

ECONOMIC IMPLICATIONS OF VARIABLE WEIGHING
AND GRADING PRACTICES IN THE SALE
OF SLAUGHTER BEEF

By

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CHAPTER I

INTRODUCTION

The Current Situation

The beef industry is booming in Oklahoma. In 1966 there were 4.3 million cattle in Oklahoma with a total value in excess of 500 million dollars. Comparable figures for 1960 were 3.4 million cattle with a value of 400 million dollars.¹ Gross receipts from farming attributed to cattle and calves have risen from 35 percent of the total in 1960 to 52 percent in 1966.² The fed beef³ sector is the most rapidly advancing segment of the industry. Cattle and calves on feed reports show the following:

55,000 head on feed January 1, 1950;

69,000 head on feed January 1, 1960;

181,000 head on feed January 1, 1968.⁴

This phenomenal growth is apparently due to increased numbers of

¹Oklahoma Data Book (Norman, 1966), p. 109.

²Farm Income - State Estimates 1949-1966, USDA, Economic Research Service, FIS-207 Supplement, (Washington, August, 1967), p. 111.

³The term "fed beef" is defined as mature beef confined to a feedlot and full-fed for at least 75 days to a grade of USDA Good, Choice, or Prime.

⁴Cattle on Feed, Oklahoma Crop and Livestock Reporting Service, Various Issues.

commercial feedlots.⁵ The largest lot in the state has a capacity of 20,000 head, but a number of other lots with capacity in excess of 5,000 head are now in operation.⁶

The feeding business has potential of making a worthwhile contribution to the economy of the regions where expansion in feeding is taking place. Typically, the effect of expansion in one sector of an economy is felt in other sectors. The market for grain and forage will tend to expand due to increased local need. More feeder cattle can be fed within the state rather than being shipped to the Corn Belt or other feeding regions. With more cattle on feed in the state, processing facilities look more favorably upon the state as a possible site for plant location, creating the possibility of increased capital investment and employment opportunities.

If such growth is to continue within the state, feeders must be able to return a profit from their operations. Profits may accrue due to expertise in buying, feeding and management, or marketing. Emphasis here will be placed on marketing since the efficiency with which marketing acts are completed will be important in determining the relative competitive position of Oklahoma's cattle feeding industry. How efficiently the individual markets his cattle will affect the economic success or failure of his feeding operation. Efficiency in feeding can be offset by poorly conceived or poorly informed marketing procedures which cost the feeder unnecessarily in the form of out-of-the-pocket costs or unrealized, but possible, higher returns.

⁵For purposes of this study the term "commercial feedlot" will be defined as a lot with a feeding capacity of 1000 or more cattle.

⁶R. E. Daugherty, Extension Livestock Marketing Economist, Oklahoma State University.

Marketing of fed beef in Oklahoma has been launched during a period of nationwide change in procedure. The transition from traditional liveweight sales to selling on a carcass evaluation basis (involving carcass weight, carcass grade, or both) is gathering momentum. In the United States as a whole, the percentage of fed beef sold on a carcass evaluation basis has increased from 4.2 percent in 1961 to 10 percent in 1966.⁷ In Oklahoma, the percentage sold on a carcass evaluation basis was 3 percent in 1959 but has increased greatly as the level of cattle feeding in the state has increased.⁸ Sources in the state estimate (unofficially) the level of carcass evaluation selling has reached one-third or more of total fed beef sales. During such a period of change and adjustment, there are questions concerning which of possible alternative procedures should be followed. These questions and the decisions which inevitably follow should be made from a well-informed position if efficiency in marketing is the goal. Currently, however, there is little information available concerning the economic implication of various practices associated with the alternative selling methods.

The theoretical advantages of selling on a carcass evaluation basis, primarily the elimination of the need to estimate grade and/or

⁷ Agricultural Markets in Change, Agricultural Economic Report No. 95, Economic Research Service, USDA (Washington, 1966), p. 263. Statement by Gerald Engleman, Acting Director, Industry Analysis Staff, Packers and Stockyards Administration (P&S), USDA, at hearing on paragraph (d) of Proposed P&S Regulation 201.99--Purchase of Livestock on a Carcass Grade Carcass Weight, or Carcass Grade and Weight Basis, Des Moines, Iowa, November 16, 1967.

⁸ Raymond A. Dietrich, Willard F. Williams, and Jarvis E. Miller, The Texas-Oklahoma Meat Industry--Structure and Marketing Practices, Agricultural Economic Report No. 39, Marketing Economics Division, Economic Research Service, USDA (Washington, 1963), p. 8.

yield, have long been recognized.⁹ Yet, there has been resistance to such a method of selling and complaints of inequities and unfair treatment feeders feel they have received when selling on a carcass evaluation basis. In spite of the attention such "inequities" have received, there has been little effort made to identify the specific causes of difficulty and to examine their economic implications.¹⁰

Among the dimensions of carcass evaluation sales to which economic significance might be attached are the conditions of exchange. In particular, weight and grade--since they are variables--appear to be deserving of consideration. The weighing and grading practices associated with sales on a carcass evaluation basis have been the source of much of the criticism of this method of selling.

The Problem

The sale of fed beef on a carcass grade and weight basis is increasing, rapidly becoming the dominant method of selling in some areas. Confusion, distrust, and misinformation accompany the developing transition from the more common liveweight selling techniques.

In a free enterprise system, price is allotted the role of guiding and coordinating economic activity. Price is both a means of communication, a channel, and a component of the message which the consumer would convey to the producer regarding needs and desires. It is

⁹Thomas M. Stubblefield and N. Gene Wright, Analysis of Carcass Grade and Weight Sales of Fat Cattle in Arizona and Southern California, Arizona Agricultural Experiment Station Technical Bulletin 156 (Tucson, 1963), p. 5.

¹⁰P&S has been investigating alleged unfair practices in this area. However, information regarding economic implications of such practices has not generally been available to the public.

through price signals, price premiums and price discounts, that production adjustments are motivated.

Theoretically, the trend toward carcass grade and weight selling of livestock will improve the effectiveness with which consumers might communicate to producers. Errors in estimation of grade and yield are eliminated and accordingly, price and variations in price are more likely to reflect the value gradients inherent to the dressed beef carcass. Any characteristic of the carcass grade and weight sale which injects ambiguity into price may offset the possible theoretical advancements, however, and lay the groundwork for inequitable and inefficient exchange processes.

In carcass grade and weight sales, a schedule of prices, based on weight and grade groupings, is negotiated prior to shipment and subsequent slaughter of the cattle. Once this schedule is completed, nominal¹¹ or quoted price is fixed and grade and weight are the remaining variables which determine carcass value.

Concern over weighing and grading practices associated with carcass evaluation sales has been and remains widespread.¹² Yet, there has been no attempt to isolate the incidence and magnitude of particular facets of weighing and grading procedures. Quite likely, this void in

¹¹Nominal price is introduced as the price which is employed in the exchange process and is based on existing or negotiated conditions of exchange. This quoted price will later be contrasted to "real price," the price commensurate with returns after any variabilities in the conditions of exchange are taken into consideration.

¹²A P&S proposal for regulations, an indication of the extent of concern, was made public while this study was being completed. Continued complaints from members of the trade relating to procedure in carcass grade and weight sales and growing awareness of the implications of these procedures as obstacles to effective competition and development of progressive operating procedures appears to have been the motivating factors for the P&S action.

the received information is due to the difficulty of analyzing operational characteristics known specifically only by the buying meat packer. Such information is not publicly available. However, information is needed if sellers are to properly assess alternative means of selling and make decisions accordingly. Continued absence of information on the economic implications of variable grading and weighing practices would mean continuation of any inequities which now prevail and less efficient and progressive operational procedures than might otherwise emerge.

Specifically, this analysis evolved from recognition of the need to fill the gap in the available information concerning the frequency of occurrence, the direction and magnitude, and the economic implications of variable weighing and grading practices in the carcass grade and weight sales of fed beef. If marketing efficiency is to match the production efficiency of a rapidly growing beef-feeding industry in Oklahoma, this information must be available to the feeder as he decides how to market his product.

Review of Literature

There has been no direct attempt to deal with the implications of variable conditions of exchange. At a theoretical level, Professor Taussig's "Is Market Price Determinate?" provides a historical precedent for the analysis. Taussig believed that in some instances market prices are indeterminate.¹³ The concept of an "avoidance gradient," as presented by Stevens, lends support to the idea of an indeterminate

¹³F. W. Taussig, "Is Market Price Determinate?", Quarterly Journal of Economics, Vol. XXXV (May, 1921).

price. Stevens shows that the strength with which an individual avoids an unfavorable position tends to increase as he approaches that position.¹⁴ Marketing economist Harold F. Breimyer depicts the indeterminate nature of price through bid and offer curves. Breimyer notes that in bargaining at low levels of aggregation, such as in direct sale of livestock, the absence of other buyers and sellers makes price indeterminate.¹⁵

At a more practical level the Packers and Stockyards Administration (P&S) of the U. S. Department of Agriculture conducted a survey which revealed discrepancies between negotiated "pencil shrink"¹⁶ and actual shrink in excess of 1 percent. Improper tare weights assigned carcass weights as much as seven pounds below actual weight. Such findings led P&S to set forth on May 30, 1967 the P&S regulation dealing with carcass sales.¹⁷

Purcell indicated the importance of variable conditions of exchange in a study which stressed the impact of variable weighing and

¹⁴ Carl M. Stevens, "On the Theory of Negotiation," Quarterly Journal of Economics, Vol. LXXII, 1958, p. 80.

¹⁵ Harold F. Breimyer, "On Price Determination and Aggregate Price Theory," Journal of Farm Economics, August, 1957, p. 678.

¹⁶ A "pencil shrink" is a percent of the actual weight which is deducted from the actual weight to determine the pay weight. For example, a 3 percent pencil shrink on a 600 pound carcass would amount to 18 pounds. After the pencil shrink of 18 pounds is deducted from the 600 pound carcass, the pay weight is 582 pounds.

¹⁷ Statement by Paschal O. Drake, Acting Director, Packer and Poultry Division, Packers and Stockyards Administration, on paragraph (d) of Proposed Regulation 201.99--Purchase of Livestock by Packers on a Carcass Grade, Carcass Weight, or Carcass Grade and Weight Basis. This statement was presented at the public hearings concerning paragraph (d) in Des Moines, Iowa on November 16, 1967.

grading practices on the communicative effectiveness of the beef marketing system.¹⁸ Stubblefield and Wright noted that feeders feel the packer might not try as hard for a higher carcass grade when cattle are bought on the rail (by carcass grade and weight) as when the packer buys the cattle on a liveweight basis.¹⁹ Williams and Uvacek noted the tendency for the grade of a carcass to vary with degree of chill, and that packers tend to take advantage of this tendency on certain carcasses which show potential of grade improvement.²⁰ Others have given the area indirect attention.²¹

Missing is any concerted effort to establish the economic implications of variable conditions of exchange such as variable weighing and grading practices. Without such efforts there is little assurance that the procedures which develop during the current period of transition will not be adversely affected by uncertainty, misconception, and a limited perspective on the part of buyer and seller.

Objectives

The primary objective of the study was to estimate the economic impact of variable weighing and grading practices in carcass grade and

¹⁸Wayne D. Purcell, An Appraisal of the Information System in Beef Marketing, (Unpublished Ph.D. dissertation, Michigan State University, 1966) Chapter 4.

¹⁹Stubblefield and Wright, p. 5.

²⁰Willard F. Williams and Edward Uvacek, Pricing and Competition on Beef in Los Angeles, Marketing Research Report No. 413, Marketing Economics Research Division Agricultural Marketing Service, USDA, (Washington, 1960).

²¹Willard F. Williams and Thomas T. Stout, Economics of the Livestock-Meat Industry, (New York, 1964).

weight sales of slaughter cattle. More specifically, the objectives were as follows:

1. To indicate developing trends in feedlot characteristics and in attitudes of feedlot managers in Oklahoma as these relate to marketing practices for fed beef;
2. To isolate the extent to which variable weighing and grading procedures accompany, or become an integral part of, carcass grade and weight sales of fed beef in Oklahoma;
3. To investigate the level of understanding exhibited by Oklahoma feeders concerning the economic implications of variable weighing and grading practices in carcass grade and weight sales of fed beef; and
4. To infer the nature and relative importance of the economic implications of such variable weighing and grading practices, given the level of understanding exhibited by Oklahoma feeders.

Procedure

There is no source of secondary data which provides the type of information required to satisfy the stated objectives of the analysis. In the area of activity with which the analysis is involved, the source and availability of primary data is a matter of concern.

Developing trends in feedlot characteristics are available via survey from an appropriate sample of Oklahoma cattle feeders. Likewise, the attitudes of various feeders toward specific marketing practices or the general tendencies in marketing procedure are available from feeders. This latter information is subjective and requires

care in interpretation and presentation.

The focal point of the analysis is a consideration of the variable conditions of exchange in carcass grade and weight sales of fed beef. Establishing the economic implications of such variabilities has been noted as the overall objective of the analysis. Accumulation of information pertinent to inferring such implications becomes a prime consideration in establishing a procedure of analysis.

As noted, detailed and quantitative information concerning weighing and grading practices, two important conditions of exchange, is generally not available. The buying packer may accumulate and maintain data showing the relationship between such facets of his operation as actual shrink of the beef carcass in the cooler and the pencil shrink employed in buying a particular lot of cattle. Such information is not available to the public. Those agencies, such as P&S, which have been allowed access to this type of information have not provided detailed accountings of what they have learned. Consequently, information for analytical and inferential purpose must come from other sources.

The feeder is the second party to the transaction, functioning as seller. While he does not have complete information on the relationship between actual shrink and pencil shrink, what the feeder thinks that relationship is determines the perspective and attitude used in negotiation. This determines whether the feeder is content with the sale and also affects his interpretation of the message which price signals attempt to transmit. In general, how the message is interpreted has impact on the relative effectiveness with which the price mechanism functions as a means of communication. Also, the extent to which inequitable exchange procedures prevail is determined by the

feeder's understanding of the variabilities inherent in the carcass grade and weight sale and the extent to which he is successful in off-setting, through negotiation, the impact of any variable procedures.

A survey was conducted among Oklahoma cattle feeders to accumulate the information considered necessary to fulfill the stated objectives. The decision was made to survey all Oklahoma feeders with a lot capacity of 1,000 head or more. In terms of percentage of all cattle fed, this is the most representative group. In addition, this group includes the "full-time" feeders who are expected to be more knowledgeable than the smaller feeders. If variable weighing and grading practices are a problem to the group of feeders surveyed, such practices would likely be a problem to the smaller feeder as well.

A questionnaire was employed in the surveys.²² The questionnaire can be divided conceptually into three related parts. The first part is concerned with establishing the nature of each operation and includes questions on buying and selling techniques, plans for expansion, etc. The type of operation which will be prevalent in the future has bearing on the type of marketing practice, and the implications of certain facets of marketing practices, which are likely to evolve.

The second part deals with techniques of marketing, perception of the adequacy of current techniques, expectations as to what will develop in terms of marketing techniques, etc. Since the P&S proposal for regulations on carcass grade and weight sales appeared in the Federal Register on May 30, 1967, questions were included to establish the feeders' familiarity with, understanding of, and opinions concerning the operationality of the regulations. Overall, this phase of the

²²A copy of the questionnaire is included as Appendix A.

questionnaire was designed to establish the operational framework where marketing techniques and practices are concerned.

The third part of the questionnaire deals specifically with variable weighing and grading practices. Questions were developed to (1) establish the feeder's understanding of the importance of such variabilities, (2) estimate the relative occurrence and magnitude of such specific practices as employing pencil shrinks in excess of actual cooler shrink, and (3) learn the extent to which the feeders are capable of initiating negotiation procedures which show potential of offsetting the impact of selected exchange practices. Such information provides the basis from which inferences regarding the economic implications and significance of variable weighing and grading practices are drawn.

Any experiential content and empirical significance of the analysis evolves exclusively from the survey and its interpretation. Secondary data is not available and no previous attempt has been made to systematically evaluate the economic significance of the much discussed variable conditions of exchange. Where considered productive, the received theory regarding price discovery and bargaining processes was employed and/or adapted to provide a theoretical base for the analysis.

CHAPTER II

PRICE BARGAINING

The coordination of economic activity is widely recognized, though not always explicitly stated, as a function of price and the price mechanism. Such a function is entailed by the more nearly explicit functions such as allocation of resources, guiding production, providing a standard or medium of exchange, etc. Because price does perform such functions, the price mechanism is viewed as the primary mechanism for promoting coordinated and orderly economic activity.

In the received theory, the concept of equilibrium price is afforded a place of considerable importance. An equilibrium, or market-clearing price, is the price determined at the intersection of a demand and a supply function--indicating the quantity consumers are willing to take (demand) is just equal the quantity sellers are willing to offer (supply) at that price. Such an equilibrium price, as shown in Figure 1, is determinate given establishment of the demand and supply functions.¹

Such a conceptual framework is most useful as an ex post explanation of the results of interacting forces of demand and supply. The interactions which lead to an equilibrium from a given position of

¹The price is "determinate" in that all transactions between buyer and seller will occur at this level, irrespective of relative bargaining power of the buyer and the seller respectively. As will be noted later, this implies the demand and supply curve are known to both buyer and seller.

disequilibrium are suppressed and attention focused on the price which, theoretically at least, must emerge unless new changes threaten the pattern of convergence. The demand and supply functions are those which are finally determined as the "correct" functions, those which evolve a market-clearing price.

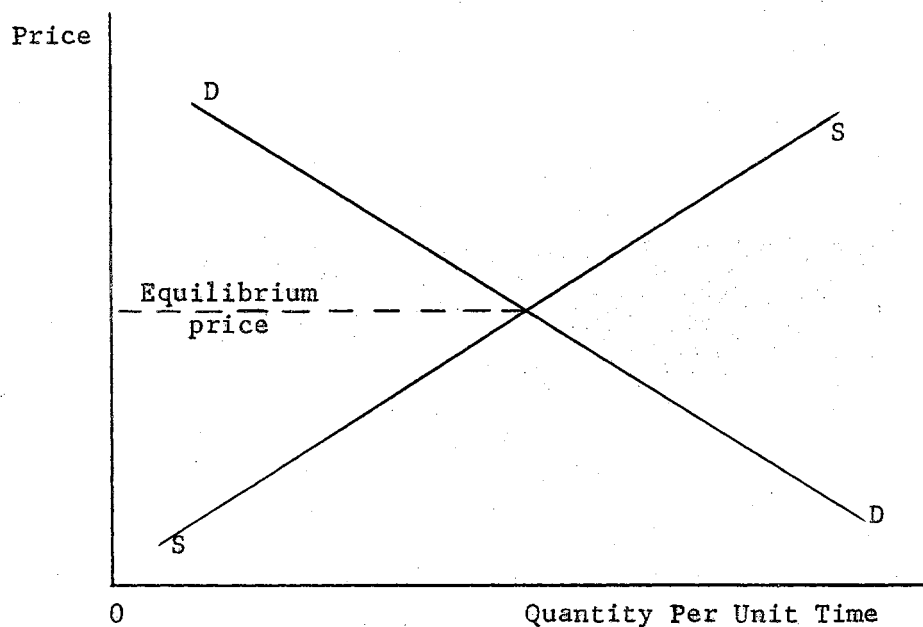


Figure 1. An Illustration of an Equilibrium Price

The level of aggregation involved in consideration of such an equilibrium precludes the application of this apparatus to a process of price discovery at very low levels of aggregation. At the extreme, price is "discovered" at a level of aggregation involving only one buyer and one seller. Negotiations take place and exchange is consummated at a price acceptable to both parties.

Unless perfect knowledge prevails, negotiations involving one buyer and one seller must necessarily be based on expectations of demand and supply. There can be no one demand and one supply curve to the exclusion of all others, but some distribution of demand and supply curves. This, in turn, confers an element of indeterminateness to price at such levels of aggregation.

Knowledge of all economic factors affecting demand and supply is not and cannot be perfect, given the limitations of the negotiator as an accumulator and interpreter of information. Increasingly, marketing and exchange processes are completed in a one buyer-one seller setting as the relative importance of terminal markets declines and the frequency of direct sales increases.²

Assuming less than perfect knowledge and a low level of aggregation (one buyer-one seller), the supply-demand framework requires modification if price bargaining and processes of negotiation are the focus of attention. Each buyer and each seller must approach negotiation processes with some preconceived expectation of "true" demand and supply. That is, each will have accumulated information and formulated expectations. A most likely or most probable demand and supply will receive most emphasis, with variations from this expectation constituting some (subjective) discrete probability distribution. In Figure 2, D'D' and D''D'' constitute such a range in expectations with regard to demand. DD is shown as the "most probable" of the expectations. Increased information prior to bargaining serves to (1) decrease the

²Sales consummated between buyer and seller without the aid of some marketing facility, such as a terminal or auction market, are termed direct sales.

range covered by $D'D'$ and $D''D''$, or (2) increase the confidence which can be placed in DD as the "most probable" demand schedule. By introducing $S'S'$ and $S''S''$ to show a similar range in expectations concerning supply, SS to indicate the most probable supply function, and considering all possible intersections of supply and demand, the maximum range of possible prices is seen to be AB at quantity Q . Since preliminary exchanges, offers and counter-offers, constitute information, expectations and the area in which exchange is possible ($ACBD$) may change as bargaining proceeds.

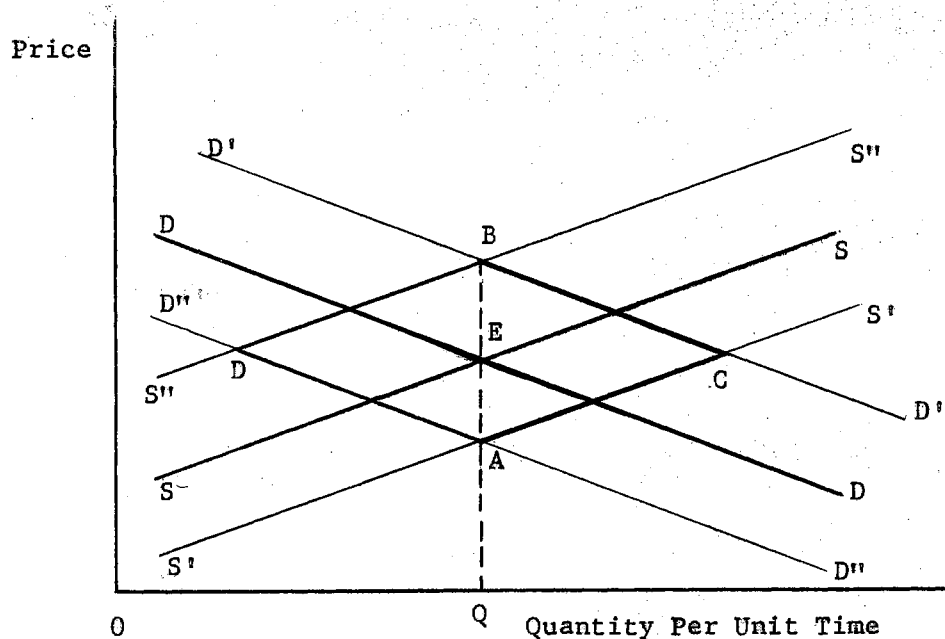


Figure 2. A Modification of the Demand-Supply Framework to Include Price Bargaining With Less Than Perfect Knowledge

Price is indeterminate over a range AB at quantity Q, with the range of indeterminateness decreasing as the quantity level moves away from Q in either direction. The most likely price is at point E, the equilibrium price when DD and SS do prevail and when "true" demand and supply are known by buyer and seller. Aggregation yields a similar framework with DD and SS being shown as the "the" demand and supply functions and E becoming the equilibrium price referred to in Figure 1.

Even a modified supply-demand framework as shown in Figure 2 is not particularly useful as a means of depicting the bargaining process. The possibility of a distribution of supply and demand expectations is conveyed and the possibly indeterminate nature of price noted. However, quantity remains a variable and this is often not the case in actual bargaining situations. In many instances, the quantity being considered is fixed. The seller might be unwilling to sell a part of his offering at the particular point in time and then face the need for negotiating sale of the remainder. To arbitrarily fix the quantity at a level such as Q overstates the case for an indeterminate price and robs the framework of its conceptual completeness. Similar comments are in order with regard to the procedure established by Edgeworth and regarded as more nearly representative of bargaining processes.³

Yet another difficulty emerges in considering bargaining processes

³Typically, the "Edgeworth Box Diagram" deals with quantity of two goods. Making one of these "all other goods" (money), as is often done in analyses based on indifference maps, leaves quantity of a physical good on the other axis. However, this procedure does denote an indeterminate situation in that a set of possible solutions, a "contract curve," is indicated. Movement along this contract curve involves a redistribution of income with relative bargaining power becoming a factor in the final position. See H. H. Liebhafsky, The Nature of Price Theory (Homewood, 1963), pp. 105-07.

at a low level of aggregation. In the supply-demand framework, there is no room for ambiguity in product definition.⁴ That is, the framework assumes supply and demand schedules are based upon an exhaustive consideration of all potentially variable product attributes. Too, there is no direct consideration of the procedure by which the exchange process is being consummated. The implicit assumption is that weighing procedure, transfer of title, timing of various operations, etc. have been mutually determined, are fixed, and are completely understood by buyer and seller.

Either ambiguity in product definition and/or less than complete understanding and agreement on the conditions of exchange has potential of contributing to the indeterminate nature of price. In either case, the applicability of the price scale is affected. If buyer and seller have differing views of the value attributes of the product, then any one price scale is inappropriate. If used, an arbitrary element is injected into the placement of the schedule of expectations concerning supply and demand in the schematic framework.

The conditions of exchange could conceivably be brought into definition of the product. However, the economic impact of differing views concerning the conditions of exchange deserve separate consideration.

There are a number of variables which, along with price, serve to determine the final value of the product to be traded. Weight is usually one such variable. Some means of product description, designed

⁴If product description or definition is permitted to vary, the three-dimensional framework which is then required is awkward as a conceptual device and is seldom employed.

to segment or categorize any value or quality gradients contained in the product, is another. If weighing procedure is a variable, then the seller may be negotiating for price with a conception of how pay weights⁵ will be determined which differs significantly from the conception held by the buyer. Similarly, if the procedure of categorizing the product by quality or value dimensions is a variable, the preconception of appropriate category may vary between buyer and seller. Such variable procedures contribute to indeterminateness in price bargaining processes. In terms of a supply-demand framework, expectations of the buyer and seller differ not only because of different levels of information or different abilities in formulating expectations, but also because value-determining conditions of the exchange process, other than price, remain variable.

There has been little attention paid to the question of indeterminateness of price in a bargaining context. Among the attempts which have been made to develop a more meaningful conceptual framework, efforts to provide a basis for examining the economic implications of the conditions which lead to an indeterminate price are largely missing.⁶ A schematic framework to eliminate quantity as a variable is relatively easy to construct. Figure 3 shows one conceptualization of price bargaining which relates price to bargaining time and abstracts from consideration of quantity (quantity is considered to be predetermined). Curves AA and A'A' show the buyer's expectations regarding price requests of the seller, indicating a maximum and minimum respec-

⁵The term "pay weight" is used to indicate the weight upon which final settlement is based, however this weight may be derived.

⁶See Breimyer, pp. 676-695; Taussig, p. 394ff; Stevens, pp. 77-97; Purcell, Chapter 3.

tively. Similarly, BB and $B'B'$ show the seller's expectations concerning offers likely to be made by the buyer. The range in price at any one point in time reflects the "limits" beyond which anticipated offers and bids, based on estimates of demand and supply, would be very unlikely to extend.

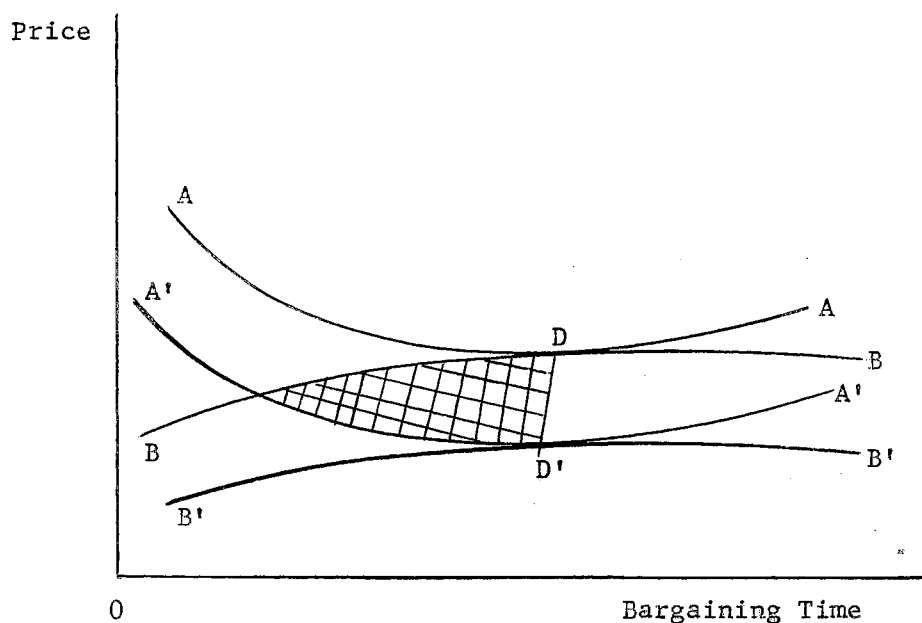


Figure 3. A Conceptualization of the Bargaining Process at a Low Level of Aggregation

Bargaining consists of concessions downward by the seller, concessions upward by the buyer. The "bargaining path" is likely to take the form of discrete concessions after various intervals of time. Exchange is possible at any combination of price and time in the cross-hatched area, but will tend to fall on or near the line segment DD' . That is, concessions will have reached a maximum during the segment of

time encompassing DD'. Beyond this time segment, if no agreement has been reached, tension will develop and the tendency to retract from previous positions will emerge.

Just where in the vertical dimension of the cross-hatched area exchange will take place depends on the relative bargaining power of the buyer and seller respectively.⁷ The seller will resist any tendency to move downward toward A'A'. The buyer resists movement toward BB.⁸ For the seller, then, A'A' might be labeled an "avoidance gradient." The schedule BB likewise becomes an avoidance gradient for the buyer. As Stevens notes, the intensity with which a given unfavorable position is resisted strengthens as that position becomes more eminent.⁹ This explains the tendency of the curves to "flatten" as bargaining time increases.

Such a conceptual framework eliminates quantity as a variable and focuses on the process of bargaining over time. It permits the formulation of expectations, encompasses the granting of concessions as steps toward a mutually acceptable position, includes the realistic notion that a position detrimental to the individual will be resisted more strongly as that position appears eminent, and permits the final price to be determined--within a range of indeterminateness--by the relative bargaining power of individuals. These, plus other implications which emerge as the framework is studied, seem to more nearly fit

⁷ Thus, price is indeterminate--at any point in time--to the extent of the vertical magnitude in the area of exchange possibilities.

⁸ The converse of this holds; the seller will aspire to AA, the buyer to B'B'.

⁹ Stevens, pp. 77-97.

the process which is carried out in bargaining at low levels of aggregation.

Capacity to handle problems of ambiguity in product definition and variability in the conditions of exchange is not an integral part of the developed conceptual framework. However, used as a point of departure, the framework does facilitate understanding of the economic implications of such ambiguities and variabilities. This is true primarily because of increased realism as to how bargaining processes occur when abstracting from problems of product definition and variable conditions of exchange.

To illustrate use of the framework as a point of departure, consider a hypothetical case in which the buyer is bargaining in full recognition that much of the commodity in question will attain a quality category C' while the seller is bargaining under the belief all of the commodity units will fall in quality category C".¹⁰ Assume C' always commands a price greater than the price for C". Consequently, the seller will approach bargaining with a range of expectations relatively lower [by an amount $\text{Price (C')} - \text{Price (C")}$] than those of the buyer. Figure 4 illustrates the change this could make, given the single and commonly used price scale, in the area of possible exchanges and the level of price at which exchange is likely to occur. Let AA, A'A', BB, and B'B' indicate the schedules as shown in Figure 3. Let bb and b'b' indicate the schedules for the seller under the hypothesized conditions. Note the possible implications as follows:

¹⁰The situation is clarified if we assume the difference arises from the procedure the buyer will follow in attaining a quality categorization, procedure of which the seller is unaware.

- (1) The buyer will have little difficulty in negotiating a price at or below $A'A'$, a position to which he will aspire, since the avoidance gradient of the seller will now be lower than had been expected by the buyer;
- (2) The buyer would be expected to reformulate his expectations of AA and $A'A'$ after bargaining begins and he has the added information from the seller's (unexpectedly) low offers;
- (3) A potentially inequitable situation prevails in that the seller may receive a price lower than is consistent with the resale value of his product; and
- (4) Insofar as the seller as a producer makes decisions on the basis of past prices concerning the quality of product to produce, the price signal associated with such a transaction is "biased" in that price appears more favorable than it really is, given the value of the product to other interests in the marketing continuum.

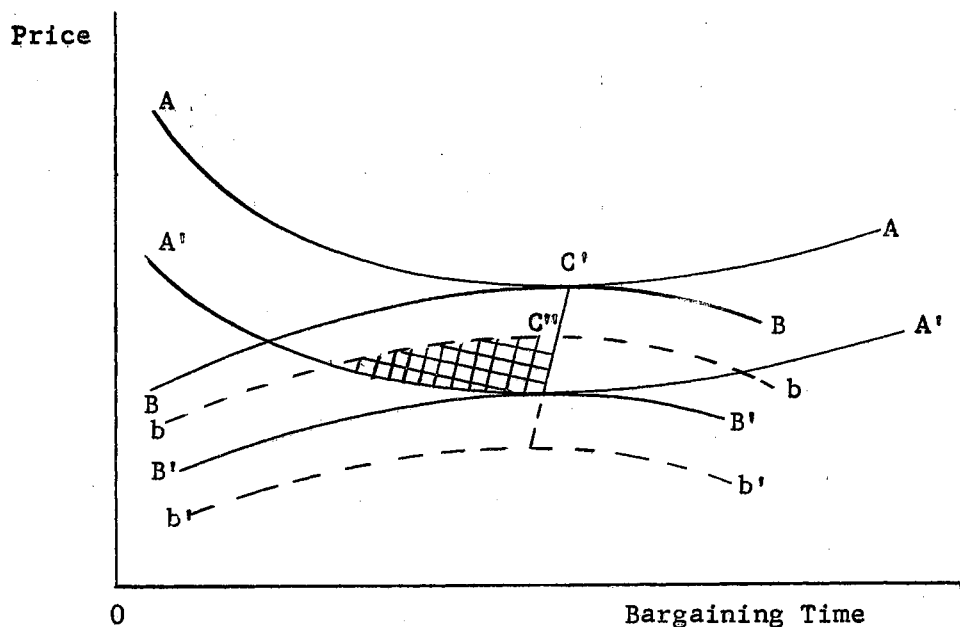


Figure 4. An Illustration of the Impact of Variable Conditions of Exchange in the Bargaining Process

By establishing other hypothetical situations, implications of various sorts can be traced through. Note that the questions of equity and efficiency of operation, the two primary concerns of performance, both arise from such a conceptualization. More specifically, inequitable and/or inefficient exchange processes may develop because (1) price can be indeterminate, for a fixed quantity, when negotiation involves one buyer and one seller, (2) the value attributes of the product may be viewed differently by buyer and seller, and (3) the procedure by which the exchange process is consummated may be variable. Variable procedure, as used here, includes any situation in which the buyer or seller, but not both, is aware of certain characteristics of the procedure to be followed (and associated economic implications).

The sole purpose of the developed format is to facilitate understanding of the economic implications of variable conditions of exchange. Later efforts to indicate the nature, magnitude, and implications of such variabilities as are revealed by the analysis should benefit from the previous discussion at a theoretical or conceptual level.

CHAPTER III

CURRENT AND DEVELOPING CHARACTERISTICS OF OKLAHOMA FEEDLOTS

The cattle feeding industry in Oklahoma is one of growth and change. The importance of efficiency in marketing is directly related to the size of the rapidly growing industry. With growth and change comes the need for adjustment and adaptation. Methods of marketing change, and information concerning what is efficient procedure rapidly becomes outdated. Insofar as knowing the current state of affairs facilitates projections of what the future will be, then up to date information concerning the nature of feeding operations and evolving patterns of behavior is important. Such information was acquired in the survey of Oklahoma feeders and will be presented here. The presentation in this chapter describes the physical characteristics of the feedlots, examines current and developing buying and selling practices, and isolates any pronounced relation between characteristics of the operations and procedure. The P&S Regulation concerned with standardization of buying procedure when cattle are bought on a carcass basis is discussed in some detail.

Characteristics of Feeders

A partnership was the typical mode of ownership for the operations which were surveyed. Eleven of the 35 operations were owned by individuals.⁶ Five were operated by hired managers. At each operation, the

person interviewed was the individual responsible for the day to day decisions (such as buying and selling decisions). The educational level of these men varied from an eighth grade education to a Master of Science degree. The average education included over three semesters of college work. Ten of the 35 have a college degree.

Neither the type of ownership nor the educational level of the operator appeared to have material influence on (1) the preferred method of selling, or (2) the capacity to handle the numerous variabilities and decision situations associated with the preferred method of selling. Whether such a conclusion should be generalized to include an indication of ability to foresee and possibly preclude problematic developments is unknown.

A third characteristic of the feeder, experience in cattle feeding, varied from six months to over 40 years. The average operator had over 17 years experience. Those feeders with about average experience tended to sell on a carcass evaluation basis.¹ In fact, over 75 percent of the feeders with 11-20 years experience sold on a carcass evaluation basis. Nearly 70 percent of the feeders in the categories with 0-10 years and over 20 years experience sold on a liveweight basis. Since the smaller feeders tend to sell on a carcass evaluation basis, this was checked as a possible explanation. However, there is no apparent correlation between years of experience and the capacity of the lot owned or managed.

¹Selling on a carcass evaluation basis is defined as a feeder selling 50 percent or more of his cattle on a carcass grade and weight or similar basis. These feeders will be referred to as "carcass feeders" in the pages that follow.

Feeders Perception of Current Marketing Procedure

Feeders feel the current marketing system does a poor job of paying premiums for the high-value, meaty carcasses. Too much emphasis is placed on live-to-dead yield and a high yielding animal is often fat and wasty. Many feeders feel more emphasis should be placed on carcass cutability.² One feeder dejectedly said, "Unfortunately there is just no incentive to produce a meaty carcass as opposed to a fat, wasty carcass." Both carcasses will often achieve the same grade. The feeder often receives the same payment for each, but the high cutability carcass may be worth 25 percent more at the retail level.

Feeders were confident that cutability was one of the most important factors affecting value at the retail level. Housewives want to buy meat with a relatively thin fat cover. Grade, the other primary determinant of retail value, is often not as important as cutability. This may explain the strong demand for Good grade beef in Oklahoma.

The feeders were asked what changes they would like to see in the beef marketing system. Among such diverse replies as "bonding of all packers," "packers out of feeding," etc. was a request for less selling on a carcass evaluation basis, unless problems associated with this method of selling are eliminated. This latter request was apparently prompted by at least a minimal level of understanding concerning the implications of the related "problems" and the widespread recognition that selling on a carcass evaluation basis is increasing quite rapidly.

Feeders were then asked what changes they expect to actually occur.

² Carcass cutability refers to the proportion of lean cuts of beef to total carcass weight.

The two major changes mentioned were (1) more carcass grade and weight selling, and (2) more preconditioning lots to prepare feeders for the finishing lots. Carcass grade and weight selling is discussed in depth in the next chapter and will be pursued no further here.

The second change feeders expect to see, more preconditioning lots, is currently developing in central and southern Oklahoma. If the developing tendency continues, marketing patterns within the state will change. Feed cost differentials between the panhandle area and the central and southern portions of Oklahoma suggests feeders in the latter areas have a comparative advantage in feeding a high silage-low concentrate ration to smaller cattle as opposed to finishing cattle. Feeders across the state feel the resources of the small feeder, if roughage is readily available, may be utilized most fully and efficiently in preconditioning cattle for the larger lots. The larger lots will likely welcome a steady and local supply of properly preconditioned cattle.

Characteristics of Feeding Operations

Feeding Performance

The feeders' estimate of daily gains for steers ranged from 2.25 to 3.5 pounds with an average of about 2.9 pounds. Heifers average daily gain ranged between 1.8 and 2.65 with most feeders reporting about a 2.5 pound average daily gain. Steers were fed from 120 to 145 days with 135 days the most likely number of days on feed. Heifers were normally sold after a feeding period of 100-110 days, but the total range in days fed was 90 to 145. Seventy percent of the steers and heifers attain the Choice grade in 135 and 110 days respectively.

Capacity of Feedlots

The capacities of the feedlots included in the survey ranged from 1,000 to 20,000 head. The combined capacity of the 35 lots was 151,800 head, an average of 4,337 head per lot. The distribution of lots within the state by capacity is shown in Figure 5.

During August and September, 1967 when the feedlots were visited several feeders noted their lots were not as full as they would be during the fall and winter months. A summary of the survey results indicated there were over 99,000 cattle in the 35 lots, an average of over 2,800 head (about 64.5 percent of capacity). This 99,000 compares with the October, 1967 estimate of 141,000 cattle and calves on feed in Oklahoma.³ The nine largest feeders interviewed had a total lot capacity of 97,000 with 74,500 on hand, an average of 8,278 head or 76.8 percent of capacity. The remaining 26 feeders with a total lot capacity of 54,800 head had 24,780 head on hand, an average of 953 or 45.2 percent of capacity.

The large feeders try to operate as close to 100 percent of capacity as possible. Large investments in facilities, equipment and labor are fixed costs which must be paid irregardless of the percent of capacity utilized. Smaller feeders are subject to wider fluctuations in percent of capacity utilized. Although several keep their lots full on a year round basis, others have cattle on pasture in the summer and feed only in the fall and winter. Some feeders use more of their capacity when they feel they can "make money" or when there is a favorable price spread between feeder cattle and fat cattle. Several feeders

³Cattle on Feed, January, 1968, pp. 1-2.

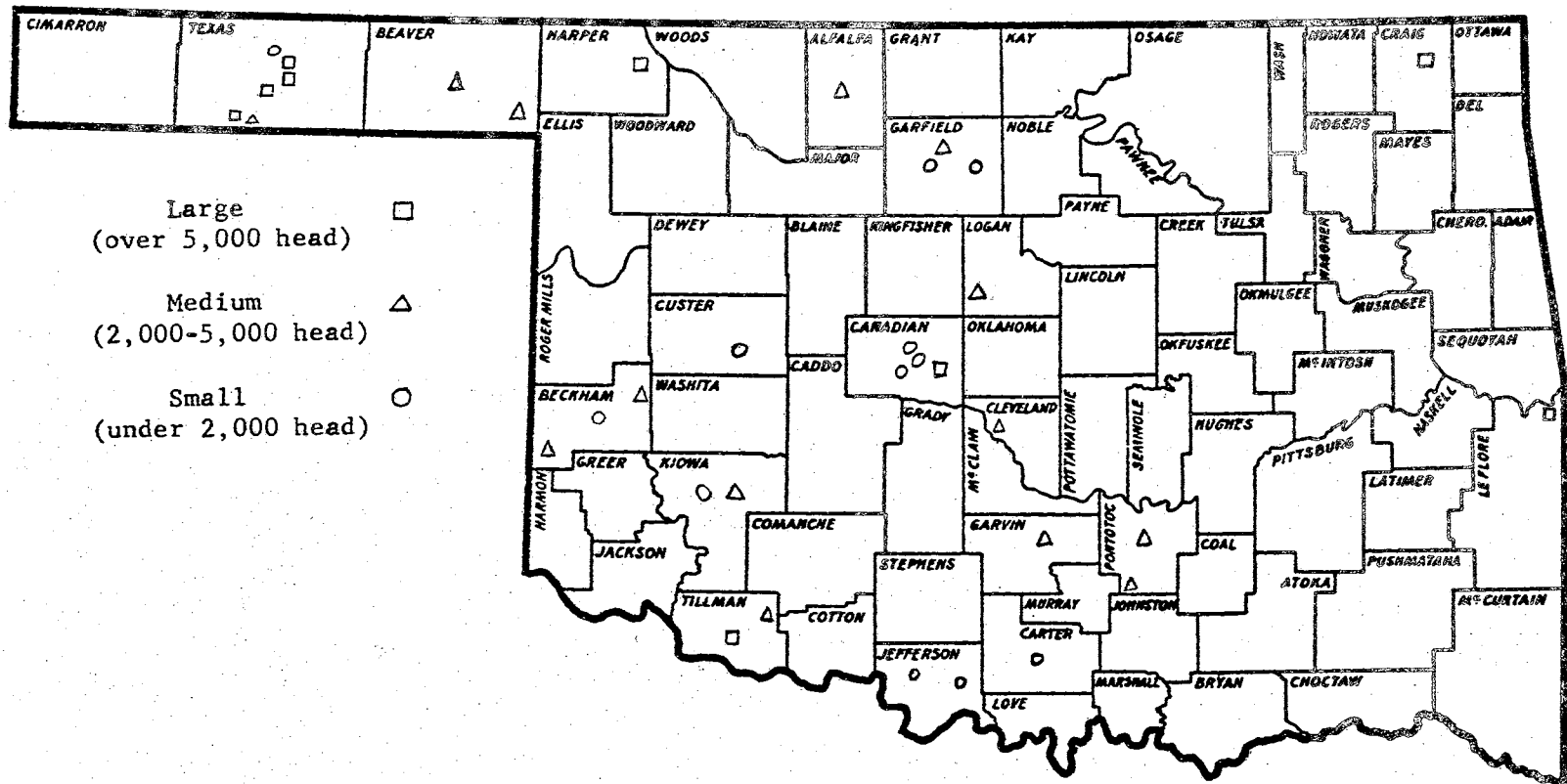


Figure 5. Location of Oklahoma Commercial Feedlots Included in Survey, By Size of Operation

mentioned the tendency to reduce the percent of capacity utilized during the summer since cattle gain less during hot weather.

Partially due to the hot weather, over one-third of the present lot capacity, 35 percent, was vacant in August and September. The unused capacity, equivalent to about 52,800 head, did not exist five years ago. Within the past five years, 25 of the 35 feeders have increased their capacity. In total, the capacity of the feedlots is up over 90 percent with an increase of 72,600 head from a capacity of 79,200 head five years ago. Twelve of the lots have increased capacity by over 200 percent. One lot has increased from 200 head to 6,000 head. The largest absolute increase was 10,000 head. Five of the lots totaling over 16,000 head capacity have been in operation for less than five years. The expansion in lot capacity is continuing with new 10,000 and 20,000-head lots under construction in the Panhandle. Six of the feeders interviewed noted they have definite plans to expand their operations in the future. Thirteen feeders felt expansion was possible or even probable. Sixteen feeders expected to remain at their present capacity. Neither size of feedlot nor preferred method of selling appeared to have any correlation with past expansion or plans for the future.

As the feeding industry continues to grow and evolve in Oklahoma, capacity per lot or operation will increase. Smaller operations may find it increasingly difficult to compete. The large feedlots reap economies of size by taking advantage of large-volume procurement and sales practices, feed mixing equipment, etc.

Buying Practices

The typical cattle bought for the feedlots were medium-quality, crossbred cattle. These cattle have no uniform color or marking characteristics. Big frames, good length, good growth, and heavy muscle potential are characteristic of these cattle and they tend to improve in appearance and quality until slaughter. The steers are typically purchased at 650-750 pounds and heifers at 450-550 pounds.

Many of the steers and heifers bought originate in southeast Oklahoma, east Texas, Louisiana, or Mississippi. The cattle from these areas are thin with "compensatory gain"⁴ potential. These cattle often gain faster and cost less than the higher quality native feeders which tend to move to the "Corn Belt" feedlots. The lower quality cattle have the potential of up-grading and are likely to return a greater profit to Oklahoma feeders than the high quality cattle. Although many Oklahoma cattle are purchased, feeders plan to buy large numbers of their cattle out of state in the future in order to avoid the relatively high-priced, fleshy native cattle.

The actual buying is handled by order buyers in most instances. Only 10 of the 35 feeders did all or a large part of the buying. Those feeders who do the buying normally bought cattle at local auctions within 100-150 miles of the feedlot. A few feeders also bought cattle in the country directly from the producer.

Some of the smaller feeders interviewed bought many of their

⁴Thin cattle from such regions have seldom had an adequate diet. When full-fed, the cattle have the size and age to compensate for the deficient diet to which they have previously been subjected. Thus, they gain more pounds than do younger cattle of the same weight.

cattle at stocker weights and placed the cattle on range grass, grain stubble, or wheat pasture prior to moving them into the feedlot. The vast majority of the cattle, however, were bought for direct movement to the feedlot.

When the survey was taken, 54 percent of the cattle in the feedlots were steers and the remaining 46 percent heifers. Twenty of the feeders were feeding over 50 percent heifers. Twelve were feeding 100 percent heifers and three others over 90 percent heifers. These were the smaller feeders who were for the most part selling to small local packers to satisfy the local demand for small cuts of beef. Most of these heifers were being sold on a carcass basis. Actually, only three of the seventeen "carcass feeders"⁵ sold more steers than heifers.

Selling Procedures: Current Procedure and Developing Changes

Liveweight Selling

Liveweight selling in Oklahoma is confined almost entirely to direct sales to packers. The procedure for selling cattle direct involves a negotiated price and payment on the basis of liveweight. Typically, the cattle are weighed on the feedlot scales and payment is made on this weight less a standard 4 percent shrink. The cattle are the property of the packer after they cross the scales and the feeder is in no way liable for any misfortune which could befall the cattle before they reach the packing plant. The sales are negotiated either in person or by telephone. In the latter case, the buyer relies on a

⁵For an explanation of "carcass feeders" see footnote 1 page 26.

previous feedlot visit for needed estimates of quality, grade, etc. All contracts are oral. The feeders who sell on a liveweight basis accounted for 67 percent of the cattle fed by the 35 feeders. None were sold through a terminal market.

Reasons given for selling direct as opposed to selling on the terminal market included:

- (1) Less competition among packers at the terminal;
- (2) Less expense involved when selling direct; and
- (3) Terminal sales are usually non-recourse and the bargaining position of the seller is therefore poorer than when selling direct.

The feeders who sell on a liveweight basis were asked what type of cattle they would sell through a terminal, assuming they had such cattle. Several of the feeders would consider selling culls and inferior cattle on the terminal market. The other types mentioned were cows; older, fleshy cattle fed for short periods; and large, long-fed cattle.⁶ About one-half the feeders wouldn't sell any type of cattle on a terminal market. Almost all the feeders felt the quality of the cattle sold direct was superior to the quality of the cattle at the terminal market.

These same feeders gave the following reasons for selling on a liveweight basis as opposed to a carcass basis:

- (1) No extension of credit to the packer;
- (2) No problem of identifying cattle;
- (3) The feeder knows what he's getting for his cattle in terms of total dollars before they leave the feedlot area;

⁶The term "long-fed" refers to cattle that are fed for a longer period of time than is normal for that particular type of cattle. For example steers are normally fed 135 days, steers fed longer than this would be long-fed cattle.

- (4) No recourse when you sell on a carcass basis;
- (5) The burden is on the packer to get the best possible grade (Some feeders feel they don't receive the best possible grade on some carcasses because higher grades are not to the packers advantage when he buys on a carcass basis);
- (6) Fancy or purebred type cattle sell better live; and
- (7) Cattle belong to the buyer when they leave the feedlot area.

However, the liveweight feeders also noted the following disadvantages of liveweight selling as opposed to carcass selling:

- (1) Need to estimate grade;
- (2) Need to estimate yields;
- (3) Need to estimate carcass characteristics;
- (4) Plain cattle and culls sell better on a carcass basis; and
- (5) Buyers try to buy live cattle at a price low enough to allow themselves a margin if they make errors and over-estimate grade and yield.

Carcass Selling

The procedure for selling cattle on a carcass basis typically involves negotiation of a schedule of prices by weight and grade groupings for the carcass. For example, 500-600 pound Choice steer carcasses may be sold for \$41 and 600-700 pound Choice steer carcasses sold for \$41.25. Good carcasses of comparable weights may be \$40 and \$40.25. Thus, the feeder knows the price he is to receive for each grade and weight grouping but could only estimate the number of steers that will fall into each group.

A few cattle are sold merely by carcass weight with a certain predetermined price. All feedlots surveyed sold cattle by oral contract. Although some cattle are sold at the lot, many sales are made by phone since the physical appearance of the live animal is relatively unimpor-

tant in carcass grade and weight sales.

Higher net returns was the motivating factor in the change from liveweight selling to carcass selling. Plainer cattle usually benefit the most in terms of an increase in returns associated with a switch to carcass selling.⁷ The average carcass feeder began selling cattle on a carcass evaluation basis four years ago. Only one feeder has sold cattle on a carcass basis for as long as ten years.

Feeders gave several advantages of carcass selling as opposed to liveweight selling. The following were the advantages noted most frequently:

- (1) No need to estimate grade;
- (2) Better information on yield returned to the feeder;
- (3) Receive "true" value for the animal;
- (4) Better returns for plain cattle and culls;
- (5) No need to estimate yield; and
- (6) Packers face less risk than when buying liveweight and the feeder therefore receives more for his cattle.

The carcass sellers also recognized disadvantages of the carcass method such as:

- (1) Extension of credit to the packer;
- (2) Requires a high degree of trust in the packer to be assured of accurate weights and grades;
- (3) The feeder has to suffer the loss if the truck has an accident in transit or if there is bruise damage on the cattle;
- (4) Fancy purebred type cattle may look better than they really are and bring more on a liveweight basis; and

⁷This, of course, assumes that such potential increases in returns are not completely offset by the variabilities associated with carcass evaluation sales.

- (5) When the market is going up liveweight prices may go up faster.

In addition to the disadvantages of carcass selling, feeders selling on a carcass basis expressed a desire for two changes in procedure:

- (1) Individual weight reports to feeders, and
- (2) More uniformity in weighing procedures between packers.

In discussing the first desired change, feeders would apparently feel more confident that they were receiving fair weights if they received the weight of each carcass. A few packers provide this service for their customers, most packers do not. The need for more uniformity in weighing procedures between packers is discussed in some detail in the following chapter. This need is one of the major reasons for the P&S Regulation.

Role of the Regulatory Agencies

One of the determinants of procedure within a given setting or the nature of any change which might evolve is the regulatory agencies involved. P&S has evidenced concern over the conditions associated with carcass evaluation sales by proposing regulations on the exchange procedure. Thus, a new development joins the changing scene in cattle feeding and merits consideration as a factor in determining what mode of operation and what type of industry organization and procedure will ultimately evolve and prevail.

The P&S Regulation adopted April 6, 1968 dealing with the purchase of livestock by packers on a carcass grade, carcass weight, or carcass grade and weight basis first appeared in the Federal Register on May 30, 1967 as a Proposed Regulation. The Regulation follows:

Purchase of Livestock by Packers on a Carcass Grade,
Carcass Weight, or Carcass Grade and Weight Basis.

- (a) Each packer purchasing livestock on a carcass grade, carcass weight, or carcass grade and weight basis shall, prior to such purchase, make known to the seller the details of the purchase contract. Such details shall include, when applicable, expected date and place of slaughter, carcass price, condemnation terms, style of dressing, grading to be used, accounting, and any special conditions.
- (b) Each packer purchasing livestock on a carcass grade, carcass weight, or carcass grade and weight basis, shall maintain the identity of each seller's livestock and the carcasses therefrom and shall, after determination of the amount of the purchase price, transmit or deliver to the seller, or his duly authorized agent, a true written account of such purchase showing the number, weight, and price of the carcasses of each grade (identifying the grade) and of the ungraded carcasses, an explanation of any condemnations, and any other information affecting final accounting. Packers purchasing livestock on such a basis shall maintain sufficient records to substantiate the settlement of each transaction, and shall, upon request from the seller or his duly authorized agent, make available for their inspection all such substantiating records which affect final accounting.
- (c) When livestock is purchased by a packer on a carcass weight, or carcass grade and weight basis, purchase and settlement therefore shall be on the basis of carcass price. This paragraph does not apply to purchases of livestock by a packer on a guaranteed yield basis.
- (d) Settlement and final payment for livestock purchased by a packer on a carcass weight, or carcass grade and weight basis shall be on actual (hot) carcass weights determined before shrouding. The hooks, rollers, and gambrels or other similar equipment used at a packing establishment in connection with the weighing of carcasses of the same species of livestock shall be uniform in weight. The tare weight shall include only the weight of such equipment.
- (e) Settlement and final payment for livestock purchased by a packer on a USDA carcass grade shall be on an official (final--not preliminary) grade. If settlement and final payment are based upon any grades other than official USDA grades, such other grades shall be set forth in detailed written specifications which shall be made available to the seller or his duly authorized agent. For purposes of settlement and final payment, carcasses shall be final graded within 72 hours after slaughter: Provided, however, that when such 72-hour period expires on a weekend or holiday, carcasses shall be final

graded not later than the close of the next work day following such weekend or holiday.⁸

The purpose of the regulation is to provide minimum safeguards for producers selling livestock to packers on a carcass grade, carcass weight, or carcass grade and weight basis. The regulation was deemed necessary when, upon analysis of a survey conducted by P&S, it was found that serious weighing discrepancies existed. The survey revealed that it was very difficult to obtain an accurate weight in those cases where a packer weighed carcasses after washing and shrouding and allowed an average tare for wet shrouds. Improper tare weights were found to be assigning carcass weights up to seven pounds below actual weight. Instead of the 2 to 3 percent shrink feeders often believed indicative of the weight loss in carcasses from a hot to a chilled condition, it was found that actual shrink was .75 to 1.50 percent for an overnight chill. In all cases checked, the pencil shrink exceeded the actual shrink.⁹

The regulations may be of great importance to Oklahoma feeders. They show potential solutions to the accounting information problem and the problems associated with lack of uniform weighing between and among packers if the regulations prove to be operational. Since one-third of the cattle fed by the 35 feeders interviewed are sold on a carcass basis and would be affected by such regulations, it was anticipated that feeders would be aware of the regulations. However, only 14

⁸ Federal Register, Vol. 32, No. 104, (Washington, May 30, 1967), pp. 7858-7859.

⁹ Drake, pp. 3-4. The P&S survey found packers shrinking carcasses 2.25 percent when actual shrink was .75 percent and other packers shrinking carcasses 2.5 percent when actual shrink was 1 percent.

of the 35 feeders interviewed were acquainted with the content of the regulation at the time of the interviews, approximately three months after the proposal for regulations was made public. These 14 feeders felt payment on hot weights was the most important part of the regulation with better accounting information, uniform tares and shrouds, and increased speed of payment also mentioned as important.

Most of the feeders felt the regulation would not be operational if it were adopted. They felt the cost of enforcing the regulation could well be prohibitive. "A P&S man would have to be placed at every packing plant" was the comment of several feeders. They also felt that if a packer had a tendency to be dishonest, he could find a loophole in the regulations. However, several of the feeders expressed a strong hope that the regulations could be made operational.

Summary

Of all the developing changes which are sweeping across current marketing procedures in fed beef, variabilities associated with carcass grade and weight sales are one of the most important obstacles to progressive change and development in marketing. These variabilities have far-reaching economic ramifications, ranging from the creation of possibly inequitable situations to blocking acceptance of a method of selling which offers considerable theoretical advantages. Consequently, the economic implications of selected facets of the often variable conditions of exchange are considered in some detail in the next chapter.

CHAPTER IV

ANALYSIS OF WEIGHING AND GRADING VARIABILITIES

Introduction

After price is negotiated, weight and grade are the remaining variables in determining the value of the beef carcass. Variations in weighing and grading practices may be equally as important as price. However, not all feeders view weighing and grading variabilities as having economic or price implications. Many are concerned about conditions of weighing, pencil shrink, or other variables, but have only a limited understanding of their economic impact.

The carcass typically loses weight as it is chilled. In general, the carcasses are weighed while hot and an arbitrary pencil shrink is employed to offset weight loss. The magnitude of this pencil shrink is variable. Also, a carcass may grade higher after thorough chilling. Thus, the time of grading becomes a variable that can have impact on carcass value.

Actually, there are both pragmatic and theoretical dimensions to the problem of variable procedure. Of practical concern is the impact of variable conditions of exchange on net returns to the feeder. This is a short run problem. At a more theoretical, but possibly more important, level is the impact on the effectiveness of the price mechanism as a coordinating and communicating device. Both will receive attention. As a frame of reference a hypothetical but realistic illustration

of the impact of variable weighing and grading practices will be developed to illustrate variabilities in weighing and grading procedures with associated implications.

A Frame of Reference

To illustrate implications of weighing and grading variability, consider a hypothetical steer which will yield a 600-pound carcass (hot weight) with a negotiated price schedule as follows:

High Good	\$40.00 per hundredweight
Low Choice	40.50 per hundredweight
Average Choice	41.00 per hundredweight
High Choice	41.50 per hundredweight

If the carcass is weighed hot and a pencil shrink of 2.5 percent is employed, the pay weight is 585 pounds. Holding grade constant at High Good, the carcass has a value of \$234.00. But if the actual weight loss were only 1.5 percent, actual weight would be 591 pounds. Using the actual weight as pay weight, carcass value is \$236.40. With a pencil shrink of 2.5 percent, a price of \$40.41 would be required to achieve a value of \$236.40 (the value with a shrink of 1.5 percent and a price of \$40.00).¹

¹ $600 - .025 (600) = 585$ pounds (5.85 cwt.), the pay weight with a pencil shrink of 2.5 percent;

$5.85 \times 40.00 = \$234.00$, carcass value with a 2.5 percent pencil shrink.

With the actual weight loss of 1.5 percent: $5.91 \times 40.00 = \$236.40$, carcass value based on actual weight loss.

Therefore, $\$234 \div 5.91 = \39.59 , the real price per cwt.

$\$236.40 \div 5.85 = 40.41$, the price per cwt. which would be required to realize "true carcass value" with a pencil shrink of 2.5 percent.

The term "real price" refers to the price which, with actual weight, would yield the same returns as negotiated or nominal price multiplied by the weight after the pencil shrink is taken. In the illustration, the "real price" of \$39.59 shows what the feeder receives per cwt. for actual weight when he negotiates a price of \$40.00 and takes a 2.5 percent pencil shrink.

Assume that the carcass would grade high Good while hot, but would reach low Choice after being thoroughly chilled. The price for low Choice is \$40.50 per hundredweight. Considering this and the actual weight loss of 1.5 percent, total carcass value would be \$239.35. If the feeder (unknowingly or otherwise) accepts a 2.5 percent pencil shrink and a hot-carcass grade, a price of \$40.91 would be required to give a carcass value equivalent to that based on "actual" weight loss and a chilled-carcass grade.²

The price of \$40.91 is \$.91 per hundredweight above the \$40.00 price which was negotiated for the high Good grade. With a yield of 60 percent, this converts to \$.55 per hundredweight on a liveweight basis. Thus, what would be considered by most feeders as a significant change in price might go unnoticed when it evolves not from a change in price as such, but from the variable weighing and grading practices which accompany the exchange process. The \$.91 per hundredweight on a carcass basis is composed of \$.41 as a result of the weighing procedure and \$.50 as a result of grading.³ For other possible price implications at various prices and levels of shrink, see Tables I and II.

The combined influence of an excessive pencil shrink (1 percent too high in the illustration) and hot-carcass grades can have consider-

² $5.91 \times \$40.50 = \239.35 carcass value based on a 1.5 percent weight loss and a chilled-carcass grade of low Choice.
 $\$239.35 \div 5.85 = \40.91 , price per cwt. required for a total value of \$239.35 if a 2.5 percent weight loss is taken.
 $\$40.00 \times 5.85 = \234.00 , carcass value with a 2.5 percent pencil shrink and a grade of high Good.
 $\$234.00 \div 5.91 = \39.59 the real price per cwt.

³ If the pencil shrink were 1 percent higher than actual shrink, the \$.41 per cwt. would be lost on all carcass. However, no more than 10 percent of carcasses will achieve a higher grade. Thus, the grading loss will average \$.05 per cwt. or less on all carcasses.

TABLE I

AN ILLUSTRATION OF THE PRICE IMPLICATIONS OF EXCESSIVE
PENCIL SHRINKS IN CARCASS GRADE AND WEIGHT SALES
OF SLAUGHTER BEEF: POTENTIAL LOSSES TO THE
SELLER, SELECTED PRICES AND PENCIL SHRINKS

Carcass Price Per Cwt.	Pencil Shrink Exceeds Actual Shrink By (Percent)							
	.25	.50	.75	1.00	1.25	1.50	1.75	2.00
(Dollars)	(Potential losses, dollars per cwt.)							
30.00	.075	.15	.225	.30	.375	.45	.525	.60
32.00	.08	.16	.24	.32	.40	.48	.56	.64
34.00	.085	.17	.255	.34	.425	.51	.595	.68
36.00	.09	.18	.27	.36	.45	.54	.63	.72
38.00	.095	.19	.285	.38	.475	.57	.665	.76
40.00	.10	.20	.30	.40	.50	.60	.70	.80
42.00	.105	.21	.315	.42	.525	.63	.735	.84
44.00	.11	.22	.33	.44	.55	.66	.77	.88
46.00	.115	.23	.345	.46	.575	.69	.805	.92
48.00	.12	.24	.36	.48	.60	.72	.84	.96
50.00	.125	.25	.375	.50	.625	.75	.875	1.00
52.00	.13	.26	.39	.52	.65	.78	.91	1.04
54.00	.135	.27	.405	.54	.675	.81	.945	1.08
56.00	.14	.28	.42	.56	.70	.84	.98	1.12
58.00	.145	.29	.435	.58	.725	.87	1.015	1.16
60.00	.15	.30	.45	.60	.75	.90	1.05	1.20

TABLE II
 CHANGES IN TOTAL RETURNS FROM A 1,000-POUND STEER
 YIELDING 60 PERCENT DUE TO EXCESSIVE PENCIL
 SHRINKS, SELECTED PRICES PER CWT.

Carcass Price Per Cwt.	Pencil Shrink Exceeds Actual Shrink By (Percent)							
	.25	.50	.75	1.00	1.25	1.50	1.75	2.00
(Dollars)	(Potential losses, dollars per head)							
30.00	.45	.90	1.35	1.80	2.25	2.70	3.15	3.60
32.00	.48	.96	1.44	1.92	2.40	2.88	3.36	3.84
34.00	.51	1.02	1.53	2.04	2.55	3.06	3.57	4.08
36.00	.54	1.08	1.62	2.16	2.70	3.24	3.78	4.32
38.00	.57	1.14	1.71	2.28	2.85	3.42	3.99	4.56
40.00	.60	1.20	1.80	2.40	3.00	3.60	4.20	4.80
42.00	.63	1.26	1.89	2.52	3.15	3.78	4.41	5.04
44.00	.66	1.32	1.98	2.64	3.30	3.96	4.62	5.28
46.00	.69	1.38	2.07	2.76	3.45	4.14	4.83	5.52
48.00	.72	1.44	2.16	2.88	3.60	4.32	5.04	5.76
50.00	.75	1.50	2.25	3.00	3.75	4.50	5.25	6.00
52.00	.78	1.56	2.34	3.12	3.90	4.68	5.46	6.24
54.00	.81	1.62	2.43	3.24	4.05	4.86	5.67	6.48
56.00	.84	1.68	2.52	3.36	4.20	5.04	5.88	6.72
58.00	.87	1.74	2.61	3.48	4.35	5.22	6.09	6.96
60.00	.90	1.80	2.70	3.60	4.50	5.40	6.30	7.20

able impact on net returns to the feeder. While a decrease of a few dollars per animal (\$5.35 at a maximum in the illustration) may seem insignificant the total magnitude of the potential decrease is staggering for a lot feeding 50,000 head per year. The range would be from about \$120,000, assuming no carcasses upgrade, to a maximum of \$135,000 if 10 percent of the carcasses upgrade.

In the illustration, nominal price can be as much as \$.91 per hundredweight above real price. It is the quoted or nominal price which is often used in determining the relative desirability of the sale, in formulating an opinion as to the adequacy of the prevailing feeding program and product quality. Yet, price signals are the medium by which the price mechanism is supposed to direct production, to coordinate what is produced with the needs and desires of consumers. With a \$.91 possible "bias," there is much room for error.⁴

Incidence and Implications of Certain Variabilities

The thirty-five feeders interviewed were asked a battery of questions to establish their general understanding and competence concerning variable conditions of exchange. The replies will be classified according to (1) feeders who sell 50 percent or more of their cattle on a carcass evaluation basis, and (2) feeders who sell primarily on a liveweight basis.⁵ Examination of the latter group helps to reveal

⁴The impact on the price mechanism as a coordinating device and communication system will receive more attention later in this chapter.

⁵One feeder in the group preferring liveweight sales had just begun his feeding operation and had sold no cattle, all other feeders in this "liveweight group" had sold cattle on a carcass evaluation basis periodically. As noted in Chapter 3 liveweight feeders feel lower quality cattle tend to return more dollars when sold on a carcass basis rather than a liveweight basis.

areas in which they differ from the former group in understanding and competence in selling on a carcass evaluation basis. As noted in Chapter III, all feeders expect selling on a carcass evaluation basis to increase.

Feeders Who Sell on a Carcass Evaluation Basis

There is a tendency, as evidenced in Table III, for the feeders with smaller feedlots to sell on a carcass evaluation basis. Ten of the seventeen feeders in the carcass group had a feedlot capacity of less than 2,000 head. Only one of the eighteen feeders preferring liveweight sales had a lot capacity of less than 2,000 head.

The feeders in the carcass group were asked a series of questions to establish their level of knowledge concerning weighing and grading practices associated with their sales transactions. The general level of knowledge and variability in that knowledge and understanding across feeders are important indicators of the economic significance of variable weighing and grading practices.

Weighing Practices

Concerning the timing of weighing, most feeders expressed rather definite opinions. Twelve of the seventeen carcass feeders felt the carcasses were weighed "hot" (soon after slaughter before being moved into the cooler). Three other feeders felt some packers wait until the following day to weigh the carcasses. Two feeders were unaware of the importance of time of weighing with regard to whether the carcass is hot or chilled. Considerable uncertainty prevailed concerning the timing of related operations such as shrouding. Only ten feeders

TABLE III
PREFERRED METHOD OF SELLING BY SIZE OF OPERATION

Preferred Method of Selling	Number of Feeders		
	Capacity of Lot (Head)		
	Under 2,000	2,000-5,000	Over 5,000
Carcass evaluation	8	2	1
Liveweight	1	11	6
Both (50% for each)	2	2	2

voiced an opinion in response to questions concerning the time of shrouding. Five felt the carcass passed over the scales while shrouded and five felt the carcasses were weighed before shrouding. The significance of this uncertainty varies with the degree to which accurate weights are obtained when carcasses are weighed with shrouds and adjustment is made for the weight of the shroud.

There is some evidence to show that the weight of the wet shrouds varies significantly, but the adjustment factor is usually constant.⁶ Generally, the adjustment is more nearly consistent with the heavier wet shroud weights, providing a measure of protection for the buyer.

⁶ Drake, p. 3. The P&S survey revealed that it was impossible to obtain an accurate weight in those cases where a packer weighed carcasses after washing and shrouding and allowed an average tare for wet shrouds. The weight of the shroud varied depending on the condition of the shroud and the amount of moisture absorbed by the shroud.

If wet shroud weights are less than the weight of the tare employed to offset the weight of the shroud, then pay weight will be "short" by the difference. Such an inaccurate adjustment in the buyer's favor decreases the net return to feeders when carcasses are weighed after shrouding. Consequently, the feeder with carcasses weighed before shrouding would likely have the greater net return, other things equal.

All but one of the 17 feeders were aware the carcass typically loses weight in the cooler. Estimates of what percentage loss might be expected varied from 1 to 4 percent with an average of about 2.1 percent. There were also such divergent replies as "up to 4 percent" and "never over 1.5 percent." Most indicated a need for this type of information, admitting they were not well informed. All were quick to note that the buyer covers weight loss in the cooler with a pencil shrink. All indicated they were informed as to how much this pencil shrink would be before price negotiations begin, or requested such information in its absence. Fifteen of the feeders felt they were paid on the basis of hot weights with a pencil shrink in every carcass transaction. One was paid on a chilled carcass weight in every case.⁷ Another feeder was paid on a chilled weight on some sales, but on a hot weight on other sales.

The feeders were asked for estimates of the variation in pencil shrink they are required to take from one buyer to another or from one transaction to another. Responses to this question from 13 of the 17 feeders are shown in Figure 6. The remaining feeders declined any response to the question.

⁷Special agreement with a retail chain store.

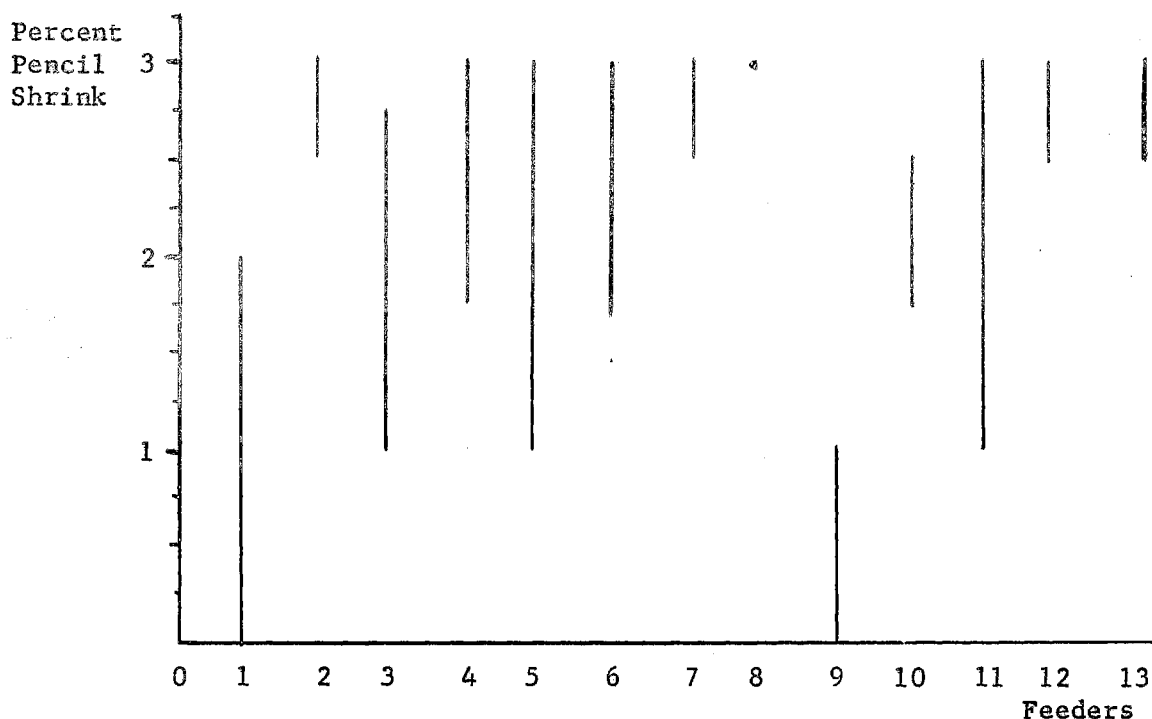


Figure 6. Pencil Shrinks Oklahoma Feeders Selling Predominantly on a Carcass Basis Are Asked to Take in Various Transactions

The average (considering the midpoints of the ranges) is 2.17 percent. The average range is 1.6 percent to 2.7 percent. The highs range from 1 to 3 percent; the lows from 0 to 3 percent. Note that the lower extreme of some ranges is in excess of the higher extreme of others. Obviously, there is considerable variability in the magnitude of pencil shrinks employed. Also apparent is a tendency for 3 percent to emerge as something of a "standard" for the upper extreme in the ranges.

Figure 7 shows a comparison of the range in pencil shrinks the 13 carcass feeders feel are justified and the pencil shrinks they have been asked to take.

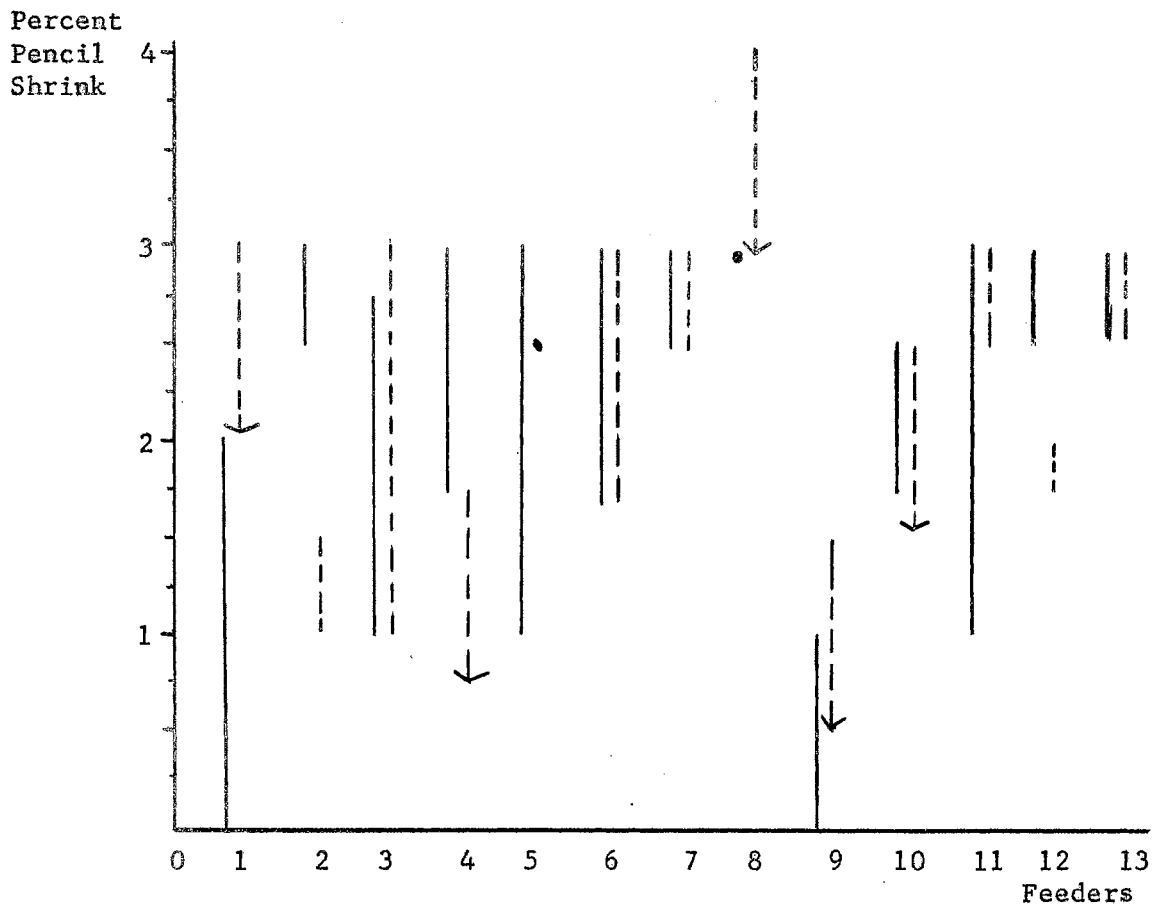


Figure 7. Comparison of Pencil Shrinks Oklahoma Feeders Selling Predominantly on a Carcass Basis Are Asked to Take and Shrinks the Feeders Feel Would be Justified^a

^aNote the solid lines represent the range of pencil shrink feeders are asked to take while the dashed lines represent the shrinks feeders feel would be justified. The downward arrows in the figure result from answers such as 3 percent or less, not more than 2 percent, etc.

Several feeders assumed the actual shrink and the shrink they have been asked to take were synonymous. Given this and the expressed lack of information regarding expected shrink, no concrete conclusions can be drawn. A more reliable basis of comparison is needed.

In Figure 8, the ranges of Figure 6 have been plotted in terms of

deviations from 1.25 percent, assumed to be a representative figure for the majority of coolers for an overnight chill.⁸ The figures to the right of the ranges in Figure 8 show the price implications of the respective excesses (or deficits) in pencil shrink relative to the assumed shrink of 1.25 percent. The deviations are based on a hypothetical carcass priced at \$40 per hundredweight.

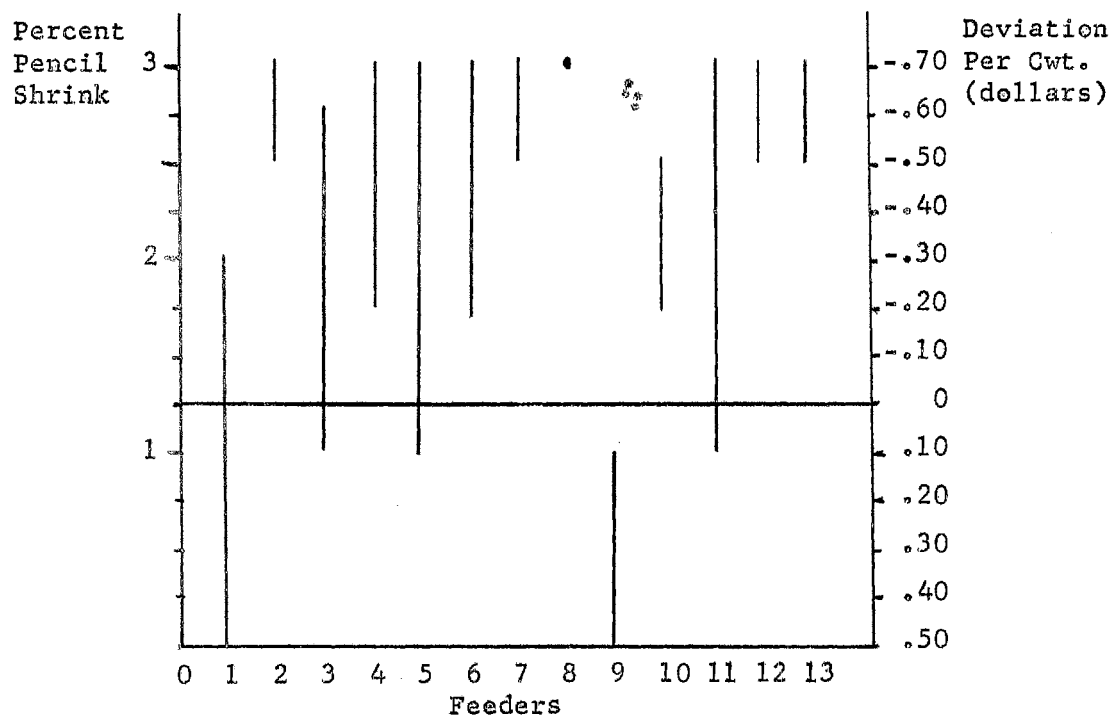


Figure 8. Pencil Shrinks. Oklahoma Feeders Selling Predominantly on a Carcass Basis Are Asked to Take Compared to an Assumed Standard of 1.25 Percent

⁸ Actual shrink varies across coolers due to the condition of the cooler, control of humidity, etc. The USDA in a survey to support their proposed regulations, found many coolers held shrink to less than 1 percent for an overnight chill. Few if any were found to exceed 1.5 percent. Given a range of from .75 to 1.50 percent, the figure 1.25 is considered to be realistic. See Engelman, p. 3.

At the \$40.00 per hundredweight price each .25 percent increase (excess) in pencil shrink results in a \$.10 per hundredweight reduction in real price. Thus a 1 percent increase (excess) in pencil shrink results in a \$.40 per hundredweight reduction in real price (as is depicted at the pencil shrink level of 2.25 percent).

Assuming the carcass actually shrinks 1.25 percent the feeder is receiving \$.40 less than \$40.00 (\$39.60) for the actual cold carcass weight of the carcass if he accepts a 2.25 percent cooler shrink. Should the pencil shrink employed be only .25 percent with the same actual shrink of 1.25 percent the feeder would receive \$.40 more than \$40.00 (\$40.40) for the actual cold carcass weight.

When the price is \$40.00 per hundredweight, the average excess pencil shrink of .92 percent results in a real price \$.36 below the \$40.00 contract price. The pay weight averages nearly 1 percent below the cold carcass weight, resulting in an almost 1 percent reduction in real price. At the maximum pencil shrink of 3 percent in Figure 8, price is biased upwards \$.70 as real price is only \$39.30.⁹

Although the weight loss for an overnight chill is 1.50 percent or less, the actual weight loss continues to increase each day the carcass remains in the cooler. Some packers may have their carcasses in the cooler longer than average, meaning a higher actual shrink. Consequently, some variation in pencil shrink across packers might be justified, but such variation cannot be predicted by the feeder.

⁹The average pencil shrink taken, 2.17 percent, minus the assumed actual shrink of 1.25 percent gives .92 percent and (.0092 times \$40 per cwt. equals the \$.36 percent price deviation). A 3 percent shrink would be 1.75 percent above the assumed shrink of 1.25 percent, (.0175 times \$40 per cwt. equals \$.70 per cwt).

In response to a specific question, most of the feeders felt that pencil shrinks were too high, especially when the pencil shrink was 2.5 percent or more. However, two of the feeders noted that 3 percent was not excessive if the carcasses remained in the cooler for a week or more. The existence for most feeders of a wide discrepancy between justifiable pencil shrinks and those experienced was apparent. Two questions logically follow:

- (1) Do feeders try to offset the excess pencil shrink taken by packers, and if so, how?
- (2) To what extent are they able to offset the economic implications of excessive pencil shrinks?

The replies of 16 of the 17 feeders to questions relating to (1) are shown in Table IV.

TABLE IV

REACTION OF FEEDERS SELLING PREDOMINANTLY ON A CARCASS
BASIS TO SITUATIONS IN WHICH PENCIL SHRINKS
REQUESTED BY BUYER ARE CONSIDERED TOO HIGH

Nature of Reaction	Number Feeders Choosing
Offset the impact of any excess pencil shrink by seeking a higher price	10
Try to secure chilled weights	1
Try to negotiate shrink down to 2 percent	1
Seek other buyers	3
No way to offset	1
No reaction to question	1

The degree to which feeders were successful in achieving a higher price, chilled weights, or a lower pencil shrink is not known. Replies to related questions indicated that while recognized as an appropriate strategy, few feeders actually bargain for a higher price in practice. Chilled weight, a higher price, or a lower pencil shrink all appear to be sound approaches to the problem. In contrast, the feeder who viewed the situation as being impossible to change could scarcely improve his position. Also, it would seem that in the long run moving to other buyers would be an unproductive strategy as compared to pushing for a higher price. If an alternative buyer cannot be found who offers the same price with a lower pencil shrink, or a higher price with the same pencil shrink, then the issue of excessive pencil shrinks must ultimately be faced.

To test the feeders ability to determine real price and make effective comparisons, feeders were asked to choose between such alternatives as those in the following hypothetical problem situation:

Bid A: \$40 With a 2 percent pencil shrink

Bid B: \$40.50 With a 3.5 percent pencil shrink

In order to choose correctly, the feeder must consider pencil shrink and convert the two different levels of pencil shrink to price implications. All feeders were capable of making the comparisons needed to choose the better bid. A few feeders could tell at a glance which bid offered the higher return. Possibly these feeders had adjusted for pencil shrinks before to determine which buyer offered the better bid. Some of the feeders who worked the problem out with pencil and paper may have had other methods of accounting for shrink in their price negotiation. However, some of the feeders were obviously not accustomed

to making such comparisons between alternative bids.

Inefficiencies caused by variable pencil shrinks

Variable pencil shrinks have an adverse effect on the feeder's short run profit possibilities, on the ability of the price system to transmit needed changes to the feeder, and on the accuracy and effectiveness of market news reports. In the following paragraphs these three aspects of the pencil shrink "problem" will be discussed in some detail.

First, the comparison of alternative bids is made unnecessarily cumbersome and complex. Not only price but the pencil shrink associated with that price requires consideration. The feeder must be aware of the pencil shrink to avoid selling his cattle at an artificially inflated price (a price which yields a smaller net return than some lower price associated with a lower pencil shrink). Comparing bids with varying pencil shrinks when selling on a carcass evaluation basis is difficult. Even more difficult and cumbersome, perhaps, is a comparison between liveweight and carcass bids.

When comparing liveweight and carcass-based sales alternatives, many factors are involved. The following is a partial listing:

1. The feeder's preference as to method of selling;
2. The number of prospective buyers and the basis (liveweight or carcass) preferred by the buyers;
3. The degree of mutual trust between buyer and seller;
4. The particular type of cattle;
5. The price trend in the market; and
6. The length of time the cattle have been fed.

A hypothetical example indicates the complexities of such decision processes. Assume the feeder is bid \$24 liveweight and \$40 on a carcass basis. (These are equivalent bids under the assumption the carcass yields 60 percent of the live pay weight). When selling liveweight, pay weight is typically the weight at the feeders scales minus a 4 percent shrink. Thus, a steer weighing 1,041 pounds has a live pay weight of 1000 pounds after the 4 percent pencil shrink is deducted. Such a steer will return \$240 if sold on a liveweight basis. The feeder can sell the steer for \$40 per hundredweight on a carcass basis, but he must decide if the animal will yield over 60 percent (yield a carcass weighing over 600 pounds). If the feeder feels the carcass will yield over 600 pounds and decides to sell on a carcass basis, has he made a logical decision? The answer would invariably be yes were it not for the variable pencil shrinks which accompany carcass sales. Such variability adds to the complexity of bid comparisons. To illustrate, assume the pencil shrink associated with the carcass bid is 3 percent. If the carcass weighs less than 618.5 pounds, the feeder will make an incorrect decision by selling on a carcass basis. His returns would be less than the \$240 he could have received on a liveweight basis.¹⁰ But assume the feeder is somewhat more fortunate and the carcass weighs 625 pounds or yields 62.5 percent. It appears the 2.5 percent yield increase (over the 60 percent) would not be enough to offset the 3 percent pencil shrink. However, pay weight on the carcass alternative is now 6.0625 hundredweight, yielding a total return of \$242.50 as

¹⁰ For example, assume the animal yields 61 percent or a carcass weighing 610 pounds (assuming the 4 percent live shrink is correct). With a 3 percent pencil shrink on the carcass, pay weight is 5.917 cwt. and total returns \$236.68 as compared to \$240.

compared to the \$240 on a liveweight basis. A feeder could easily make the mistake of comparing the 2.5 percent excess over the 60 percent (which has a 1000-pound base) with the 3 percent pencil shrink (which has a 625-pound base).

If the feeder is successful in avoiding all the possible arithmetic errors, he is still faced with the possibility of making an error in judgment. The feeder does not know what his cattle will actually yield. He may use the incorrect method of selling due to errors in estimating yield or due to excessive pencil shrinks and resulting low pay weights. In the example above if the carcass weighed 620 pounds the feeder would be wise to sell on the carcass basis, but if the carcass weighed less than 618.5 pounds, the feeder should sell on a liveweight basis. Consistent accuracy to this degree of perfection is impossible to obtain.

Errors in estimating yield are just a part of the risk a feeder must take in feeding cattle, but the calculations based on that estimate should be carefully made to insure the feeder that he is selling via the method which will return the most dollars. To make the right decisions the feeder needs accurate information on what his cattle yield. Then if he records other possible variable conditions such as weather conditions, length of time on feed, time of day weighed, type of cattle, etc. which might affect the yield, he may be in a better position to choose the correct method of selling, given any combination of competitive bids.

A second inefficiency attributable to variable pencil shrinks is the concealment of price signals through which the marketing system relays needed information to the feeder. Over time, the wants and needs

of consumers change. This change, as related to their purchases of beef, is evidenced by the type of meat they buy. The retailer must note these changes and adjust his supply of meat accordingly. Similarly, the retailer's changing need must be met by the packer, and the packer's changing needs must be met by the feeder. The market system seeks to transmit these needed changes from the consumer through the intermediaries to the feeder via price signals related to particular carcass characteristics. For example, premiums might be paid for heavily muscled carcasses and discounts levied against overly fat and wasteful carcasses. Fluctuations in price arising from variable weighing practices, not from value gradients, conceal "true" price signals and negate the effectiveness of price as a communicative device.

To illustrate how the price signals for needed changes can be lost, Figure 9 was constructed. Individual feeders in the survey had been exposed to pencil shrinks primarily in the 1 to 3 percent range. It would then be possible for the typical feeder to experience the set of "price signals" shown in the figure. Nine sales are shown, each at a price of \$40.80 per hundredweight. Each successive sale is accompanied by an increase in pencil shrink of .25 percent. (A pencil shrink of 1 percent was employed in the first sale). The constant price of \$40.80 gives the appearance of price stability, often to be desired, but the constant price is deceiving. Real prices trend downward from \$40.80 to \$40.00.

The problem which prevails has been simplified for the presentation in Figure 9. The problem the feeder faces is more complex. The feeder may sell with a 2 percent pencil shrink one week, followed by another type of cattle with a 3 percent shrink the next week. Much

heavier cattle of the original type may be sold with a 2.5 percent shrink the following month. Concurrently, market reports indicate the cattle market is changing each day. The reports the feeder hears are usually price quotes without the shrink conditions and therefore in the form of a range of prices for a particular grade of cattle. The feeder is unable to isolate the price that a specific type of cattle would bring. With these and other variables affecting and counteracting this \$.80 spread in "real price" the price signal can be concealed and needed adjustments delayed.

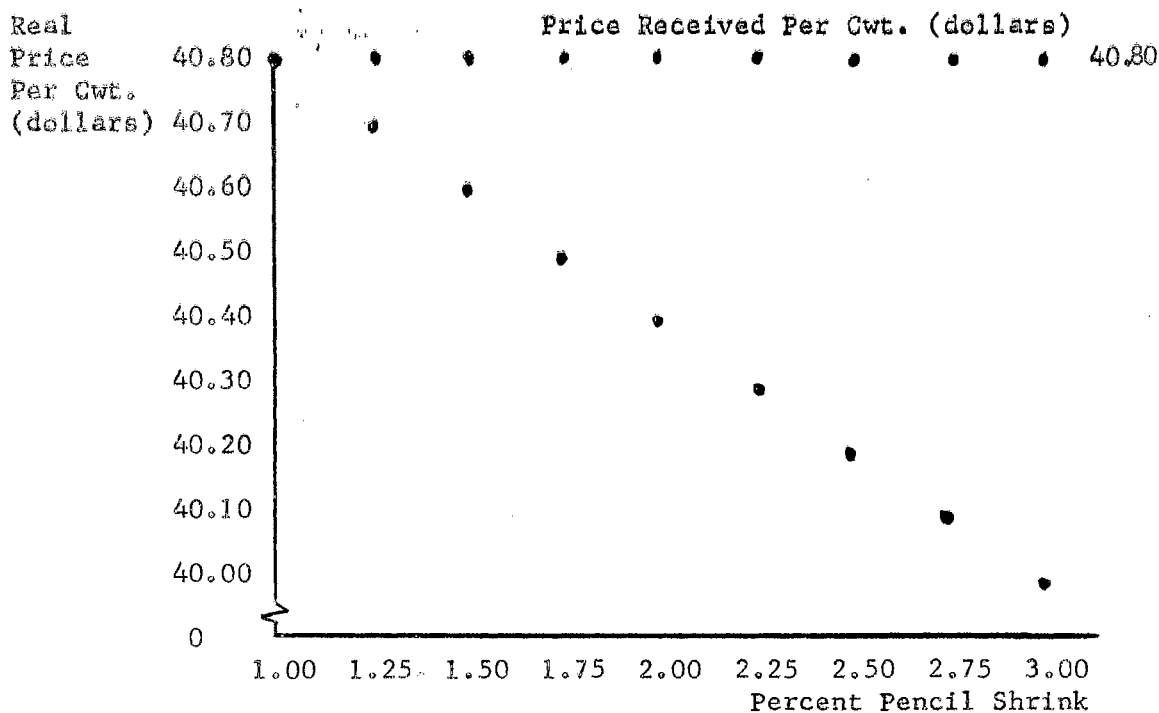


Figure 9. An Illustration of the Impact of Variable Weighing Practices on the Effectiveness of Price as a Communicative Device

A third inefficiency attributable to variable pencil shrinks emerges through an effect on the market news reporting system, leading to reporting of wider price ranges than would otherwise be necessary. The market reports usually do not include the pencil shrink involved when particular prices are paid for carcasses. Assume there are two "identical" 1,000-pound steers that will dress 60 percent. One could command a price of \$41.25 with a 3 percent shrink and the other \$40.00 with no pencil shrink. The market reports might report a \$1.25 range in price for the two steers, but the range would be more artificial than real since both steers would have brought \$40 if pencil shrink had not been a factor.

Grading Practices

As suggested earlier, variable grading practices can also have an impact on returns to feeders and effectiveness of the price mechanism as a communicative device. The grading factor is not as important as the weighing variable since it applies only to approximately 10 percent or less of the carcasses sold on a carcass evaluation basis. But as was shown in the example on page 43, a higher grade for a carcass after thorough chilling could increase the return to the feeder by \$3 or more for that carcass. This could be an important return when profits are small or negative. Since accurate knowledge concerning the grading variable could help the feeder squeeze a few more dollars from a load of steers, the feeders were questioned concerning the grading variable.

All but two of the 17 feeders knew that a carcass can grade higher after thorough chilling. Ten responded to the question with reasons for such grade improvement. The chief reason given was that marbling

appears more abundant and distinct. Other reasons given included better color, whiter fat, better texture, and firmer lean. The majority of the feeders felt grading was completed the day after slaughter or within 48 hours unless a holiday or weekend intervened. However, two feeders felt the final grading was completed about a week after slaughter.

Four of the 17 did not know whether they were paid on the basis of hot or cold carcass grades. Nine of the feeders felt they were paid on cold carcass grades or regraded carcass grades, but several were relying solely on what they had been told by buyers. One was paid on hot grades, two on partially chilled grades and for one, payment was dependent on when the grader was at the plant.

Hypothetical problem situations in which the buyer was to pay the feeders on hot carcass grades were presented to the feeders. Feeders were faced with the problem of selecting a strategy which would permit them to achieve cold carcass value for the carcasses. Responses of "insist on chilled grades" and "bargain for a higher price" are indicative of strategies which at least have potential of succeeding. Seeking other buyers avoids the basic issue. If other buyers also wish to pay on hot weights, a more positive approach to the problem would be necessary. Feeders who go along with the buyer offer no positive solution to the problem and would appear to be subject to net returns below those of other feeders for comparable cattle. All responses are categorized and shown in Table V.

Sufficient basis has been established to indicate the economic impact and implications of variable grading practices. The impact on income and on the effectiveness of price as a communicative device are

similar to the impacts of variable weighing practices. What grade news agencies attempt to report will determine whether a note of ambiguity is injected into market reporting efforts. If preliminary grades are reported, the quoted price for that grade may be biased upward. If final (and possibly higher) grades are reported, then quoted price to the market news agencies is, it would appear, at the discretion of the buying packer. Whatever grades are reported, the price signals will not be as "sharp," not as effective in motivating change, as they might be if stability rather than instability and ambiguity prevailed.

TABLE V

REACTION OF FEEDERS SELLING PREDOMINATLY ON A
CARCASS BASIS TO A SITUATION IN WHICH THE
BUYER WOULD PAY ON HOT-CARCASS GRADES

Nature of Reaction	Number Feeders Choosing
Insist on chilled grades	5
Seek another buyer	4
Bargain for higher prices	3
Go along with buyer	2
No reaction to question	3

Feeders Who Sell on a Liveweight Basis

Eighteen feeders sell primarily on a liveweight basis. All but

one of the 18 have sold, or are presently selling, some cattle on a carcass evaluation basis. In anticipation of increasing sales on a carcass evaluation basis, the liveweight feeders were asked a series of questions concerning weighing and grading practices they have encountered, or will encounter, when selling on a carcass evaluation basis. Most of the problems, results, and difficulties of the previous section apply to these feeders as well. The areas in which the liveweight feeders depart significantly from the previous section will be presented here.

Note in Table III on page 48 that 17 of the 18 feeders in this liveweight group have a feedlot capacity of 2,000 head or more. Thus, this group contains most of the larger feeders interviewed and all those feeding on a custom basis.¹¹

Weighing Practices

All the liveweight feeders knew that a carcass loses weight when chilled. Estimates of this weight loss varied from 1 to 3 percent with an average of 2.1 percent (which was also the average of the carcass feeders estimates). All of this group had been paid on hot carcass weights. The variation in pencil shrink 12 of the 18 feeders in this group have been asked to take from one transaction to another is shown in Figure 10. The remaining six feeders declined to respond or answered "I have no idea," etc.

The average (considering the midpoints of the ranges) is 2.4 as opposed to 2.17 for the carcass feeders. The average range is 1.9

¹¹ Lots feeding cattle on a "custom basis" feed cattle owned by others for a specified fee.

to 2.9 percent as opposed to 1.6 to 2.7 percent for the carcass feeders. The highs range from 2 percent to 3.25 percent; the lows from 1.5 percent to 3 percent. Comparable figures for the carcass feeders are 1 to 3 percent for the highs, 0 to 3 percent for the lows. The higher percentages for the liveweight feeders may result from the absence of any sales on a chilled or partially chilled pay weight. There is some support for a conclusion that feeders in this group also take a slightly higher pencil shrink under comparable conditions.

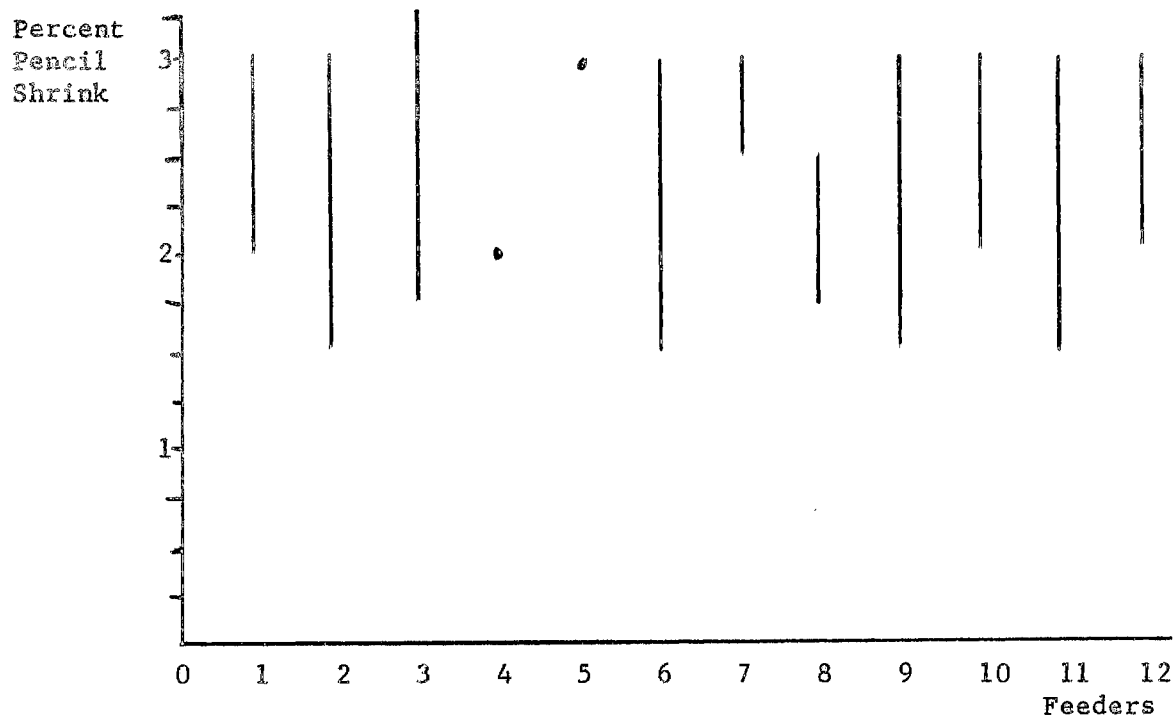


Figure 10. Pencil Shrinks Oklahoma Feeders Who Sell on a Liveweight Basis Have Been Asked to Take During Periodic Exposure to Sales on a Carcass Basis

In Figure 11, the ranges depicted in Figure 10 are plotted in terms of deviations from 1.25 percent, again used as a representative shrink for the majority of coolers for an overnight chill.

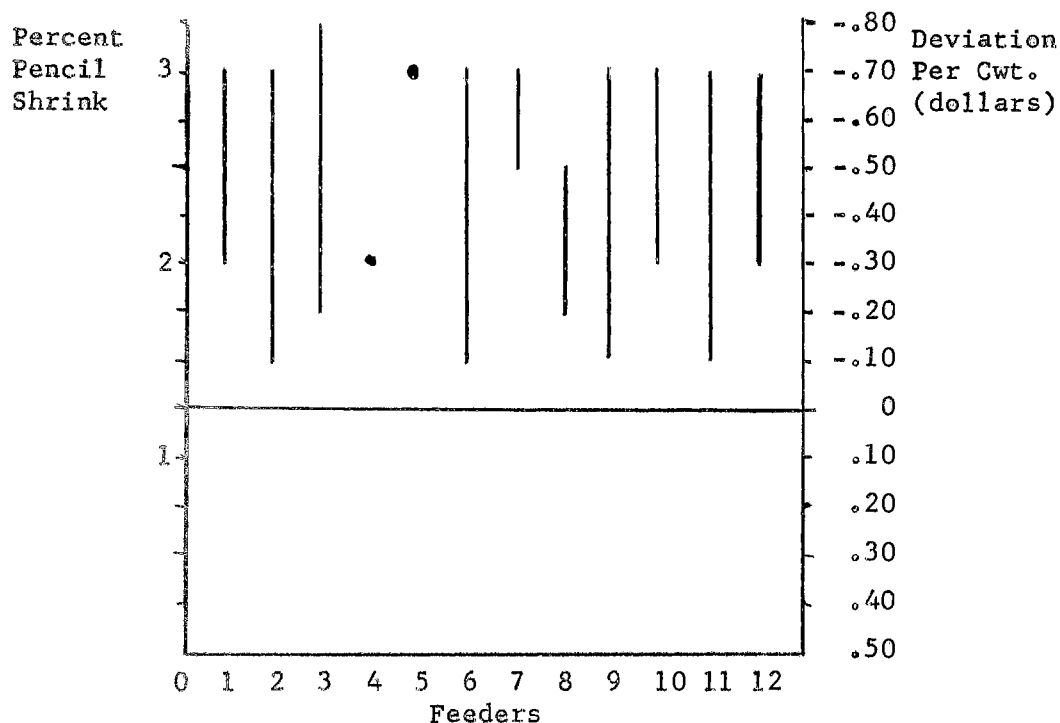


Figure 11. Pencil Shrinks Oklahoma Feeders Who Sell on a Liveweight Basis Have Been Asked to Take During Periodic Exposures to Sales on a Carcass Basis Compared to an Assumed Standard of 1.25 Percent

The figures to the right of the ranges in Figure 11 show the price implications of the respective excesses in pencil shrink relative to the assumed "normal" shrink of 1.25 percent. When priced at \$40 per hundredweight the average deviation from 1.25 percent is 1.15 percent or \$.46 per hundredweight. Thus, on the average, these feeders may

lose \$.10 per hundredweight more than the carcass feeders (with an average deviation of \$.36 per hundredweight). The maximum shrink of 3.25 percent would result in a loss of \$.80 per hundredweight.¹²

Figure 12 shows a comparison of the ranges in pencil shrinks the 12 feeders in this group feel are justified and the pencil shrinks they have been asked to take. All but one felt pencil shrinks were too high. There was no appreciable difference between the two groups in their recognition of the need to offset the effects of the high pencil shrink via higher prices. Two of the liveweight feeders experienced problems in converting pencil shrinks to price implications, but in general there were no obvious differences in abilities of the two groups. As might be expected, there was wider variation in ability within groups than across groups.

¹²The average pencil shrink taken, 2.4 percent, minus the assumed actual shrink of 1.25 percent gives 1.15 percent; .0115 times \$40 per cwt. equals the \$.46 per cwt. price deviation. A 3.25 percent shrink would be 2 percent above the assumed shrink of 1.25 percent; .02 times \$40 per cwt. equals \$.80 per cwt.

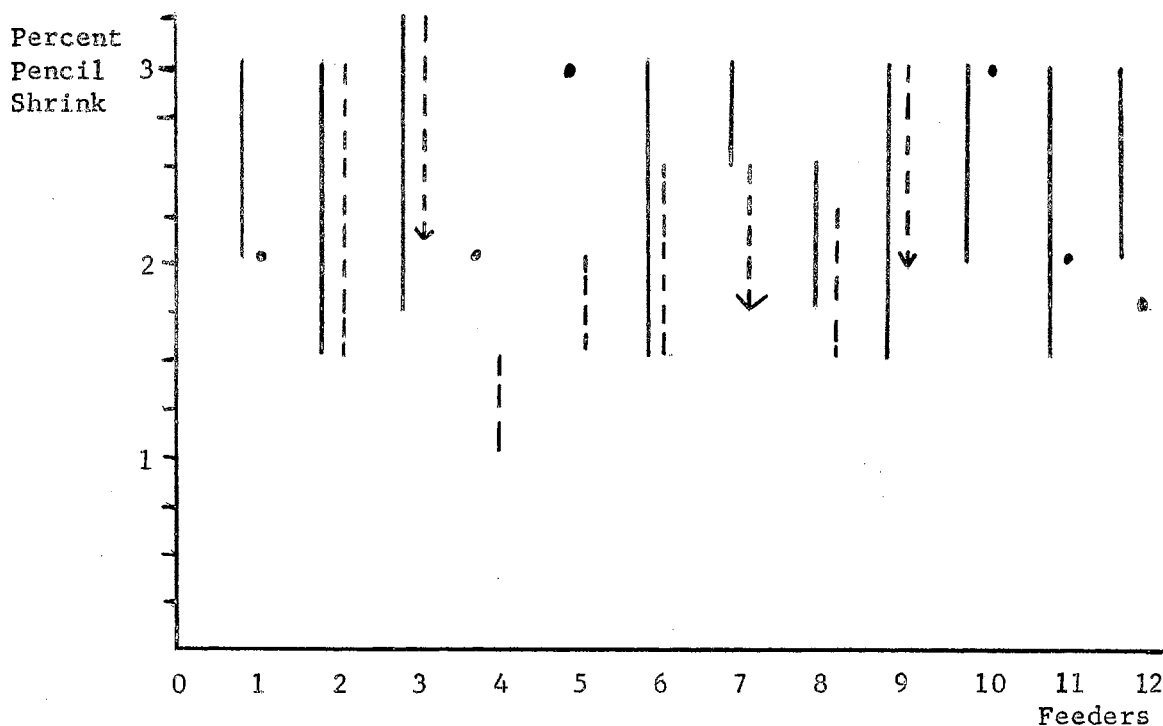


Figure 12. Comparison Between Pencil Shrinks Oklahoma Feeders Who Sell on a Liveweight Basis Have Been Asked to Take During Periodic Exposure to Sales on a Carcass Basis and Shrinks the Feeders Feel Are Justified

Grading Practices

The liveweight feeders answers largely paralleled those of the carcass feeders. Only three liveweight feeders as opposed to four carcass feeders did not know whether they were paid on hot or chilled grades. In the hypothetical problems in which the buyer was going to pay the feeders on hot carcass grades, the liveweight feeders responded as shown in Table VI.

Again the replies closely paralleled those of the feeders selling predominantly on a carcass basis. Of the ten that responded to the question, eight replied with "insist on chilled grades" or "bargain

for a higher price," both of which could prove to be productive strategies.

TABLE VI

REACTION OF LIVWEIGHT FEEDERS TO SITUATION IN WHICH
THE BUYER WOULD PAY ON HOT-CARCASS GRADES,
CARCASS GRADE AND WEIGHT SELLING

Nature of Reaction	Number Feeders Choosing
Insist on chilled grades	5
Bargain for higher price	3
Refuse the offer	1
"Go along with the grades"	1
No reaction to question	8

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The fed beef industry is growing rapidly in Oklahoma. Numbers of cattle and calves on feed have increased from 69,000 in January, 1960 to 181,000 in January, 1968. Growth has been largely in the large feedlots with up to 20,000 head capacity.

During such periods of growth and development, it is important to initiate and/or adopt efficient marketing procedures. Marketing advances have lagged relative to improvements in production techniques and feedlot management. Carcass grade and weight selling, theoretically an advancement in marketing procedure, has been a point of much concern within the industry. Information on this and alternative ways of selling is needed to facilitate decisions which contribute to progressive development in marketing procedure.

Carcass sales of fed beef have been plagued with charges of inefficiency and inequity. However, no concerted effort has been made to investigate and estimate the economic implications of variabilities associated with carcass sales. Variable weighing and grading procedures can affect the seller's net returns and destroy the ability of the price mechanism to effect, via price signals, needed changes and revisions throughout the marketing system. If feeders are unable to discern price premiums and price discounts, the result is a delay in

needed adjustments. Such possibilities can be established conceptually but must be tested empirically to determine the nature and direction of associated economic implications. Oklahoma feeders currently sell a much higher percentage of beef by the carcass method than the average U.S. feeder, such sales are expected to increase, and information on the economic impact of such variable practices and procedures is therefore badly needed.

Establishing the economic implications of any weighing and grading variabilities associated with carcass grade and weight sales of slaughter beef in Oklahoma became the primary objective of the analysis. A secondary objective was to isolate the trends in feedlot characteristics and attitudes of feedlot managers in Oklahoma as these relate to marketing practices for fed beef.

The adopted procedure included a survey of thirty-five large Oklahoma feeders, analysis of the data obtained in the survey, and study of related works and concepts. To initiate the discussion of variable conditions of exchange, it was necessary to point out (1) the indeterminateness of price at low levels of aggregation, and (2) the nature of the problem evolving from variability in economically important conditions of exchange. In Chapter II, an attempt was made to modify the received price theory to conform to the situation faced by the individual feeder as he negotiates a sale. The resulting theoretical format served as a point of departure in establishing the implications of variable procedure.

In Chapter III, current and developing characteristics of Oklahoma feedlots are described. Feeders were asked questions concerning current marketing procedure and needed changes. Feeders felt more emphasis

should be placed on carcass cutability and less on dressing percentage of the live animal. Most feeders noted the current marketing system is incapable of reflecting premiums and discounts, based on high or low cutability, back to the producer. Changes feeders expect to see in the future are more carcass grade and weight sales and more preconditioning lots to prepare cattle for the finishing lots.

Current feeding performance in the finishing lots shows steers with an average daily gain of 2.9 pounds and heifers with an average daily gain of 2.5 pounds for 135 and a 110 day feeding periods respectively. As expected, the daily gains vary considerably between lots.

The thirty-five lots surveyed contained approximately 75 percent of the fed cattle on hand in the state. Feeders interviewed had lot capacities of from 1,000 to 20,000 head. Expansion within the past five years amounted to over 47 percent of present capacity. More expansion is anticipated in the future, especially by the feeders with present capacity of less than 5,000 head.

Most of the feedlots feed thin crossbred cattle bought locally or in East Texas and Louisiana by order buyers. Feeders indicate a strong preference for such cattle over the "quality" feeder animals found in most of Oklahoma. Response to questions on whether more feeder animals would be bought in Oklahoma over the next 10 years varied, depending upon whether the feeder expected out-of-state supplies to decrease and what changes in quality of the Oklahoma cattle might be expected. Almost all feeders would buy in Oklahoma if the "right" type of cattle were produced here. Smaller feeders usually feed heifers to satisfy the local demand for USDA Good beef. The larger feeders fed more steers than heifers. When the survey was taken, about 54 percent of the

cattle in the feedlots were steers.

Seventeen of the 35 feeders sold 50 percent or more of their cattle on a carcass basis. About 33 percent of all cattle in the state are sold carcass grade and weight, indicating the smaller feeders tend to sell on a carcass basis. All feeders had sold at least a few loads of cattle on a carcass basis. Carcass selling procedure typically involves negotiation of a schedule of prices by weight and grade groupings. The main reason for selling on a carcass basis was higher returns, especially for "plain" cattle. Other advantages were "no need to estimate grade and yield" and "receive true value of animals." Disadvantages included the need for absolute trust in the packer, extension of credit to the packer, and the risk of loss due to bruise or other damage while the animals are in transit to the packing plant.

The alternative to carcass selling is liveweight selling. Sixty-seven percent of the cattle in the survey were sold liveweight. Essentially all liveweight sales are direct to the packer via a negotiated price and payment on the basis of liveweight. Eighteen of the 35 feeders sell predominantly on a liveweight basis. Advantages and disadvantages of liveweight sales are direct opposites of carcass advantages and disadvantages.

In Chapter IV the economic and/or price implications of weighing and grading variabilities in the sale of carcass beef are discussed. Pencil shrinks employed by packers in negotiating carcass sales are the primary source of variability in weighing procedure. Pencil shrinks of from 0 to 3.25 percent are experienced by Oklahoma feeders when selling on a carcass basis. This variation in pencil shrinks permits carcass price to vary more than \$1.00 per hundredweight while carcass

returns remain constant. A one percent excess shrink will result in a loss of approximately \$.41 per hundredweight. In addition, payment on preliminary rather than final grades may result in a loss of \$.50 or more per hundredweight on some carcasses.

Carcasses do lose weight during the chilling process. This weight loss is the reason for pencil shrink, but carcass pay weights will be reduced even further if weight is lost before weighing is completed. Weighing for payment immediately after slaughter is necessary for consistency and equity. A thorough understanding of such things as the timing of weighing and related operations can help a feeder bargain effectively.

The thirty-five feeders interviewed were asked a group of questions to establish their experiences with, understanding of, and competence in initiating strategies to offset variable conditions of exchange. In response to a question concerning the time of weighing, most feeders felt the carcasses were weighed "hot" (soon after slaughter before being moved into the cooler). However, two feeders were not aware of the importance of the time of weighing and three other feeders felt some packers wait until the following day to weigh the carcasses. Feeder's estimates of what weight loss would be expected in a modern cooler varied from 1 to 4 percent with an average of 2.1 percent. In comparison, the average pencil shrink taken by the feeders, based on midpoints of the range, was 2.3 percent. However, there were a number of instances in which the upper extreme in the first range was below the lower extreme in the latter range. There is great variation in the pencil shrinks experienced and in the pencil shrinks feeders feel are justified. Some feeders feel actual shrinks are equal to those they are

asked to take. Other feeders feel actual shrinks are far below the pencil shrinks packers employ. The variation in pencil shrinks employed in conjunction with feeders expressed lack of information regarding actual shrink indicates a problem exists and, at the same time, makes estimation of the magnitude of the problem very difficult.

Actual shrink based on a survey by the Packers and Stockyards Administration, USDA varies from .75 to 1.5 percent for an overnight chill. Selecting 1.25 percent as a basis for comparison, it was noted that all but one of the feeders in the survey had consistently taken pencil shrinks in excess of 1.25 percent. The average shrink taken by feeders selling predominantly on a carcass basis, compared to the 1.25 percent, would result in a real price \$.36 per hundredweight below a negotiated price of, say, \$40.00 per hundredweight. The same comparison for feeders selling primarily on a liveweight basis resulted in a real price \$.46 per hundredweight below such a negotiated price.

Feeders were asked for their reaction to a situation in which the pencil shrinks requested by the buyer were considered to be too high. Several feeders would seek other buyers or negotiate for more equitable weighing conditions. A majority of the feeders felt bargaining for a higher price was the proper strategy to employ. However, there was little indication that feeders were actually attempting to offset the effects of high pencil shrinks through price bargaining or through other types of negotiation. In many cases bargaining for a higher price was not attempted since the feeder was not aware that the pencil shrink taken might be excessive.

Variable grading practices also have an impact on returns to feeders and the ability of the price mechanism to relay needed changes

from consumer to producer. Feeders were questioned with regard to grading of animals sold on a carcass grade and weight basis. Most feeders knew that a carcass could reach a higher grade with complete chilling. Several feeders did not know whether they were paid on hot or cold carcass grades. With a price differential of \$.50 per grade, the feeder would lose \$3.00 on a 600-pound carcass which upgraded if the packer paid on the basis of preliminary "hot" grades and then moved the carcass to a higher grade after thorough chilling.

A possible solution to weighing and grading problems is the P&S regulation dealing with carcass grade and weight sales which became effective April 6, 1968. The regulation provides for payment on actual hot weights and final grades. Further provisions are made for such things as uniform tare weights and complete accounting information. The regulation was made public as a proposal on May 30, 1967. However, during August and September, 1967 only 14 of the 35 Oklahoma feeders were even vaguely familiar with the content and purpose of the regulation. There was a noticeable tendency to confuse these regulations with concurrent interest in packer bonding--a completely separate issue. The few feeders who were sufficiently well informed to respond to questions indicated a need for such regulations. Most, however, doubted whether the regulations could be effective.

Conclusions

The primary objective of this analysis has been to establish and measure the economic implications of variable weighing and grading procedures in carcass grade and weight sales of slaughter cattle in Oklahoma. To clarify and emphasize conclusions relating to this

objective, certain of the inferences drawn as part of the analysis are noted here. Important inferences in conclusion form are as follows:

1. The widespread practice of employing an arbitrary pencil shrink to evolve pay weights in carcass grade and weight purchases of slaughter cattle can decrease returns to individual feeders and result in an inequitable distribution of returns among feeders as a whole.
 - a. Pencil shrinks of 3 percent are commonplace. Shrinks of 3 percent exceed the actual shrink for an overnight chill by 1.75 percent in most cases (employing 1.25 percent as a representative figure for most coolers as supported by surveys made by the U.S. Department of Agriculture). At a negotiated price of \$40.00 per hundredweight, the seller receives \$39.30 per hundredweight with an actual weight loss of 1.25 percent and a pencil shrink of 3 percent. Such a deviation converts to \$4.20 on a 600-pound carcass, to \$126.00 on a load of 30 steers.
 - b. There is substantial variation among feeders in their ability to deal with problems associated with excessive shrinks. Some feeders do not recognize a problem exists. Others understand the implications of an excessive pencil shrink, but fall short in recognizing what (if any) strategies have potential to offset the implications of any excessive shrinks. The result is a variation in returns to feeders due to differing levels in understanding and ability to cope with variable weighing procedures.
2. The effectiveness of the price mechanism as a means of communicating incentive for change and adjustment from consumer to producer (pricing efficiency) is decreased by variable weighing procedures which introduce an element of bias into price signals. Coordination of economic activity throughout the beef marketing system is thus threatened.
 - a. Variable pencil shrinks conceal price signals which the price mechanism seeks to transmit from consumer to producer. Pencil shrinks ranging from 1 to 3 percent, if associated with transactions showing a negotiated price of \$40.00 per hundredweight and using 1 percent as actual shrink, lead to a real price ranging from \$40.00 down to \$39.20 (based on a 1,000-pound steer dressing 60 percent).
 - b. Varying pencil shrinks, by distorting and often concealing real price, have slowed the adoption and use of carcass grade and weight sales. Comparisons to liveweight alternatives are made cumbersome and unnecessarily difficult. Consequently, the theoretical advantages of carcass grade and weight sales have not always been realized in practice.

3. The task of reporting market news activity is made more difficult and the reports rendered less useful, by variable pencil shrinks in carcass grade and weight sales. Since individual circumstances cannot be feasibly reported, a price range and some (often implicit) assumption regarding the shrinks employed is necessary. The report must be less definitive as a result.
4. Regulations similar to those now being placed in effect by P&S will, if operational, perform an economically productive function. The requirement which specifies that hot weights be used as pay weights would eliminate the need for an arbitrary pencil shrink, help to prevent distortion of the price signal, and provide the element of standardization needed to facilitate meaningful comparison between sales alternatives. However, the survey results show (1) only 14 of the 35 feeders interviewed were even vaguely familiar with the regulations 3 months after they were proposed, and (2) there was concern among the 14 as to whether the regulations could be operational.
5. Variable grading procedure has potential of economic implications similar to those associated with variable weighing procedures, but at a possibly lower level of occurrence and magnitude.
 - a. A significant percentage of beef carcasses which are classified as "liners" will attain a higher grade when thoroughly chilled than when hot or partially chilled. If settlement is on the basis of preliminary grades and the carcasses are subsequently regraded, the "true" value of carcasses which will upgrade is not reflected in the net returns to the seller.
 - b. The Oklahoma feeders interviewed were less aware of the economic implications associated with variable grading procedures than those associated with variable weighing procedures. Thus, the extent to which such grading procedure affects returns and the effectiveness of the price mechanism varies directly with the extent to which "hot grades" are used for payment purposes, and the proportion of carcasses which will upgrade. Few of the feeders were sufficiently concerned with the timing and procedure of grading to indicate strategies are being employed to offset any problems which exist.
 - c. The P&S regulations, which require payment on the basis of "final" grades, would--if operational--eliminate problems associated with variable grading procedure.
6. Carcass grade and weight sales, already high relative to the national average, will continue to increase in Oklahoma. Currently, feeders are not sufficiently well informed concerning the nature and magnitude of economic implications associated

with variable weighing and grading procedures. An educational effort to eliminate this gap in the currently available body of knowledge is needed.

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APPENDIX

APPENDIX A

FEEDLOT SURVEY

I. GENERAL INFORMATION

(1) Name _____

(2) Address _____

(3) Relationship to operation

_____ owner

_____ Part-owner; _____%

Manager. Do you make the selling decision? ___ Yes ___ No

Explain _____

_____ Other _____

(4) Formal education ____ (Years, with 12 = high school diploma)

(5) With this operation ____ years

(6) Years experience in cattle feeding _____

(7) Characteristics of the operation:

Capacity of feedlot (in head) _____

Number in lot at present _____

Try to operate at ____% of capacity

Factors affecting decision on capacity (put 1 by most important, etc.)

_____ price of feeder cattle

_____ price of slaughter cattle

_____ captial investment

_____ capital availability

_____ labor availability

_____ feed availability

_____ feed cost

_____ other _____

Increase in capacity over past 5 years _____

Plans for future capacity; explain _____

(8) Do you _____ buy or _____ grow your feeders?

<u>Buy</u>	<u>Grow</u>
Average age _____	Average age _____
Sex _____	Sex _____
Average Wgt. _____	Average Wgt. _____
Quality (grade, etc.) _____	Quality (grade, etc.) _____

Do you also raise feeders? _____ Yes _____ No

Why buy calves for feedlot and sell your own? _____

Buy out-of-state, reasons

_____ Quality of feeders; explain _____

_____ Local supply inadequate; explain _____

_____ Local or in-state feeders not suited to feeding operation;
explain _____

How is the buying handled? _____

Likely to buy more in state next 10 years? _____ Yes _____ No;
reasons _____

(9) Feeding Performance

(a) Cost per pound of gain

feed cost _____

non-feed cost _____

total _____

(b) Gain per day

average _____

range _____

- (c) Grade you aim for
 specific grade _____
 general grade range _____
- (d) Average number of days on feed _____
- (e) Ration fed _____
- _____
- _____

II. GENERAL INFORMATION ON SELLING TECHNIQUE, CURRENT PERCEPTION, EXPECTATIONS FOR FUTURE, ETC.

- (1) Are current methods of selling satisfactory? ___ Yes ___ No

Reasons: _____

- (2) How would you like to see current procedure change? _____
- _____
- _____

- (3) Expectations as to what changes will actually occur: _____
- _____
- _____

- (4) What single factor most influences your decisions on grade to which you feed, weight, degree of finish or other potentially variable aspects of your finished cattle?

If mentions price, mark _____ why? _____

If price not mentioned, cue as follows; "What role does price play in the making of these decisions" and record answer _____

- (5) a. An important buyer suggests some characteristics of your cattle which is hurting their sales potential. You investigate and find you could eliminate the fault with a slight change in feeding procedure. Costs would not be affected. What magnitude of price increase would you require before making the change? _____ Why?
- _____

- b. You would probably prefer some other means of being informed on the changes you should make i.e. something other than having to rely on a direction of the buyer or other business acquaintance. What is the more typical way you are informed concerning needed changes _____
- _____

What is needed to motivate change? _____

- (6) Name the two characteristics of a carcass, or terms used to describe a carcass, which most affect the value of the carcass at retail once price is settled. 1. _____

2. _____ Which is more important? ___ 1. ___ 2.

- (7) Do you feel there is a need for mutual trust between the feeder and packer or buyer if the feeder is to receive fair value for his product? ___ Yes ___ No Reasons: _____

- (8) Are you familiar with the recent proposed regulation by P&S concerning regulation of procedure for packers buying on a carcass basis? ___ Yes ___ No. If yes: What parts or aspects of the proposal do you consider most important and why?

Will the regulation, if adopted, be operational: ___ Yes ___ No
Reasons: _____

Why were the regulations necessary? _____

- (9) Is your present system of marketing doing an effective job of paying premiums for the animal yielding a valuable carcass at retail and levying discounts for factors which decrease that value? ___ Yes ___ No

Reasons: _____

What one change would you make if given the opportunity to more nearly insure that the system would be effective in this regard? _____

- III. SELL ON A _____ CARCASS EVALUATION, _____ LIVELINE BASIS.
(If the feeder sells 50 percent or more of his cattle on a carcass basis continue, if not go to page nine.)

Carcass Evaluation

- (1) Description of particular procedure of selling _____

Sell _____% of cattle this way, remainder via _____

(2) Changed to this technique from selling on a liveweight basis
_____ years ago.

(3) Single most important reason for your decision to change _____

(4) Advantages relative to liveweight

_____ No need to estimate grade

_____ More accurate; how? _____

_____ Better information on yield, etc. back to feeder

_____ Buyer can examine important value-related
attributes of the carcass.

_____ Other _____

(5) Disadvantages relative to liveweight sales

_____ Extend credit to packer

_____ Identity of carcasses a problem

_____ Requires trust of packer

_____ Variable grading procedures; impact _____

_____ Variable weighing procedures; impact _____

_____ Kills the "high" or "up" market

_____ Other _____

(6) Changes in procedures you would like to see enacted _____

(7) Procedures: (a) price determined by

_____ Negotiating schedule of prices by weight and grade group-
ings on _____ liveweight basis; _____ on carcass basis

_____ Price tied to market quotation; what market and what time?

_____ Price determined by packer after slaughter in accordance
with what he gets in carcass market; explain _____

_____ Other _____

(b) Is there a written contract? ___ Yes ___ No

If yes, the following are included:

- Condemnation procedures or allowance
- Time of payment _____
- Time of weighing _____
- Time of grading _____
- Information to be provided feeder; nature of this information _____
- Procedure of weighing (tare weights, shroud off, etc.); explain _____

- (c) What sources of information do you use in negotiating your sales, prices, etc.? _____

What information do you use in comparing the method with liveweight sales possibilities? _____

Illustrate how you make such a comparison _____

Provisions for enforcement of contract provisions

- None
- Mutual trust between feeder and packer
- Plant and slaughter procedure always open to inspection
- Knowledge of cattle and expected weights and grades
- Other _____

(8) Perception and Understanding

- (a) Do you know when the carcasses are weighed? Yes: Time _____; No.
- (b) In what state is the carcass weighed i.e. shroud on or off, wet or dry, etc. _____

If, for example, the carcass is weighed with the shroud on, how is the weight of the shroud taken into account?

- (c) Would you expect the weight of the carcass to change during chilling in the cooler?

Yes _____ No _____
 increase _____
 decrease _____

If yes:

- (1) What would you expect this weight loss to be on a percentage basis? _____
- (2) How is this loss handled in determining the weight for which you will be paid? _____
- (3) Are you paid on the basis of hot weight or chilled weight? _____
- (4) Is there a "pencil shrink" taken to cover weight loss in the cooler? ___ Yes ___ No. If yes; when are you informed as to what it will be? _____
- (5) What would be your estimate of the range in the pencil shrink taken from one transaction to another or from one buyer to another? _____%
- (6) Do you have information at your disposal which indicates expected weight loss in a relatively modern and well-maintained cooler? ___ Yes ___ No Is there a need for such information? ___ Yes ___ No
- (7) Do you feel the pencil shrink taken to cover weight loss while in the cooler is sometimes higher than is justified? ___ Yes, ___% of time; ___ No.
- (8) If a prospective buyer were making an offer which included a pencil shrink in excess of what you are reasonably sure is justified, what would be your reaction? _____

What specific action would you take? _____

- (9) Do you feel it important that the pencil shrink be specified sufficiently early to be brought into the negotiations on price? ___ Yes ___ No Reasons: _____
- (10) You have two offers for your cattle. Offer A is for \$40.00 (\$24) with a 2% pencil shrink to cover cooler shrink. Offer B is for \$41.00 (\$24.60) which offer would you take? _____ Why? _____
- (11) Offer A is for \$40.00 with a 2% pencil shrink. Offer B is for \$40.50 with a 3 1/2% pencil shrink. Which offer will you take? _____ Why? _____

- (12) Your steers will average 1,000 pounds, yield 60%, and you are to receive \$40 with a 3% pencil shrink. You feel actual shrink will be 2%. How much price increase would you need to offset the 1% excess shrink? _____
 [Make notes on manner of calculation] _____
-

- (d) To your knowledge, is there any reason why you should be concerned about when the carcasses are graded for purposes of determining the grades upon which payment is to be made? Yes No Reasons: _____
-

- (e) When are the carcasses graded relative to time of placing them in the cooler? _____

- (f) Would you expect the grade a carcass might make to change with more complete chilling i.e. more time in the cooler?
 Yes _____ No _____ Why? _____

Higher Grade _____

Lower Grade _____

- (g) Are you paid on the basis of "hot carcass" grades or "chilled carcass" grades? Hot Cold Comment: _____
-

If "yes" in (f):

- (h) Consider a load of 20 steers (comment on use of small number for simplicity). You negotiate a price of \$40 (24) for the Good grade, \$41 (24.60) for the Choice grade. Your buyer feels the load with split equally between the two grades. You question this and find he intends grading for payment as soon as the shrouds come off after slaughter. You believe that if the carcasses were thoroughly chilled, fully 15 would make Choice. How do you handle this situation?

Insist on use of "chilled grades." How do you insure compliance? _____

Insist on higher price. On which steers and how much? _____

Refuse the offer

Other _____

- (i) You are faced with two alternatives. Alternative A involves payment on the basis of chilled carcass grades and you assume the load of 20 will grade 15 Choice and 5 Good. Price is \$40 (\$24) for the Goods, \$41 (24.60) for the

Choice cattle. Alternative B involves payment on basis of hot carcass grades and you are to assume the load will split 10 Good, 10 Choice. What prices would you need to receive for the Good steers to make alternative B equal to A? \$ _____ for Good

Comments: _____

Liveweight

(1) Sell _____% of cattle this way, remainder via _____

- (a) _____% direct
- (b) _____% through organized market
- (c) Advantages of direct or organized market _____

(2) If sell direct:

What information do you use in deciding on appropriate price?

_____ If other than a terminal report, ask "What role if any, does the quotation from the Tulsa, Oklahoma City, or other central yard play in your price negotiations?" _____

What type of cattle do you (or would you) sell through a terminal or central market assuming you had such cattle? _____

If sell through organized market:

What do you consider to be the alternative outlet for your cattle? _____

Do you get bids or otherwise stay informed on what your cattle would bring if sold direct? _____

What type of cattle would you sell direct, assuming you had such cattle? _____

(3) Sold on liveweight basis for _____ years.

(4) Advantages relative to carcass grade and weight

_____ No extension of credit to packer

_____ No problem of identification

_____ More competitive bidding

_____ Receive true value for animal

_____ Other _____

(5) Disadvantages

- Need to estimate grade
- Need to estimate yields
- Need to estimate carcass characteristics
- Problems with shrink and when weighed
- Other _____

(6) Procedure in pricing, weighing

- a. Negotiate price and
- Weigh on feedlot scales
- Weigh on packer scales off truck
- Weigh on feedlot scales after overnight stand
- Other _____
- b. Do you condition your cattle before shipment? Yes No
If yes, mark
- Early morning shipment, dry feed only previous evening.
- Early morning shipment, dry feed and water previous evening.
- Early morning shipment, no feed or water previous evening.
- Other _____
- Why condition? _____
- c. Do you have accurate records on in-transit shrink on your cattle? Yes No If yes, mark
- have weighed at lot then off truck
- Research results
- Other _____
- d. Is a pencil shrink usually taken when you sell your cattle on the feedlot scales? Yes No
- % taken is variable
- % taken is constant at _____%
- e. Is the pencil shrink taken ever in excess of what the information available to you suggests actual shrink would be?
- Yes No
- f. Do you attempt to offset the effects of this excess? Yes No
If no, why not?
- Accepted practice
- Negotiated prices probably reflect recognition that pencil shrink is too high.
- Packer must protect himself

Not that confident of information on shrink

Other _____

If yes, how?

Try to negotiate a higher price

Retaliate next time by "filling" cattle

Stop conditioning cattle

Other _____

[If tries to negotiate higher price, go to (g), if not cue to (g) but keep separate identities].

- g. Assume you are selling steers with an average weight of 1,000 pounds, with a 4% pencil shrink, and you are relatively sure actual shrink will not exceed 3%. With a price of \$24.00 per hundredweight, how much increase in price would you need to offset the impact of the excess shrink? [Provide pencil and paper if desired, record answer and note whether he worked out the answer or gave an off-the-cuff estimate].
- (7) Have you ever sold carcass grade and weight or are you considering selling via this method at some future date? _____
- (8) What changes would need to be made before you would sell on a carcass grade and weight basis? _____
-
- (9) If you were to sell carcass grade and weight -
- (a) Would you want to know when the carcasses would be weighed?
 Yes _____ : time _____ No _____
- (b) In what state would the carcass be weighed i.e. shroud on or off, wet or dry, etc. _____
- If, for example, the carcass was weighed with the shroud on, how should the weight of the shroud be taken into account?

- (c) Would you expect a carcass to change weight during chilling in the cooler? _____ Yes _____ No _____
- _____ increase?
 _____ decrease?
- If yes,
1. What would you expect this weight loss to be on a percentage basis? _____
 2. How would this loss be handled in determining the weight for which you would be paid? _____
 3. Would you expect to be paid on a hot or chilled weight?
 _____ chilled? _____ hot?

4. Would you expect a pencil shrink to cover weight loss in the cooler? Yes No
5. What would be your estimate of the range, in the pencil shrink taken from one transaction to another or from one buyer to another? _____%
6. What weight loss would you expect in a relatively modern well-maintained cooler? _____
7. Would you expect the pencil shrink taken to cover weight loss while in the cooler to sometimes be higher than is justified? Yes % of time No.
8. If a prospective buyer were making an offer which included a pencil shrink in excess of what you would think was justified, what would be your reaction? _____
9. Do you see any reason why the pencil shrink should be specified sufficiently early to be brought into the negotiations on price? Yes No Reasons: _____
10. If you were selling carcass grade and weight and had two offers for your cattle: Offer A is for \$40.00 (\$24) with a 2% pencil shrink to cover cooler shrink. Offer B is for \$41.00 (24.60). Which offer would you take? _____
Why? _____
11. Offer A is for \$40.00 with a 2% pencil shrink. Offer B is for \$40.50 with a 3 1/2% pencil shrink. Which offer would you take? _____ Why? _____
12. Your steers will average 1,000 pounds, yield 60%, and you are to receive \$40 with a 3% pencil shrink. You feel actual shrink will be 2%. How much price increase would you need to offset the 1% excess shrink?

[Note manner of calculations]

- (d) Assume you are selling carcass grade and weight - to your knowledge, is there any reason why you should be concerned about when the carcasses are graded for purposes of determining the grades upon which payment would be made? Yes No
Reasons: _____
- (e) Would you expect the grade a carcass might take to change with more complete chilling i.e. more time in the cooler? Yes
_____ No _____ high grade _____ lower grade Why? _____

- (f) Do packers pay on the basis of "hot carcass" grade or "chilled carcass" grades? Hot Cold Comment: _____

If yes in (e):

- (g) Consider a load of 20 steers (comment on use of small number for simplicity). You negotiate a price of \$40 (24) for the good grade, \$41 (24.60) for the Choice grade. Your buyer feels the load will split equally between the two grades. You question this and find he intends on grading for payment as soon as the shrouds come off after slaughter. You believe that if the carcasses were thoroughly chilled, fully 15 would make the Choice grade. How would you handle this situation?

 insist on use of "chilled grades." How do you insure compliance? _____

 insist on higher price. On what steers and how much? _____

 refuse the offer

 other

- (h) You are faced with two alternatives. Alternative A involves payment on basis of chilled carcass grades and you assume the load of 20 will grade 15 Choice and 5 Good. Price is \$40 (24) for the Goods, \$41 (24.60) for the Choice cattle. Alternative B involves payment on basis of hot carcass grades and you are to assume the load will split 10 Good, 10 Choice. What prices would you need to receive for the "Goods" to make alternatives B equally as good as A? \$ _____ for Good Comments: _____

Garcass and Liveweight

- (1) What type of cattle are sold each way? _____

- (2) Why do you sell both ways? _____

VITA

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