

Factors Impacting Dairy Profitability in 2007

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A common saying in Kansas (and elsewhere) is “if you don’t like the weather, just wait ten minutes,” which points to the weather variability. While the unit of measurement might be months rather than minutes, these days it seems that saying fits the dairy industry regarding profitability just about as well. Profits for dairy producers tend to go from feast to famine in relatively short order, which obviously makes management decisions a never ending challenge. Unfortunately, this year (2006) has likely been more famine than feast for many dairy producers due to low milk prices and rising input prices. How are things looking for 2007? This paper provides a glance at some of the key profit drivers for 2007 based on information that was available in early December of 2006.

Many factors impact profitability on a dairy, such as milk production, replacement prices, milk price, input prices (e.g., feed, labor, utilities, supplies), facility and equipment costs. This paper examines a few of these key factors, but it does not address all profit drivers. Furthermore, it is recognized that the various factors impact differently managed dairies (e.g., conventional, organic, pasture) in different ways and thus comments here will not apply to all dairies in the same way. Also, it is recognized that there might be interactions between several factors impacting profitability.

Producers can do little about overall milk prices from a management perspective, but price obviously impacts profit in a major way. Thus, producers need to consider prices when making management decisions. Figure 1 shows the monthly average Class III prices from 2000 through 2007, where forecasts are based on the futures market. The variation in milk prices dairy producers have faced since 2000 is quite dramatic, ranging from a low of \$8.57/cwt (Nov 2000) to a high of \$20.58/cwt (May 2004). The average price in 2006 (11 months actual and one month forecasted) is \$11.88 compared to a forecasted average for 2007 of \$13.89 (an increase of 16.9%). While \$13.89 is lower than the 2004 and 2005 averages (\$15.39 and \$14.05), this annual average price is higher than the annual average for five of the last seven years (and not much lower than the \$14.05 received in 2005).

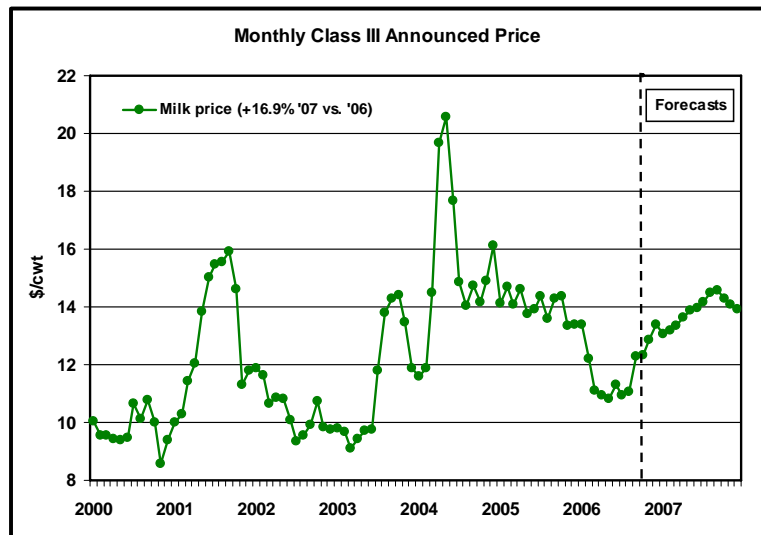


Figure 1

When thinking about costs, dairy producers need to consider if the cost is “fixed” or “variable” based on production (number of cows milked and milk production). While all costs are variable in the long run, for shorter time periods many costs are fixed. For example, the cost of facilities is basically the same whether facilities are being used or not or whether cows are producing 60 lb of milk or 80 lb of milk per day. Likewise, labor and utility costs likely do not vary much with milk production per cow, although they will vary based on the number of cows milked. As a general rule, profits for the dairy are maximized by maximizing the returns to fixed costs (or in the case of unprofitable years, losses are minimized). This typically means milking as many cows through the facility as possible to maximize the returns to the fixed facility investment and maximizing the production per cow to maximize returns to the fixed cow investment.¹

Feed costs are the greatest cost for most dairies, but they can vary significantly from dairy to dairy due to many factors (e.g., type of ingredients used, milk production, geographical location). Figure 2 shows the monthly average nearby futures prices for corn and soybean meal from 2000 through 2007. While many feed ingredients are used besides corn and soybean meal, these two commodities provide a reasonable proxy for dairy feed costs in general. Price forecasts for soybean meal in 2007 are 12.3% higher than 2006 prices; however, it can be seen that average prices for corn in 2007 are expected to be considerably higher than 2006 (+40.4%). The average price forecast for corn in 2007 of \$3.67/bu is over \$1/bu higher than the average prices in both 2004 and 2006 (the other “high corn price years”).

What should a producer do in response to potentially high feed costs in 2007? Rather than focusing on what should be done, it might be more useful to focus on what should *not* be done. Dairy producers should not attempt to minimize feed cost when measured on a per cow basis, or for that matter, even on a per cwt of milk basis. Rather, they should consider income over feed costs (IOFC) as the measure to focus on, or total cost per cwt of milk (as opposed to feed cost per cwt). This is important because as producers consider alternative feed ingredients (e.g., increased use of distillers grains) it is possible to reduce feed cost per cwt, but if milk production decreases IOFC might also decrease, leading to reduced financial returns.

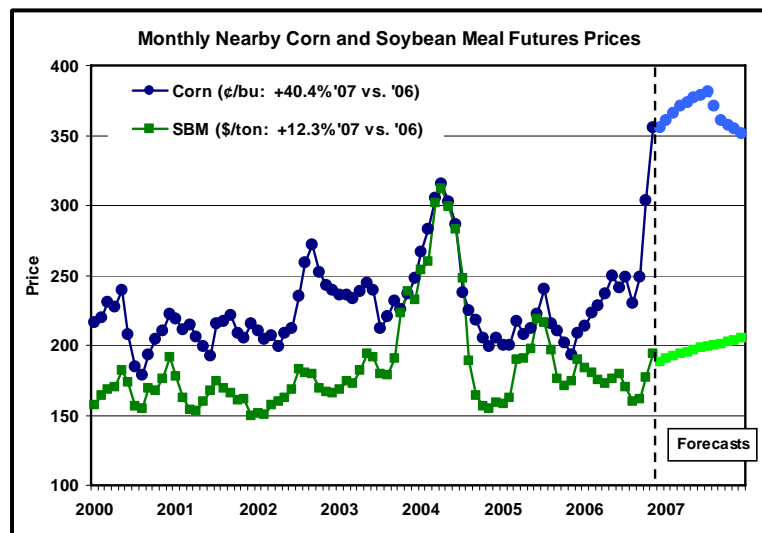


Figure 2

Once feed maintenance requirements are met, it typically takes one pound of feed (dry matter basis) for every 2-2.5 pounds of milk production. Given

¹ When considering the optimal number of cows to run through a facility, there often is a trade-off between cow numbers and milk production per cow. That is, while overcrowding facilities might lower costs per cow (\$/head), it does not necessarily lower costs of milk production (\$/cwt) if the production/cow decreases significantly. Because milk production is marketed on a per cwt basis, the relevant cost to attempt to minimize is cost/cwt not cost/cow.

2.25 lbs of milk per pound of feed and a net milk price of \$14/cwt, this implies that the income from each additional pound of feed is \$0.315 (2.25 x \$0.14), which is significantly above projected feed costs (\$0.09-\$0.11). The important point to remember is that, even though feed costs will be considerably higher in 2007 compared to 2006, feeding for top production, i.e., maximizing milk per cow, probably will still be the most profitable management strategy. That is because maximizing returns over feed costs (IOFC) per cow generates the maximum dollars that can be used to cover fixed costs and hence increase profits.

Figure 3 shows monthly average prices of various energy sources from 2000 through 2007. As anybody that has been paying utility bills knows, energy prices generally have been increasing for the last five years or so. The good news for dairy managers is that price forecasts for 2007 are for energy prices to be similar to 2006 levels. Unfortunately, the bad news is that 2006 levels were the highest they have ever been. Thus, producers will continue to face high energy prices in 2007. To the extent energy-related costs are fixed (i.e., not directly related to milk production), producers will minimize energy costs by maximizing milk production. Furthermore, even when milk production is directly related to energy use (e.g., use of fans for cooling cows), the value of the additional milk generally will offset the additional utility costs.

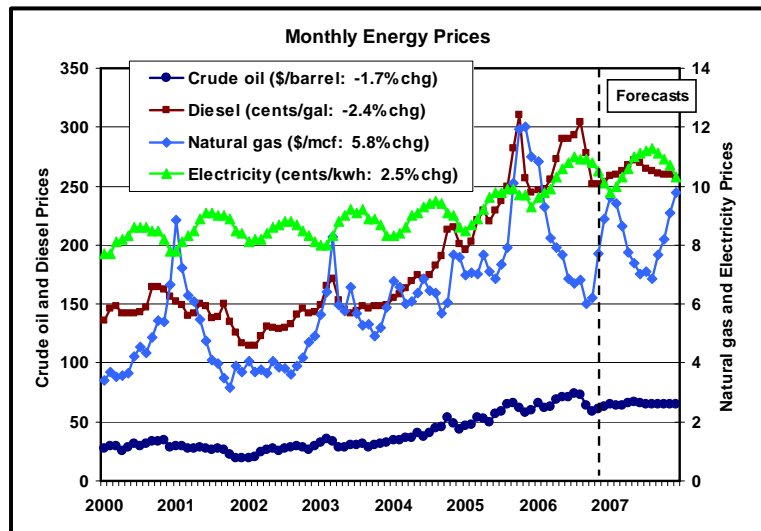


Figure 3

Another fixed cost most dairies face is the interest cost associated with the capital invested in the dairy. Figure 4 shows quarterly interest rates charged on various types of agricultural debt from 2000 through the third quarter of 2006. It can be seen that interest rates have been steadily increasing since early 2004. While we do not have official forecasts of these interest rate series for the last quarter of 2006 and 2007, it is fairly safe to say that interest rates in 2007 will likely be at comparable or higher rates than recent years (2004-2006). These relatively higher interest rates result in higher fixed costs. In

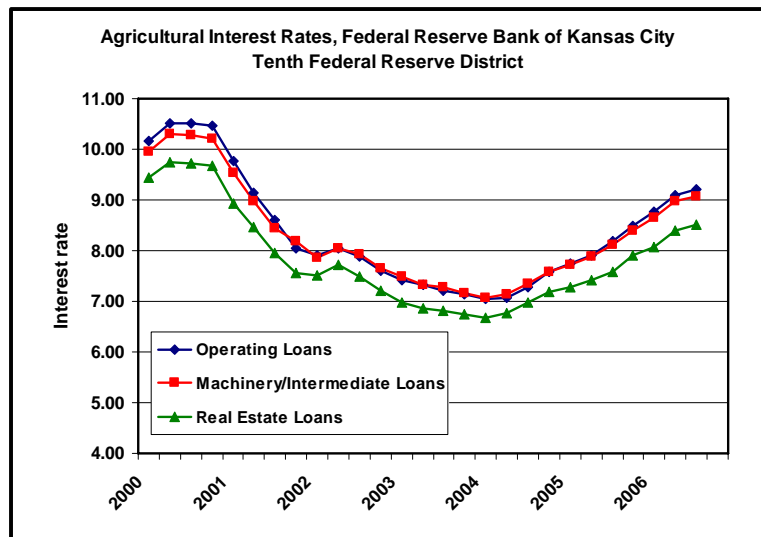


Figure 4

response to these higher fixed costs, profit-driven producers should strive to maximize production so as to generate the maximum returns to contribute towards fixed costs.

After feed and replacement costs, labor is one of the largest costs of production for many dairies. Figure 5 shows labor wage rates for dairy milkers and supervisors and foremen in agriculture (not dairy specific). It can be seen that, from 1995 to 2005, the annual increases in wage rates have ranged from 2.8% for milkers to 4.5% for those in supervisory positions. Labor costs for 2007 likely will be higher than 2006, continuing the trends depicted in figure 5. Another factor that likely will lead to higher labor costs in 2007 is immigration reform, which could increase direct (i.e., wage rate) and indirect (i.e., compliance) costs associated with hired labor. Similar to utilities and interest costs, labor has a huge “fixed” aspect and thus managers should strive to maximize the returns to this fixed cost, which once again typically is accomplished by maximizing production.

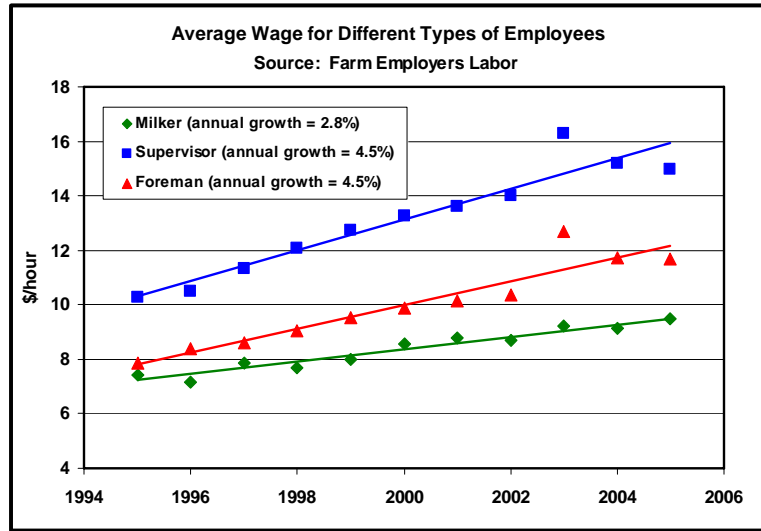


Figure 5

Profit

What do these changes mean for dairy profits in 2007? Projected budgets were used to evaluate the effect of +\$2/cwt milk price, +30% feed cost, +5% labor cost, +0.5 percentage point in interest rate, and all other factors held constant. The cumulative effect of these changes is that returns are approximately \$3-\$30 per cow *worse* than 2006. However, if feed prices are 25% higher, rather than 30%, then returns are roughly \$50-\$70 *better* than in 2006. If management strategies are adopted to increase production/cow, further diluting fixed costs, profits would increase further.

Summary

This past year (2006) has been a tough year for many dairy producers due to low milk prices and high input costs. The outlook for 2007 is mixed – milk prices will be higher, but so will many costs (e.g., feed, interest, labor). From a management perspective, there are several things dairy producers should keep in mind for this upcoming year. First, as they consider alternative feed ingredients that might impact both production and cost/ton, it is important to analyze the impact on IOFC or total cost/cwt rather than feed cost/day or feed cost/cwt. This will ensure that appropriate conclusions are reached regarding the economic optimal feeding program. Second, producers need to recognize that often the best management response to many of the high costs is to maximize production (number of cows through parlor and milk production per cow). This is because many of the costs on a dairy are “fixed” in nature in the short run and thus do not vary directly with production. Maximizing the returns to these fixed costs leads to maximum profits (or minimum losses in unprofitable years).