customers would go to 100% of their purchases	
How far into the future do they want to have a contact price?	up to and beyond one year	up to one year	
What percent of their purchases would they to forward contract		100% for an annual price	
Do you provide forward price contracts to your customers?	Yes	No	No
How long have you provided this	6 months or less		
What percent of your business is done with this type of contract?	Less than 25%		
How is the price determined?	negotiated		
Has this program increased your customer base?	Can't tell		
How far into the future do you have a contract price?	3 months		
What percent of your business is contract at each time period?	only weeks for less than 25% of business		
Would you like to provide forward price contracts to your customers?		Yes & No	Possibly
Comment		Food Service might Lack of customer interest Volatility of markets - risk of price change is high	Volatility of markets
Have you passed the bulk of the increased costs in recent times on to your customers or have you swallowed the increased costs in hopes that there will be a better day?	Yes	Yes	Yes
Has the historical pattern caused you to change prices to your customers more than you have wanted?	Yes	Yes	Yes
Have you changed prices more than your customers have wanted?	Yes	Yes	Yes
If you had control how often would you change your prices?	Monthly	Quarterly	Monthly
If your customers had control how often would they want the prices changed?	Annual	Annual	Monthly

It is confusing that the two companies that have had requests for cash forward contracts both felt their customers wanted one year or longer forward prices, but the company that had a program offers two month forward pricing, yet their customers have only contracted for a few weeks in advance. A possible explanation is that short-term contracts (two months) are not long enough to help these companies, therefore they have not used the contracts much.

Nonfat Dry Milk

Two processors who were interviewed sold nonfat dry milk. One sold to other processors and value adding companies, while the other sold to retailers and wholesalers. One indicated that they changed prices weekly. The other company only changed prices as needed and indicated that during the last two years prices had been fairly stable. Neither company had received requests from their customers for a cash forward contract. The company that changed prices as they felt they needed to said that the lack of requests for cash forward contracts was because of the price stability. When one studies the different dairy product markets, nonfat dry milk is clearly the most stable. This stability is primarily the result of the federal dairy support price program. Neither company had provided their customers with a cash forward contracting program, but one company wanted to provide cash forward contracts on an annual basis.

One company had passed most of the costs of increased nonfat dry milk prices on to customers, while the company who only changed prices as they felt they needed, to had swallowed some costs. The difference between these companies' decisions could be in the customers who bought their products. One was selling to another processor, or value adding company, who was basically purchasing a commodity product. The other company was selling to retailers and wholesalers. This product was packaged for sale, and was no longer a commodity product. To produce this product the company had made an investment in equipment and needed to retain their customers long term to receive the full value of their investment.

One company changed prices more than they would have preferred and more than their customers would prefer. The other company felt just the opposite. They did not believe they had changed the prices more than they wanted or more than their customers had wanted. Each company also had a different opinion of when they wanted prices to change. One company wanted prices to change quarterly, the other annually. Both companies felt their customers wanted prices to change in the same time frame.

It is hard to say whether the stability of prices was affecting the use of cash forward contracts or not. It would be logical to think that stability helped producers to offer such contracts, but the question of stability increasing buyers' interests is confusing. One school of thought would say that they were more interested in forward contracting because the risk associated with a contract price significantly higher than the actual market price is minimal. However forward contracts are usually used where companies have risk and companies want to lessen the number of unknowns. In the case of nonfat dry milk it is hard to see how use of cash forward contracts would lessen the price unknowns. However, if the price support

Table 27 Two Nonfat Dry Milk Sellers' Selling Practices and Perceptions

Core Business	Processor	Processor
Customer	Value-Adding/processing	Retail - Wholesale
How frequently do you change prices to your customers?	Weekly	As needed - last two years have been stable
Have your customers asked for forward price contracts?	No	No
Comments	1) Stability of the markets -- don't expect that to change 2) Margins are steady	Because of stability in the market
Do you provide forward price contracts to your customers?	No	No, but only change price as needed
Would you like to provide forward price contracts to your customers?	No	Yes
Comment		Would like to contract on an annual basis
Have you passed the bulk of the increased costs in recent times on to your customers or have you swallowed the increased costs in hopes that there will be a better day?	Passed	Swallowed some to provide stability
Has the historical pattern caused you to change prices to your customers more than you have wanted?	Yes	No
Have you changed prices more than your customers have wanted?	Yes	No
If you had control how often would you change your prices?	Quarterly	Annual
If your customers had control how often would they want the prices changed?	Quarterly	Annual

program were terminated, nonfat dry milk would likely see price risk because of increased price volatility.

Processor Packaged Milk

Four processors interviewed sold packaged milk. Each sold some milk to retailers, and three of the four sold milk to food service and institutions. The milk sold by these processors was packaged and ready for consumption, however their customers were companies that actually sell to the final consumer.

Each company changed the selling prices to their customers monthly. Two companies, which serve institutions, had received requests from their customers for forward price contracts. These two companies had offered forward price contracts to these customers in the past, however they no longer offered such contracts, because institutions revised their contracts to include adjusters for changing milk costs, instead of having a fixed price. This change was made because the contract prices were too high, because of the selling companies concern for milk price volatility and their inability to protect themselves.

Two companies did not have an interest in offering their customers a cash forward contract. One of these participants indicated that price movement allowed them to adjust their margins over times - they face powerful buyers and need a major change in price to adjust wholesale prices. The other participant wanted to remain price competitive with the market and indicated there was no way to offset the price risk of offering such contracts. Another company was only interested in offering such a program if it was the industry standard and provided an opportunity to cover annual costs. The company was worried about offering a price and not being able to cover their costs if the cost of milk went up. The remaining company had some interest in offering cash forward contracts. This participant was open to offering a program, but did not want to be proactive with it. This participant was concerned that the customers were not sophisticated enough to use cash forward contracts, since the customers' customers (consumers) did not make long term commitments.

Each company had passed the increased milk costs onto their customers. Three companies felt they had changed the prices more than they would have liked to, while one did not feel that way. One of the companies that felt they had changed prices more than they had wanted to mentioned that at times in the year their competition would change their prices which would make their price appear high. These "games" by the competition were only for the short term. Two companies felt they had changed prices more often than the customers wanted. One company felt they had not changed prices more than customers had wanted and another company was unsure.

Each company had their own opinion of how often they wanted to change prices. One company said monthly, another two months, another quarterly, and one wanted to change prices annually. Each company also had different ideas of how often their customers wanted the price to change. One company felt their customers wanted to see the price remain the same for multiple years or never change. Another felt their customers wanted to see an annual price. The last two felt their customers would like semiannual and quarterly price changes, respectively. From this small group and their multiple marketing channels, it does

Table 28 Four Processors' Selling Packaged Milk -- Selling Practices and Perceptions

Customer	Retail - Food service	Retail - Food service - Insitutions	Retail - Institutions	Retail - Food service - Institutions
How frequently do you change prices to your customers?	Monthly as costs change	Less than Monthly depending on dealer cost	Monthly as costs change	Monthly as costs change
Have your customers asked for forward price contracts?	No	Some institution buyers have required fixed price contracts in the past -- The rest have not	No	Some institution buyers have required fixed price contracts in the past -- no requests for others
How far into the future do they want to have a contact price?		Institutions wanted 9 month contracts		Institutions wanted annual contracts
Do you provide forward price contracts to your customers?	No	Institutions only	No	Institutions only
Would you like to provide forward price contracts to your customers?	No	No	Not Proactively	No
Comment	Want to remain competitve with the market -- there is no way to offset the price risk - will not offer fixed price contracts to insitutions any more because of price risk	Price movement helps adjust margin over time -- powerful buyers and need major change in price to adjust wholesale prices to account for all costs	Not sure that customers are sophisticated enough to do it. They do not have long term commitments with their customers. Would be interested if it was requested and was feasible.	If it tracked with the industry and provided an opportunity to cover annual costs then would be interested
Have you passed the bulk of the increased costs in recent times on to your customers or have you swallowed the increased costs in hopes that there will be a better day?	Passed	Passed	Passed	Passed
Has the historical pattern caused you to change prices to your customers more than you have wanted?	No	Yes	Yes	Yes

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Table 28 Continued

Have you changed prices more than your customers have wanted?	Yes	No	Possibly	Yes
Comments		Fluid customers like price volatility - standard oligopoly - Big cost changes tend to result in price changes - but margins are eroded over time	Only time we have been concerned with changing price is when the competition has attempted to play games with the price in the short run in hopes of stealing business. We have swallowed some manufacturing cost increases to remain competitive.	
If you had control how often would you change your prices?	Monthly	2 months	Quarterly	Annual
If your customers had control how often would they want the prices changed?	Multiple years or never	Semiannual	Quarterly	Annual

not appear that the marketing channel influences the customers' desired frequency for price changes.

Consumer Packaged Milk

Two grocery retailers interviewed sold packaged milk. This section is focused on companies where the customers are the final consumers, who will purchase the milk and then drink it. Each company changed packaged milk prices monthly, one company also adjusted prices as needed to remain competitive.

One company felt their customers wanted a stable milk price for a year and had requested such. The other company did not feel their customers had requested stable prices and did not think that consumers actually knew what the price of a gallon of milk was.

Neither company provided customers with stable prices, and neither company wanted to provide stable prices. One company was willing to provide stable prices if it tracked with the industry and they knew they could cover their costs. The other company was concerned about remaining competitive with local competition.

Both companies had passed the increased cost of raw milk on to customers. Both also felt they had changed the price more often than they wanted, and more often than their customers had wanted. Both agreed that their customers would like to see the price change annually, but differed on how often they would like to see the price change. One company was comfortable with the prices changing monthly, while the other company was interested in seeing the prices change annually. The company that wanted to see prices change annually was also the company who had requests from their customers for stable prices. It is unclear if that is the reason they would like annual prices.

Table 29 Two Grocery Retailers' Selling Packaged Milk -- Selling Practices and Perceptions

Core Business	Retailer	Retailer
Customer	Retail customer	Retail customer
How frequently do you change prices to your customers?	Monthly as costs change	Monthly & Competitve situation
Have your customers asked for forward price contracts?	Yes	No
Comments		Customers don't know what the cost of a gallon of milk
How far into the future do they want to have a contact price?	Annual price	
What percent of their business that they do with you do they want to contract?	100%	
Do you provide forward price contracts to your customers?	No	No
Would you like to provide forward price contracts to your customers?	No	No
Comment	If it tracked with the competition and provided an opportunity to cover annual costs then would be interested	Want to remain competitive with local competition
Have you passed the bulk of the increased costs in recent times on to your customers or have you swallowed the increased costs in hopes that there will be a better day?	Passed	Passed
Has the historical pattern caused you to change prices to your customers more than you have wanted?	Yes	Yes
Have you changed prices more than your customers have wanted?	Yes	Yes
If you had control how often would you change your prices?	Annual	Monthly
If your customers had control how often would they want the prices changed?	Annual	Annual

Ice Cream

Two processors interviewed sold ice cream. Both sold to retailers, while one also sold to wholesalers. Each has their own schedule for price changes. One company changed prices monthly, while the other company had two programs for pricing ice cream. One program changed prices as needed while the other changed price monthly. There was no clear explanation for the two programs.

Both companies had received requests from their customers for forward price contracts and their customers had been requesting this type of arrangement for six years. Both indicated that their customers would like to contract 100 percent of their purchases at a fixed price. One company produced a branded ice cream and said that the customers did not care about the branded product, "the buyers will pay whatever price and simply add their market up, to achieve their desired margins." However both participants indicated that their customers wanted to contract 100 percent of the private label business. The time frame these participants thought their customers were interested in contracting was slightly different. One company felt their customers would like to have annual prices so they could form advanced marketing campaigns. The other company felt customers were interested in having the same price for the high volume season, which was indicated to be March through October.

One company had made an attempt to provide a forward contracting program in the sense that they tried not to change the price during the summer. However, they had not always been able to do that. The company recently had changed their contracts with their private label customers to allow them to change the price monthly, even during the summer. This change was made because of the volatility of raw material cost used in making ice cream. The other company had not made any attempts to provide a cash forward contracting program. Yet, both companies had swallowed some of the increased raw material costs, instead of passing them on to customers. So from that stand point it would appear that the second company had also attempted to provide some price stability. Both companies indicated that they had changed the prices to their customers more than the company had desired. One felt they had changed the price more than their customers had desired while the other responded "it depends on the price change."

One company they felt the prices should remain fixed for the summer season, while the other wanted annual prices. The first company felt their customers wanted prices to remain fixed for the summer season, while the second felt customers desired annual prices.

Table 30 Two Ice Cream Sellers' Selling Practices and Perceptions

Core Business	Processor	Processor
Customer	Retail	Retail - Wholesale
How frequently do you change prices to your customers?	Monthly	2 programs - one changes as needed the other monthly
Have your customers asked for forward price contracts?	Yes	Yes, most would like no change
How long have they been asking?	6 years	6 years
What percent of their business that they do with you do they want to contract?	100% for private label - branded buyers don't care	100%
How far into the future do they want to have a contact price?	Would like prices to stay the same for the high volume season especially from March through October	Annual prices to do market planning
Do you provide forward price contracts to your customers?	No - but make an attempt not to change prices during season, but not always able to do that	No
Would you like to provide forward price contracts to your customers?	No	No
Comment	Unable to protects costs	Unable to protects costs
Have you passed the bulk of the increased costs in recent times on to your customers or have you swallowed the increased costs in hopes that there will be a better day?	Swallowed	Swallowed
Has the historical pattern caused you to change prices to your customers more than you have wanted?	Yes	Yes
Have you changed prices more than your customers have wanted?	Depends on the change	Yes
If you had control how often would you change your prices?	Like the price to not change during the summer season	Annual
If your customers had control how often would they want the prices changed?	Fixed for the summer season	Annual

Summary of Selling Products

There were seven different dairy products represented, and they were arranged into nine different selling groups. These included raw milk (2 companies), cheese sold by processors (6 companies), cheese sold directly to consumers (4 companies), cream (2 companies), butter (3 companies), nonfat dry milk (2 companies), packaged milk sold by processors (4 companies), packaged milk sold directly to consumers (2 companies), and ice cream (2 companies).

In general the pricing patterns looked like the commodity pricing in the dairy industry. For example, cheese and butter were typically priced weekly and milk was generally priced monthly. In this section there were three types of milk sales 1) raw milk, 2) packaged milk sold by processors, and 3) packaged milk sold to consumers. In each case the milk was priced monthly. Cheese was broken into two groups, cheese sold by processors, and cheese sold directly to consumers. The processors varied in frequency of price changes from weekly to annually, the most prominent response was weekly. Cheese sold to consumers changed prices less frequently. Price from fast food restaurants changed semiannually while grocery retailers changed closer to monthly. Butter and cream were each predominately priced weekly. Nonfat dry milk was priced by one company weekly, while the other only changed prices as needed. Each company selling ice cream changed prices monthly, but one also had a program in which prices changed as needed.

Most of the participating companies had received requests from their customers for forward contracts, however three categories had not received requests. These categories were cream, nonfat dry milk, and processors selling packaged milk. It is unclear why these customers had not requested forward contracts. One possible reason is that they did not think their suppliers would be interested in offering such an option. In the case of nonfat dry milk, it could be that because of the price support program the customers felt they were not exposed to that much price risk. Ice cream customers and processor cheese customers had been asking for forward contracts the longest (up to six years). Both ice cream manufacturers had received requests for forward contracts, while five of the six processors selling cheese had received requests. Three of the four companies selling cheese directly to customer felt their customers expected price stability. One of the two companies selling packaged milk directly to consumers felt the same way. One of the two companies selling raw milk had received requests for forward contracts and two of the three companies selling butter had received requests.

Ice cream sellers thought their customers wanted to contract 100 percent of their purchases, while the rest of the sellers had mixed interest. For raw milk the interest in forward contracting ranged from 25 to 50 percent of the customers purchases. The processors selling cheese that had received requests felt their customers wanted to contract from less than 25 percent up to 100 percent of their purchases, which was the same range of interest seen by the companies selling butter. For each category, except ice cream, the predominate interest was to forward contract purchases for one year, and in the case of butter beyond a year. The interest in ice cream forward contracting was seen to be seasonal by one company and annual by the other.

Table 31 Summary of Selling Practices by Dairy Product Sellers

	Raw Milk	Proccesor Cheese	Consumer Cheese	Cream	Butter	Nonfat Dry milk	Proccessor Packaged Milk	Retail Packaged Milk	Ice Cream
Frequency of price changes (most frequent response)	Monthly	Weekly	Varied	Weekly	Weekly	Varied	Monthly	Monthly	Varied
Requests for forward contracts (yes/total)	1/2	5/6	3/4	0/2	2/3	0/2	0/0	1/2	2/2
Longest standing request	2 years	6 years	expected		2 years			expected	6 years
Low percent to forward contract	25%	Less than 25%			Less than 25%				100%
High percent to forward contract	50%	75 to 100%			100%				100%
Distance into the future (most frequent response)	1 year	1 year			1 year plus				varied
Provide cash forward contracts (yes/total)	0/2	4/6	1/4	0/2	1/3	0/2	0/4	0/2	0/2
Oldest program in group		5 years plus	1 year plus		less than year				
Most active program		75 to 100%	75 to 100%		less than 25%				
Of those without programs, interest in offering one	1/2	0/2		1/2	0/1	1/2	0/4	0/2	0/2
Number who passed cost/ total	2/2	5/6	3/4	2/2	3/3	1/2	4/4	2/2	0/2
Price changed more than **seller** wanted/total	1/2	3/6	1/4	1/2	3/3	1/2	2/4	2/2	2/2
Price changed more than **buyer** wanted/total	2/2	5/6	3/4	2/2	3/3	1/2	2/4	2/2	1/2
Sellers desired frequency of price change (most frequent response)	Varied	Varied	Annually	Varied	Monthly	Varied	Varied	Varied	Varied
Buyers desired frequency of price change (most frequent response)	Annually	Annually	Annually	Varied	Annually	Varied	Varied	Annually	Varied

Forward contracts were only provided in two categories, cheese sold by processor and butter. One of three companies selling butter provided their customers with forward contracts. This company had been providing this option for less than a year and was only contracting up to 25 percent of customers' purchases. The oldest forward contract program had been provided for over five years by one of the cheese processors. Four of the six processors selling cheese provided their customers with forward contracts. The most active company was contracting between 75 and 100 percent of customers' purchases. One company which sold cheese directly to consumers worked to keep prices stable, but this was not "forward contracting," since they did not contract with customers to purchase the product. Instead of contracting, the company attempted to keep prices stable for their customers to increase customer satisfaction and purchases.

Sellers in three categories had interest in providing forward contacts that did not currently provide such contacts. These categories were raw milk, cream and nonfat dry milk. The rest of the companies that did not currently provide forward contracts to their customers did not have an interest in providing contracts. The predominate reason for not providing forward contracts across products was concern over being able to offset the risk associated with making that type of commitment.

In each category, except ice cream, the majority of companies had passed the bulk of increased raw material costs onto customers. In most cases 100 percent of the participants had done so. The majority of companies felt their price changes occurred more frequently than their customers wanted, and in most categories, more than they, themselves, would have liked.

When participants were asked how often they would like the price of their products to change, most liked the current pricing system, or indicated a schedule that would be less frequent than the current pattern. When participants were asked how often they felt their customers would like prices to change, the predominate answer was annually, regardless of the product being discussed.

Summary of Buyers' and Sellers' Interest in Forward Contracting

Raw Milk

The interviews with companies that purchased raw milk and the interviews with companies that sold raw milk did not provide identical views on the selling transaction of raw milk. The purchasing companies indicated a very strong interest in forward contracting milk. Five of the seven companies indicated that they wanted to forward contract with their suppliers. One company had forward contracts available but wanted to contract a higher percentage of their purchases. When the two selling companies were asked if they had received requests from their customers for forward contracts, only one had. There are a couple explanations for this discrepancy between the buyers' interests and lack of requests to the sellers. One is that this study's sample size was too small and therefore is not representative. The other is that the one company that is not interested in purchasing under with a forward contract is the only company that purchases from the company that had not received any requests.

Another discrepancy in views regarding raw milk was the difference in the buyers' opinion of what they wanted to contract and what the seller, which had received requests for forward contracts, thought buyers wanted to contract. The seller interviewed that had received requests for forward contracts from raw milk buyers believed that buyers wanted to purchase between 25 and 50 percent of purchases, but also indicated some would go 100 percent. The majority of raw milk buyers interviewed that were interested in forward contracts indicated they that wanted to contract between 75 and 100 percent of their purchases. All the milk buyers were interested in their forward contracts being 12 months.

The clear consensus from the raw milk buyers was that they wanted forward contracts. The majority wanted these contracts for 75 to 100 percent of their annual purchases. Yet, the sellers did not seem to be interested in provided forward contracts. At the time of the survey neither one offered such contracts, but one was interested in providing them. They were constrained however, by Federal Milk Marketing Order (FMMO) regulations that limit cooperatives from selling raw milk below the FMMO minimum price.

It would seem that if the minimum pricing restrictions imposed (on non-cooperatives) by the FMMO could be removed, forward contracting of raw milk would quickly advance. There are a variety of ways in which such contracts could be written and priced. One possibility is that companies that procure milk directly from dairy producers could contract with producers and use those contracts to offset contracts with their raw milk customers. This would allow them to cover the price risk associated with making forward contracts and help meet the needs of their customers. According to the participants in this survey, four of the six companies purchasing milk directly from producers were already offering forward contracts to their producers. Therefore contracting with their raw milk customers would allow them an alternative method of offsetting risks, and help meet the needs of their customers at the same time.

Cheese

The best example of forward contracting in the products evaluated in this study was with cheese. There were a total of seven companies interviewed that purchased cheese, two were using forward contracts for less than 25 percent of their purchases and wanted to use them for more. These companies had been using such contracts for two and three years respectively. Four companies did not have forward contracts available but wanted them. Three of the six would do more business with a supplier that provided forward contracts.

There were six processors who sold cheese. Five of the six had received requests from their customers for forward contracts. This was very closely in-line with the buyer's interest in such contracts. Four processors offered forward contracts. Three of the four had contracted less than 25 percent of their business using forward contracts. However, one was contracting between 75 and 100 percent of their business. Three of the four were offering contracts one year into the future, while one company was only contracting ten months out.

The surveyed cheese buyers' interests in forward contracting ranged from 25 percent of their needs to 100 percent. Only one was willing to commit to a year contract. Two companies were interested in contracts for up to six months, while another was willing to go nine months. However, length of contracting differed from buyer to buyer. Some surveyed cheese sellers felt their customers were interested in contracting for less than 25 percent of their needs, while one company indicated their customers wanted to contract between 75 and 100 percent. Three companies felt their customers wanted to contract for one year, while one felt their customers would contract for all time frames up to and beyond a year. Another company felt their customers wanted to contract by quarters for up three quarters of a year into the future.

It would appear that the cheese sellers have a pretty clear picture of their customers' interest, if the results of the buyers' responses are any indication. There were two areas where sellers and buyers seem to have a differing view. First, the level of interest that sellers think their customers are looking for is lower than what the cheese buyers indicated. Second, three selling companies felt their customers wanted annual prices, but according to the cheese buyers, only one was interested in an annual price. The fact that the sellers' view does not perfectly align with the buyers' survey is not truly significant. The cheese sellers understand that their customers are interested in forward contracting. They were just a little low in the percent the buyers appeared to be looking for. The fact that sellers think their customers want an annual price also would not be a problem for the cheese buyers. Cheese buyers most likely would simply not make annual commitments.

Four of the six cheese sellers offered their customers forward contracts, but these contracts had not accounted for more than 25 percent of their business for three of the companies. Of the two companies, which did not provide forward contracts, neither had an interest in offering such contracts. One company was waiting for FMMO reform and removal of the federal dairy price support program, while the other was not comfortable with covering their costs. These two selling companies may need to change their views in the near future, since three of the six cheese buying companies indicated that if a supplier could provide them with forward contracts, they would do more business with that company.

In general, it would appear that the cheese companies were moving ahead in forward contracting. The majority of buying companies interviewed were interested in forward contracting and two were using such contracts. The majority of selling companies were providing their customers with forward contracts. The challenge was getting the level of forward contracting to match the level that the buyers seemed to be interested in. It would appear from this research that it simply takes time. The cheese seller with the oldest forward contracts was forward contracting 75 to 100 percent of their cheese. This program had been around for over five years. It would seem that this "success" has been a result of experience on both the part of the seller and on the part of the buyers. It would not be surprising to the researchers if in three years the overall level of contracting by sellers and buyers was significantly higher.

Cream

There was a big discrepancy between the comments made by the cream buyers and the views of the cream sellers. This discrepancy may be attributed to the low number of participating cream sellers. There were six companies interviewed that purchased cream. None of them had been able to forward contract their cream purchases, but four were definitely interested in forward contracts, and an additional company was interested, if it was the industry standard. The companies that sold cream had not received any requests from their cream customers for forward contracts. It is unclear why the majority of cream buyers participating in this research wanted forward contracts, but neither of the cream sellers had been approached with such a request from their customers. A possible explanation is that the buyers believe it is too great of a challenge for their suppliers, so they have not asked. A possible reason why neither seller had offered customers forward contracts was because they have never been asked to do so. One of the companies was open to the idea of offering forward contracts, but only if it was the industry standard. The other selling company was not interested in offering contracts because the necessary risk management tools were not available.

Providing proper risk management tools will be key to establishing forward contracts between cream sellers and buyers. Since cream is a "by-product" of milk it is a difficult product to find a natural seller for. With milk and even cheese (because of the close correlation between the two prices) the "natural seller" is the dairy producer who is at risk if the price goes down, therefore they enter into forward contracts for their milk. When looking at cream, it is only a component of milk, so contracts with producers and contracts with cream buyers would not fully cover the risk of companies purchasing the milk. Therefore another risk management tool needs to be available. The ideal tool would be some type of actively traded cream or milkfat contract on the futures market. Cream prices were based off the butter market according to this research. So a possible butter futures contract would provide opportunities for cream sellers to cover their risk and possibly for cream buyers as well. One buyer in particular was hesitant on what level or timeframe they wanted to forward contract because of concern over being able to get commitment from their customers.

Once the proper futures market contract begins trading actively it is likely that forward contracting for cream will result. The level will most likely begin with a small

percentages of the purchases, which is what most of the buyers wanted. But as both buyers and sellers get more comfortable, the companies that want to forward contract 100 percent of their purchases should be able to do that. The challenge will be waiting for such a futures market to develop. Butter futures have been trading for several years, but they still lack the liquidity necessary to provide the type of hedging opportunities these companies were looking for.

Butter

There were three companies that were buyers of butter and three companies that were sellers of butter. None of the buyers had been provided with an opportunity to cash forward contract with their suppliers, but two of them had an interest in such contracts and both indicated that if a supplier would provide them with such an opportunity, they would probably do more business with that company. The third buyer did hot have an interest in cash forward contacting. This company had learned to deal with the volatility. There were two selling companies who had received requests from their customers for cash forward contracts. The companies that seemed to be requesting contracts were either retail or food service customers. Selling companies had not received any request from their processing customers. Both of the companies who had received requests for forward contracts believed their customers wanted annual contracts, but they differed on the volume the customers wanted. One felt their customers wanted to contract less than 25 percent, while the other felt they had customers who wanted to contract 100 percent. The level perceived by the sellers and that defined by the buyers differed somewhat. The buyers interested in forward contracting were looking at significant portions of their purchases. One wanted to contracts 75 to 100 percent of their purchases for ten months while the other company wanted to contract 100 percent for a minimum of three months at a time but would contract up to a year in advance.

One butter seller was offering cash forward contracts to their customers. This company had provided these contracts for less than six months. They had only contracted small amounts with their customers, less than 25 percent. Even though they provide customers with prices up to two months in advance, customers had only contracted a few weeks out. The other two selling companies had mixed opinions about making such commitments with their customers. They were both concerned about the volatility in the market and being able to offset the risk of these contracts.

Like cream, the natural seller of butter would be the farmer since that is where the butterfat first becomes a price risk. However, because of the numerous companies that are impacted by the butter price, it is very possible that an active butter futures market could develop. The development of such a market will be slow. Butter futures contracts are traded, but the volume of activity has not been at the level that many of these companies would need. It is unclear what catalyst is needed to bring all the companies impacted by butter prices to the market to help stimulate activity. It would appear by the opinions of the participants in this survey that if butter were actively traded, more cash forward contracting would be occurring between the butter buyers and sellers.

Nonfat Dry Milk

Nonfat dry milk is the least volatile of the dairy products discussed in this research, yet it did not lessen buyers' interest in forward contracting. There were six companies interviewed that purchased nonfat dry milk. Four had forward contracts available to them, but only three were using them. One of the companies that did not have forward contracts available was interested in them. There were only two companies that sold nonfat dry milk, and neither of them provided their customers with forward contacts, or had received requests from their customers for forward contracts. One company was interested in providing their customers with annual forward contracts, and in some ways had been doing so since they only changed prices as they needed and indicated that prices had been stable for two years.

While three purchasing companies had used forward contracts provided by their suppliers, their use was varied. One company had used the contracts for 100 percent of their purchase for three to six months in advance. The other two were purchasing less than 25 percent of their needs. One buyer purchased for a quarter of a year in advance, while another purchased nine months in advance. The two companies would each like to forward contract a greater percent of their needs. One wanted to contract between 75 and 100 percent, while the other wanted to contract 100 percent. Both of these companies were interested in doing more business with a company that provided them an opportunity to enter into such arrangements.

One buyer was adamant about the need for an active futures market to allow for forward contacting. There are nonfat dry milk futures contracts, but like butter futures they are not actively traded. The other companies did not seem so concerned about the presence of a futures market as long as they could forward contract. The sellers did not seem to be receiving pressure from their customers to provide such an option, one was interested and had been making efforts in reducing volatility, but had not entered into any contracts.

It is not surprising to see that forward contracting has been occurring in nonfat dry milk, even to the point that one buyer called forward contracts an industry standard. The volatility of nonfat dry milk is small compared to the rest of the dairy industry, but that is not to say that it does not have an impact on the companies that use it. One of the challenges that those involved in nonfat dry milk are going to face is the disappearance of the federal dairy price support program, which has help provide the stability of nonfat dry milk prices. It is unclear how the removal of a support price will impact this market. One probable option will be that the price will drop to a level that would be competitive with the world market. However, it is unclear if this will result in the same stability at a lower level or if nonfat dry milk will then begin to feel the impact of volatility that other dairy markets have experienced. If volatility is a product of eliminating price supports, an actively traded futures market will most likely be the only way for the forward contracting to continue. The other dairy products with volatility have limited forward contracting except where an active futures market exists. It would seem logical that the same would be true of nonfat dry milk.

Packaged Milk

There were four participating companies that purchased packaged milk, two were fast food companies and two were grocery retailers. There were three processors who sold packaged milk. The two fast food companies were interested in having their suppliers provide forward contracts, in fact, one company was writing language into their contract that would essentially provide them with a forward contracting option. The retailers had a very different view. They were not interested in forward contracting, they were concerned about remaining competitive, and therefore they did not want to have their costs locked in while their competition might not.

Only the sellers of packaged milk who dealt with institutions had received requests from their customers for forward contracts. The other customers had not requested forward contracts. Two selling companies provided forward contracts to their institution customers, but not for their other customers. None of the selling companies seemed interested in offering forward contracts to their customers. One company showed some interested, but did not want to be proactive with their customers in offering such contracts.

Writing forward contracts between buyers and sellers of packaged milk does not seem that difficult a first glance, because of the pricing provided by the FMMO. It would seem that sellers could simply use the Basic Formula Price (BFP) futures to protect their risk and price off the BFP futures market to their customers. The problem arises when you consider the butterfat content of the milk and the excess butterfat produced in homogenizing milk and protecting that value. Protecting butterfat resulting from packaged milk complicates writing packaged milk forward contracts. This hurdle could be overcome if there was an activity traded butter futures market. Then the butter futures price could be used in the calculation of a bid price and allow the seller to hedge their risk.

All of the efforts might be a loss however if the company's customers are retailers. The retailers that participated in this research were very conscious of local competition. One indicated that in some areas gallon milk prices were used to attract customers to a store. If this company's policy was to always match competition, and they had "forward contracted" their milk, matching the competition could take them from a reasonable profit to a hefty loss. But that is not to say that they would not have been in a "loss" situation without the contract. They feared forward contracts would not allow them to be flexible in adjusting to the market and competitive pressures.

It would appear that two items are necessary for forward contracting to occur between sellers and buyers of packaged milk. The first is to cover the risk of the seller through an actively traded butter futures contract, so they can hedge the butterfat value. The second necessary ingredient is that all retailers would look to forward contacting. The two grocery retailer participants in the survey feared loosing competitive advantage with forward contract, therefore they were not interested. If it were standard for retailers to forward contract then they would begin to apply pressure to suppliers to make such an opportunities available and make use of forward contracts. Only time will tell if these factors will coexist or not.

Conclusions

The hypothesis being tested was:

> Few dairy firms have participated in cash forward pricing either on the buying or selling side of their firm. However, these firms are interested in using price risk management tools, including forward contracts, in their future buying and selling strategies.

The first part of the hypothesis proved correct for the majority of products involved in this research. However, this hypothesis was incorrect for processors selling cheese and the customers of processors, the majority of which had been involved in forward contracting. The second part of the hypothesis was clearly on target. All purchasing firms regardless of the product being purchased were interested in forward contracting, or increasing the level of their forward contracts. The selling firms seemed to be interested in forward contracting but had some concerns about being able to offset the price risk associated with making contracts with their customers.

The level of interest in forward contracting appeared high across products when studying the buyers' responses. The only area where this was not the case was for retailers buying packaged milk. They felt making such commitments would limit their flexibility. However, the companies purchasing other products seemed to be extremely interested. The data that seemed to most clearly showed their interest was that most buyers of all products wanted to lock in at least 50 percent of their purchases. If buyers had all indicated less than 25 percent, it would have appeared that they wanted to test the waters to see how it would work, but this did not appear to be the case.

The story seemed to be quite different for the sellers. They did not seem to be all that interested in providing forward contracts to their customers. Sellers of cheese and butter had provided their customers with forward contracts, but there was only limited interest in the other products. For raw milk, the sellers were constrained by FMMO regulations. For the other products the chief concern was a way to cover the price risk of offering forward contracts.

Sellers' responses about their customers provided an insight into how well the buyers and sellers were communicating. While the buyers in this survey may not have been the specific customers of the sellers in this survey, they both provided a representative sample of the industry. That being said, for some products the buyers and sellers seemed to be more closely communicating that others. Cream appeared to have the least amount of communication. Comments by the sellers about their customers clearly did not align with the actual desires of the buyers. In the other products the responses of buyers and sellers reasonably matched with some minor discrepancies.

There were some positive findings for increased forward contracting in the future. One was that there was significant interested in forward contracting cheese. Several companies had been involved in cheese forward contracts. The sellers of cheese seemed to be responsive to their customers wants and were working to make forward contracts

available. Cheese buyers that had forward contracts available had been using them, but were interested in being able to contract a greater percentage of their purchases. It would seem from the responses on both sides that the level of contracting between cheese buyers and sellers will see a rapid increase within the next few years.

Another positive finding was the buyers' level of interest in forward contracting raw milk, and the sellers' interest in making such contracts available. With restructuring in process for FMMO, and changes in FMMO regulations, it is quite likely that increased contracting will result.

For the other products, mainly butter and cream, there was strong buyer interest in forward contracting, but the sellers were very hesitant to make those contracts with customers. The sellers' concern was understandable because there were limited opportunities available for them to offset the risk of such commitments. It would appear the only way to see increased forward contracting with in butter and cream transactions would be with the use of an actively traded futures contract or contracts. Both the NYBOT and CME have a butter futures contract that is traded, but the volume of trading in these contract have not been at a level that many of these companies are comfortable with or that would be necessary to support the level that many of the buyers are looking to protect. If an actively traded futures market develops that allows for companies making butter and cream transactions to offset their risk, it would seem logical that the level of forward contracting would increase as quickly as the market could sustain their trading.

Recommendations

Based on the findings of this research, the following recommendations are offered.

1) The exchanges (CME & NYBOT) need to continue to communicate with the companies in the dairy industry to develop and offer the type of futures contracts that are needed to facilitate forward contracting. The contract that seemed to be most obviously missing from this research was a futures contract for milkfat. There are butter futures contracts traded at the both the NYBOT and the CME, but the trading activity is not at a level to interest the industry to use it to offset risk. Since these contracts are not new, it would seem in the exchanges' best interest to find out why companies are not using the butter futures and what modifications could be made that would make them more useful. Nevertheless, a milkfat contract maybe more appealing than a butter contract, since it could be used by buyers and sellers of butter, cream, and ice cream to offset risk. If a futures contract was written that addressed the specific industry needs, protecting both butter and milk fat, perhaps increased trading activity would quickly follow. This research shows that there is significant interest in forward contracting on the part of buyers of butter, cream and ice cream. The sellers' greatest hesitation in offering forward contracts was being able to protect the price risk associated with such contracts.

   Futures exchanges need to work aggressively at staying in tune with the specific needs of the dairy industry. This is especially true as the industry experiences major change such as federal order reform, and responds quickly to add new contracts or modify existing contract that meet the needs created by these changes.

2) Sellers and buyers expressed different views in the use of forward contracts. This would indicate that buyers and sellers need to do a better job of communicating. It is possible that products have not seen a lot of forward contracting because of buyers not expressing an interest, to their suppliers in forward contracting. One way for buyers to get their suppliers to provide forward contracts is to try a pilot program. This would help both buyers and sellers get a better feel for forward contracting. For products relating to milkfat, a pilot might be the only way to begin futures market trading, and a forward contracting program. Participating companies would have to be open with each other to develop trust in the use of futures and forward contracts. It is clear that open and clear communication among buyers and sellers will be necessary in the learning process.

3) Education is also a key to increase use of forward contracting. Price risk management is still a relatively new idea for the dairy industry and this newness is not limited to dairy producers. This research has shown that there was interest in expanding forward contracting. To increase the level of forward contracting companies will need to be more comfortable with risk management tools and how they fit into their organizations. This will require learning. The most logical source of such learning opportunities would seem to be the exchanges, since they will be the beneficiaries of these companies' use of the futures markets. Both the NYBOT and CME have developed educational materials and conducted workshops for buyers and sellers, but additional workshops are needed. Much

of the information relating to risk management, with futures markets in particular, is very difficult to comprehend and it takes multiple interactions for people to fully understand. Much of the material is very difficult for individuals to pick up from reading and studying alone. They need to be able to ask questions. This is why workshops are a more useful format for education and learning. These workshops need to be focused on risk management in general, including the basics of futures markets. It would seem logical to have workshops focused on one dairy product and explain how each person or company that contributes to getting that product to the consumer could benefit from using the futures. Where feasible, people who have used the futures in their management practices could be used as presenters to help participants relate to the information being shared. These workshops should also provide opportunities for hands on learning through either case studies, or some type of interactive training to help participants better understand the mechanisms and applications that are involved in the theory being discussed.

4) One area for future research is to survey consumers on their sensitivity to price fluctuation, especially as it relates to items found in the dairy case. The two food retailers that participated in the study did not seem to be concerned about price fluctuations as much as they were about competing with the local competition. This research would assist retailing companies in assessing the need for developing forward contracting strategies. It also could assist the industry in better understanding what consumers' perceptions are of the dairy case as it relates to pricing.

This research has helped to reveal the interest in alternative contractual arrangement for dairy products on the part of both buyers and sellers. It has also showed that such contracts are feasible because it has been done for some products, cheese, butter and nonfat dry milk. There was one major limiting factor which is preventing more forward contracting from occurring, an actively traded futures market. The BFP futures market seemed to be working to provide sufficient risk management to allow for cheese forward contracting. However this market will not serve the other products very well, so they need their own actively traded futures market. Some of these futures contracts exist, but have not had sufficient trading to get all the players involved and there in lies the challenge for the dairy industry: how to get all the players into the futures market? When this challenge is overcome this industry can expect to see increasing number of forward contracts for all products and greater percentages of the products changing hands with this type of arrangement.

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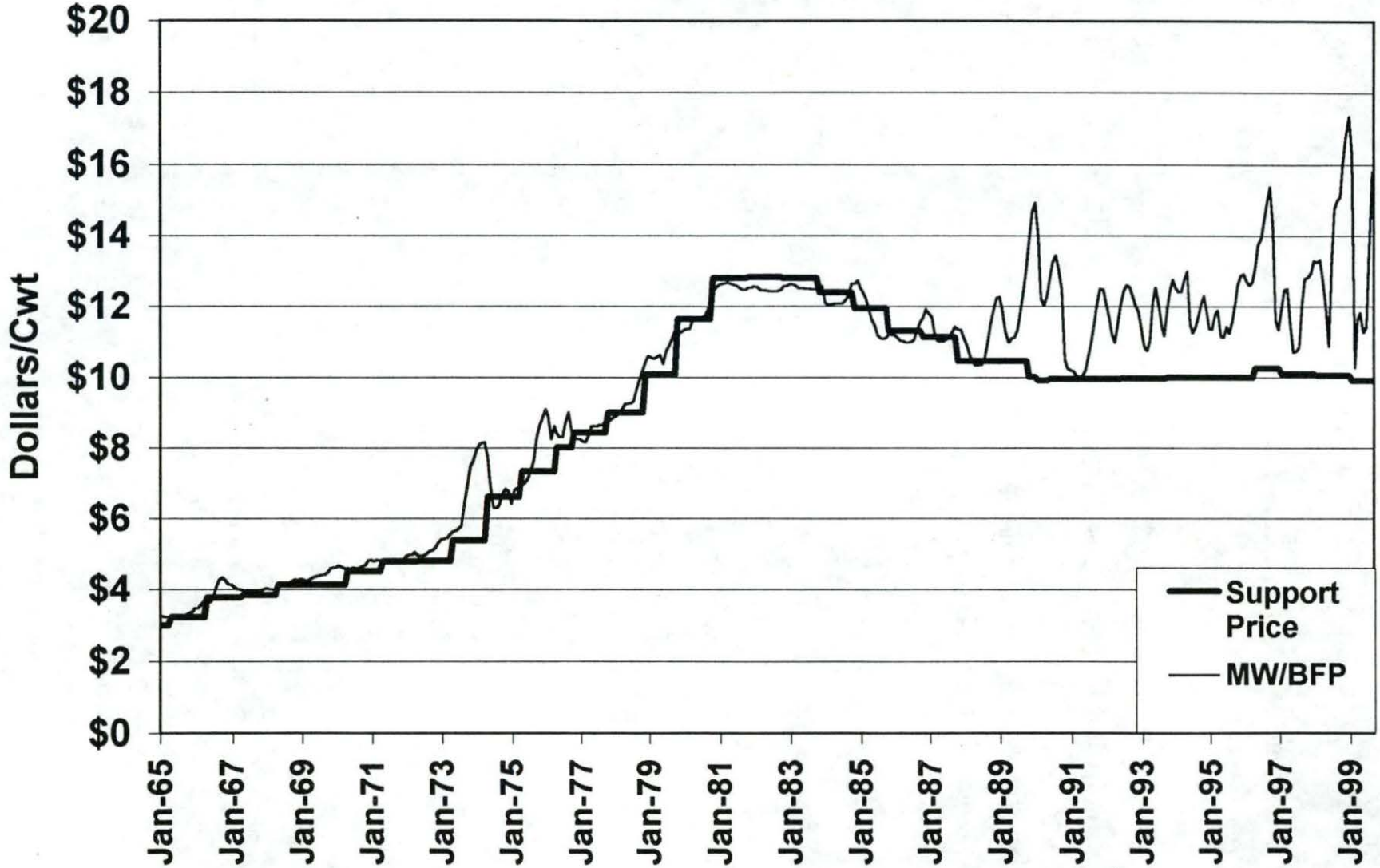
NPPC, University of Missouri, Pork 95, Pig Improvement Co., Dekalb Swine, MFA Livestock and A. L. Laboratories Study.

APPENDIX A

MW/BFP versus Support Price, 1965-99



APPENDIX B

General Information

1) What is your principle business?
   ____ Food Manufacturer
   ____ Processor ___ Coop ___ Non-Coop
   ____ Fast Food
   ____ Retail Grocer

2) Has your company used nondairy futures markets?
   ____ Yes
   ____ No

   a) If yes:
      i) Product Years
      _____ _____
      _____ _____
      _____ _____

      ii) Purpose of using nondairy futures markets? (check all that apply)
      ___ Protect Selling Prices
      ___ Protect Buying Prices
      ___ Protect Inventory Values

      iii) Have the nondairy futures markets worked as you expected them to?
      a) Yes b) No
      Why or why not?_____
      _____
      _____

      iv) Would you call the company's use of nondairy futures a success?
      a) Yes b) No
      Why or why not?_____
      _____
      _____
      _____

      v) Could the company use nondairy futures markets more?
      a) Yes b) No
      If Yes, why don't they? _____
      _____
      _____
      _____

b) If no:
   i) Why? _____
   _____
   _____

3) Has your company used dairy futures?
   ____ Yes
   ____ No

a) If yes:
   i) Product | Years
   _____ | _____
   _____ | _____
   _____ | _____

   ii) Purpose of using the dairy futures markets? (check all that apply)
   ___ Protect Selling Prices
   ___ Protect Buying Prices
   ___ Protect Inventory Values

   iii) Have the dairy futures markets worked as you expected them to?
   a) Yes b) No
   Why or why not?_____
   _____
   _____

   iv) Would you call your company's use of the dairy futures a success?
   a) Yes b) No
   Why or why not?_____
   _____
   _____
   _____

   v) Could your company use the dairy futures markets more?
   a) Yes b) No
   If Yes, why don't you? _____
   _____
   _____
   _____

b) If no:
   i) Has your company considered using the dairy futures?
   ____ Yes
   ____ No

(1) If yes why don't you use it? _____

_____

_____

_____

(2) If no, why has the company not considered it? _____

_____

_____

_____

4) Do you personally believe in the dairy futures markets?

____ Yes

____ No

5) Are there individuals within your division, other than yourself, that have a strong opinion of the dairy futures markets?

____ Yes

____ No

a) What is their opinion?

____ Positive

____ Negative

6) Do you know if senior management has an opinion of the dairy futures markets?

____ Yes

____ No

a) What is their opinion?

____ Positive

____ Negative

7) What is the biggest buying/selling challenge that your company currently faces?

_____

_____

_____

8) What is being done to deal with that challenge?

_____

_____

_____

APPENDIX C

Questions Regarding your Purchasing Practices

This survey is for **each** of the major areas in which your company purchased dairy products **(i.e. if the company purchase more than one product you will complete more than one survey).**

This survey is for your purchase of:

____ Raw milk
____ Cream
____ Cheese
____ Butter
____ Nonfat Dry Milk
____ Packaged Milk

---

1) Number of sources for product?
   ____ 1-3
   ____ 4-6
   ____ 7-10
   ____ 10-15
   ____ more than 15

2) Which of the following would you say best describes your suppliers (based on annual sales)?
   ___ The majority of product comes from companies **larger** than our company.
   ___ The majority of product comes from companies **about the same size** as our company.
   ___ The majority of product comes from companies **smaller** than our company.

3) Rank the following factors in the order you consider them when making purchasing decisions.
   ___ Product availability
   ___ Product availability and price
   ___ Product price
   ___ Quality
   ___ Past relationship

   _____
   _____
   _____
   _____

4) How often do you change sources?

   _____
   _____

5) What are the reasons for changing sources?

_____
_____
_____
_____

6) What is the current pricing procedure?

_____
_____
_____
_____

7) Percent of product purchased under each type of purchase arrangement?
___ Contract
___ Purchase on the Spot Market

a) Do you like how the contract arrangements are working?
_____ Yes
_____ No

i) If yes, why is it good? _____
_____
_____
_____

ii) If no, what are the problems? _____
_____
_____
_____

iii) What changes would you make? _____
_____
_____
_____
_____

b) Do you like how the spot market arrangements are working?
_____ Yes
_____ No

i) If yes, why is it good? _____
_____
_____
_____

ii) If no, what are the problems? _____
_____
_____
_____

iii) What changes would you make? _____
_____
_____
_____
_____

8) Under the contract arrangement do you currently purchase your inputs for a certain period at a set price (fixed not floating with the market)?
____ Yes
____ No

a) If yes:
i) How long have you been doing this? _____

ii) What percent of your purchases do you currently purchase at a set price (fixed not floating with the market)?
_____ Less than 25%
_____ Between 25% and 50%
_____ Between 50% and 75%
_____ Between 75% and 100%
_____ 100%

(1) What percent of your purchases have a set price for the following months?

_____ 1	_____ 8
_____ 2	_____ 9
_____ 3	_____ 10
_____ 4	_____ 11
_____ 5	_____ 12
_____ 6	_____ more than 1 year
_____ 7	

iii) Who initiated this program?
____ You requested
____ Suppliers offered

iv) How is the price determined? _____
_____
_____
_____

9) Are you interested in purchasing your inputs or more inputs for a certain period at a set price(fixed not floating with the market)?

____ Yes
____ No

a) If yes

i) What percent of your purchases would you want to purchase at a fixed price?

_____ Less than 25%
_____ Between 25% and 50%
_____ Between 50% and 75%
_____ Between 75% and 100%
_____ 100%

ii) For each month in advance what percent of your purchases would you like to have priced in advance of purchase?

_____ 0
_____ 1
_____ 2
_____ 3
_____ 4
_____ 5
_____ 6
_____ 7
_____ 8
_____ 9
_____ 10
_____ 11
_____ 12
_____ more than 1 year

10) If a supplier offered a forward price would that supplier get more of your business? (provided they could supply you with more)

____ Yes
____ No

a) If no? why

_____
_____
_____
_____

Raw milk Purchasers

1) Do you buy direct from farmers?
_____ Yes
_____ No

   a) If No Stop!

   b) If Yes:
      i) Do you currently offer a forward price program to the farmers?
         _____ Yes
         _____ No

      i) How long are the contracts that you currently offer farmers?
         _____ Monthly Number of months in advance _____
         _____ Quarterly
         _____ Biannually
         _____ Annually

APPENDIX D

Questions Regarding your Selling Practices

This survey is for each of the major areas in which your company sells dairy products, you may complete multiple forms if your company sells multiple commodities to different types of customers.

This survey is for your sale of:

____ Raw milk
____ Cream
____ Cheese
____ Butter
____ Nonfat Dry Milk
____ Packaged Milk
____ Ice Cream
_____(other)

Where your Customer is:

____ Retail
____ Food Service
____ Wholesale
____ Value-adding/processing
_____ (other)

---

1) How frequently do you change prices for your customers?
   _____ As soon as costs change
   _____ Monthly
   _____ Weekly
   _____ Daily
   _____ Other

2) Have your customers asked for forward price contracts?
   _____ Yes
   _____ No

   a) How long have they been asking? _____

   b) What percent of their business that they do with you do they want to contract?
      _____ Less than 25%
      _____ Between 25% and 50%
      _____ Between 50% and 75%
      _____ Between 75% and 100%
      _____ 100%

c) How far into the future do they want to have a contract price?

_____ 1
_____ 2
_____ 3
_____ 4
_____ 5
_____ 6
_____ 7
_____ 8
_____ 9
_____ 10
_____ 11
_____ 12
_____ more than 1 year

(1) If you know, what percent of their purchases would they like to forward contract for the following months?

_____ 0
_____ 1
_____ 2
_____ 3
_____ 4
_____ 5
_____ 6
_____ 7
_____ 8
_____ 9
_____ 10
_____ 11
_____ 12
_____ more than 1 year

3) Do you provide forward price contracts to your customers?

_____ Yes
_____ No

a) If yes:

i) How long have you provided this option? _____

ii) What percent of your business is done with this type of contract?

_____ Less than 25%
_____ Between 25% and 50%
_____ Between 50% and 75%
_____ Between 75% and 100%
_____ 100%

iii) How is the price determined? _____

_____

_____

_____

iv) Has this program increased your customer base?

___ Yes
___ No
___ Can't tell

v) How far into the future do you have a contract price?

_____ 0 months(only weeks)	_____ 7
_____ 1 month	_____ 8
_____ 2	_____ 9
_____ 3	_____ 10
_____ 4	_____ 11
_____ 5	_____ 12
_____ 6	_____ more than 1 year

vi) What percent of your business is contract at each time period?

_____ 0 months(only weeks)	_____ 7
_____ 1 month	_____ 8
_____ 2	_____ 9
_____ 3	_____ 10
_____ 4	_____ 11
_____ 5	_____ 12
_____ 6	_____ more than 1 year

b) If no:

i) Would you like to provide forward price contracts to your customers?

_____ Yes

_____ No

ii) What is preventing your company from offering forward price contracts to customers? _____

_____

_____

_____

4) Have you passed the bulk of the increased costs in recent times on to your customers or have you swallowed the increased costs in hopes that there will be a better day?

_____ Passed

_____ Swallowed

5) Has the historical pattern caused you to change prices for your customers more than you have wanted?

_____ Yes

_____ No

6) Have you changed prices more than your customers have wanted?

_____ Yes

_____ No

7) If you had control how often would you change your prices?

_____ Monthly
_____ Quarterly
_____ Biannual
_____ Annual
_____ Multiple years

8) If your customers had control how often would they want the prices changed?

_____ Monthly
_____ Quarterly
_____ Biannual
_____ Annual
_____ Multiple years