

Video Cattle Auctions Show a Niche Becoming the Norm

by

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Video auctions are the new standard for cattle marketing. They operate much like a traditional auction taking place in a sale barn, but have a much larger pool of potential buyers. Thus, cattle sale prices observed in video auctions are often more indicative of national prices than are local cash sale prices. This means we can learn what cattle markets really want by studying video auction prices.

Cattle markets signal what they value by offering a price premium for animals that possess the desired characteristics. Thus, ranchers can learn what value-added efforts are worthwhile by simply watching market prices for cattle sold with and without the characteristics thought to add value. If a consistent price premium is offered by the market for some characteristic, it indicates an economic incentive to provide the market with cattle having the desired trait. However, if the premium is not consistent across years, it may be a false signal that mixes the market effects of more than one pricing factor. In cases with inconsistent market signals, such a price differential for a “value-added” factor that is switching from a premium to a discount over time, the market is not truly responding to the factor and ranchers are not really being offered a higher or lower price for providing that factor to the market. Thus, knowing what is truly being valued by the market can save ranchers time and money. Cattle markets are dynamic, so ranchers need to carefully watch price trends to see what characteristics are valued.

In recent years there has been much discussion about whether or not preconditioning cattle before sending them to market adds to their sales value. Preconditioning can be defined as some management program aimed at making calves more valuable to buyers. Several

preconditioning programs have been discussed, including various respiratory vaccination programs, weaning, and implants. For example, two research projects conducted by Colorado State University in 1997 and 1999 with video auction data from 1996-97 and 1995-98, respectively, both reported that vaccination programs resulted in cattle sellers receiving higher average prices than those received by sellers of unvaccinated calves. In those studies price premiums were reported as high as \$3.89/cwt. A study conducted by Oklahoma State University in December 2000 found that price premiums were received for preconditioned calves, but the premium was not enough to cover preconditioning costs. These early studies focused on preconditioning, assessing its market effects. However, many factors influence cattle prices and those influences are often interactive.

Recent research conducted by the University of California found important changes in the calf market since those earlier analyses and, as a result, very different signals for ranchers. The new analysis had more data available and used a complex statistical process to get a more current picture of the market value of preconditioning and other pricing factors.

The New Study

We conducted a new study with more recent data to see whether the very dynamic cattle market still values several characteristics that earlier research found received price premiums. Similar to earlier studies, we used data from video auctions of calves. Western Video Market provided us with anonymous information from 1,979 lots of cattle with average weights in the 500-625 pound range sold in video auctions during the period 1997-2003. This weight range was used to focus on the price effects of the length of time since calves were weaned. The number of lots sold per year increased from 153 in 1998 to 397 in 2003. Average lot size

increased from 130 head during 1997 to 146 head in 2003. The cattle were sold from ranches across the western half of the country.

We focused our attention on whether or not price premiums were still received for value-added calves. In the process we discovered that the market has changed in an important way, which explains why research results have varied over time.

To begin, we found why many ranchers may be confused about the market value of preconditioning. None of the value-added programs received a consistent price premium when using only simple average price data that can be observed by ranchers when watching the market. Each program has premiums and discounts in different years over the data period, thus no pattern exists. That appears to indicate the market is not really paying attention to the value-added characteristic when setting prices.

We cross-checked this result by using advanced statistical methods and got mixed results with some very important differences. By including the effects of long-run price trends (created by the cattle cycle), location factors, and many other variables that commonly influence prices (listed in Table 1), we found that both preconditioning and the Quality Assurance Program (QAP) received a small but statistically significant price premium while implanting programs had no significant effect on prices received by ranchers over the entire 1997-2003 period. However, many of the results varied between years (as shown in Table 2). Clearly, there is much more to the story.

Niche Becomes the Norm

The explanation for the difference between results of earlier studies and our results is readily apparent. The cattle industry has responded to the market. This shows up in Figure 1.

The graph illustrates the percentage of lots in the video auction data that were preconditioned or implanted, two of the value-added characteristics reported in Table 1. In particular, the share of calves sold as preconditioned was less than 10% during the period covered by earlier studies, but that share jumped in 2001 such that preconditioned cattle have represented a majority of the market since that time.

The catalyst behind this change is the dynamics of a competitive market: sellers respond to buyers' preferences. Buyers were expressing a preference for preconditioned calves during the 1990s, but few sellers were aware of this change in demand at first, thus few ranchers were supplying preconditioned animals to the market. Buyers' attitudes were typified by a 1999 comment by a feedyard manager in Nebraska who said "I buy 4,700 calves per year and cattle that are vaccinated are worth more to me than non-vaccinated cattle. In fact, I won't buy cattle that aren't preconditioned." Clearly, that message got out to ranchers and starting in 2001 they were supplying the market with mostly preconditioned calves. In other words, the market niche became the market norm. Now, the higher supply of preconditioned calves has led to the price premium seen earlier being competed away in most years. In a competitive market, sellers must supply a product with the characteristics demanded by buyers or risk selling at a discount or, in a worse case, not being able to sell at all. The end result is that early adopters of value-adding programs may benefit by receiving a price premium, but that premium will gradually disappear as more sellers join the market, increasing the supply of product with the desired attribute.

There is some evidence that preconditioning has now gone past being the norm to being a requirement in some markets. Some ranchers have reported to us that only preconditioned calves were allowed in some auctions. Such a development is typical in markets where some product attribute has become the market standard. Sale operators (in livestock and crop markets) usually

try to standardize the products being offered for sale whenever a clear buyer preference becomes known. In such a case, if cattle sale operators know that buyers want only preconditioned calves, showcasing preconditioned cattle might be a way to attract more buyers to the sale.

Back to the Future

Our study did find two characteristics that consistently received a price premium over the data period. First, our analysis showed that increasing the length of time since weaning increased average prices. For every 30 days in the length of time since weaning, the average price increased about 1.3 cents per pound (as shown in Table 1 for the entire data period). The premium did vary from one year to the next (as shown in Table 2), but was statistically significant each year beginning in 1998.

Second, calves that met the requirements of the natural beef program received a premium in each of the five years that sales of natural cattle were made in the video auctions and that premium was statistically significant in four of those five years, as shown in Table 2. The amount of the price premiums was influenced by other factors such as breed and sale location, as indicated in Table 1. In our results, natural beef received a statistically significant premium in four of the five years, ranging from \$1.11/cwt to \$2.08 (shown in Table 2). Over the entire 1997-2003 period the average premium was \$1.60/cwt (reported in Table 1).

In the future, the existence of natural beef premiums and their amount will depend upon the competitive response within the cattle market. If buyers continue to expand their demand for natural beef, price premiums may exist. However, as ranchers respond and provide increased supplies of natural beef to the market, the natural niche may become the norm and see premiums competed away. During the data period the share of sales that were “natural” was zero in 1997-

98 and steadily increased to only 13% by 2003. Thus, natural beef is still very much a niche.

The same points can be made about the price effects of the weaning period length. As shown in Figure 1, the share of calves sold in the video market that were weaned more than 30 days was very small in 1997 and 1998, but that share increased to around 30 percent for sales in 2000 through 2003. Thus, cattle producers have responded to the market and are delivering more calves weaned a longer period and, as a result, are receiving a price premium over the average price received for calves freshly weaned. However, the weaning niche could see smaller premiums if it grows to become a larger share of the market.

The irony of the general results here is that beef buyers were moving toward more standard use of preconditioning programs involving more “value-adding” use of medications, and now buyers are beginning to reflect consumers’ preferences for more cattle that are free of rancher interventions. “Natural beef” free of hormones and antibiotics is a move back to the simpler production practices of the past, as illustrated by the decline in the share of animals implanted (see Figure 1). Thus, in a sense, the cattle industry’s future may involve discovering ways to go back to old production methods and finding a way to make them pay.

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Table 1. Results of a Statistical Analysis of Cattle Prices, 1997-2003

<i>Factor</i>	<i>Price effect (\$/cwt)</i>	<i>Significant?</i>
Preconditioning	0.81	***
QAP	0.92	***
Implant	0.03	
Bunk broke	-0.37	
Western Rancher's Beef	0.50	
Wean length	1.27	***
Natural	1.60	***
Forward contracting period	0.13	
Variability of animals in lot	-0.63	***
Head number in lot	0.01	***
Head number squared	-0.00	**
Weight (average/head)	-0.17	***
Weight squared	0.00	*
Geographic location of ranch	a	***
Breed	b	mixed
Trend	c	***

These values are statistically significant (different than zero) only when indicated by *, ** or *** (respectively, 90%, 95%, and 99% confidence level). Thus, a value with no asterisk is essentially zero, meaning there is no real price premium or discount.

^a This variable showed discounts for all locations west of Nebraska. For California, the discounts ranged from \$5.94 to \$6.66.

^b Breeds received different average prices within a \$1.50 range.

^c Four trend variables were used to account for the cattle cycle's effects on national market prices. Our data first trended downward, then upward, and then repeated that pattern during the 1997-2003 period. All four trend variables were statistically significant.

Table 2. Price Premiums for Value-Added Calves (\$/cwt)

Year	Preconditioned	QAP	Implant	Wean Length	Natural
1997	0.51	-0.33	0.29	0.64	
1998	0.86	0.02	1.03 ***	2.17 *	
1999	0.95 *	-2.28 **	0.13	0.80 **	2.08 ***
2000	0.02	1.15	-0.68 *	1.13 ***	0.52
2001	0.31	1.36 ***	0.11	1.29 ***	1.11 *
2002	0.66 **	0.30	-0.20	1.27 ***	1.20 **
2003	1.57 ***	1.73 **	-0.18	1.58 ***	1.84 ***

Note: The values reported here were estimated using statistical regression analysis. Positive values are price premiums for the attribute, negative numbers are price discounts. These values are statistically significant (different than zero) only when indicated by *, ** or *** (respectively, 90%, 95%, and 99% confidence level). Thus, a value with no asterisk is essentially zero, meaning there is no real price premium or discount.

Figure 1. Cattle Preconditioned, Implanted, and Weaned over 30 Days as a Percent of Total Sales

