

Cattle Business in Mississippi – March 2007
“Stocker Cents” article

Cattle Price Risk and the Corn Market

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Corn prices are currently at their highest level in a decade. The troubling thing about the current corn situation from a cattle producer’s point of view is that, unlike in the mid-1990s when corn prices were supported by a tight supply situation, the current corn market is primarily demand-driven. The past three corn harvests (2004-2006) have been the three largest corn crops on record. Corn carryover coming into this most recent harvest was nearly 2 billion bushels. Despite these facts, the corn market experienced an unprecedented price rally right through the middle of harvest. This is a notable event, and it underscores the impact that growing demand from the energy sector is having on the corn market.

Stocker cattle producers are not insulated from events in the corn market, though many backgrounding programs may use little if any corn. The fact is that just about all feed prices are very closely related to the corn price. As the price of corn rises, the price of anything that is a substitute for corn will rise as well. The relationship between corn prices and substitute feed prices can also be illustrated graphically. Figure 1 plots distiller’s dried grain (DDG) prices against corn prices using cash price data from 1990 through 2006. This figure clearly shows that DDG price tends to go up (down) as corn price goes up (down). A similar relationship holds for other readily available corn substitutes.

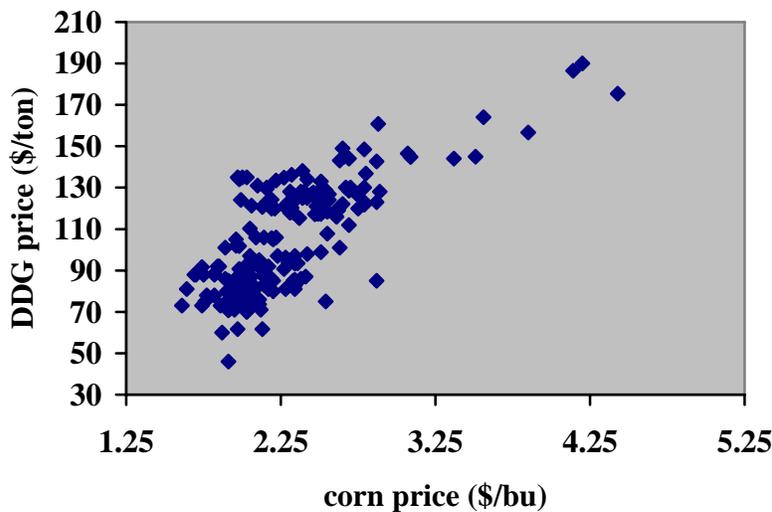


Figure 1. Scatter Diagram of Distiller’s Dried Grain Price versus Corn Price: 1990-2006

The impact of corn price on the value of substitute feeds is just one way in which stocker operations are affected by rising corn prices. There is also a very close relationship between calf prices and corn prices. As corn prices go up, calf prices go down. This reflects the fact that as corn prices go up, the cost of gain in finishing operations goes up as well. Feeders pay less for feeder calves because the returns to feeding are reduced as a result of higher cost of gain.

Previous research has shown that a \$1/bushel increase in corn price generally equates to a long-run decline in feeder cattle prices of roughly \$6 to \$8 per hundredweight. In the dramatic run-up in corn prices this fall, feeder cattle prices fell by much more than this, by roughly \$20 per hundredweight (through other supply/demand factors that were at work in the market as well).

A corn price increase does not just lower calf prices, it also reduces the spread between prices for calves in different weight categories. Dhuyvetter, Schroeder, and Prevatt observed that at a corn price of \$1.68, the spread between prices for 500 and 800 pound steers is \$20.00/cwt. When the corn price is \$3.52, that spread is just \$8.00/cwt.

Stocker operators are not so much concerned with price slides (i.e., the differences in price per unit for cattle of different weights at a given point in time) as with buy/sell margins (i.e., the difference between purchase price of a stocker calf when it enters the backgrounding program and the sale price of a feeder calf when it leaves the program). A good way to look at buy/sell margins for stocker operations, and one that explicitly considers the impact of cost of gain, is to calculate a break-even feeder price required to cover all costs at various stocker price/cost of gain combinations. This is the question, familiar to stocker operators and cattle feeders alike, of how far the price of a calf can be “backed-up” with the returns from backgrounding or feeding. Table 2 shows break-even feeder calf prices for different stocker calf price and cost of gain combinations.

Table 2. Break-Even Feeder Calf Price (\$/cwt) at Different Stocker Calf Price and Cost of Gain

COG (\$/cwt)	Stocker Price							
	90	95	100	105	110	115	120	125
40	66.67	69.33	72.00	74.67	77.33	80.00	82.67	85.33
50	71.33	74.00	76.67	79.33	82.00	84.67	87.33	90.00
60	76.00	78.67	81.33	84.00	86.67	89.33	92.00	94.67
70	80.67	83.33	86.00	88.67	91.33	94.00	96.67	99.33
80	85.33	88.00	90.67	93.33	96.00	98.67	101.33	104.00

Notes: Stocker calf weight assumed to be 400 pounds; feeder calf weight assumed to be 750 pounds

The point here is that for any given stocker price, as cost of gain goes up, the break-even feeder price goes up as well, narrowing the profitable buy/sell margin. Numbers from Table 6 can be used to illustrate how this occurs. Consider the case of a the manager of a stocker operation who expects to achieve a \$0.40 cost of gain per pound

and also expects feeder calves to be selling for about \$85/cwt when his calves are ready for market. That manager would be willing to pay around \$125/cwt for stocker calves (a buy/sell margin of about -\$40). If a rise in feed prices raises expected cost of gain to \$0.50 cents per pound of gain and lowers expected feeder calf price to \$80/cwt, the stocker manager then would be willing to pay only around \$105/cwt for stocker calves (a buy/sell margin of about -\$25).

The foregoing points provide some basis for a discussion of the current corn price situation. The first point to note is that, largely for the reasons stated above, rising corn prices have already taken quite a few dollars off of the value of feeder cattle. In mid-September 2006, the March 2007 feeder cattle contract was trading at around \$110/cwt (with March 2007 corn trading around \$2.60/bu). By mid-January, March feeders had fallen to about \$92/cwt while corn had traded up to about \$4.10/bu. Rising corn prices were not the only factors in the feeder cattle price decline (adverse weather in the Plains, light slaughter rates, and softer fed cattle prices must also be considered), but skyrocketing corn prices were the primary concern in the market. This decline in feeder cattle prices is potentially very serious for stocker operations that had already purchased relatively high-priced stocker calves. Buy/sell margins will be very wide on some calves purchased this fall at the same time that the cost of any harvested feeds used in the backgrounding program will have also gone up considerably. This is pretty much the worst-case scenario for stocker operators. Favorable forward pricing opportunities for high-priced stockers currently in process are in the past. Managers should now look for pricing opportunities that will minimize losses and, most importantly at this point, manage costs aggressively to keep cost of gain as low as possible.

Moving forward, stocker and feeder prices will both adjust to higher corn prices this spring. That adjustment has largely taken place. The spread between 4-weight and 7-weight steer prices at Oklahoma City in mid-January was about \$10 narrower than the year before. Lower feeder prices translate into lower value of gain in stocker operations, but this effect will be offset to some degree by a narrowing of buy/sell margins. Stocker operators that are in a position to be low cost producers (for example, with intensive forage-based production systems) could find the market situation in 2006 more profitable than in the last couple of years when price spreads have been very wide. Of course, much depends on what happens with corn in 2007.

The most important point to consider with respect to the corn market is that it could be extremely volatile in 2007. USDA January supply and demand estimates projected corn ending stocks for this marketing year at just 752 million bushels. At current use levels, that is a little over a three week supply of corn. In early 1996, ending stocks projections for that year amounted to about 2.5 week's worth of use. The 1996 crop turned out to be a good one and prices quickly retreated. This year, even with a good crop, prices could remain relatively high. If there is any indication at any time in the growing season that the crop could be in jeopardy, corn prices will easily surpass all previous records. That is the major risk facing cattle producers this year. In response to this risk, stocker operators should carefully consider all risk management options. Some type of price protection (either hedging with futures or options or cash forward pricing) will be vital on

calves being purchased now and at least for the rest of 2007. Stocker calves that might look pretty cheap in February and March could look astronomically expensive in May or June if trouble develops with the corn crop. Corn prices will soar to new highs and feeder prices will drop to lows not seen in several years. In an environment this volatile, prudent price risk management is essential.

Reference

Dhuyvetter, K.C., T.C. Schroeder, and W. Prevatt. 2001. *The Impact of Corn and Fed Cattle Prices on Feeder Cattle Price Slides*. MF-2504. Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Manhattan, KS: April.