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Fed Cattle Pricing

This NebGuide discusses pricing alternatives for fed cattle, including live weight, dressed weight and grid pricing.

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Pricing fed cattle is becoming more complex, requiring more time to evaluate pricing alternatives and marketing cattle. Is there one best pricing method? How are live weight, dressed weight, and grid or formula prices related? This NebGuide will provide answers to these and other questions about fed cattle pricing.

Pricing Mechanics

Fed cattle are priced predominantly in three ways: 1) live weight, 2) dressed weight or in the beef or 3) carcass grade and yield or grid pricing. Formula price agreements and strategic alliances between feeders, packers and other parties generally use one of the three pricing methods and then include additional stipulations. The pricing methods are similar in principle; however, they differ relative to each other and across firms. To gain insight into the similarities and differences, consider how fed cattle prices are established.

Meat packers estimate meat and byproduct sales, subtract slaughter and processing costs and a profit target. What remains is how much they can pay for fed cattle. More specifically, packers begin with a basic profit equation:

$$(1) \text{ Profit} = \text{Total Revenue} - \text{Total Costs}$$

Equation 1 can be expanded to provide additional detail:

$$(2) \text{ Profit/head} = [(\text{Price}_{\text{Meat}} \times \text{Quantity}_{\text{Meat}}) \\ + (\text{Price}_{\text{Byproducts}} \times \text{Quantity}_{\text{Byproducts}})] \\ - [(\text{Price}_{\text{Livestock}} \times \text{Quantity}_{\text{Livestock}}) \\ + \text{Costs}_{\text{Slaughtering-Fabrication}}]$$

Packers rearrange their profit equation into a bid price equation:

$$(3) \text{ Bid Price}_{\text{Fed Cattle}} = [(\text{Price}_{\text{Boxed Beef}} \times \text{Quantity}_{\text{Boxed Beef}}) \\ + (\text{Price}_{\text{Byproducts}} \times \text{Quantity}_{\text{Byproducts}}) \\ - \text{Costs}_{\text{Slaughtering-Fabricating}} \\ - \text{Profit Target}] / \text{Quantity}_{\text{Fed Cattle}}$$

A few key points can be made concerning this general bid price equation:

- Fed cattle bids change with changing boxed beef and byproduct sales;
- Individual packers have different costs and different profit targets, and hence, different bids;
- When there is a relatively short supply of fed cattle, packers generally decrease their profit target, and hence, increase their bid price. Conversely when there is a large supply of fed cattle, packers generally increase their profit target and lower their bid price;
- This is a general bid price and is not yet specific to the pricing method nor to individual pens of cattle.

Once a packer has established the bid price for a particular time period the process of actually offering a bid on a pen of cattle differs depending on the pricing method. Many of the differences between pricing methods are directly related to the amount of information that is actually available at the time pricing occurs. The advantages and disadvantages of how price is determined and the overall market implications for the beef industry of each will be discussed in the following section.

Live Weight Pricing

When fed cattle are priced on a live basis, price is generally negotiated between the packer and the feedlot based on the expected value of the cattle when processed (a 4 percent pencil shrink on cattle is usually included and packers pay transportation from the feedlot to the packing plant). To establish a buy order, the packer starts with a base Choice carcass price and adds or subtracts quality and yield grade premiums and discounts associated with the quality traits the packer expects in the pen of cattle when processed. The adjusted carcass price is converted to a live animal price by multiplying it by the expected dressing percentage. This live price is then credited with byproduct and hide values and adjusted for slaughter costs, transportation costs, and the packer's profit margin, to establish an estimated live animal bid price.

Often when a particular feedyard offers a large number of cattle in a single transaction, the packer buyer may bid the entire lot for the same price to save time and costs associated with cattle procurement, even though individual pen and animal values differ. The feedlot marketing a large number of cattle on a live basis has similar incentives to market a large portion of the showlist to a single buyer in one transaction.

Pricing cattle on a live basis is appealing to some cattle feeders who want to maintain flexibility in cattle pricing until the transaction price is established. However, because meat quality and carcass dressing percentage are difficult to accurately predict on live animals, premiums and discounts paid on a live basis generally do not reflect the true cattle value associated with the final product yield and quality. In other words, high quality cattle are often undervalued and low quality cattle often overvalued.

Dressed Weight Pricing

When cattle are marketed on a dressed weight basis, the cattle buyer does not need to estimate dressing percentage of cattle. Price is established based on the actual hot carcass weight. The dressed price offered is similar to the live price bid in that the buyer starts with a base Choice carcass price, adjusts it for expected quality and yield grade, weight premiums and discounts, byproducts, slaughter costs (seller generally pays transportation on dressed cattle sales), and the packer's profit. In principle, this price will be comparable to a live price adjusted for dressing percentage for the same pen of cattle. In practice, the dressed price (after transportation costs) may be greater or less than the dressing-percentage-adjusted live price since errors in estimating dressing percent are eliminated in dressed weight sales. If knowing the dressing percentage is of value to packers, then over time, across a large number of pens, the average dressed price should be greater than the average dressing-percentage-adjusted live price, other things equal.

The incentives for packers to buy complete showlists and feedlots to sell complete showlists at one dressed price are the same as for live weight pricing. This practice reduces costs associated with procurement for the packers and marketing for the feedlots. However, it distorts market signals and tends to reward inferior cattle and penalize superior cattle by trading all cattle at one average price. However, even though the dressed price will be equal across all pens, pens with higher yielding cattle, higher dressing percent, will receive greater revenue for the same live weight of cattle.

Grid Pricing

Pricing cattle on a grade and yield or grid basis is essentially the same as pricing on a dressed weight basis except, in addition to knowing dressing percentage, the packer also bases price on known quality and yield grades of each animal in the pen. Many beef packers offer cattle producers the opportunity to price cattle on a carcass grid basis. Most packer grids list a base price for a Choice, yield grade 3, 550-950 pound, steer carcass. An example of a typical price grid offered by beef packers is presented in *Table I*. The price received for each carcass is the base price plus the particular premiums and discounts. For example, a Choice yield grade 3, 550-950 lbs. carcass would receive a price of \$105/cwt. A Select yield grade 4 carcass would receive a price of \$78.75/cwt ($\$105.00/\text{cwt} - \$26.25/\text{cwt}$).

Table I. An Example Grid Pricing System (Carcass \$/cwt)					
(Assumes base Choice Yield Grade 3 price \$105/cwt, Choice/Select spread \$6.25/cwt)					
	<i>Yield Grade</i>				
<i>Quality Grade</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Prime	8.00	7.00	6.00	-14.00	-19.00
Upper 2/3 Choice	3.00	2.00	1.00		
Low Choice	2.00	1.00	105.00	-20.00	-25.00
Select	-4.25	-5.25	-6.25	-26.25	-31.25
Standard	-24.50	-25.5	-26.50	-46.50	-51.50
Dark Cutters, Stags, etc.		-20.00			
Greather Than 950 lbs.		-25.00			
Less Than 550 lbs.		-25.00			

Summary of Pricing Methods

Table II contains a summary and comparison of issues associated with the typical fed cattle pricing arrangements just presented. Differences across pricing method for fed cattle trade are important because price will likely differ across pricing methods even for the same pen of cattle. Prices for the same pen of cattle are likely to differ because different kinds and amounts of information are used in the various pricing methods to arrive at a price. the key element is that as a producer moves from live cattle pricing to dressed weight to grid pricing, it is increasingly important that the producer understand the type of cattle being marketed, the particular pricing system being used, and their probable impacts on the net price received.

Table II. Comparison of "Typical" Practices for Various Fed Cattle Pricing Methods

<i>Nature of Trade</i>	<i>Cattle Pricing Method</i>		
	<i>Live</i>	<i>Dressed Weight</i>	<i>Price Grid</i>
Prices cattle on an individual basis	No	No	Yes
Price variability across animals	None	None	High
Price variability across packers	Little	Moderate	High
Trucking costs paid by	Buyer	Seller	Seller
Pricing location	Feedlot 4% Shrink	Packing Plant	Packing Plant
Prices reflect meat yield	Estimated	Dressed Yield	Yield Grade
Prices reflect quality grade	Estimated	Estimated	Detailed Actual
Base price determination	Live Market	Dressed Market	Varies
Large discounts for "out" cattle	No	Some	Yes
Price negotiated on each transaction	Yes	Yes	No
Importance of seller knowing cattle quality	Not Very	Not Very	Very



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