AgriLIFE EXTENSION
Texas A&M System

E-557
RM1-11.0
03-09

Risk Management

Grid Pricing of Fed Cattle

Robert Hogan, Jr., David Anderson and Ted Schroeder*

Grid prices, or value-based marketing, refers to pricing cattle on an individual animal basis. Prices differ according to the underlying value of the beef and by-products produced from each animal. Schroeder et al. have reported that pricing fed cattle on averages is detrimental to the industry because it does not send appropriate price signals to cattle feeders, stockers and, ultimately, cow-calf producers. However, incentives to sell cattle on averages and problems associated with identifying beef quality have inhibited the development of value-based pricing. Both cattle feeders and packers have been reluctant to change from a live animal pricing system to a carcass pricing system.

Opportunities to profit from better matching fed cattle prices to value have encouraged packers, alliances and producers to use carcass-based pricing. Now, there are several value-based fed cattle pricing systems, including formula pricing, price grids and alliances. Is there one "best" pricing method? How are live weight, dressed weight and grid or formula prices related? The purpose of this publication is to help producers decide which form of fed cattle pricing may be most profitable for them.

Is Carcass Merit Pricing For You?

Should you market your cattle on a carcass merit basis? If so, does it matter which pricing system you use or which packer or alliance you sell to? The answer to both questions is, ***"It depends."*** The most critical factors that influence the profitability of these decisions include: 1) the quality and dressing percent of the cattle you produce; 2) the Choice-Select market price spread; 3) production and feeding cost differences associated with targeting your cattle to a particular price grid or packer; and most important 4) your knowledge about the price/quality distribution of your cattle and your (or the feeder's) ability to sort your cattle to meet the criteria for a particular grid or formula. The following analyses focus on the price/cattle quality relationship, without considering production costs. This is not to imply that production costs associated with attaining a particular quality-related price incentive are not important. They are critical to profitability. However, production costs differ with producers and cattle types and are not explicitly evaluated here.

Cattle Pricing Methods

Fed cattle usually are priced in one of three ways: 1) live; 2) dressed weight or *"in the beef;"* or 3) carcass grade and yield or grid pricing.

Live Cattle Pricing

When fed cattle are priced on a live basis, price is generally negotiated between the packer and the feedlot based upon the expected

AgriLIFE EXTENSION
Texas A&M System

*Assistant Professor and Extension Economist–Management, and Professor and Extension Economist–Livestock and Food Marketing, The Texas A&M System; and Professor and Extension Economist, Kansas State University.

value of the cattle when processed (a 4 percent pencil shrink on the cattle from the feedlot to the packing plant is usually included). To establish a buy order, the packer starts with a base Choice carcass price and then adds or subtracts expected quality and yield grade premiums and discounts associated with quality traits the pen of cattle are expected to exhibit 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 adjusted with by-product and hide values and further adjusted for slaughter costs, transportation costs, and the packer's profit margin[1] to establish an estimated live animal bid price. If packers can purchase a large number of cattle from one location at one time, they may increase their bid price to reflect reduced transactions and procurement costs.

Pricing cattle on a live basis is appealing to some cattle feeders who want to maintain complete flexibility in cattle pricing until the transaction price is established. Live pricing may also be preferred if the producer does not know the characteristics of the cattle or expects the dressing percentage, quality grade or yield grade to be below average. However, because meat quality and carcass dressing percentage are difficult to predict accurately on live animals, premiums and discounts paid on a live basis generally do not reflect the true value of the final product. In other words, high-quality cattle are often undervalued and low-quality cattle often overvalued. This gives producers no incentive to invest in better genetics and produce a better product.

Dressed Weight Pricing

When cattle are marketed on a dressed-weight basis, the cattle seller assumes the risk of dressing percentage. Price is based upon 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 and adjusts it for expected quality and yield grade, weight premiums and discounts, by-products, slaughter costs (seller generally pays transportation on dressed cattle sales), and the packer's profit.

In principle, the dressed-weight 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 higher or lower because there are no errors in estimating dressing percentage. 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 being equal.

Grid Pricing

Pricing cattle on a grade and yield or grid basis is essentially the same as pricing on a dressed-weight basis, except that in addition to dressing percentage, the seller assumes the risk of the quality and yield grade 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- to 900-pound steer carcass. For example, a typical price premium and discount schedule offered by beef packers is shown in Table 1.

Table 1. Example grid, as presented by a packer ($/dressed cwt).

Choice YG3 550- to 900-lb	Base price
Prime-Choice Premium	6.00
CAB-Choice Premium	1.00
Choice-Select Discount	-9.00
Choice-Standard Discount	-18.00
Yield Grade I	2.00
Yield Grade II	1.00
Yield Grade IV	-15.00
Yield Grade V	-20.00
Light Carcasses (<550 lb)	-19.00
Heavy Carcasses (>900 lb)	-19.00
Dark Cutters	-25.00
Bullocks/Stags	-25.00

[1] It's important to note that the packer is not guaranteed a profit. The cattle market is a competitive market where packers still have to bid to get the cattle. That bidding sometimes is easier or harder. Packers do lose money, at times, when market conditions dictate that they pay more for the cattle than was profitable.

The assorted premiums and discounts are then simply copied into the grid as shown in Table 2.

Table 2. Example of grid premiums and discounts.

Quality grades	Yield grade 1	2	3 ($/cwt carcass)	4	5
Prime			6.00		
CAB			1.00		
Choice	2.00	1.00	**Base**	-15.00	-20.00
Select			-9.00		
Standard			-18.00		
CARCASS WEIGHTS			OTHER		
550-900 lb		Base (105.00)	Dark Cutter, etc. Bullock/Stags		-25.00 -25.00
Less than 550 lb			-19.00		
More than 900 lb			-19.00		

The rest of the grid is now filled in typically by just adding premiums and discounts. For example, to get the premium for Prime-Yield Grade 1, add the $6.00 Prime premium and the $2.00 Yield Grade 1 premium to get $8.00. As another example, to compute the discount for Select-Yield Grade 5, add the $9.00 Select discount and the $20.00 Yield Grade 5 discount to get $-29.00. The entire grid is shown in Table 3.

Table 3. Example grid premiums and discounts.

Quality grades	Yield grade 1	2	3 ($/cwt carcass)	4	5
Prime	8.00	7.00	6.00	-9.00	-14.00
CAB	3.00	2.00	1.00	N.A.	N.A.
Choice	2.00	1.00	**Base**	-15.00	-20.00
Select	-7.00	-8.00	-9.00	-24.00	-29.00
Standard	-16.00	-17.00	-18.00	-33.00	-38.00
CARCASS WEIGHTS			OTHER		
550-900 lb		Base (105.00)	Dark Cutter, etc. Bullock/Stags		-25.00 -25.00
Less than 550 lb		-19.00			
More than 900 lb		-19.00			

The price received for each carcass is the base price plus the particular premiums and discounts. For example, if the Choice, yield grade 3, 550- to 900-pound carcass price is $105.00/cwt, a Select, yield grade 4, 700-pound carcass would receive a price of $81/cwt ($105.00/cwt - $24.00/cwt, the Select-yield grade 4 discount).

The USDA reports a weekly survey summarizing selected beef packer grid premium and discount schedules. This report is on the internet at *http://www.ams.usda.gov/mnreports/lm_ct155.txt* (National Weekly Direct Slaughter Cattle – Premiums and Discounts). The LM CT155 report is useful for understanding average grid price premiums and discounts being offered by packers, and for raising awareness of the range of discounts and premiums.

Table 3 illustrates how quickly net price can decrease with yield grades 4 and 5 and with quality grades below Choice (Select and Standard). In this example, the discount from Choice to Select is a relatively severe $9/cwt. The discounts between Choice and Select quality grades typically range from $1.00/cwt to $12.00/cwt, depending on the supplies of Choice versus Select carcasses, the demand for each, and seasonal purchasing patterns and habits. (The weekly Choice-Select spread has been as large as $23.08 and as small as $0.68 over the past 5 years.) There are usually large discounts for Standard grade carcasses, dark cutter carcasses, and carcasses lighter than 550 pounds or heavier than 900 to 950 pounds. Some grids also offer premiums and discounts for hide quality.

For many packers' grids, price premiums and discounts are additive. That is, the base price is adjusted in an additive manner for the associated characteristics of the carcass (as in our example above). For some packers, not all premiums and discounts in their price grid are additive. For example, some packers quote the same price for all Standard grade cattle regardless of yield grade. The USDA grid summary report assumes additive discounts and premiums. In addition, this report is not volume-weighted and includes only packer-stated grids, not actual purchases. As a result, the report does not represent market average grid prices. This is important to understand when interpreting the USDA price report and comparing it with any particular packers' grids you may be considering.

Summary of Pricing Methods

Table 4 summarizes and compares issues associated with typical fed cattle pricing arrangements. Differences in the various methods are important because they use different kinds of information and cause prices to differ even for the same pen of cattle. The key is that as a producer moves from live cattle pricing to dressed-weight to grid pricing, it is increasingly important to understand the type of cattle being marketed and the pricing system being used, and to assess probable net price received.

Over time, average cattle or cattle with little background information may sell better with live pricing. A somewhat better class of cattle may sell better with dressed pricing. First rate classes of cattle whose characteristics are known by the producer may sell better by pricing on the grid.

Table 4. Assessing ways to sell fed cattle.

	Cattle pricing method		
Producer pricing attribute	**Live**	**Dressed**	**Grid**
Pricing level	pen level	pen level	animal level
Paid for quality	No	No	Yes
Paid for yield	No	No	Yes
Paid for dressing %	No	Yes	Yes
Who pays trucking?	Buyer	Seller	Seller

Formulas: Importance of Base Price

When fed cattle are priced on formula, an important consideration, in addition to the premium/discount structure, is the base price. In interviews with packers and cattle feeders, Schroeder et al. discovered several different types of base prices being used. One was the average price of cattle purchased by the plant where the cattle were to be slaughtered. The average price of cattle was usually for the week prior to, or the week of, slaughter. Other base prices were specific market reports such as highest reported price for a specific market for the week prior to, or week of, slaughter. One base price was tied to live cattle futures prices. Some base prices were negotiated. Some base prices were on a carcass weight basis, whereas others were on a live weight basis based upon yields of the cattle slaughtered.

Many packers have established base prices using plant average quality grades and dressing percentages of cattle slaughtered during the week. Before agreeing to deliver cattle to a particular packer on formula or grid, the producer should understand in detail how the base price is calculated and obtain some base price quotes over time from several packers. The producer does not want any surprises at this point.

Importance of Grid Premium/Discounts

When selling cattle on price grids, in addition to considering base prices, cattle producers should carefully evaluate the price premium/discount structures of various packers' grids and determine which grid is most advantageous to them. Different grids may offer significantly different prices for the same quality of cattle. In addition, packers value traits differently. For example, one packer might not discount select cattle and another packer might not discount Yield Grade 4 as much as another packer.

Pens of cattle that are fairly uniform generally bring similar prices with different packer grids. However, pens with even small percentages of higher or lower grade carcasses, heavier or lighter animals, or more than the average number of "out" cattle (dark cutters, stags, bullocks, etc.) have much more variable prices. For this reason, it is important for cattle producers to know their cattle, sort their cattle carefully for uniformity, and target them for specific packers.

Grid Price Determinants over Time

In addition to variability in prices across grids, it is important that producers understand determinants of price differences over time. Small changes in dressing percentage alter the relative advantages of selling on either a live or dressed basis. For example, with a $65/cwt live steer price and a $102.50/cwt dressed carcass price, cattle dressing higher than 63.4 percent will receive a higher price per head if sold dressed than if sold live, and cattle with a lower dressing percentage will receive a higher price on a live basis. With these prices, a 1200-pound live steer will gain $6/head in value for each 0.5 percent increase in dressing percentage.

Over time, one of the most important determinants of price grid premiums and discounts is the Choice-Select carcass price spread. The greater the Choice-Select spread, the greater the price discount for lower quality cattle. The Choice-Select price spread varies over time as the cattle supply and demand for specific quality grades change.

There is a seasonal pattern to the Choice-Select spread. It typically is the widest in May-June and narrowest in February and again in August. The Choice-Select spread widens and narrows based on seasonal patterns in relative supplies of Choice and Select cattle. Seasonal demand patterns for different cuts and qualities also affect the spread.

Yield grade premiums and discounts have remained relatively stable over time for all packer grids. Therefore, this pricing factor is expected to remain more predictable than the Choice-Select price spread.

References

Schroeder, T.C., C.E. Ward, J. Mintert and D.S. Peel. "Beef Industry Price Discovery: A Look Ahead." Research Institute on Livestock Pricing, Research Bulletin 1-98, March 1998.

Partial funding support has been provided by the Texas Corn Producers, Texas Farm Bureau, and Cotton Inc.–Texas State Support Committee.

Produced by AgriLife Communications, The Texas A&M System
Extension publications can be found on the Web at: *http://AgriLifeBookstore.org.*
Visit Texas AgriLife Extension Service at *http://AgriLifeExtension.tamu.edu.*