# Dairy Situation and Outlook: Fall 2001*

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## Overview

Current conditions are very favorable for dairy producers, with surprisingly high milk prices and milk-feed ratios well above average. Anticipate falling prices, however, from November through Spring, 2002, as producers use profits to expand, milk per cow resumes its upward trend, and the economy slows. The existing pricing system favors Kentucky, where most milk goes to high-value fluid uses. Kentucky has access to good forages, is less affected by environmental regulations than Western dairy states, and is positioned near large population centers. Threats include a huge cost disadvantage relative to Western producers, and extremely low average milk per cow. Little leeway exists for additional government support, but private risk management opportunities exist, and new products show promise in enhancing dairy demand.

## The Current Situation: High Farm-Level Prices and Lower than Average Costs

The dairy market staged a surprising recovery in 2001. Most forecasters expected the industry to be plagued with over-capacity until well into the year, extending the low prices of 2000. However, unfavorable springtime weather in the West, high replacement heifer prices, and cow number reductions cut supply more than expected. The "year without a spring flush" left cheese and butter plants competing with each other for scarce milk supplies, and for the first time in at least 14 years, Class III and Class IV milk prices rose each month from January through June. Class I milk is used for fluid purposes, Class III milk is used for cheese, and Class IV milk is used for butter and non-fat dry milk powder.

Understanding what drives Kentucky's farm-level milk prices requires a little background information. Since January, 2000, monthly Class I prices are determined by the higher of the Class III or Class IV price. The Class IV price has been higher during all months except July and August, 2001. The futures market predicts that the Class III price will be higher through November, then the Class IV price will take over again as the Class I driver. Why is this important? Most of Kentucky belongs to two Federal Milk Marketing Orders that have a very high Class I utilization rate (the percentage of production used for fluid milk), typically in the 60-75 percent range. So, the largest butter (and for a few months, cheese) producing regions have a big influence on the fate of Kentucky's dairy farmers. California is the main producer of butter and powder in the U.S., and California accounts for the majority of the cheese sales on which Class III prices are based. The

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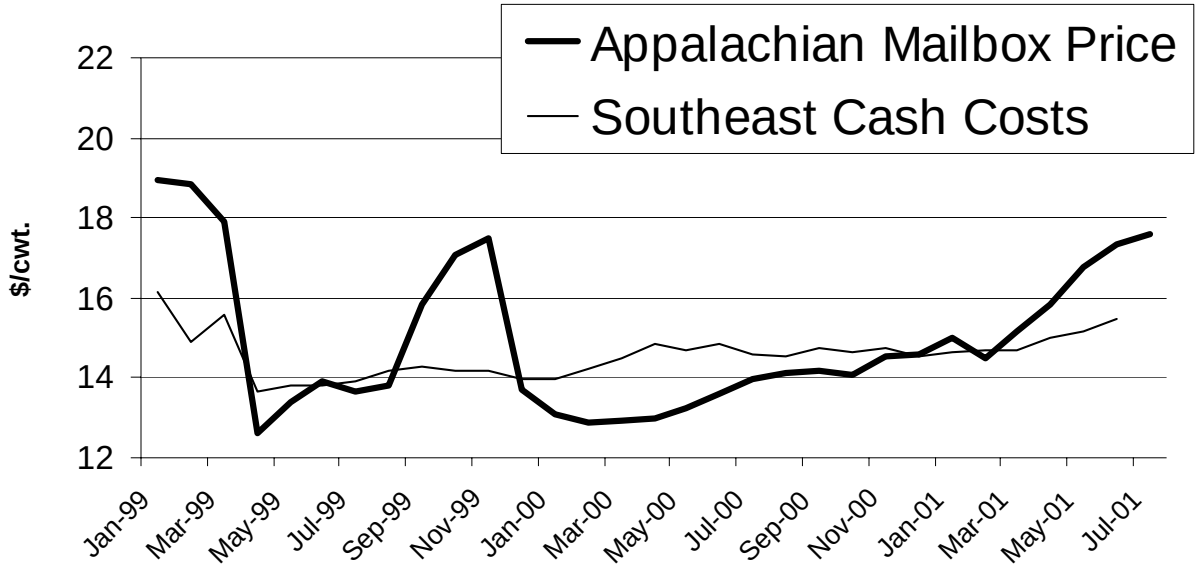
bottom line is that California dairy production and the butter market are perhaps the two most important factors affecting Kentucky farm-level milk prices.

Western dairy expansion peaked in October, 2000, and the rate of increase has since slowed in response to low milk prices in 2000 and early 2001, as well as environmental constraints on new mega-dairies. However, the growth rate in cow numbers is still 3.7% over last year, and growth has resumed in milk per cow. Butter prices peaked at $2.225 per pound on August 29th. While butter prices are expected to remain well above average, they will probably decline for the rest of the year due to seasonal increases in milk production, adequate stocks, and declining consumer confidence.

Cheese prices are also high but expected to decline for the remainder of the year. American cheese production was lower than the 1998-2000 trend for the first seven months of 2001. Cooler weather is now helping milk volumes recover, and correction of a USDA reporting error now reveals that cheese stocks are probably adequate for the holiday buying season. Both of these supply side factors will depress prices, and the prospect of a slipping economy may depress prices from the demand side. A positive demand-side factor is the seasonal increase in cheese usage during the school year.

2001 is a much better-than-average year for Kentucky farm-level milk prices. Mailbox prices have been climbing steadily since March, 2000. The average in the Appalachian marketing order for the first seven months of 2001 was $16.03/cwt., which is 21 percent higher than 2000 and 3 percent higher than 1999 mailbox prices for the January-July period. The Appalachian marketing order covers most of Kentucky, including Adair County. Mailbox prices in the Southeast marketing order, which includes Barren County, average $0.68/cwt. lower than the Appalachian order.




**Mailbox Prices Were Higher Than Cash Costs During 2001**

Not only are milk prices high in 2001, but the milk-feed price ratio is high. In every month since January, the milk-feed ratio has been above the 1985-2000 average. In June and July, the ratio was the highest it has ever been since at least 1985. This is a different situation than the period of record-high mailbox prices of late 1998, when costs were also high, and more closely resembles conditions in late 1999. Historically, the Southeast is second only to the Northeast in terms of

average total cash expenses, but is competitive with the Upper Midwest and the Corn Belt in terms of average total economic costs, which include noncash expenses such as unpaid labor. The Pacific region has a huge cost advantage in both total cash expenses and total economic costs, explaining its increasingly dominant position in the dairy industry.

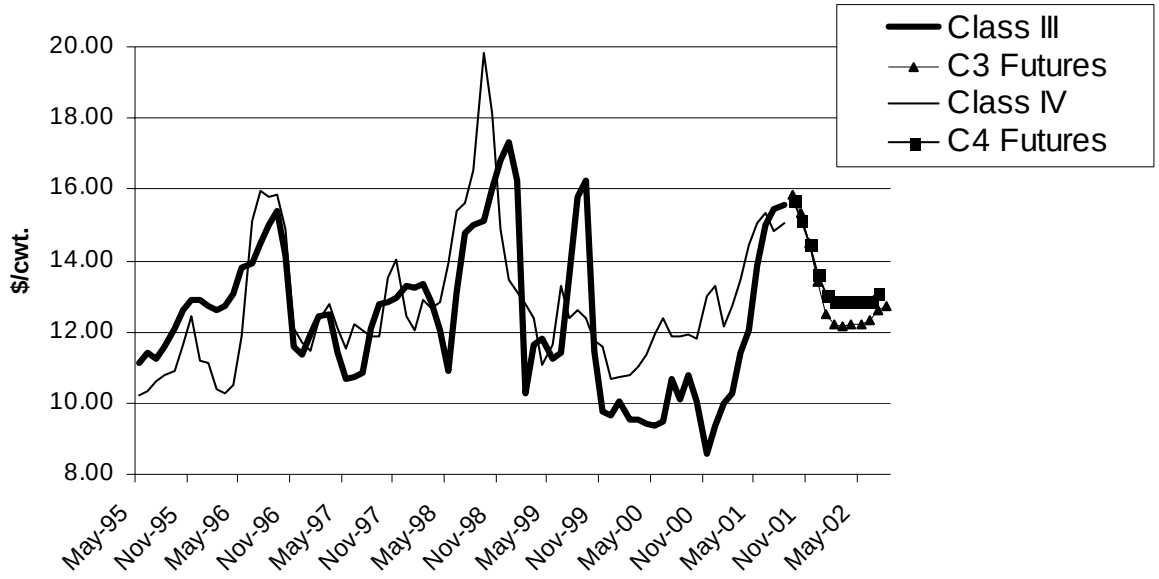
**Outlook: Expanding Supply and Weakening Demand Will Lower Prices**

Today's high prices are largely the result of a lagged supply response to last year's low prices. With replacement heifer prices running very high, many farms retained cows in late lactation, which dragged down milk per cow numbers. Farmers will respond to today's profitable conditions by expanding herds and improving productivity with fresh cows, tempered somewhat by the high replacement heifer prices. Unfavorable weather and the tail end of a decade-long economic boom were supportive price factors that may be absent in the coming year. Butter stocks are above year-ago levels, cheese stocks are higher than previously thought, and recession with its accompanying decline in food-away-from-home expenditures appears increasingly likely.

Milk prices have a history of climbing for several months, then falling hard in one or two months. Recent examples are the $2.52/cwt. drop in the Basic Formula Price (essentially the Class III price) between October and November, 1996, the $6.00/cwt. crash between January and February, 1999, and the $4.77 collapse between September and October, 1999.

**Class III and IV Milk Prices Since 1995, with Futures Market Forecasts**

Dairy economists and futures markets have done a poor job of predicting the magnitude of milk price changes more than two months in advance. The current price trajectory resembles that of late 1996, late 1998, and late 1999. In each case, futures markets underestimated the eventual drop in prices until the futures contracts were within one or two months of expiring. As of this writing (September 25th), the futures markets are predicting that 2002 Class III prices will decline to about $12/cwt. Prices fell well below $12/cwt. during the 1996, 1998, and 1999 collapses.



This dairy economist has learned that predicting distant milk prices is often futile, but recent history clearly shows that Kentucky dairy farmers should have a plan to deal with the possibility that Class III prices will fall well below $12/cwt. between January and May, 2002.

**Opportunities for Dairy Farmers to Manage Price Risk**

While the previous paragraph was being written, the November Class III futures contract lost $0.50/cwt. in value, and the early spring contracts dropped just below $12/cwt. This illustrates the volatile nature of milk prices. Following reductions in federal price support levels and greater exposure to global competitive forces, price risk grew substantially in recent years. Buying put options is perhaps the simplest, safest way for individual producers to avoid income loss from falling prices.

Options are like "price insurance". For example, today a farmer might pay a premium of $0.40/cwt. to buy a $12 December Class III milk put option. If the December Class III milk price ends up being $11/cwt., the option will be worth $1/cwt. ($12 - $11) when it expires. The farmer then collects a net gain of $0.60/cwt. ($1.00 - $0.40) that helps offset the low mailbox price in December. In this example, the farmer has effectively bought a Class III price floor of $11.60/cwt. ($12.00 - $0.40). If the farmer's December mailbox price is typically $2.00 above the Class III price, the farmer expects to earn a mailbox price of at least $13.60/cwt. ($11.60 + $2.00), no matter how low Class III prices fall between now and December.

Buying put options limits a farmer's downside risk, but still allows the farmer to benefit from high prices. This risk management strategy does not require any changes in the dairy's operation, there is no risk of spending more on risk management than the premium paid up front, and it does not require any action or monitoring after the option is purchased. A farmer only needs to set up a hedging account with a qualified broker, and then call the broker with instructions whenever she wants to buy an option.

USDA's Risk Management Agency offered the Dairy Option Pilot Program in 12 Kentucky counties in 2001. The program provides an introductory training session, and then pays 80 percent of the premiums for options purchased during the next four months. Its purpose is to provide such generous subsidies that farmers will try using options and eventually become self-sufficient in price risk management, rather than relying on Market Loss Assistance Payments.

Only 4.5 percent of the eligible farmers participated in the training sessions, and a much smaller number have actually purchased an option through the program, despite the almost ideal hedging conditions in 2001. Why? Some common reasons seem to be: (1) options are unfamiliar and learning about them is intimidating, (2) the broker relationship is intimidating, (3) the correlation between Class III prices and mailbox prices is not well documented, possibly rendering hedging ineffective, (4) the science and art of choosing when to hedge is viewed as risky in itself, and (5) sticker shock at the premium levels. Research is underway at UK to resolve uncertainty about dairy hedging effectiveness and to identify effective yet manageable dairy hedging strategies.

**New Kentucky Farm Business Analysis Results**

The annual Kentucky Farm Business Management (KFBM) Dairy Enterprise Analysis is a key tool in identifying sources of competitive strength. The 2000 results, prepared by Colby Blair, Darwin Foley, and Jack McAllister, were just released. The 31 dairy farms in the program averaged

143 cows that averaged 16,763 pounds per cow per year. The 2000 average in the top-20 dairy states (of which Kentucky is a member) was 18,532 pounds per cow. The 2000 Kentucky average was only 12,803 pounds per cow. While some operations are competitive using a low productivity/low cost strategy, net returns were strongly correlated with milk per cow. In general, the KFBM sample typifies the segment of Kentucky's dairy industry that is most likely to remain competitive in the face of ongoing industry consolidation.

Given that 2000 was plagued by record-low prices, it is encouraging that the average net returns over all costs were only $0.51/cwt. in the red, and 41 percent of the herds actually had positive net returns. The most profitable operations tended to make their money through higher milk per cow, marketing more beef, and lower non-feed cash costs. The middle third of operations in terms of profitability showed greater feed cost efficiency, but spent considerably more per cwt. on livestock supplies and hired labor. Farms with 101-150 cows tended to be the most profitable. The average total cost of producing milk was $14.44/cwt.

**Policy Issues and Market Developments Affecting Dairy in 2002**

Other important issues to watch are the progress of the 2002 Farm Bill, continuing industry consolidation, and some exciting new product trends. While the terrorist attacks of September 11th did not immediately impact dairy markets much, they delayed legislative work on the 2002 Farm Bill. Despite this, the House is expected to begin considering its version of the Farm Bill in early October. Most observers think the Farm Bill will not be completed until 2002, with implementation beginning in 2003. Expected dairy components include an extension of the current support price structure. New budget priorities and WTO constraints on farm subsidies may limit the bill's generosity to dairy farmers. The Northeast Dairy Compact will likely expire without renewal on September 30th, after which the battle for re-authorization will commence.

Consolidation continues at all levels of the dairy market. At last count, Kentucky contains 1,898 dairy farms, compared to 2,731 in 1995. Unfortunately, no data exist to differentiate between those who were forced out by market conditions and those who would have retired anyway. The recent wave of cooperative mergers has left a much smaller number of players, especially in any given region. The merger of Suiza Foods and Dean Foods created a single firm with national processing capacity and a 30 percent fluid milk market share, with greater potential for anti-competitive behavior. The cheese market is dominated by Kraft and a handful of other firms, and the retail grocery sector now contains firms with national and international market coverage. One long-term effect of consolidation will be reduced reliance on open markets, and greater use of contracts, strategic alliances, and other forms of vertical integration that allow more reliable sourcing and tighter control over product attributes.

Fluid milk processors are re-positioning milk as a competitive beverage, with important potential benefits to both the dairy industry and the public. Flavored milk in single-serve re-sealable PET bottles has been highly successful in school vending machines, and extended shelf-life technologies broaden its appeal. Flavored milk accounted for only three percent of retail milk sales in 2000, but it is driving sales growth. While chocolate milk dominates the segment, suppliers offer flavors as diverse as strawberry banana, French toast, and even pumpkin pie(!).

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