

## Puts, Contracts, and Hedging: How Good Would My Marketing Plan Have Been?

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A milk marketing plan can be used to reduce Class III milk price variability or the swings in milk prices from low to high. Figure 1 shows that from January 2000 through September 2006, Class III milk price ranged from a low of \$8.57 in November 2000 to a high of \$20.58 in May 2004. The average Class III milk price was \$12.27. Over this 81-month period, 33 months had a Class III price less than \$11.00/cwt.

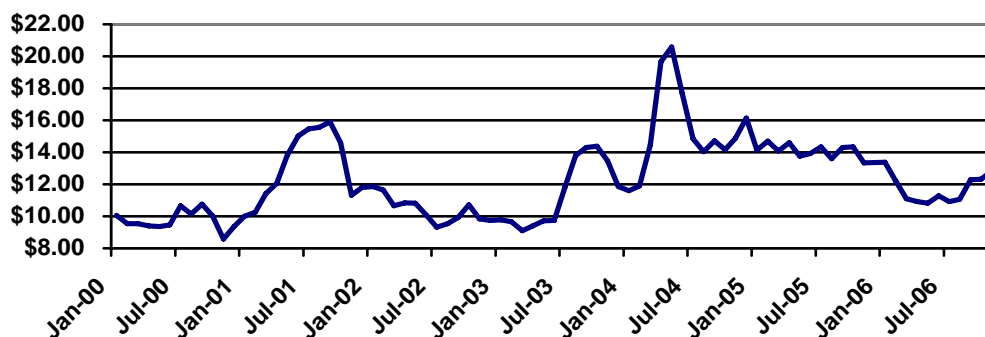


Figure 1. Announced Class III milk price January 2000-November 2006.

One goal of milk marketing is to reduce price variability. There are a number of milk pricing tools that can be used to manage price risk. These include cash forward contracts, futures contracts or hedging and options.

Milk marketing plans should be simple to implement and maintain. The following milk marketing plan is a sample plan that illustrates changes in milk price variability and average price when the plan is implemented over the January 2000-September 2006. The plan uses cash forward contracts and put options.

### The Plan

The plan makes use of put options to set a minimum price for Class III milk and cash forward contracts if the Class III futures price meets certain target prices. The marketing plan is presented in Table 1. The average monthly milk production is 183,300 pounds.

The marketing plan calls for the use of put options. The strike price is \$11.50 for January-June and \$12.50 for July-December. The maximum premium I am willing to pay is \$0.50/cwt. If a monthly put option at the specified strike is available at or below the premium I am willing to pay, a put option is purchased.

There are three Class III trigger prices for forward contracting: average, top third, and top fifth. If the Class III futures contract settles at or above the average, 15% of monthly milk production is contracted. If the Class III futures contract settles in the top third, 25% of monthly milk production is contracted. If the Class III futures contract settles in the top fifth, an additional 25% of monthly milk production is contracted. If I have not contracted milk and a trigger is hit in the last 2 months of a contract's life, I will not contract even though the trigger has been hit.

**Table 1. Target price for marketing plan.**

	Put Options		Forward Contracts		
	Strike price	Premium	Average	Top third	Top fifth
January	\$11.50	\$0.50	\$11.55	\$12.73	\$13.42
February	\$11.50	\$0.50	\$11.41	\$12.08	\$12.63
March	\$11.50	\$0.50	\$11.49	\$12.18	\$12.77
April	\$11.50	\$0.50	\$12.42	\$12.90	\$13.84
May	\$11.50	\$0.50	\$12.70	\$13.01	\$14.04
June	\$11.50	\$0.50	\$12.46	\$12.93	\$13.78
July	\$12.50	\$0.50	\$12.48	\$13.10	\$13.85
August	\$12.50	\$0.50	\$12.53	\$13.44	\$14.20
September	\$12.50	\$0.50	\$13.17	\$13.87	\$14.61
October	\$12.50	\$0.50	\$12.94	\$13.47	\$14.13
November	\$12.50	\$0.50	\$12.04	\$13.17	\$13.66
December	\$12.50	\$0.50	\$12.05	\$13.23	\$14.13

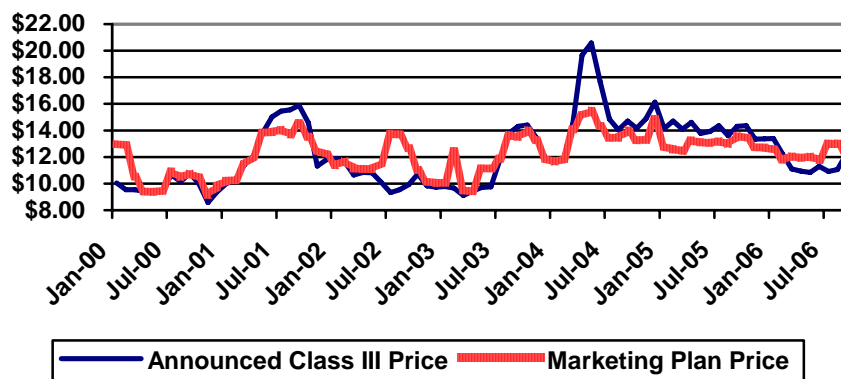
This marketing plan has been implemented from January 2000-September 2006. Table 2 provides a summary of the results of the marketing plan. The average Class III milk price received was \$0.04 less with the marketing plan than without. The minimum price received with the marketing plan was greater than the lowest announced Class III price received. With the marketing plan, only 17 of the 81 months had a Class III milk price that was less than the \$11.00/cwt. This is an improvement over the 33 months where the announced Class III price was below \$11.00.

**Table 2. Marketing plan summary results.**

	Take the announced price	Use the marketing plan
Average price	\$12.26	\$12.22
Minimum price	\$8.57	\$9.16
Maximum price	\$20.58	\$15.45

The highest price received with the marketing plan was less than the highest announced Class III price. Using the simple contracting rules in the marketing plan prevents waiting for a higher price in an up-trending market.

Figure 2 shows the monthly milk prices received for both the announced Class III and the price when following the above marketing plan. There are two periods that need attention. The first is January 2002 through February 2003 where the marketing plan price was higher than the announced price as a result of contracting triggers at the average price that were



**Figure 2. Class III milk price received.**

available in mid 2001. In addition, there were large gains on put options that were purchased on 2002 milk. The other is April-May 2004 where the announced Class III price was well above the marketing plan price. It shows the implication of contracting milk in an up-trending market. This plan contracts milk as soon as a price trigger is met.

There are four points that can be made with regards to this simple milk marketing plan:

1. Price variability is reduced with this marketing plan.
2. Pricing opportunities may well occur early in a futures contract's trading life. We need to be looking for them.
3. Need to take care if pricing in an up-trending market. Watch for signals that the market is down-trending before contracting.
4. Put options can be an effective marketing tool. The cost of puts can be prohibitive.