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VALUE BASED MARKETING FOR FED CATTLE: PART II GRID PRICING



by

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In the last issue of the *Economics Commentator*, the rational for the development of a new **VALUE BASED MARKETING SYSTEM** was discussed. In this issue a comparative revenue analysis between the AMS grid pricing system and the dressed weight & grade pricing system using SDSU slaughter data will be presented.

The explicit goal of value based marketing is to improve the transfer of information from the consumer to the producer on cattle quality through price. Value Based marketing supporters argue that this can be accomplished if: 1) the practice of pricing fed cattle by lot is ended; and 2) a pricing system is introduced which rewards superior cattle and discounts inferior cattle.

Currently, the only widely used value based pricing system for fed cattle is dressed weight & grade. However, for a majority of the animals marketed dressed weight & grade, the system is a value based system of discounts only. This particular characteristic of the dressed weight & grade system is considered a serious deficiency by many producers (See Table 1).

Table 1. Prices for Dressed Weight and Grade System

Quality Grade	Yield Grade				
	1	2	3	4	5
Prime	110	110	110	87.50	87.50
Choice	110	110	110	87.50	87.50
Select	106	106	106	83.50	83.50
Standard	100	100	100	77.50	77.50

(Continued on p.2)

MIGRATION, HOUSING RURAL RENEWAL



by

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Introduction

Northern Plains states enjoy unemployment rates significantly below the current national rate of 4.9%. Small state populations plus relatively large farm sectors ensure tight labor markets. With farming increasingly driven by scale economies, small farmers are forced to pursue other occupations. In theory, this exodus should expand the overall available labor pool; but, as unemployed farmers are few in number, statewide effects are quite small.

Concurrent with the growing concentration in farming is an influx of manufacturing firms to the Northern Plains. From a producer's standpoint, the amenities of the region include relatively low levels of wages, unionization, and state taxes and regulatory effort, and a work force with high levels of education and work ethic.

Dualism

Dualism is a term used by development economists to explain the side-by-side existence of structurally different sectors. Within a society, the dual relationship might consist of a high tech, high wage, expanding sector and a low wage, contracting rural sector. The disparity between the sectors is not temporary, and the wage differential between sectors may not diminish with time.

(Continued on p.3)

Table 2. Prices for AMS Grid System

QUALITY GRADE	YIELD GRADE							CARCASS WEIGHT
	Less than YG 2.0	Equal to or Greater than YG 2.0	Greater than YG 2.5	Greater than YG 3.0	Greater than YG 3.5	Greater than YG 4.0	Greater than YG 5.0	
Prime	\$119	\$118	\$117	\$116	\$115	\$ 95	\$ 90	Less than 900 lbs.
Choice	\$114	\$113	\$112	\$111	\$110	\$ 90	\$ 85	
Select	\$110	\$109	\$108	\$107	\$106	\$ 86	\$ 81	
Standard	\$104	\$103	\$102	\$101	\$100	\$ 80	\$ 75	
Choice	\$111	\$110	\$109	\$108	\$107	\$ 87	\$ 82	900-950 lbs.
Select	\$107	\$106	\$105	\$104	\$103	\$ 83	\$ 78	
Standard	\$101	\$100	\$ 99	\$ 98	\$ 97	\$ 77	\$ 72	
Choice	\$ 96	\$ 95	\$ 94	\$ 93	\$ 92	\$ 72	\$ 67	Greater than 950 lbs.
Select	\$ 92	\$ 91	\$ 90	\$ 89	\$ 88	\$ 68	\$ 63	
Standard	\$ 86	\$ 85	\$ 84	\$ 83	\$ 82	\$ 62	\$ 57	

One solution to the current fed cattle pricing system is pricing animals on a grid system. A typical grid system has a greater range of premiums and discounts than exists under the dressed weight and grade system. The concept of a grid system has gained considerable attention in the industry and there have been several designs proposed.¹

The grid system to be discussed here was developed by the Agricultural Marketing Service (AMS 1996) division of the USDA.² The AMS grid system is three-dimensional. The AMS grid system is based on the current grid system used in the hog industry. This pricing system expands the yield categories from five under the dressed weight & grade system to seven. It also adds an additional dimension: weight class, divided into three weight class categories.

Comparing Table 1 to Table 2, it is clear that the AMS system differentiates with respect to price to a much greater degree than the dressed weight & grade system. For producers who produce above average cattle, marketing their animals on a grid pricing system will increase their revenues relative to the other cash marketing alternatives. However, for producers who produce below average cattle, marketing their animals on a grid pricing system will decrease their revenues relative to the other cash marketing alternatives.³

The Animal and Range Science Department at South Dakota State University (SDSU) has conducted a Retained Ownership Demonstration Program (RODP) for beef over the last six years (Wagner, et al., 1991-95). During the first five years of the project, 1409 steer calves were entered into an accelerated feeding program

and raised to slaughter weight. At slaughter weight, the animals were marketed under the dressed weight & grade marketing system. SDSU's animal scientists collected detailed carcass data at the time of slaughter. The actual dressed weight & grade price data for the 1409 animals reveals that those animals which attained a quality grade of choice and yield grade of less than 4 received the highest price per cwt on market day. Animals which graded select and less than yield graded 4 received the next highest price on market day. Discounts were applied to approximately 3% of the animals that did not meet the above standards. However, no premiums were given despite the fact that 65% of the animals yield graded better than 3 and 42% graded choice (the average yield grade was 2.7).

The marketing performance of RODP animals under the AMS grid system is compared with the dressed weight & grade system. This is possible because an arbitrary but equivalent base price for both systems is set at \$110.00. The dressed weight & grade system is two-dimensional, so weight class is not a factor. However, for heavy cattle, an across-the-board discount is common. Under dressed weight & grade, there are no premiums and the discounts are derived by aggregating the AMS grid system discount categories. Animals that graded yield grade 4 or lower incurred a \$22.50 discount. Animals that quality graded select or standard were discounted \$4.00 and \$10.00, respectively. For cattle whose hot carcass weight was above 950 pounds, an \$18.00 cwt discount was applied.

Table 3 contains the summary statistics with respect to revenue per head under the marketing alternatives.

Table 3. Mean, Standard Deviation, and Range of Revenue per head.

Marketing Method	Mean	SD	Max	Min
Dressed Weigh & Grade	766.87	81.54	1006.50	491.84
AMS-Grid System	781.74	82.86	1005.70	505.76

Marketing under the grid system increased average revenue per head by \$14.87 and the standard deviation by \$1.32 (Table 3). However, the range for revenue is greater under the dressed weight & grade system by \$14.72. However, variability is measured by the standard deviation and is a better measure of revenue risk. An increase in the standard deviation indicates that marketing under the GRID system entails greater revenue risk.

The results of this comparative study indicate that a producer with cattle of similar quality to those used in the SDSU study would have earned an additional \$20,951.83 in revenue on 1409 head under the price structure presented above. If the quality of the cattle used in the comparative study would have been below average in quality, then the grid system would have heavily discounted those animals. In the final analysis, marketing fed cattle under a grid pricing system will provide superior returns for those producers who produce superior cattle.

Footnotes:

¹ At the present time, grid pricing arrangements are being offered to slaughter cattle suppliers by Beef America, Monfort, and Excel Co. the common link between these systems is the addition of premiums and a disaggregation of the discounts as compared to the dressed weight & grade system. However, there is no industry standard in place at this time.

² The AMS presented its beef grid system at the 1996 national convention of the NCBA. The AMS grid pricing system is derived by the AMS through a weekly fed cattle premium and discount survey of seven packers. The premiums and discounts reported in Table 2 represent an average of those reported premiums and discounts from the AMS Grid presented at the NLBA convention.

³ In Tables 1&2, the base price is set at \$110.00. This base price was arbitrarily selected for this example. That base price is determined by market forces for cattle that meet minimum yield and quality grades. Currently, for SD the base price is calculated by adding half the choice-select price spread to the Nebraska hot carcass weight price.

(Diversification ... cont'd from p.1)

In the Northern Plains, there are two different story lines playing out simultaneously. Urban centers see an influx of relocating or expanding manufacturers, further constricting already tight labor markets. Housing prices

rise and infrastructure is strained by in-migration. At the same time, employment possibilities contract and infrastructure lies idle in rural communities.

Recent evidence indicates that some states, including South Dakota and Nebraska, have lost prospective new industries because of inadequate labor supply where firms wished to site. The challenge for states and potential entrant firms is to entice migration to deepen the labor pool in or proximate to those areas favored by entering firms. Alternately, with proper policy, Northern Plains states might make less favorable areas, "off the beaten path" more attractive to entrant firms.

The Migration Decision

The work of Sjaastad (1962) views migration as an human capital investment decision which entails both costs and benefits for the migrant. To the potential migrant, benefits or relocation include a higher wage and/or a higher level of amenities (non-wage income) than exists at the point of emigration.

Amenities include (but are not restricted to) climate, outdoor recreational facilities, low crime and poverty rates, and proximity of museums, theaters, and other cultural facilities (Clark and Hunter, 1992). A broader definition of regional amenity regards the cost of housing, utilities, and transportation as necessary inclusions in the immigration decision matrix. Brown (1994) proposes that real wage differentials act to equalize amenity differences across regions. Thus, low wage states, if relatively high in amenity value, are not unattractive to potential immigrants.

Amenity Generation

Differences in amenity inventories can enable states to differentiate their product (business environment and quality of life) in the eyes of "buyers" (firms and labor). Bending the economic theories of production and exchange, we suggest that a state should specialize in producing a product (environment) which uses its abundant resources intensively. For Northern Plains states, comparative advantage means intensive use of land in the "production" mix.

Numerous studies have indicated that the availability of affordable housing ranks high on the list of amenities sought by workers. Moreover, housing amenities rank higher with both executives and workers in high-tech industries than in industry overall, and are an important factor in retaining highly trained workers within an area (Gottlieb, 1994).

One specific option would make use of rural land in the hands of municipal, township, or county authorities -- acquired through tax default or purchase of marginal farmland. There are a number of options in implementing a home-siting program. The locally (regionally) acquired land could be sold in individual plots to residents and immigrants seeking low cost housing. Low land prices, allowed by the modest costs of acquisition, would make the land parcels appealing to buyers. State aid would aid in the acquisition of land. Bonds backed by the revenue from land mortgages could be sold to finance the development (streets, sewer, utilities) of land. The rural community would have the final say in how many land parcels and potential immigrants it would welcome.

Care would be taken to locate potential housing tracts outside the urban ring and inside a rural locality with excess capacity for an existing infrastructure. The initial series of home-sitings must be within reasonable commute of a significant labor market. With solid planning and luck, subsequent sitings can be further in the "hinterlands" as earlier sitings generate their own mini-labor markets.

Conclusions

It is important that Northern Plains states consider immigration policy as a means of enhancing economic diversity and states' labor pools. Inducements such as home-siting assistance in communities with excess capacity utilize Northern Plains states' abundant (cheap) resource and can trigger a positive multiplier effect, aiding rural development.

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