



Grid Pricing Usage by Cattle Feeders

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A survey of cattle feeders in 2002 showed a distinct trend toward grid pricing of fed cattle, away from live weight and dressed weight cash market pricing (Schroeder et al.; see also F-585, Cattle Feeders' Marketing and Pricing Practices, <http://www.osuextra.com>). Cattle feeder respondents reported pricing 16% of fed cattle with a grid in 1996, 45% in 2001, and anticipated using a grid to price 62% of fed cattle marketed in 2006. Data available since implementing the Livestock Mandatory Reporting Act in April 2001 showed that formula pricing accounted for 46.7% of fed cattle purchases by packers in 2001 and increased to 49.1% in 2002 (Ward 2004). Data from the two sources was quite consistent. However, in 2003, the extent of formula pricing dropped sharply, to 34.0%.

This extension fact sheet reports results from a more recent survey of cattle feeders. Its focus is on the extent of grid pricing and factors that explain the use of grid pricing by cattle feeders.

Survey and Response

A survey was conducted of cattle feeders in Nebraska, Colorado, Kansas, Oklahoma, Texas, and New Mexico in September 2004¹. Approximately 500 questionnaires were mailed, and 147 completed, useable questionnaires were returned, a 29.4% response. Among the respondents were 31 cattle feeders who did not use grid pricing in 2003. Since the focus of this research was factors affecting grid pricing use, this fact sheet only considers the 116 respondents who used grid pricing for some or all of the fed cattle they marketed in 2003.

Summary information about the cattle feeder respondents is shown in Table 1. Over half the respondents (64.3%) were from Nebraska and Kansas. Just under half the respondents (48.3%) marketed more than 20,000 fed cattle in 2003. The extent of grid pricing varied from 1% to 100% with 59.5% using grid pricing for 40% or less of their marketings in 2003 and 36.3% using grid pricing for more than 60% (Figure 1). Among the cattle feeders who responded to this survey, most either used grid pricing extensively or not very much. Few (just 4.1%) were in the middle category (41-60%) of marketings.

Comparing Grid Pricing Groups

Grid pricing groups were created based on the extent of grid pricing use; that is, percent of total fed cattle marketings in 2003 that were priced with a grid. The objective was to determine whether or not there was a difference in factors affecting grid pricing for groups of cattle feeders based on

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Table 1. Characteristics of cattle feeder respondents who used grid pricing in 2003.

	Number of Responses	Percent of Total
Respondents by state where majority of cattle were fed		
Nebraska	42	36.5
Colorado	15	13.0
Kansas	32	27.8
Texas	20	17.4
Oklahoma, New Mexico, other	7	6.1
Respondents by size based on number of cattle marketed		
Less than 5,000 head	25	21.6
5,000-19,999	35	30.2
20,000-49,999	22	19.0
50,000-99,999	22	19.0
100,000 or more	12	10.3

the extent they used grid pricing. Two groups are compared; cattle feedlots marketing 50% or less of their fed cattle with a grid, and those using grid pricing for more than 50% of their marketings.

Table 2 shows similarities and differences between the grid pricing groups based on marketing and pricing practices. Several differences in average responses between the two groups were statistically significant (Ward 2005). Those us-

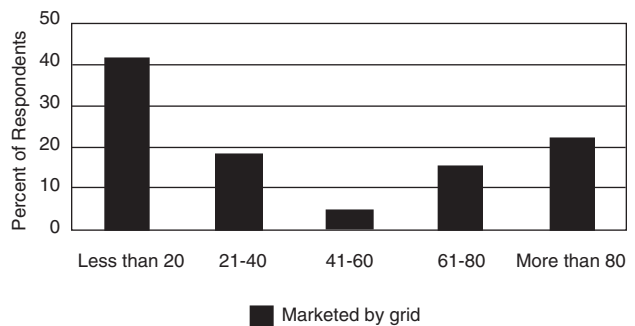


Figure 1. Survey response by percent of marketings priced via grid in 2003 (NE, CO, KS, TX, OK, NM).

Table 2. Fed cattle marketing and pricing practices, by extent of grid pricing in 2003 (NE, CO, KS, TX, OK, NM).

Practice	Grid Pricing Groups	
	50% or less of Marketings	More than 50% of Marketings
	(Percent)	
Percent custom fed	60.8	52.5
Percent sold to largest buyer*	56.5	83.6
Percent marketed with an agreement, contract, part of an alliance, or cooperative*	16.8	61.2
Percent priced on a ...		
Live weight basis*	46.7	10.2
Dressed weight basis*	34.7	5.2
Grid*	18.4	84.0
Percent of grid pricing when the base price is ...		
Negotiated**	39.9	23.5
Formula tied to quoted prices	42.2	39.1
Formula tied to plant average**	14.3	29.6
Formula tied to boxed beef	1.4	5.5

* Different means at 0.01 significance

** Different means at 0.05 significance

ing grid pricing more frequently sold a higher percentage of fed cattle (83.6%) to the buyer purchasing the most fed cattle from their feedlot, compared with the group less dependent on grid pricing (56.5%). Cattle feeders using grid pricing more frequently also sold a higher percentage of their fed cattle (61.2%) via an agreement, contract, or as part of an alliance or cooperative compared with 16.8% for the less frequent users of grid pricing.

Given how the two cattle feeder groups were created, differences in the extent of pricing by alternative methods was expected. The group using grid pricing more heavily marketed 84.0% of their fed cattle with a grid compared with 18.4% for the other group. Therefore, those not using grid pricing as much, predictably used live weight and dressed weight pricing for a higher percentage of their marketings (46.7% and 34.7%, respectively). The group using grid marketing more frequently, used live weight and dressed weight pricing considerably less frequently (10.2% and 5.2% of fed cattle marketed, respectively).

How the base price in grids was determined also varied between the two groups. The most common method of determining the base price for both groups was a formula tied to a quoted price. Those not using grid pricing as much used this method for 42.2% of their marketings while the heavier users of grid pricing used it for 39.1% of fed cattle marketed. Those not using grid pricing as much reported negotiating the base price for a higher percentage of their grid priced trades (39.9%) compared with 23.5% for the heavier users of grid pricing. Those using grid pricing more often reported using a formula tied to a plant average price (or packer procurement cost) more commonly (29.6%) compared with the group not using grid pricing as much (14.3%).

Factors Affecting Grid Pricing

Market, Carcass, and Related Factors

Cattle feeders surveyed were asked to respond to thirteen statements believed to potentially affect their use of grid pricing. Statistical tests were used to determine similarities and differences among the two grid pricing groups of respondents.

Table 3 presents the average (mean) rating for each statement and group. A rating of 1 by cattle feeders corresponded to strongly agree with the statement, a 4 was neither agree nor disagree, and a 7 was strongly disagree. How cattle feeders in the two groups responded to the statements differed very little. The response to only one statement was statistically different.

Table 3 places the statements into similar categories. For the cattle feeder group using grid pricing most frequently, factors of most importance in determining when to price fed cattle with a grid were (mean rating in parentheses):

- when cattle were expected to fit a specific grid (2.71)
- when cattle were expected to quality grade well (2.86)
- when cattle were expected to dress well (2.88)
- when recent experiences with grid pricing were favorable (2.93)
- when cattle were expected to yield grade well (3.05)
- when the Choice-Select price difference was wide (3.07).

Four of the six factors were from the Cattle Characteristics category in Table 3. The other two came from the Other Factors and the Price and Market Conditions categories.

Five of the six factors rated highest by the group using grid pricing the most also were rated most important by the group not using grid pricing as frequently. The sole statement for which there was a significant difference in the mean response between the two groups related to using grid pricing when futures market prices are relatively stable. Futures market stability was rated more important to the group using grid pricing less frequently than to the heavier users of grid pricing.

Sorting to Enhance Effectiveness

Cattle feeders using grid pricing more frequently might be expected to sort cattle one or more times to maximize the effectiveness of grid pricing. Feedlot manager responses bore that out. Table 4 summarizes the sorting results from feedlot manager respondents.

Feedlot managers in the group using grid pricing more frequently in 2003 reported sorting cattle significantly more

Table 3. Mean rating of factors affecting whether or not to use grid pricing, by extent of grid pricing in 2003 (NE, CO, KS, TX, OK, NM).

Factor	Grid Pricing Group	
	50% or less of Marketings	More than 50% of Marketings
	(Mean response)	
Price and Market Conditions		
Favorable base price	3.20	3.67
Upward trending market	4.44	4.36
Tight supplies (fewer days of feed)	5.20	5.07
Wide Choice-Select price spread	3.61	3.07
Wide YG4-YG5 price spread	4.96	4.50
Cattle Characteristics		
Quality grade well (percent Choice or better)	2.76	2.86
Yield grade well (percent YG1-2)	3.53	3.05
Dress well (high dressing percent)	3.43	2.88
Cattle expected to fit a specific grid	3.13	2.71
Futures Market Conditions		
Relatively stable prices*	3.89	4.43
Relatively stable, predictable basis	4.21	4.69
Other Factors		
Favorable expected profit margins	4.14	4.12
Marketing with an agreement, contract or through an alliance or cooperative	4.00	3.56
Favorable recent experience with grid pricing	3.38	2.93

* Different means at 0.10 significance

than those using grid pricing less frequently. Nearly twice as many feedlots in the group not using grid pricing extensively reported not sorting (63.0%) compared with the group using grid pricing more heavily (35.6%). Significant differences were also found when sorting occurred. More frequent users of grid pricing were more likely to sort at placement and prior to marketing than the group of feeders not using grid pricing as much.

Feeders were asked to rank the purpose of sorting cattle on feed on a scale from 1 to 3. No significant difference was found between the two grid pricing groups (Table 4). The highest mean rank for each group was to minimize "out" or severely discounted carcasses, which is consistent with much advice given by economists familiar with grid pricing. The second and third highest mean ranks differed in absolute terms between the two groups. For the group using grid pricing most frequently, the next two highest-ranking targets were quality grade and end weight.

Grid Pricing Concerns

Concerns regarding grid pricing may influence the extent to which feedlot managers market fed cattle with grids. Feedlot managers were asked to rate their concern on a ten-point scale (10 being the highest concern) with components of grid pricing. A significant difference was found between the two grid pricing groups for two components but not the other two.

Feedlot managers who used grid pricing less frequently expressed greater concern regarding how the base price is determined in grids than those using grid pricing more frequently (mean rating of 8.2 and 7.2, respectively). Similarly, the smaller users of grid pricing were more concerned about

the structure of premiums and discounts (mean rating of 8.0 and 6.9, respectively) than feeders who used grid pricing more heavily. No difference was found between the two groups regarding the subjective nature of quality and yield grading (mean rank of 7.4 and 7.7, respectively). However, this was the

Table 4. Extent and purpose of sorting cattle on feed, by extent of grid pricing in 2003 (NE, CO, KS, TX, OK, NM).

Timing of Sorting	Grid Pricing Groups	
	50% or less of Marketings	More than 50% of Marketings
	(Percent)	
None*	63.0	35.6
At placement*	25.3	50.5
At re-implanting	18.4	27.1
Prior to marketing*	33.7	54.3
Objectives of Sorting (Rank=1 is most important on a scale of 1 to 3)	(Mean Rank)	
Quality grade target (e.g. Choice or higher)	1.7	1.7
Yield grade target (e.g. YG 1-2)	1.9	1.9
Fat thickness target	2.1	2.0
Finished end weight target	1.6	1.8
Minimize "out" carcasses	1.5	1.6

* Different means at 0.01 significance

component of most concern to frequent users of grid pricing. At the bottom for both groups was concern about the absence of key factors determining the value of carcasses, such as red meat yield and tenderness, among others (mean rank 6.6 and 6.1, respectively, for the two groups).

Key Factors Identified

Regression models were estimated to determine factors affecting the extent of grid pricing for all respondents. Two variables were found to be consistently important. As the percent of fed cattle sold to the largest buyer purchasing cattle from that feedlot increased, both the extent of grid pricing increased and the probability of greater usage of grid pricing increased. Similarly, as the percent of fed cattle marketed with an agreement, contract, or part of an alliance or cooperative increased, both the extent of grid pricing increased and the probability of higher usage of grid pricing increased. This latter result was consistent with the 2002 survey of cattle feeders (Schroeder et al. 2002).

The direction of causality assumed here was that these two factors explained the extent of grid pricing. In fact, maybe the extent of grid pricing by a feedlot led to marketing a higher percentage of cattle to one buyer and using more frequently a marketing agreement or related tool.

Other factors also explained the extent of grid pricing in the regression model; and some differed from the factors rated most important by the group using grid pricing most frequently. Two statements came from the Price and Market Conditions category in Table 3, suggesting that market conditions are indeed a driving force in determining the extent of grid pricing.

- The Choice-Select price spread was deemed important. Most previous grid pricing research confirms the importance of the Choice-Select price difference. Here, a wide Choice-Select price spread was associated with more grid pricing which is somewhat counterintuitive. Typically, as the Choice-Select price discount increases or price spread widens, the net grid price for a pen of cattle declines, regardless of the quality composition in the pen. Therefore, one might expect that a widening of the Choice-Select discount would discourage feeders from grid pricing, unlike the regression results.
- Expected favorable profit margins were important. However, feeders agreeing that grid pricing increased when profit margins were favorable were less apt to use grid pricing. In essence, cattle feeders who used grid pricing the most, paid less attention to whether or not they expected to earn a profit on fed cattle marketed in deciding how to price them than feeders who used grid pricing less frequently.

- The final significant regression variable related to the use of sorting. As expected, as the percentage of not sorting increased, the use of grid pricing declined. Cattle feeders using grids extensively sort cattle one or more times to increase the effectiveness of grid pricing.

Summary and Conclusions

Previous grid pricing research identified general motives for grid pricing by cattle feeders. Research reported here sought cattle feedlot managers' insight into factors determining their use of grid pricing and related practices or concerns related to grid pricing use.

Differences were found between cattle feedlot managers who marketed more than half vs. half or less of their fed cattle via grid in 2003. Feedlots using grid pricing more frequently:

- marketed a higher percentage of their fed cattle to a single buyer;
- marketed a higher percentage of their fed cattle with a market agreement, contract, alliance, or cooperative;
- more often determined the base price in grids by a formula tied to plant average prices and less frequently by negotiating with packers; and
- sorted cattle more frequently at placement and prior to marketing.

Few differences were found between the two groups regarding ...

- factors affecting when to use grid pricing; and
- objectives in sorting cattle on feed.

The extent of grid pricing was not consistently related to many factors thought to influence when feeders used grid pricing, such as size, location, and response to various market conditions. It appears many feedlot managers determine what is best for their feedlot and cattle owners when choosing pricing methods to use in marketing fed cattle.

References

- Schroeder, Ted C., Clement E. Ward, John Lawrence, and Dillon M. Feuz. Fed Cattle Marketing Trends and Concerns: Cattle Feeder Survey Results. Kansas State University, Report MF-2561, June 2002.
- Ward, Clement E. Captive Supply Trends since Mandatory Price Reporting. Oklahoma Cooperative Extension Service, Fact Sheet F-597, November 2004.
- Ward, Clement E. "Factors Influencing the Extent of Grid Pricing of Fed Cattle." Paper presented at the NCR-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management, St. Louis, Missouri, April, 2005