Peer Review of GIPSA's Texas Panhandle Fed-Cattle Investigation

GIPSA BACKGROUNDER

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Peer Review of GIPSA's Texas Panhandle Fed-Cattle Investigation

Introduction

The Grain Inspection, Packers and Stockyards Administration (GIPSA) administers the Packers and Stockyards Act (P&S Act) to insure the integrity of livestock, meat, and poultry markets. This includes fostering fair and open competition, and guarding against deceptive and fraudulent practices affecting the movement and price of meat animals and meat products.

The Western Organization of Resource Counsels (WORC) submitted a petition for rulemaking to the Department of Agriculture (USDA) requesting that USDA promulgate regulations to restrict certain livestock procurement practices regarding forward-contracted and packer-fed cattle. As a result of dialogue with WORC and other industry groups, USDA decided to conduct outside peer reviews of some of GIPSA's major investigations of competitive behavior in the meatpacking industry. The reviews are intended to determine if GIPSA asked the right questions, collected the right data, and conducted sound analyses using appropriate models. The larger goal is to strengthen GIPSA's investigations of potential anti-competitive behavior by improving and enhancing procedures for such investigations.

The peer review of an investigation of major fed-beef packing plants in the Texas Panhandle has been completed. The investigation focused on procurement methods including use of non-spot procurement methods during the period February 1995 through early May 1996. Non-spot procurement methods (commonly known as captive supplies) refer to livestock controlled by or committed to a packer through a forward contract, marketing agreement, or packer feeding program.

The investigation included collecting detailed data on procurement transactions and extensive interviews with feedlot operators to learn about procurement behavior. The investigators produced numerous data tables summarizing the characteristics of the procurement transactions. Some of these summaries were released in February 1998.

GIPSA subsequently entered into an agreement with Dr. John Schroeter and Dr. Azzeddine Azzam, economists at Iowa State University and the University of Nebraska, respectively, to conduct

econometric analyses of the use and effects of non-spot purchases on prices paid for fed cattle during the period of the investigation. The information in the investigative file and Schroeter and Azzam's draft report were made available to the peer reviewers.

GIPSA asked seven distinguished outside authorities to review the Texas Panhandle fed-cattle investigation. The reviewers were Dr. Michael Wohlgenant, Professor of Agricultural Economics at North Carolina State University; Dr. H. Alan Love, Associate Professor of Agricultural Economics at Texas A&M University; Ronald Fecso, Chief Statistician at the National Science Foundation; Dr. Richard Sexton, Professor of Agricultural Economics at the University of California-Davis; Dr. Valerie Suslow, Associate Professor of Economics at the University of Michigan; Dayton Lehman, Deputy Assistant General Counsel at the U.S. Department of Transportation; and Dr. DeeVon Bailey, Professor of Economics at Utah State University.

Findings of the Peer Reviewers

Project Planning, Data Collection and Descriptive Analysis

The reviewers generally found that GIPSA specified an appropriately broad objective for the investigation, which was to obtain a full understanding of procurement areas, procurement methods, pricing methods, cattle type, seller information, lot information, purchase/schedule date, etc. Three of the seven reviewers thought the investigation should have posed broader questions of packer and feedlot behavior, consistent with suggested broader theoretical models. The reviewers believed other major analytical issues also need to be addressed such as the long run effects of non-spot procurement and the use of oligopsonistic power in cattle procurement.

The reviewers generally were pleased with the scope of information obtained through interviews with feedlot operators and were impressed with the amount and breadth of data collected on individual cattle procurement transactions. The reviewers reported that GIPSA obtained much useful information about packers' procurement practices. There were some criticisms of the data collection process and of the descriptive analysis of the data. The questionnaire design could have been improved to avoid potential leading questions and to obtain data more relevant to incentives for various procurement practices. Some reviewers also thought that interview data should have been obtained from packers to learn if they have different views of the procurement process. Finally, several reviewers indicated that more descriptive analysis could have been performed that would have contributed to the understanding of procurement behavior and led to better formulation of analytical econometric models. Several reviewers thought data should have been obtained on packers' processing costs and feedlots' feeding costs.

Econometric Analysis

The reviewers indicated that the technical report by Schroeter and Azzam was well-written and consistent with the research objective. Several reviewers said the expertise and experience of the researchers was a strength of the investigation. The reviewers said the general approach and results were reasonable and defensible. The reviewers focused on three basic aspects of the Schroeter and Azzam analysis: (1) theoretical considerations in developing the econometric models; (2) model specifications; and (3) interpretation of the model results.

Regarding the theoretical considerations, the reviewers thought the analysis needed to include more complete theoretical rationale for procurement strategies that may explain packers' use of non-spot procurement methods. A more complete theoretical rationale would provide alternative hypotheses that could be tested using econometric techniques. Several expressed a concern that the length of time covered by the analysis did not permit analysis of the long run impacts of non-spot procurement.

Regarding the model specifications, the reviewers identified additional variables and technical suggestions they thought might have improved the analysis. Several reviewers questioned the use of specific variables in the analysis. The reviewers made many useful recommendations. Several called for additional presentation of basic descriptive statistics for the variables used in the models as a matter of standard practice. Two reviewers pointed out the importance of spatial dimensions to markets and prices, another indicated that insights may be gained from the theory of contracts, and another reviewer recommended that consideration be given to understanding the bidding mechanism. Nearly all reviewers indicated a need to examine long run effects of non-spot procurement arrangements. One reviewer suggested consideration of possible market power by feedlots. Two suggested examining differences between packers. Many of the reviewers' concerns about model specification had their origin in the theoretical rationale for the analysis, while others were rooted in the appropriateness of the data available for the analysis.

Questions regarding model development and specification, in turn, led to questions about interpretation of the model results. The reviewers generally accepted that Schroeter and Azzam found a small, statistically-significant inverse association between non-spot procurement and spot-market prices, i.e., higher levels of non-spot procurement are associated with lower spot market prices and vice versa. They agreed with Schroeter and Azzam that the association does not necessarily establish that non-spot procurement caused lower prices. Finally, none of the reviewers pointed to evidence of behavior that would constitute a violation of the P&S Act.

Summary of Major Strengths and Criticisms

The following table summarizes the major strengths and criticisms identified by the peer reviewers and USDA's plans for addressing them.

Strength or Criticism	*Response*
1. The investigation addressed important issues, developed a rich database of procurement and interview data, used highly qualified analysts, and produced a well written report consistent with the general objectives of the investigation.	GIPSA has been restructured and is strengthening its capability to address competitiveness issues. The Texas investigation, initiated prior to the restructuring, builds on past investigations and contributes to our knowledge and understanding of fed-cattle markets.
2. The scope of the investigation was too narrow. It didn't address questions such as the interaction between packers and feeders, and the competitive implications of their behavior, including the possible exercise of market power.	Some of the issues raised went beyond the intended scope of this investigation. GIPSA will continue to monitor non-spot procurement to assess their effects on livestock markets, including the issues raised by the reviewers.
3. The investigation did not cover a long enough time period. The relatively short time period covered by the investigation (February 1995 through early May 1996) did not provide trends in the use of non-spot procurement, entry and exit, changes in demand, or structural changes that would have permitted a more complete analysis of the use and effects of non-spot procurement.	The investigation was conducted to gain a better understanding of the use and effects of non-spot procurement, but was not expected to examine their long run effects. To the extent that analyses of long run effects depend on long data series, analyses must await the availability of such data. Future investigations will benefit from an accumulation of data collected for this and other investigations.
4. The data collection process could have been improved by asking more questions about economic and other factors that may explain variations in packers' and feeders' use of non-spot procurement. GIPSA needs to ask questions uniformly of all respondents, avoid leading questions, and include interviews with packers.	GIPSA is incorporating the reviewers' suggestions about planning, designing and conducting investigations and analyses into its current investigations and will continue to incorporate the suggestions in its investigative procedures.

Strength or Criticism	*Response*
5. The econometric analysis didn't make sufficient use of available formal theoretical models to characterize the incentives for and consequences of the use of non-spot procurement. For example, the investigation could have examined the structure or implications of the bidding process, which may best be modeled using an alternative theoretical framework. Modeling limitations also limited the ability to draw definitive conclusions about whether the use of non-spot procurement caused lower spot market prices.	GIPSA is examining theoretical and modeling issues raised by the Texas Panhandle investigation and plans to take steps to address these issues in the future.
6. The empirical estimating equations should have included additional or different explanatory variables to measure relationships more precisely. Some variables that were assumed to be independent explanatory variables, especially the AMS reported price, likely were not, i.e., they were mutually determined with the variables being predicted. Model specification limitations may have limited the predictive power of the models, weakened the conclusions, and left unanswered questions about the plausibility of alternative conclusions or interpretations.	Schroeter and Azzam incorporated the suggestions of the peer reviewers in their analysis and final report to the maximum extent possible. GIPSA will examine remaining model limitations in designing future investigations.

Schroeter and Azzam's Response to the Reports of the Peer Reviewers

Schroeter and Azzam prepared a separate report in which they discussed how they responded to the review comments. They expressed their appreciation for the reviewers' suggestions. They indicated that there are many competing theories and models that might explain the reasons for the use of and the effects of non-spot purchases of cattle, including some theories not identified by the peer reviewers. They indicated that some of the theories were in conflict with each other and it was impossible to incorporate all of them into their analyses. Some comments and suggestions also could not be addressed due to time and resource limits.

While Schroeter and Azzam did not incorporate all of the suggestions about alternative models, they included in their final report an economic model of packer decision making that underlay their econometric analyses. The model provided an economic rationale explaining how competitive profit-maximizing behavior would lead to an inverse relationship between the aggressiveness of packers' bidding for spot market cattle and the proportion of a packer's total purchases of cattle accounted for by non-spot procurement methods. They also hypothesized that an inverse relationship between non-spot procurement methods and spot market prices is consistent with packers' and feeders' attempts to schedule deliveries of non-spot cattle to take advantage of expected price changes from one week to the next.

Schroeter and Azzam made several revisions in their final report to address criticisms and suggestions made by the peer reviewers. Schroeter and Azzam presented additional empirical analyses of spot market price patterns and added analyses of relationships between cattle quality and procurement methods, and relationships between prices paid and procurement methods. They modified their econometric models and performed additional econometric tests. A plant-level estimating equation was re-specified to include a measure of each plant's use of non-spot procurement relative to such use by other plants, in order to better express how variations in bidding aggressiveness may affect competition among plants. Schroeter and Azzam also adjusted their model to better account for scheduling of deliveries of non-spot-market cattle. They reported that, overall, the changes they made in response to the reviewers' suggestions resulted in stronger econometric results than in their original draft.

Conclusions

The peer review has served its purpose. Very capable reviewers conscientiously reviewed GIPSA's Texas Panhandle fed-cattle investigation and made numerous suggestions that will increase the knowledge gained from that investigation, contribute to future analysis of livestock procurement investigations, and enable GIPSA to strengthen its investigative process in general. The effects of non-spot procurement of livestock remain a very high priority for the Department, and we will continue to investigate the practice and take regulatory and legal steps when violations of the Packers and Stockyards Act are indicated.

The peer reviewers' reports, along with Dr. Schroeter and Dr. Azzam's responses to the review comments, and Schroeter and Azzam's final report on the Texas Panhandle fed-cattle investigation are on GIPSA's home page at: www.usda.gov/gipsa/progser/p&s/txpeer/peerreview.htm.

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