

# Dairy Farm Crisis

2009

A Look Beyond Conventional  
Analysis

## Abstract

By the third week of February 2009, nearly everyone with some knowledge of dairy farming recognized, to some degree, the financial crisis dairy farmers now face. Many people feel there is a surplus production of milk and therefore of dairy products. Most who imagine the “surplus” is the problem, also feel “market” economics will deal with the problem without any government intervention.

Those who are better informed realize the current dairy crisis is connected with the world financial meltdown. A significant problem leading up to, and perhaps a lead cause of the world financial crisis, is that we mistakenly equated free markets with unregulated markets.

Dairy markets are run by an oligarchy —a few elite players — with little or no governmental oversight. As such, the current financial situation provides an opportunistic moment for key players to unduly depress farm milk price and reap both profits and market power.

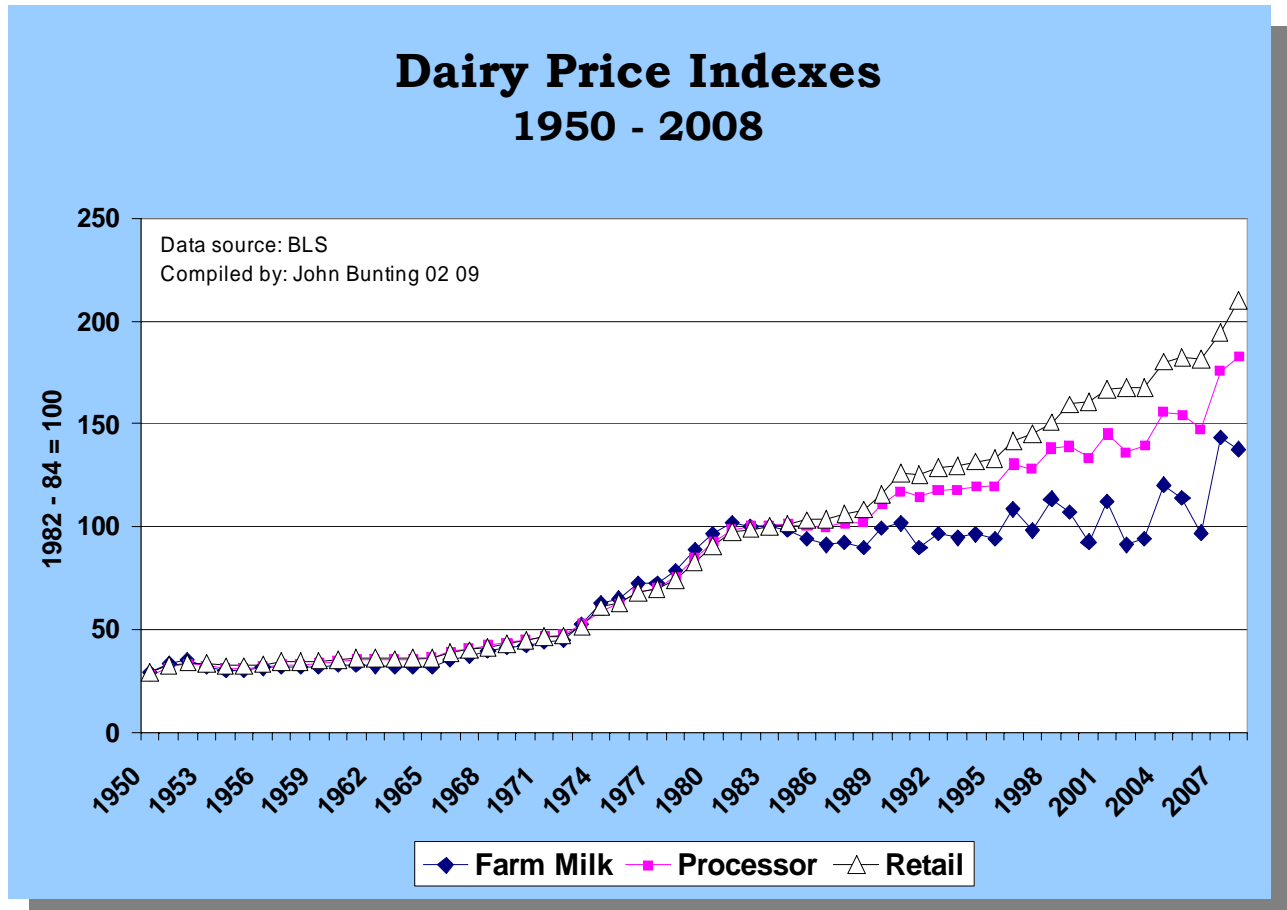
Farm milk prices began to fall in late 2008, in spite of data which suggests it should not have happened:

- Nearly as much nonfat dry milk was exported in December 2008 as was exported in December 2007.
- December 2008 imports of milk protein concentrates were massive.
- Imports of casein, another dairy derived protein, also increased in December 2008.
- “Butter and other milkfats” imports increased nearly 60% in December 2008 compared with December 2007.
- Cheese imports for December 2008 increased 15% over December 2007.
- Commercial disappearance of dairy products increased in December 2008 and for the 2008 year increased 2.6% according to USDA data.

If, indeed, as most experts believe, too much milk drove farm milk prices down, there is no easy explanation of the dairy exports and imports of December 2008.

## Farm Milk Price

Contrary to popular belief, government policies, not market forces are responsible for dairy farm milk prices. Government policy in early 1981, turned dairy farm milk pricing over to a handful of powerful industry firms.



In the 30+ years from 1950 to the early 1980s, dairy farmers, processors and retailers were profitable with prices for all segments rising at the general rate of inflation. Price signals moved from the dairy farm through to the consumer perfectly correlated, which could be expected in an actual market scenario.

Government policy changed dramatically with the elimination of parity pricing for dairy farm milk. Parity pricing kept the price of farm milk moving at the general rate of inflation. Eliminating parity was sold under the guise of creating a more “market oriented” pricing system.

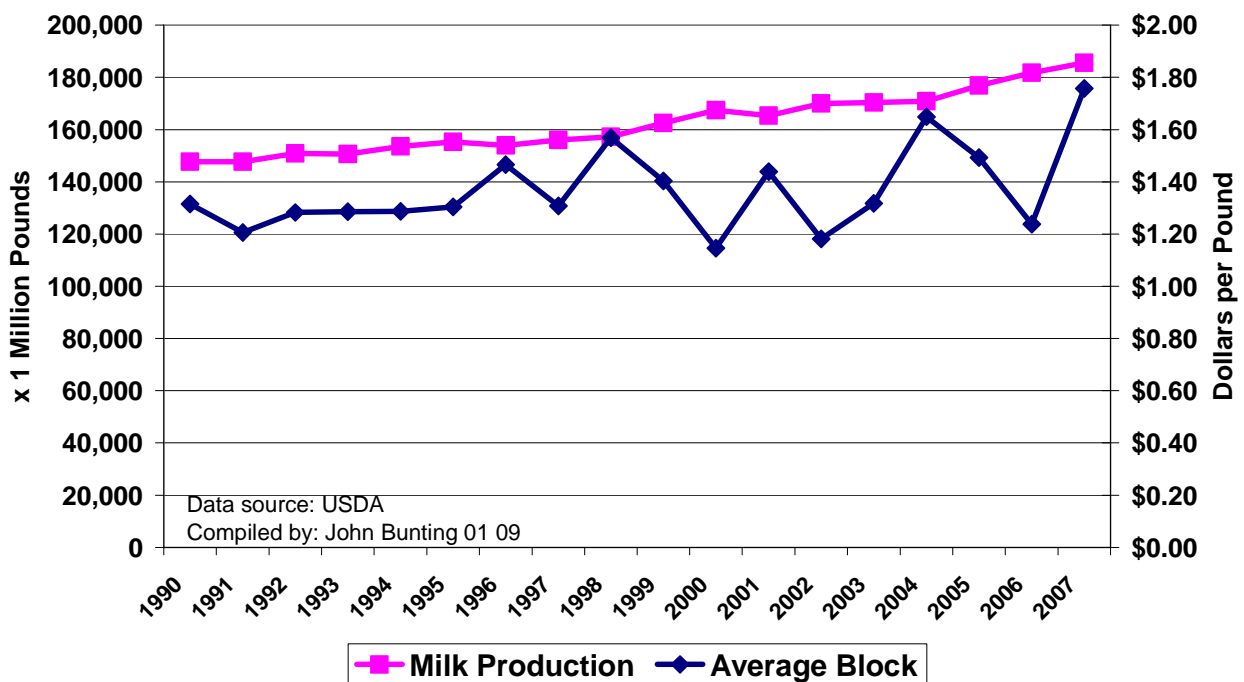
As can be seen from the above graph, the spread between farm milk price and retail price has steadily widened since the Reagan administration, with no public benefit. Real farm milk price, in inflation-adjusted dollars, has fallen nearly every year, yet consumers pay more for milk and cheese at the store. This has created a rat race in which dairy farmers increase production merely to keep from sinking.

Conventional experts would have you believe the “market” is determining farm milk price. The truth

is, farm milk price has a near-perfect (.96) correlation to the trading of generic block Cheddar on the Chicago Mercantile Exchange (CME). Trading of block Cheddar on the CME began in the spring of 1997. Prior to trading at the CME the trading took place at the National Cheese Exchange (NCE) in Green Bay, Wisconsin.

Trading of block Cheddar on the CME determines farm milk price. However, farm milk price is very poorly correlated to farm milk production.

## Milk Production and Block Cheddar Price NCE/CME



Farm milk production has been driven primarily by real estate values in the Inland Empire (Riverside and San Bernardino counties in California) and the IRS tax code 1031, which provided the input of the external capital and incentive to have invested heavily in bigger dairy farming operations.

Clearly, there is no supply/demand factor in farm milk pricing. Farm milk price is driven by the internal needs of a handful of elite players.

### Collapse of Farm Milk Price

With the collapse of the world financial system in late summer 2008, demand for dairy products, primarily nonfat dry milk powders seemed to collapse. Beginning in October 2008, large amounts of nonfat dry milk (NFDM) were sold to USDA as “surplus.”

Experts held that export markets for NFDM had all but disappeared. Therefore, sales to the Commodity Credit Corporation (CCC) of the USDA were necessary to clear the market of the surplus. However, the initial sales of surplus NFDM to the CCC originated with one California cooperative.

Shortly thereafter, a second cooperative sold surplus product to the CCC. All sales to the CCC have originated from California plants, which suggests factors other than surplus may have been involved.

Additionally, the sales, in 2008, to the CCC were not directly from the participating co-ops but through a broker. Industry sources indicate the co-ops received \$.0025 less going through the broker but, obtained the money immediately, rather than waiting ten days for payment from the CCC.

The use of a broker indicates a problem with the commercial paper market (CPM) crash. Without a functioning CPM, short-term borrowing was severely limited.

Once sales of NFDM to the CCC began, the price of NFDM fell dramatically to just above \$.80 per pound by the end of December 2008. At the beginning of September 2008, the price per pound of NFDM was \$1.33.

Selling NFDM through a broker hastened the fall of NFDM price. This action was important to the co-ops as the price paid to farmer members directly relates to the wholesale price of NFDM, as reported through the National Agricultural Statistics Service (NASS) or California Department of Food and Agriculture (CDFA).

Both NASS and CDFA determine farm milk price by subtracting from the wholesale price what is known as a "make allowance." Make allowances guarantee to the processor costs of production plus a return on investment, or profit.

When the dairy processor sells "surplus" NFDM to the CCC, another or *second* make allowance, which includes another profit to the processor, is an integral part of the price. Therefore, there is an incentive to the processor to sell to the CCC rather than expend effort marketing NFDM when the price is low. This "double-dipping" causes undue surplus sales to the government rather than providing incentives to produce for the market.

Grade AA butter prices began a rapid fall in price beginning in the third week of October 2008. By the second week of January 2009, the main seller of NFDM to the CCC, California Dairies, Inc., began selling butter to the CCC.

Cheddar cheese prices in CME trading began an undulating fall by the end of May 2008. By the first week of January 2009, block cheddar prices had fallen below the CCC support price of \$1.13 per pound, although there were no sales to the CCC.

From the above information, anyone could logically conclude the U.S. had a dairy surplus. Certainly, by December 2008, after months of complaints regarding the drop in milk powder exports and supposed resulting sales of NFDM to the CCC, there seemed to be a consensus: the U.S. did not need any more dairy products.

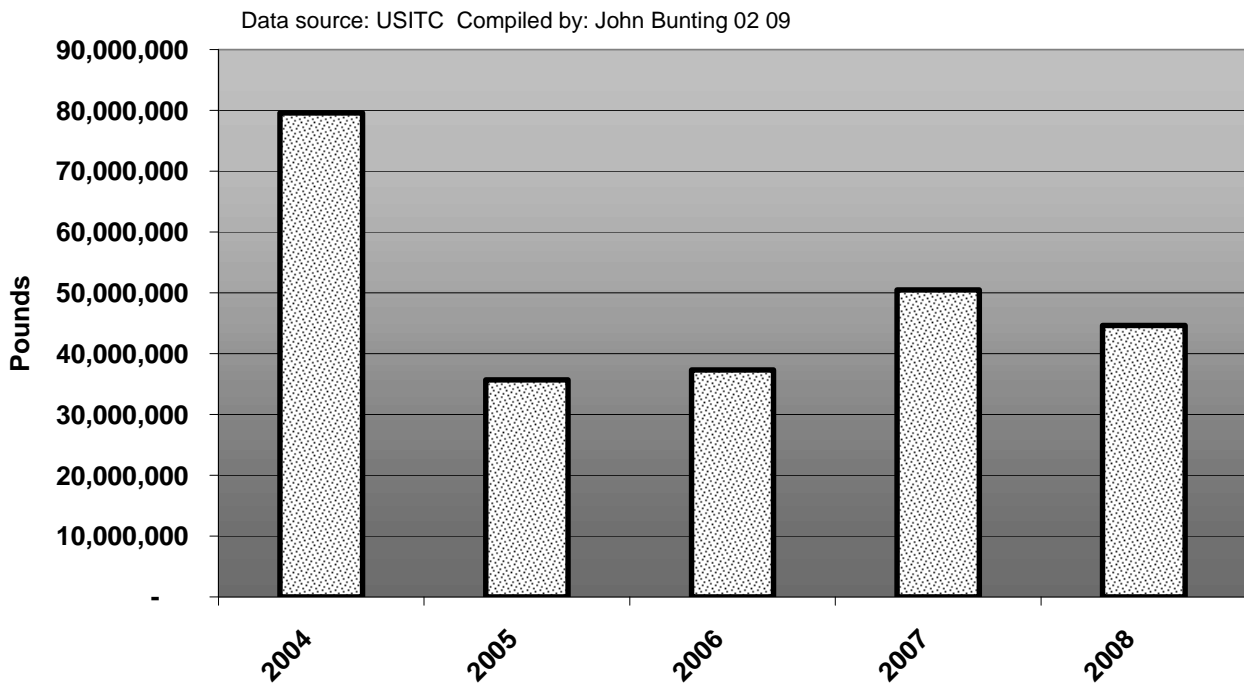
## **Trade Data Paints a Different Picture**

All major NFDM producers in California belong to a marketing agency in common, DairyAmerica. DairyAmerica has an exclusive deal with Fonterra, the monopoly New Zealand dairy cooperative, which covers virtually all NFDM exports.

Fonterra is the world's leading dairy trader. Fonterra saw a dairy processing opportunity in China and invested in the Chinese firm Sanlu. Sanlu was the company which added the chemical melamine to milk which resulted in illnesses and deaths. The melamine scandal reduced Fonterra's sales. Therefore, exports of NFDM from California were negatively impacted.

However, exports from the U.S. of NFDM and the near twin, skim milk powder (SMP) for December 2008 of 44,654,173 pounds were only slightly less than exports for December 2007 of 50,474,317 pounds.

## December Exports of Milk Powders (NFDM & SMP)



### Dairy Protein Imports Flood U.S.

Domestic sales of NFDM have been eroded by imports of milk protein concentrates (MPC). MPCs are produced by first "ultrafiltering" milk. Ultrafiltered (UF) milk is produced by separating milk components according to size. Small molecules such as lactose and minerals pass through a filter, while large molecules such as proteins are held back. Therefore, the UF milk has an increased or concentrated protein level. Finally, the UF milk is dried to a powder — MPC.

The U.S. dairy industry is the largest user of NFDM, consuming over 60% of production. The largest use is in fortifying milk in the production of cheese.

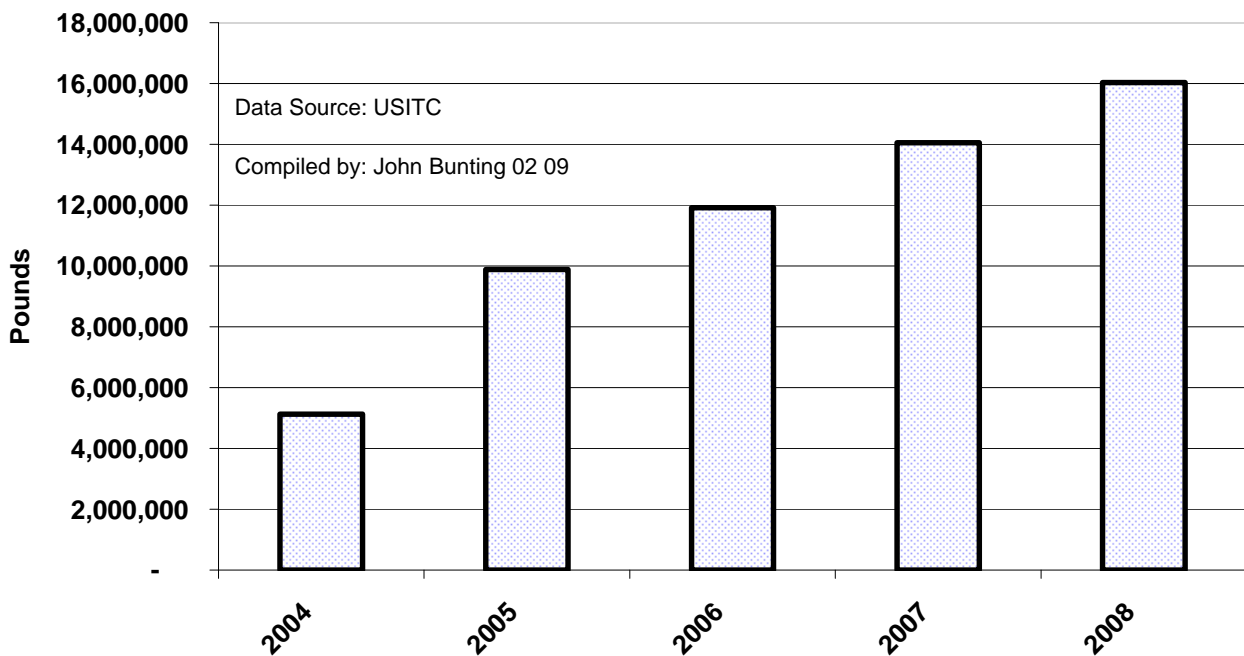
Fortifying the cheese vat in the production of hard cheese increases yield, which is translated by

industry as an increase in efficiency.

Comprehensive, reliable data on use of NFDM is collected by American Dairy Products Institute (ADPI). ADPI's latest data is for 2007. According to ADPI, 30.2 % less NFDM was used in production of hard cheese in 2007 when compared with 2006. That was 169.6 million pounds less NFDM used in production of hard cheese.

There is every reason to think the trend of using less NFDM in the cheese vat continued in 2008.

## December Imports of Milk Protein Concentrates



Importing MPCs into the U.S. is the same as importing milk, except that MPCs are loaded into box trailers at the dock for transportation to plants. No one notices. USDA does not count MPCs as milk. If the imported MPCs for December 2008 could be converted back to milk hauled in tanker trucks, the convoy would be nearly 65 miles long, bumper to bumper. A milk truck convoy of that size would be noticed.

Casein is the prime dairy protein. Casein is produced by coagulating milk with an acid. An example of this, which is familiar to many people, is adding vinegar to milk. The coagulated protein is then removed and dried. After drying, the casein is rolled to form a powder.

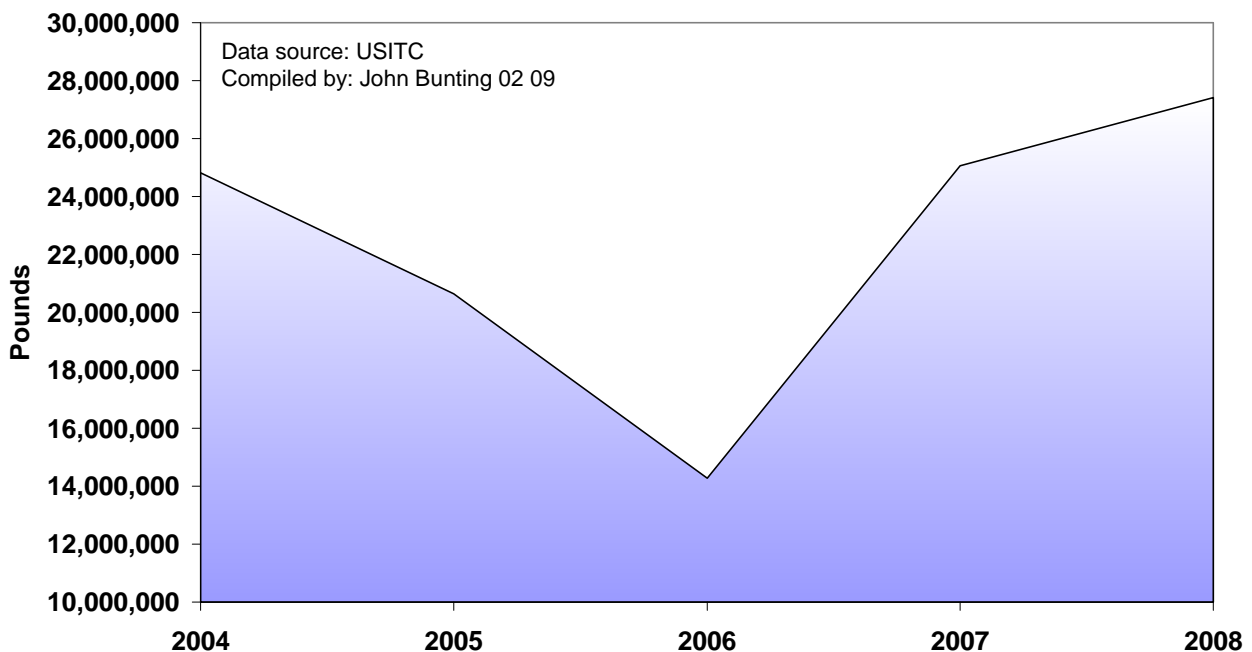
Casein can be and is used in making some cheese, especially what appears to be cream cheese or dips.

Caseinates are casein (pure dairy protein) processed additionally. An example of use of caseinates is in the original ingredient list for Coffee Mate: corn syrup solids, vegetable oil, sodium caseinate, dipotassium phosphate, mono- and diglycerides, sodium aluminosilicate, artificial flavor, annatto color.

Casein and caseinates are produced from milk and tend to be used as substitutes for milk. Numerous studies indicate casein cannot be produce profitably in the U.S. because imported prices are so low.

According to data from the U.S. International Trade Commission (USITC) the U.S. imports about half of all casein from New Zealand. There is no comfort in the fact the we did import 286,598 pounds in December 2008 from China.

## December Imports of Casein & Caseinates (HTS 3501)



As mentioned earlier, a great deal of imported dairy proteins are added to the cheese vat in the U.S. Adding protein to the cheese vat increases the yield; however, virtually every cheese requires a fat to protein relationship. “Efficiency” is gained with the marriage of imported dairy proteins with imported milkfat.

### Milkfat Shortage

There is a shortage of milkfat in the U.S. in large part because, while Americans are drinking less whole milk, they are consuming more milkfat in the form of half and half, cream cheese and whipped

cream.

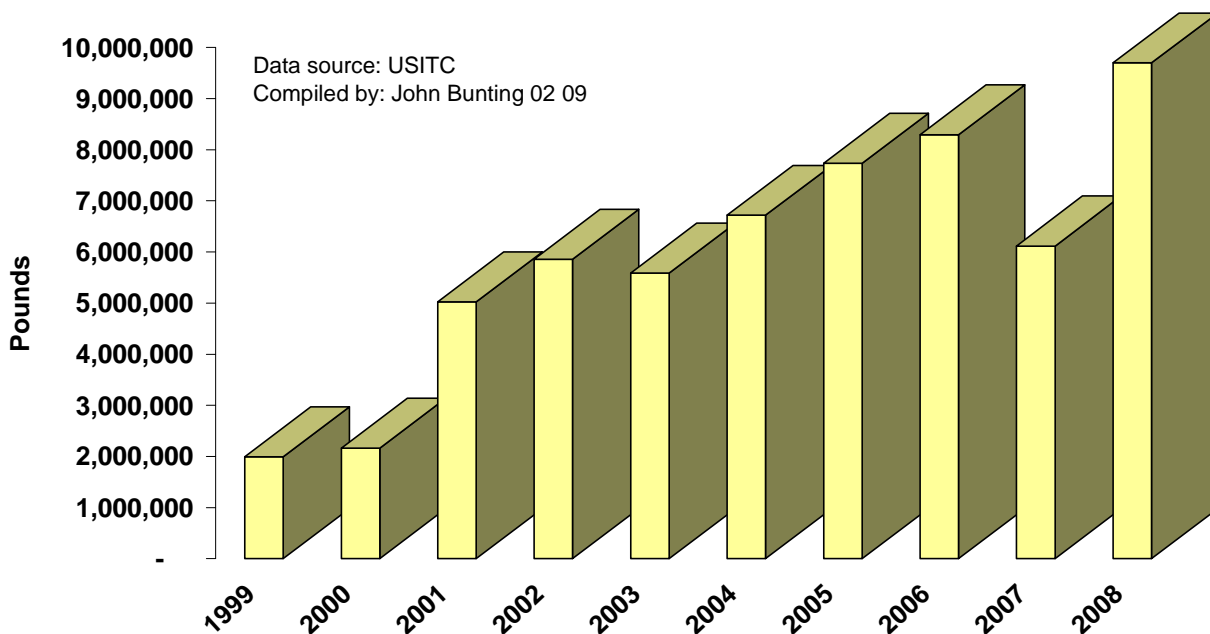
### U.S. Consumption of Fluid Cream

Million Pounds	2002	2003	2004	2005	2006
Fluid Cream	1,860	2,151	2,313	2,351	2,459

Data source: USDA

Quite naturally, the U.S. has turned to imports for milkfat.

### December Imports of Butter and Other Fats and Oils Derived From Milk



“Butter and other fats and oils derived from milk” is a technical term used to classify items in world trade.

Included in this category is what anyone would recognize as butter. However, virtually all butter sold at retail is USDA grade AA. To be graded as AA requires that the butter be produced in a USDA inspected plant. Therefore, very little imported butter is found on retail shelves. Most imported butter is used as an ingredient.

Another imported product under the classification of “butter and other fats and oils derived from milk” is anhydrous milkfat and butter oil. Butter oil is obtained by melting butter. Anhydrous milkfat is processed one further step to remove virtually all water.

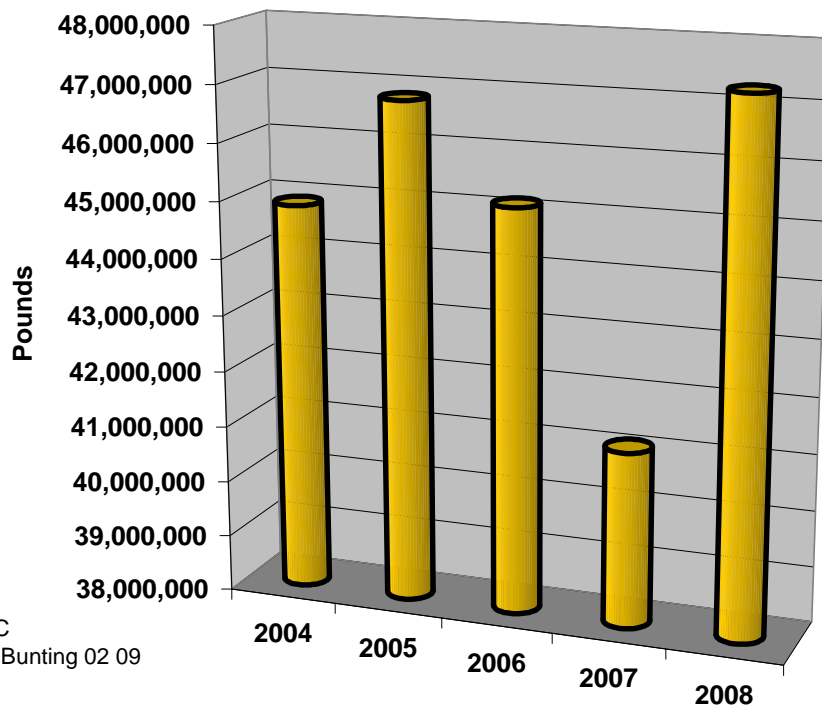
Anhydrous milkfat can be stored at room temperature for up to six months. Anhydrous milkfat is very versatile and can be used in many products, including making butter. Anhydrous milkfat is considered an excellent source of milkfat in the cheese vat.

In December of 2008, the U.S. imported 9,698,035 pounds of anhydrous milkfat which was a 158% increase over December 2007.

### **Cheese Imports Soar**

Cheese prices on the CME for block Cheddar began in December of 2008 at \$1.79 per pound and by December 31, 2008, had fallen to \$1.1325 per pound. On January 7 and 8, 2009, block Cheddar traded on the CME at \$1.04 per pound, well below support price. Nearly everyone considered the low CME prices an indicator of “surplus.” But, look at the cheese imports for December 2008.

## **December Imports of Cheese And Curd**



Data source: USITC  
Compiled by: John Bunting 02 09

The government support price for cheese is \$1.13 per pound. The average price of block cheddar on the CME for January 2009 was \$1.0833. No cheese was sold to the government in January 2009.

Even with the massive imports of cheese in December 2008, the USDA “Cold Storage” report shows

total cheese in storage for January 2009 to be only 1% above December 2008. U.S. cheese demand must be strong.

Dairy Market News, a USDA publication for the week of February 16 – 20, 2009 stated, “Buyers are now aggressively looking for more cheese for immediate needs and for future use.” Dairy market News further states, “In the last week, anyone that has tried to clean out inventories of old or off condition cheese has been very successful.” Granted, cheese prices might be low, but, if demand were off significantly, buyers would not be purchasing “old or off condition cheese.”

For the year 2008, the U.S. ran a positive trade balance with dairy products. However, in the last quarter of 2008, when everyone was told consumer demand had crashed, imports rose dramatically. For each of the first three quarters of 2008, dairy imports averaged \$700 million. In the last quarter of 2008, dairy imports rose to \$811.8 million.

There is no comfortable way to reconcile the contradiction between the conventional explanation for low dairy farm milk price and imports pouring in at the same time.

## **The Players**

Data from the United States International Trade Commission (USITC) provides a great deal of information but yields no clues regarding the identity of the players. While still not providing very complete information, USDA’s dairy import license list provides some hints. USDA Foreign Agricultural Service offers dairy import licenses in December for the following calendar year.

For 2008 Dairy Farmers of America (DFA) — this nation’s largest milk producers’ co-op — holds 12 import licenses. An import license allows the importation of certain dairy products to enter the country at low tariff rates. DFA has a license to import butter substitutes at the same time it owns a butter manufacturing company in America.

DFA also has two licenses to import “American” type cheese. DFA also holds import permits for Italian type cheese.

There is no credible case to be made that DFA’s importing of cheese helps American dairy farmers.

Another player stands out by the sheer number of permits, and that is Fonterra, with 24 licenses. Fonterra is New Zealand’s monopoly cooperative and largely responsible for selling the idea of milk protein concentrates to American manufacturers. Fonterra, not surprisingly, is a partner with DFA on several fronts.

If Fonterra only held permits to import to the U.S. from New Zealand there might be some redeeming logic, but Fonterra hold permits to import from a large number of countries, including Iceland.

Other companies also have permits, but DFA and Fonterra have many permits. Moreover, both DFA and Fonterra are cooperatives who, when convenient, claim to think first of dairy farmers.

## **Commercial Disappearance**

USDA Economic Research Service (ERS) regularly publishes data on consumption of dairy products which ERS refers to as “commercial disappearances.” The data shows an increase consumption of dairy products for 2008 of 2.6% and for December 2008 up 2.7%.

More telling is that 188.8 billion pounds of raw milk was sold from U.S. farms in 2008. The total commercial disappearances for 2008, according to USDA were 193 billion pounds of whole milk equivalent. In other words, the equivalent of 4.2 billion pounds of milk was imported. To put this into perspective, the equivalent of 230 tanker truck loads of milk was imported every single day in 2008.

Note, however, in the commercial disappearances, USDA does not include either MPCs or casein products. The actual shortfall of milk production in the U.S. for 2008 would be much higher if dairy proteins were counted.

## **Market Failure**

America has an unwarranted faith in markets bordering on zealotry. At the same time, Americans are poorly educated as to what exactly is a market. Indeed, Americans (including bankers) are economically illiterate.

A functioning, efficient market must have many players who individually and collectively bring rich information to the market. Reducing the number of players reduces information and results in market failure.

We know from the Government Accountability Office (GAO) report (GAO-07-707) released in July 2007, that the opportunity for price manipulation exists on the CME. GAO stated, “Because the CME spot cheese market remains a market in which few daily trades occur and a small number of traders account for the majority of trades, questions exist about this market’s susceptibility to potential price manipulation.”

Furthermore, on December 16, 2008, the Commodities Futures Trading Commission (CFTC) announced a settlement with DFA over price manipulation in which DFA’s former CEO and another officer have agreed to pay a \$12 million fine. While the deal between DFA and CFTC is short on specifics, there are already numerous private lawsuits alleging financial damages from these manipulations. More information is likely to be gained from the legal cases.

Reasonable people have a solid basis for concluding that pricing dairy farm milk from the whims of the small handful of players at the CME is not in the public’s interest. In the meantime, no one hears from policy makers calling for an investigation or a change in the dairy pricing system.

The pricing events occurring within dairy are not part of some Darwinian economics which will evolve to the newer and better world. The present pricing events are driven by opportunistic activities of a few major players. In that, the dairy picture is very similar to the national and world financial crisis which took leadership by surprise.

Too much manipulation of financial events, particularly of the sort which denies market power and access to information to lesser players, ultimately threatens the collapse of the whole dairy sector.

As if operating as a team, we have seen a complete failure of government regulatory oversight, ranging from USDA, CFTC and the Antitrust Division of the U.S. Justice Department.

While the near-term victims of these milk price manipulations are dairy farmers, the potential, longer-term victims of such events will be the U.S. citizens. Carried to its fullest extent, this milk pricing debacle threatens to decrease this nation's ability to feed its citizens.