

**Public Price Reporting, Marketing Channel Selection and
Price Discovery: The Perspective of Cow/Calf Producers
in the Dakotas**

by

**Scott W. Fausti, Bashir A. Qasmi, Doug. G. Landblom,
Martin Beutler, Pat Johnson, Roger Gates,
Hubert Patterson, and R. Salverson**

Economics Staff Paper 2006-1

Papers in this series are reproduced and distributed to encourage discussion on research, extension, teaching, and economic policy issues. Although available to anyone on request, the papers are intended primarily for peers and policy makers. Papers are normally critiqued by some colleagues prior to publication in this series. However, they are not subject to formal review requirements of South Dakota State University's Agricultural Experiment Station and Cooperative Extension Service publications.

Thirty-five copies of this document were made by the Economics Department at a cost of \$2.30 per copy.

5/8/2006

Public Price Reporting, Marketing Channel Selection and Price Discovery: The Perspective of Cow/Calf Producers in the Dakotas.

BY

Scott W. Fausti, Bashir A. Qasmi, Doug. G. Landblom, Martin Beutler, Pat Johnson, Roger Gates, Hubert Patterson, and R. Salverson.

Abstract

Cow/calf producers operating in the Dakotas were surveyed on their price discovery strategies, marketing channel preferences, and their perceptions of how regime change in the public price reporting system for fed cattle affected the beef industry in general and the cow/calf industry in particular. Survey results indicate cow/calf producers consider local institutions (auction barns etc.) to be more reliable for price discovery and marketing their feeder and stocker cattle than regional or national institutions (futures market etc.). Consistent with this view, producers perceive that the current public price reporting system is less reliable than local market sources when making individual marketing decisions. However, Dakota cow/calf producers perceive livestock mandatory price reporting as benefiting the beef industry in general.

Key Words: cow-calf marketing, price discovery, marketing channel, public price reporting

Authors Affiliation:

Scott W. Fausti, Martin Beutler are Professors of Economics at South Dakota State University. Bashir A. Qasmi is an Associate Professor of Economics at South Dakota State University. Doug G. Landblom is a Professor of Animal Science at North Dakota State University. Pat Johnson, Roger Gates, R. Salverson, and Hubert Patterson are Professors in the Department of Animal and Range Science at South Dakota State University.

Acknowledgements: Funding for this project was provided by the Four State Consortium Grant Program.

Public Price Reporting, Marketing Channel Selection and Price Discovery: The Perspective of Cow/Calf Producers in the Dakotas.

Introduction

The importance of timely and accurate public price reports in the efficient operation of U.S. livestock markets and price discovery has been discussed widely in the literature. Lawrence et al. (1996) provide a brief but informative overview of this discussion. One important aspect of public price reporting is the role it plays as a public good. Ideally, public price reports provide all market participants with the same level of information, resulting in the leveling of the market playing field for all participants.

Henderson et al. (1983) contend that the government provision of this service has contributed to a movement away from public markets and toward direct sales of agricultural products. Terminal market transactions for fed cattle declined during the last half of the 20th century, and this raised questions about market efficiency and price discovery associated with public reporting of terminal market transactions (Tomek 1980).

The government response to declining terminal markets for fed cattle during this period was to increase its reliance on voluntarily reported transaction information for direct sales. During this period however direct sale information collected on a voluntary basis by government market reporters also began to thin. By the end of the 1990s the USDA estimated that 35 to 40 percent of all negotiated transactions in the fed cattle market were not being reported (USDA/AMS 2000). The thinning of voluntarily reported transactions contributed to the public price reporting reform movement that led to the passage of mandatory livestock price reporting legislation in 1999. Thinning livestock cash markets are cited in the mandatory price reporting

literature as a source of competitive disadvantage for small producers who rely on public information sources for price discovery and developing marketing strategies (Fausti and Diersen 2004).

In the cattle industry, mandatory price reporting regulations have only been instituted in the slaughter cattle market. Public price reporting for the upstream components of the beef supply chain are still conducted primarily through a network of state funded market reporters who are trained by the USDA to provide price information on auction market activity in the stocker and feeder cattle markets.¹ Price, quality, and volume information is collected by these certified reporters and then transmitted via the USDA-AMS market news wire.

Recent changes in the public price reporting regime for fed cattle raise the question of how these changes might affect upstream links in the beef supply chain. One issue is the potential effect of regime change on cow/calf marketing and price discovery practices. North and South Dakota were selected as a case study because when the cow/calf industries of North and South Dakota are combined, they represent the second largest beef cow/calf producing area in the United States behind Texas. A survey of cow/calf producers was conducted during the summer of 2005. The questionnaire was designed to elicit information on: a) producer marketing strategies, b) producer price discovery strategies, and c) producer perceptions about any benefits of mandatory price reporting in the fed cattle industry to the beef industry in general or the independent producer in particular.

The paper is divided into four sections: a) data and methods, b) market channel selection, c) price discovery strategies, and d) producer perception of MPR's effect on the industry and individual operations.

¹ In the northern plains, the term stocker cattle refers to weaned calves 500 to 600 lbs. Stocker cattle are typically backgrounded for 30 to 90 days before being placed in the feedlot. The term feeder cattle refers to weaned calves 700 to 800 lbs. Feeder cattle typically are placed directly into the feedlot.

Data and Methods

In the summer of 2005, the state extension services of North and South Dakota provided the authors with the names and addresses of 814 active cow/calf producers in their respective states. A mail survey questionnaire was designed to elicit information on production and marketing practices of cow/calf producers operating in the Dakotas. The mail survey was designed and administered according to the procedures recommended by Salant and Dillman (1994). Questions eliciting information on marketing and price discovery practices and producer perceptions of whether mandatory price reporting in the slaughter cattle market has impacted their operations were designed using either a Likert-scale or ranking scale format. Both designs generate data that are ordinal in scale. Therefore, nonparametric statistical procedures were used to analyze the data. The questionnaire was mailed during the fall of 2005, and 199 completed surveys were returned, a response rate of 24.5 percent. All completed surveys were from the western parts of the Dakotas, commonly referred to as “West River.”

Marketing Channel Selection Preferences of Dakota Cow/Calf Producers

The cow/calf industry is the only segment of the beef industry that has not succumbed to the forces of increased market concentration and vertical integration. In 2005, there were approximately 770,000 beef cow operations in the United States and 85 percent of the beef cow inventory in the United States was located on beef cow operations of less than 500 head (USDA/NASS 2006).

Schmitz et al. (2003) report that 60.8 percent of the nation’s calf crop is sold through local auction barns. The residual is marketed via video auctions (11.4 percent), internet sales (5.1 percent), and private sales (22.7 percent). In the Dakotas, Schmitz et al. estimate 72.5 percent of the calf crop is sold via local auction barns. Private sales account for 15 percent in

North Dakota and 20 percent in South Dakota.² Video and internet sales account for 12.1 percent and 7.5 percent of total sales, respectively. The national study by Schmitz et al. suggests that calf sales in the United States are dominated by local auction markets. This implies that both public and private price reporting on local auction market activity with respect to price, volume, and quality is an important conduit for the transmission of market information to buyers and sellers participating in those local markets.

Lawrence et al. (1996) also report on producer preference for marketing through the public auction channel. From a survey of Iowa producers who sell feeder cattle, Lawrence et al. report that 88.5 percent of producers indicate the most common method of marketing their animals is by public auction. Lawrence et al. describes Iowa's feeder cattle market as being dominated by small producers. The importance of the public auction marketing channel among small producers was also verified in a recent study of Louisiana cow/calf producers by Gillespie et al. (2004). They also find a positive relationship between size of operation and the use of private party sales and video auction.

In our survey, we asked producers about their preferences among four alternative marketing channels. We developed two sets of questions concerning the marketing of feeder and stocker cattle, as it is not unusual for cow/calf producers in the Dakotas to sell light-weight weaned calves that need additional background feeding before placement in a feedlot. Animals sold as stockers for background feeding may be marketed differently than animals sold directly to feedlots. Specific questions or statements for cow/calf producers are listed in Box 1. Statistical

² Schmitz et al. also provided a breakdown across marketing alternatives based on a simple weighted average by number of beef cow operations across 15 states. Given that small operations dominate the national population of beef cow operations, and small scale operations prefer local auction markets when selling calves, the percentage of beef cow operations selecting local auction barns when selling calves increases to 65.8%.

properties of the data from completed responses are provided in Table 1 for both feeders and stockers.

BOX 1: Likert scale Questions on Market Selection

I sell my feeder cattle at a local auction market.
I sell my feeder cattle to a feedlot operator.
I sell my feeder cattle in a satellite auction market.
I sell my feeder cattle to an order buyer/dealer.

The Likert scale is 1=always, 2= frequently, 3=occasionally, 4= rarely, and 5=never

I sell my stocker cattle at a local auction market.
I sell my stocker cattle to another rancher.
I sell my stocker cattle in a satellite auction market.
I sell my stocker cattle to an order buyer/dealer.

The data in Table 1 indicate that the overall median Likert score for selling feeder cattle and stocker cattle via a public auction is 2 and the mode is 1. Producer preference for selling feeder and stocker cattle via a satellite auction has a median and a mode of 5. Producer preference for selling feeder calves to a private party has a median of 4 and a mode of 5.³ A median value of 4 indicates that half of the respondents sell calves to private parties at least occasionally. Producer preference for selling stocker calves to a private party has a median and a mode of 5. These statistical measures of location suggest that producers' marketing strategies for stockers and feeders are very similar, and producers have a strong preference for the auction market channel when selling calves either as stockers or feeders.

The data collected in the survey also enable us to test a proposition proposed by Schmitz et al. They suggest that marketing channel selection by cow/calf producers is influenced by herd size. The link they develop is that as herd size increases, indirect transaction cost for electronic

³ The term private party refers to producers selling either to a feedlot operator, order buyer, or another rancher.

marketing of livestock declines. Schmitz et al. propose that small producers do not have calf lot sizes that are large enough to economically justify the use of non-traditional marketing channels. We test this proposition using the survey data from questions relating to cow/calf producers' preferences for market channels. Since the data is ordinal in nature, a nonparametric correlation analysis was selected. Accordingly, we used the Spearman correlation procedure to test for association between herd size and preference for marketing channel for selling feeder (Table 2) and stocker cattle (Table 3).

The correlation analysis, presented in Tables 2 and 3, indicates that as herd size increases, producer preference for selling calves (feeders or stockers) through local auction markets decreases. The analysis also indicates that as herd size increases, a producer's propensity to sell calves (stockers or feeders) to either a private party or satellite auction increases.⁴ The correlation results reveal an inverse association between producer preference for selling calves through a local auction and producer preference for selling via satellite or private party. These findings are consistent with the discussion by Schmitz et al. and lend support to their explanation of these relationships within the scope of "New Institutional Economics."

Dakota Cow/Calf Producer Preference for Price Discovery Information Sources

The Lawrence et al. study also addresses the issue of producer preference for private versus public sources of livestock price information during the price discovery process. Lawrence et al. reports that when Iowa producers sell feeder calves to a private party, the information sources used by producers in the price discovery process are feeder cattle market price (53 percent of respondents), fed cattle market price (39 percent of respondents), and feeder cattle futures market price (8 percent of respondents). With respect to auction market price

⁴ The relationship between herd size and private sales was insignificant in the Schmitz et al. and Gillespie et al. papers.

reports, Lawrence et al. reports that 72 percent of Iowa producers surveyed consider auction market prices when making marketing decisions. When selling feeder cattle, 87 percent of Iowa producers indicate that auction market price reports were at least of moderate input into the price discovery process for estimating the market price of their animals.

We asked Dakota producers their view on the reliability of market price information sources during their price discovery search process when marketing feeder and stocker cattle. The following scenario was posed to producers in the questionnaire prior to the price discovery question being asked: "...Your view on which source of market information is the most important to your price discovery search when you decide to market livestock..." Box 2 contains the actual statement presented to the producers with a request for ordinal ranking of reliability of different market information sources. The respondents were asked to only rank information sources that they had used in the past. Of the 199 respondents who returned completed questionnaires, 191 answered this question. The structure of the question allows us to calculate the proportion of respondents that have used each of the information sources in the past as part of their price discovery process (Table 4).

BOX 2: Ordinal Scale Question on Price Discovery

Please provide a ranking from 1 to 8. Let 1 indicate the most reliable source of market information and 8 be the least reliable source when you are trying to determine the market price of feeder (stocker) cattle you have decided to sell. Rank only those sources you have used in the past.

- a. USDA public price reports published by the Agricultural Marketing News Service.
- b. Price reporting by local auction managers or reporters in a public medium (newspapers, radio, etc.).
- c. Price reporting by fee based electronic data service (DTN, Cattle Fax, etc.).
- d. Information from neighbors and friends.
- e. Futures market.
- f. Quotes from buyer.
- g. Satellite auction market.
- h. Other.

The summary statistics in Table 4 reveal an interesting pattern of producer preferences across information sources used in the price discovery process. Local sources of price information are preferred to general sources of price information when producers engage in the price discovery process. With respect to usage, 98 percent of producers look to local auction market prices disseminated in the local media as a source of information in their price discovery process. After local auction market information, producers look to local contacts 80 percent, and quotes from buyers 75 percent. General sources of price information used in the price discovery process are less popular among Dakota cow/calf producers: USDA market reports 73 percent and fee based market information sources 65 percent. The exception is satellite auctions as a source of price information: 78 percent.

On the issue of producer perception of how reliable an information source is, Dakota producers again view local sources of market information as being more reliable than general sources of information as an input into their price discovery process. Table 4 provides the statistical measures of location (mode and median) for producer responses concerning the reliability of price discovery information sources. The location measures were used to generate an ordinal ranking of information sources. Survey respondents ranked auction market reports in local media outlets to be the most reliable source of information for price discovery, followed by local contacts and satellite auction prices. The source of information considered to be the least reliable was the “other sources,” followed by USDA price reports, fee based information sources, and futures markets. One interesting fact gleaned from the data is that with respect to usage, USDA price reports ranked higher than fee based or futures market, but fee based reports and futures market reports ranked higher than USDA price reports on the reliability scale.

Given the ordinal nature of the data, the third moment of the distribution of information source variables was evaluated with respect to whether the distributions were positively or negatively skewed. All of the price discovery local information source rankings are positively skewed and all of the price discovery general information source rankings are negatively skewed with the exception of satellite auction markets. The implication of a positively skewed distribution is that producer preferences are revealing a common belief that local information sources are more reliable. A negatively skewed distribution indicates the survey group has a common belief that general information sources are less reliable.

The price discovery question was repeated for marketing stocker cattle. Of the 199 respondents who returned completed questionnaires, 148 answered this question. The analysis of producer responses is provided in Table 5.

Producer preference for information sources to facilitate the price discovery process when selling stocker cattle is very similar to the feeder cattle price discovery process reported in earlier studies. With respect to information source usage, local sources of information have a higher percentage of usage than general sources. The same pattern also continues to hold when information sources are ranked based on reliability scores and the evaluation of the third moment of the distribution of information sources.

These survey results on producer preference for marketing channel and price discovery information source alternatives add another dimension to the growing literature on cow/calf producer behavior. Our study clearly indicates that producers have a natural bias in favor of local market information sources over aggregate or general market information sources. These findings suggest that the recent trend in public price reporting toward more aggregate reporting

of market conditions in livestock markets may be less desirable from the viewpoint of small producers, because they value local information sources over aggregate information sources.

Implementation of Mandatory Price Reporting for Slaughter Cattle

Traditionally, as in case of most other agricultural products, livestock prices were determined in a spot market environment. Spot market transactions occur either through direct negotiations between individual buyers and sellers (or their agents) or in public auctions based on observable attributes. USDA has provided agricultural market information to the public since 1915. The Agricultural Marketing Act of 1946 established the Agricultural Marketing Service (AMS) and provided regular reporting of livestock prices, quantities, and transaction characteristics in its market news program. By the late 1990s the AMS was releasing 800 reports annually covering grain, wool, livestock, and red meat. These reports were prepared from information voluntarily supplied by market participants or collected by the market reporters. Some of these reports were highly localized, detailing the quantities of different types of commodities sold, with range for weights, yields, and grades as well as prices. Others were more aggregated reports and summarized market activity across a wide geographic area for a week, month, or year (USDA/ERS, 2005, pp 4-6).

The voluntary livestock price reporting system worked reasonably well for many years. However, by the late 1990s, many industry participants believed that for a number of reasons the voluntary system had become ineffective (Azzam 2003, Wachenheim and DeVuyst 1999). It was argued that as the slaughter cattle volume sold in the spot market began to fall sharply, increasingly more cattle were being sold under alternative marketing arrangements. With a decline in aggregate spot market volumes, local market coverage by daily market news releases became much sparser. For example, in the early 1990s local daily fed cattle cash price reports

for Kansas and Texas were not released for about 10 percent of the days due to lack of sufficient trading volume. By year 2000, AMS was unable to release 60 percent of these daily market reports. With the increased volume of cattle moving outside the spot market, coverage of these daily market reports became a major concern of market participants (Schroeder et al. 2002b).

In this environment, Congress passed the Livestock Mandatory Reporting Act of 1999 (MPR), which required the reporting of all livestock transactions of large meat packers. MPR was to begin in January 2001, but numerous problems with collecting and summarizing transaction information from packers delayed implementation until April 2001 (Grunewald et al. 2004). As implemented, the packers were required to report on all livestock transactions if they annually slaughtered an average of 125,000 cattle or 100,000 swine or slaughtered or processed an average of 75,000 lambs. Mandatory price reporting, as applied, covered about 90 percent of commercial cattle slaughter.

The MPR system is designed to be a more comprehensive system, information on non-spot market transactions are now reported, and the method of data collection has changed dramatically. Under the new arrangement, the information is transmitted electronically from packers to AMS. This shift from voluntary to mandatory reporting has altered the public price reporting landscape for the beef industry. First, some regional market news reports were dropped; including live cattle reports for Montana and South Dakota districts. Second, with automated methods of reporting, mandatory reports may reflect a wider range of transactions and prices due to substantially lower level of outlier filtering. Third, the standard rules to prevent disclosure of confidential data came into play with the mandatory system imposing strict confidentiality requirements. These rules proved to be too restrictive and led to a nondisclosure of up to 81 percent of the regional and national daily afternoon direct-slaughter negotiated-

purchase prices during the early phase of MPR. The confidentiality guidelines were modified on August 20, 2001 (USDA/ERS 2005: pp 10-13).

However, even with the modifications to the MPR system it has not been viewed favorably by producer groups. The legislation was allowed to expire in October of 2005. Currently, the MPR system is operating as a quasi-voluntary public price reporting system (USDA/ERS September 2005, GAO December 2005).

Recent academic studies had signaled a potential problem with MPR before it expired. Schroeder et al. (2002a) and Grunewald et al. raised a red flag concerning how effective MPR has been in improving market transparency in the fed cattle market. Schroeder et al. conducted a survey of managers in the feedlot industry from Iowa, Kansas, Nebraska, and Texas. The survey offered a series of statements on cattle marketing and on MPR and asked respondents to select from a range of numerical responses to indicate their degree of agreement or disagreement with each statement. They report respondents' strong disappointment with the MPR. Specifically, they reported that only 41 percent of the respondents believed that MPR was benefiting the beef industry, 76 percent believed MPR was not as beneficial as expected, 52 percent believed the information on regional daily fed cattle prices did not increase, 65 percent believed that MPR did not enhance their ability to negotiate cash prices with packers, and 63 percent believed that MPR did not enhance their ability to negotiate base prices or formulas with packers.

It should be noted that the Schroeder et al. survey was conducted in March and April 2002. MPR had been in place for only a short time and the problems arising from MPR implementation were still fresh in respondents' minds. During this period, fed cattle prices were also relatively low (\$70 per hundred weight live weight). In a recent ERS study it was suggested that respondents' dissatisfaction with the MPR, as reported in the Schroeder et al. study, may

have been a reflection of market conditions rather than the implementation of Mandatory Price reporting system (USDA/ERS 2005: pp 25-26).

Dakota Cow/Calf Producers' Opinions on Mandatory Price Reporting

The cow/calf industry depends upon derived demand for feeder cattle from feedlot operators. Because of direct linkages, any changes in the slaughter cattle market are expected to be felt quickly in the cow/calf industry. In our survey, we asked Dakota cow/calf producers to respond to a number of statements designed to elicit their view on how successful MPR has been in improving the public price reporting system for: a) the beef and cow/calf industries, b) their price discovery process for slaughter, stocker, and feeder cattle, c) improving the relative importance of USDA public price reports in their marketing decisions, and d) their ability to negotiate sale of feeder cattle to feedlot companies.

The respondents could select from a range of numerical responses to indicate their degree of agreement with each statement, from 1 (strongly disagree) to 5 (strongly agree). Table 6 lists the questions and presents a summary of the survey results for the MPR related statements, including the median response value to the Likert scale questions, as well as the proportions of respondents who tended to disagree (response 1-2), be undecided (response 3), or agree (responses 4-5). We were surprised to find that the cow/calf operator opinions on mandatory price reporting are not correlated to the herd size, level of education, years of experience, or the membership in beef industry or livestock association.⁵

⁵ We did explore the association of the cow/calf operator opinions on mandatory price reporting responses and a number of potential explanatory variables (herd size, level of education, years of experience, and membership in beef industry or livestock association) by estimating a cumulative logit model and were surprised to find no significant relationship between the responses and these explanatory variables.

a. Impacts on Beef and Calf Industry

In the Grunewald et al. paper the focus is on feedlot operators, and they report that feedlot operators have an unfavorable view of MPR. In contrast, the majority of cow/calf producers in our survey view MPR as having a beneficial effect on the beef industry in general and the cow/calf industry in particular. The survey revealed that a third of the respondents were undecided if replacing the VPR system with MPR for the public reporting of slaughter cattle prices had been beneficial to the beef industry (34 percent) or the cow/calf industry (37 percent). The majority of the respondents agreed that replacing the VPR with the MPR has been beneficial to the beef industry (57 percent agreed versus 9 percent disagreed) and the cow calf industry (52 percent agreed versus 11 percent disagreed).

b. Impacts on the Price Discovery Process

Questionnaire statements 3-5 in Table 6 were designed to elicit respondent opinions regarding the effect of MPR on the cattle price discovery process in their region. A majority of respondents were unsure if the MPR improved the price discovery process for slaughter cattle (57 percent), stocker cattle (53 percent), or feeder cattle (49 percent) markets in their region or state. About a third of the respondents agreed that, with the implementation of MPR, the price discovery process improved in their region (state) for slaughter cattle (32 percent agreed versus 11 percent disagreed), stocker cattle (35 percent agreed versus 13 percent disagreed), and feeder cattle (40 percent agreed versus 11 percent disagreed). This is slightly more favorable than the feedlot managers' view of MPR reported in Schroeder et al. (2002a).

The proposition gleaned from this set of questions suggests that a strong majority of respondents do not view the regime change in the public price reporting system for fed cattle positively with respect to price discovery. A logical extension of this proposition is that a

majority of respondents do not believe that regime change in the public price reporting system has improved market transparency or increased market efficiency.

Given that Dakota cow/calf producers expressed a preference for local market information during the price discovery process, it appears that producers would also prefer greater coverage of local markets in public price reports. This preference for local information may partially explain why Congress failed to renew the mandatory livestock price reporting legislation in 2005. Public price reports under the MPR system have a greater level of aggregation relative to former voluntary price reporting system. However, a potential solution to the problem lies in making regional price report data available publicly.

c. Impacts on Cattle Marketing Decisions

Questionnaire statements 6-8 in Table 6 were designed to elicit respondent opinions regarding the importance of USDA public price reports as inputs into their marketing decisions. A majority of respondents were unsure if, with the implementation of MPR, the importance of USDA public price reports increased in their decision making process when they marketed feeder cattle (51 percent), retained feeder cattle (58 percent), or marketed stocker cattle (58 percent). Among those who had decided, opinions regarding the importance of USDA public price reports were mixed. More respondents in this group were of the view that, with the implementation of MPR, the USDA public price reports had become more important for their feeder cattle marketing decisions (30 percent agreed versus 19 percent disagreed). On the other hand, more respondents in this group disagreed with the statement that post MPR, USDA public price reports were more important for their decisions to retain feeder cattle (13 percent agreed versus 29 percent disagreed), and to market stocker cattle (18 percent agreed versus 24 percent disagreed).

One plausible explanation for these response results is that cow/calf operators tend to make decisions regarding herd size, retaining feeder cattle, and retaining stocker cattle primarily on the availability of pasture. However, our survey suggests that producer preference for local information sources is also a plausible explanation for why a strong majority of respondents do not believe that the value of public price reports as an input into their marketing decisions has increased as a result of regime change in public price reporting for fed cattle.

d. Impacts on Ability to Negotiate

Questionnaire statement 9 in Table 6 was designed to elicit respondent opinions regarding the impact of MPR on their ability to negotiate the sale of their feeder cattle to feedlot companies. A majority of the respondents (53 percent) were not sure if their ability to negotiate the sale of their feeder cattle to feedlot companies changed after MPR went into effect. Remaining respondents were divided almost equally, 23 percent agreed (versus 24 percent disagreed) that MPR improved their ability to negotiate their feeder cattle. Given that producers in this survey indicate a preference for local information sources when engaged in price discovery and that a majority of them sell feeder cattle at local auction barns, it is not surprising that only 23% of respondents indicated that MPR improved their ability to negotiate with feedlot operators when selling feeder cattle.

The survey results on producer perception of how effective MPR has been in improving price information and negotiating terms of trade are consistent with the survey results reported by Grunewald et al. It appears from our survey and the Grunewald et al. survey that a majority of producers in both the feedlot and cow/calf industries do not believe the public price reporting has improved their negotiating position under MPR.

Summary

A mail survey of Dakota cow/calf producers was conducted in the summer of 2005. The questionnaire elicited information on: a) producer preferences for marketing channels when selling feeder and stocker cattle, b) producer preferences for sources of information when engaged in price discovery, and c) producer perceptions of the positive and the negative effects of the change to mandatory price reporting in the fed cattle market for cow/calf producers and for the beef industry.

The results of the survey indicate that producers strongly prefer to sell feeder and stocker cattle at local auction relative to selling to a private party. However, there is a positive association between herd size and a producer's preference to sell to a private party. This is consistent with the findings in the literature (Schmitz et al. and Gillespie et al.).

The results of the survey on price discovery indicate that producers have a natural tendency to gather information for price discovery from local sources rather than from aggregate or general market information sources. It appears that producers perceive local sources as being more reliable. A natural extrapolation of this finding is that the recent trend in public price reporting toward more aggregated reports is inconsistent with the preferences of cow-calf producers.

On the issue of cow/calf producer perceptions of how effective MPR has been in improving the market environment, the majority of cow/calf operators have a mildly positive view for the beef industry in general and the cow/calf industry in particular. This is in contrast to the findings reported by Grunewald et al. for feedlot operators. However, when asked how MPR has affected the market environment at the regional or individual level, a strong majority of

cow/calf producers indicate they do not feel that MPR has improved: a) the quality of public price reports, b) price discovery, and c) their ability to negotiate price when selling feeder cattle.

The contribution of this study lies in addressing the issues of marketing channel preferences, price discovery sources, and perceptions about the public price reporting system in a single survey. Previous studies investigated only one or two of the three issues discussed in this paper. Our survey results suggest that cow/calf producers consider local institutions to be more reliable for price discovery and marketing their feeder and stocker cattle. Consistent with this view, producers perceive the current public price reporting system is less reliable than local market sources when making individual marketing decisions.

The implication for public price reporting policy is that moving toward a more aggregate price reporting system is not viewed positively by cow/calf producers. This conclusion has policy repercussions consistent with recent events. The U.S. Congress failed to renew the MPR legislation and the authorization expired in September of 2005. Currently, public price reporting of all livestock prices is on a quasi voluntary basis under MPR parameters. However, a potential solution to the problem lies in making regional price report data available publicly.

Bibliography

- Azzam, A., "Market Transparency and Market Structure," *American Journal of Agricultural Economics*, Vol. 85, No. 2 (May 2003): pp. 387-395.
- Fausti, S.W., and M. A. Diersen., "The Voluntary Reporting System's Ability to Provide Price Transparency in the Cash Market for Dressed Steers: Evidence from South Dakota," *Journal of Agricultural and Resource Economics* Vol. 29, No. 3 (Dec 2004): pp. 553-566.
- GAO, "Livestock Market Reporting: USDA has taken some steps to Ensure Quality, but Additional Efforts are Needed." GAO-06-202 (December, 2005): Washington, DC.

- Gillespie, J., A. Basarir, and A. Schupp., “ Beef Producer Choice in Cattle Marketing,” Journal of Agribusiness, Vol. 22, No. 2 (Fall 2004): pp. 149-161.
- Grunewald, Sarah, T. C. Schroeder, and C. E. Ward., “Cattle Feeder Perceptions of Livestock Mandatory Price Reporting,” Review of Agricultural Economics, Vol. 26, No. 4 (Dec 2004): pp. 521-538.
- Lawrence, J.D., J.A. Shaffer, and M. L. Hayenga., “Valuing Public Price Reporting: The Iowa Experience, Journal of Agribusiness, Vol. 14, No. 1(Spring 1996): pp. 15-32.
- Henderson, D.R., L.F. Schrader, and J.V. Rhodes., “Public Price Reporting” in Federal Programs in Agricultural, ed. W.J. Armbruster , D.R. Henderson, and R.D. Knutson, 1983, pp21-58. Publisher: Interstate Publisher and Printers, Danville, IL.
- Salant, Pricilla, and D. A. Dillman., How to Conduct Your Own Survey, John Wiley & Sones, Inc. 1st Edition, 1994.
- Schmitz T.G., C.B. Moss, and A. Schmitz., “” Marketing Channels Compete for U.S. Stocker Cattle,” Journal of Agribusiness, Vol. 21, No. 2 (Fall 2003): pp. 131-148.
- Schroeder, Ted C., J. Lawrence, C. E. Ward, and D. M. Feuz., “Fed Cattle Marketing Trends and Concerns: Cattle Feeder Survey Results.” Manhattan, KS: Kansas State University Agricultural Experiment Station and Cooperative Extension Service, June 2002a.
- Schroeder, Ted C., Sarah Grunewald, and C. E. Ward., “Mandatory Price Reporting in Fed Cattle Markets: Motivations and Implications.” Paper presented at the Council on Food Agriculture and Resource Economics Annual Symposium, Washington DC, November 2002b.
- Tomek, W.G., “Price Behavior on a Declining Terminal Market.” American Journal of Agricultural Economics, Vol. 62, No.3 (1980): pp. 434-44.

USDA-AMS, "Livestock and Grain Market News Branch: Livestock Mandatory Reporting; Final Rule." Federal Register, Vol. 65, No. 232, December 1, 2000.

USDA/ERS, "Did the Mandatory Requirement Aid the Market? Impact of the Livestock Mandatory Reporting Act", Report No. LDP-M-135-01, September 2005.

USDA/NASS "Farms, Land in Farms, and Livestock Operations: 2005 Summary", Report No. Sp Sy 4, January 2006.

Wachenheim, C.J. and E.A. DeVuyst., "Strategic Response to Mandatory Reporting Legislation in the U.S. Livestock and Meat Industries: Are Collusive Opportunities Enhanced?", *Agribusiness*, Vol. 17, No. 2, (1999): pp. 177-195.

TABLES

Table 1: Market Channel Preference when Selling Feeder and Stocker Cattle

Statistics ^a / Marketing Channels	Mode Feeders	Median Feeders	Mode Stocker	Median Stocker
Auction (n=189)	1	2	1	2
Order Buyer (n=183)	5	4	5	5
Satellite (n=180)	5	5	5	5
Feedlot Operator (n=180)	5	4	-	-
Rancher (n=158)	-	-	5	5

a. Statistical measures of location (mode and median) are based on the number of responses for each marketing channel.

Table 2: Spearman Correlation Coefficients for Market Channel and Herd Size: Feeder Cattle^a

	Herd Size	Auction	Order Buyer	Satellite Auction	Feedlot Operator
Herd Size	1.00	0.33 ^{***}	-0.15 ^{**}	-0.20 ^{***}	-0.27 ^{***}
Auction		1.00	-0.53 ^{***}	-0.34 ^{***}	-0.45 ^{***}
Order Buyer			1.00	0.21 ^{**}	0.46 ^{***}
Satellite Auction				1.00	0.26 ^{***}
Feedlot Operator					1.00

a. Three asterisks indicate a correlation coefficient is significant at the 1% level, two asterisks 5%, and one asterisk 10%. Correlation analysis based on a sample size of n=189.

Table 3: Spearman Correlation Coefficients for Market Channel and Herd Size: Stocker Cattle^a

	Herd Size	Auction	Order Buyer	Satellite Auction	Rancher
Herd Size	1.00	0.32 ^{***}	-0.15 ^{**}	-0.18 ^{**}	-0.04
Auction		1.00	-0.21 ^{***}	-0.17 ^{**}	-0.23 ^{***}
Order Buyer			1.00	0.24 ^{***}	0.26 ^{***}
Satellite Auction				1.00	0.17 ^{**}
Rancher					1.00

a. Three asterisks indicate a correlation coefficient is significant at the 1% level, two asterisks 5%, and one asterisk 10%. Correlation analysis based on a sample size of n=189.

Table 4: Information Sources for Feeder Cattle Price Discovery

Statistics ^{a/} Information Sources	No. & % of usage N=191	Usage Ranking	Reliability Ranking: Mode	Reliability Ranking: Median	Ordinal Reliability Rankings ^b	Mean	Distribution ^c
USDA Price Reports	N=138 (73%)	5	7	5	7	5.02	Negatively skewed
Public Medium Auction Reports	N=188 (98%)	1	1	1	1	1.83	Positively skewed
Fee Based Info Sources	N=124 (65%)	7	5	5	5.5	4.74	Negatively skewed
Local Contacts	N=153 (80%)	2	2	3	2.5	3.84	Positively skewed
Futures Markets	N=137 (72%)	6	5	5	5.5	4.59	Negatively skewed
Quotes from Buyers	N=143 (75%)	4	3	4	4	4.04	Positively skewed
Satellite Auction Prices	N=148 (78%)	3	2	3	2.5	3.70	Positively skewed
Other Source of Information	N=36 (18%)	8	8	7.5	8	6.03	Positively skewed

- a. Statistical measures of location (mode and median) are based on the number of respondents who ranked a particular information source. A rank of 1 indicates the most reliable and a rank of 8 the least reliable.
- b. Ordinal rankings are based on median rank. In case of median rank ties, the ordinal rankings are based on mode rank.
- c. Comparing measures of location and examining the histogram of a distribution determine the classification of a distribution as being positively or negatively skewed.

Table 5: Information Sources for Stocker Cattle Price Discovery

Statistics ^a / Information Sources	No. & % of usage N=148	Usage Ranking	Reliability Ranking: Mode	Reliability Ranking: Median	Ordinal Reliability Rankings ^b	Mean	Distribution ^c
USDA Price Reports	N=93 65%	6	4	5	7	4.80	Negatively skewed
Public Medium Auction Reports	N=144 99%	1	1	1	1	1.71	Positively skewed
Fee Based Info Sources	N=88 61%	7	3	5	6	4.60	Negatively skewed
Local Contacts	N=113 78%	2	2	4	4	3.92	Positively skewed
Futures Markets ^d	N=99 70%	4.5	3, 5 ^d	4	5	4.36	Symmetric
Quotes from Buyers	N=100 70%	3	3	3	3	3.80	Positively skewed
Satellite Auction Prices	N=99 68%	4.5	2	3	2	3.82	Positively skewed
Other Sources of Information	N=22 15%	8	8	8	8	6.41	Positively skewed

- a. Statistical measures of location (mode and median) are based on the number of respondents who ranked a particular information source.
- b. Ordinal rankings are based on median rank. In case of median rank ties, ordinal rankings are based on mode rank.
- c. Comparing measures of location and examining the histogram of a distribution determine the classification of a distribution as being positively or negatively skewed.
- d. The futures market distribution is bimodal.

Table 6. Dakota Cow Calf Producer Opinions on Impacts of MPR

Category/Statement	(No.)	Median score	Disagree Likert 1-2	Undecided Likert=3	Agree Likert 4-5
..... Percentage Response Rate					
Impacts on Beef and Cow-calf Industry:					
(1) Replacing the VPR system with MPR for the public reporting of slaughter cattle prices has been beneficial to the beef industry.	187	4	9%	34%	57%
(2) Replacing the voluntary price reporting system with MPR for slaughter cattle sales has been beneficial for the cow/calf industry.	183	4	11%	37%	52%
Impacts on Price Discovery Process:					
(3) With the implementation of MPR, price discovery in the slaughter cattle market has improved in my region (state).	185	3	11%	57%	32%
(4) With the implementation of MPR, price discovery in the market for stocker cattle has improved in my region (state).	182	3	13%	53%	35%
(5) With the implementation of MPR, price discovery in the feeder cattle market in my region (state) has improved.	184	3	11%	49%	40%
Impacts on Cattle Marketing Decision:					
(6) The importance of USDA public price reports, as input into my feeder cattle marketing decisions, has increased since MPR was implemented.	184	3	19%	51%	30%
(7) The importance of USDA public price reports, as input into my decision to retain feeder cattle, has increased since MPR was implemented.	177	3	29%	58%	13%
(8) The importance of USDA public price reports, as input into my stocker cattle marketing decisions, has increased since MPR was implemented.	174	3	24%	58%	18%
Impacts on Ability to Negotiate:					
(9) My ability to negotiate the sale of my feeder cattle to feedlot companies improved after MPR went into effect.	175	3	24%	53%	23%