MONTANA STATE UNIVERSITY

An economic analysis of feeder cattle marketing in Montana

by Dolphus R Dawson

A Thesis Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILOSOPHY in Agricultural Economics
Montana State University
© Copyright by Dolphus R Dawson (1964)

Abstract:
The feeder cattle industry is vital to the economy of Montana. The customary market for the product of this industry is in danger from the encroachment of the produce of the feeder cattle industry in the Central and Southeaster states. The best means of blocking this encroachment is through improved marketing efficiency.

Methods of marketing feeder cattle have long been undergoing change. Resultant indications of each change are that the feeder cattle producer is attempting to reduce his marketing costs, retain more control over the marketing of his product, and attain more bargaining strength.

Observations of the rancher were primarily concerned with direct marketing because analysis of Montana brand inspection records shows an obvious movement of the feeder cattle producer toward this market. Analysis of survey data indicates a strong preference for this market. Even though the surveyed cattlemen were predominately marketing direct, they preferred to deal with the feedlot operator more often than the dealer—order buyer. Analysis of the actual marketing methods which they used demonstrated that they were dealing with these buyers in reverse order.

It is postulated that when the producer is facing the feedlot operator structural characteristics of the market approximate that of pure competition on both sides of the market. When the producer is facing the dealer order buyer, there are market conditions approaching pure competition on the selling side, but there are imperfect conditions on the buying side.

It was posited that these imperfections were due to an imbalance of market information. Models were constructed by which to examine differing posited levels of information. Observations of ranchers offer some empirical evidence to substantiate the resultant conduct indicated by these models. Analysis of market information used by the observed rancher indicates that he is largely unaware of much available information and that very little available information is meaningful in the market of his preference. At the same time, the observed rancher made many efforts to obtain better information.

Most of the sellers in the sample, for strategical reasons engaged in forward contracting. Examination of contracting data indicated that these sellers were subject to disadvantage by the terms of these contracts. This disadvantage is brought about largely by lack of market information.

The observed rancher had definite ideas as to the type, form, and timing of needed information. Market information, designed along these lines, would enable the Montana rancher to increase his bargaining strength, improve his marketing efficiency, and thereby retain his share of the feeder cattle market.

AN ECONOMIC ANALYSIS OF FEEDER CATTLE MARKETING IN MONTANA

by

Dolphus R. Dawson

A Thesis Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

in

Agricultural Economics

Approved:

Head of Department

Chairman, Examining Committee

Dean, Graduate Division

Montana State College
Bozeman, Montana

August, 1964

ACKNOWLEDGEMENTS

The author wishes to express gratitude to Dr. Jack R. Davidson, committee chairman; and to Dr. John L. Fischer, Dr. Layton S. Thompson, and Professor William J. Ewasiuk for advice and assistance in the undertaking of this study.

Thanks are extended to Drs. Oscar O. Thomas and E. P. Smith, Department of Animal Science and Range Management, for counsel on phases of the study.

Appreciation is extended to Mr. William Cheney and Mrs. Betty Algard of the staff of the Montana Livestock Commission for their assistance and cooperation during the designing of the sample.

Very deep thanks are expressed to the Montana cattlemen who so generously gave of their time and made this study possible, and who graciously extended the hospitality of their homes to this author.

TABLE OF CONTENTS

	Page
VITA	i
ACKNOWLEDGMENTS	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	vii
LIST OF FIGURES	x
ABSTRACT	xi
CHAPTER I. INTRODUCTION	1
The General Problem Setting	1
General Economic Importance of Agriculture	2
Feeder Cattle are a Strategic Export Product	7
The Market Here in Montana	13
The Limit of the In-State Market	16
Challenge to Montana's Export Market	16
Structural Changes in Feeder Cattle Marketing	18
Changes Leading to Terminal Markets	19
Changes Leading to Auction Markets	22
Changes Leading to Direct Markets	24
The Research Problem	26
Objectives	28
Hypothesis	29
Procedure	29
Source of Date	29
Sampling Considerations	30
CHAPTER II. COMPETITION AND THE FEEDER CATTLE MARKET	33
The Nature of the Market	33
Perfect Competition as an "Ideal" Market	35
Market Structure Analysis	41
The Game Approach	42
Elements of a Two-Person Constant Sum Game	45
Wold Criterion	47
Savage Criterion	48
Hurwicz Criterion	49
"Principle of Insufficient Reason" Criterion	50
The Case of "Partial Ignorance"	50
A Critique of Game Theory	51
Wold Criterion	51
Savage Criterion	52
Hurwicz Criterion	52
"Principle of Insufficient Reason" Criterion	53
The Case of Partial Ignorance Criterion	53
The General Theory	54
The Model for the Feeder Cattle Bargaining Game	58
Wold Criterion	58
Savage Criterion	61

TABLE OF CONTENTS
(Cont.)

Page

Hurwicz Criterion. 62
Principle of Insufficient Reason Criterion 64
The Case of Partial Ignorance Criterion. 65

CHAPTER III. 67
PREFERENCE AND USE OF MARKET METHODS BY MONTANA FEEDER CATTLE PRODUCERS. 67
Ranking of Preference and Reasons of Preference. 67
State. 67
Areas-Within-State. 73
Actual Marketing Methods Used. 79
State. 79
Areas-Within-State 82
Consistencies of the Marketing Pattern. 89
State. 89
Areas-Within-State 91
The Case of the Closest Organized Market. 95
The Direct Buyer. 98
State. 99
Areas-Within-State. 100
Season of Contact 105
State. 105
Areas-Within-State. 109

CHAPTER IV. BARGAINING IN THE DIRECT MARKET. 113
Introduction. 113
The Strategies of Price Bargaining. 113
A General Model for Price Bargaining. 113
Price Bargaining Sequence. 120
All Original Offers. 120
Original Offers By Buyer 123
Original Offers By Sellers 124
The Buyer's Original Offer is Rejected and a Counter-Offer is Made. 126
The Seller's First Counter-Offer is Rejected and the Order Buyer Makes a First Counter-Offer. 128
The Seller Rejects the Buyer's First Counter-Offer and Makes His Second Counter-Offer. 129
The Buyer Makes A First Counter-Offer After He Has Rejected the Seller's Original Offer. 130
The Buyer's First Counter-Offer is Rejected and the Seller Makes a First Counter-Offer. 132
The Seller's First Counter-Offer is Rejected and the Buyer Makes a Second Counter-Offer. 133

TABLE OF CONTENTS
(Cont.)

Page

The Strategies of Bargaining for Shrinkage Conditions 134
The Strategies of Bargaining for Cutback Conditions 142
Strategies in the Use of Feeder Cattle Purchase Contracts 146
The Time Element of Contracting and Delivery 150
The Contract Form 152

CHAPTER V. MARKET INFORMATION--ITS ROLE IN DIRECT SELLING 158
Seller's View of the Adequacy of His Market Information In Relation To That of the Buyer 158
Types of Market Information Received and Types Used in the Seller's Decision-Making 160
USDA Mailed Livestock Market News Reports 160
Commission Firm Mailed Reports 164
Auction Market Reports 165
Bank Reports 167
Farm Magazines and Agricultural Newsletters 169
Newspapers 171
Radio Reports 172
"Last Minute" News 172
Television Reports 173
A Critique of Market Reports 173
Seller's Ranking of Market News Sources 174
Seller's Views On Suggested Market News Improvements 177
Auction Market News 177
Direct Market News 177
Summary 180

CHAPTER VI. SUMMARY, CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH 182
Summary 182
Suggestions for Improvement of the Feeder Cattle Producer's Bargaining Position 187
Grading and Sorting Demonstrations 187
Contract Forms 187
Auction Market Reports 188
Description of Price-Quality 188
Regional Coordinated Extension Programs 189
Beef Advertising Campaign 189
Knowledge of Presently Available Reports 189
Radio Reports 190
Television Reports 190
Shrinkage Information Booklets 191
Educational Programs 191
Direct Market Report 191
Further Research 192

TABLE OF CONTENTS
(Cont.)

	Page
Optimal Size of Feeder Calves	192
Game Model	192
Buying Side of the Direct Market	193
APPENDICES	194
LITERATURE CITED	217

LIST OF TABLES

Number		Page
I	MOVEMENTS OF MONTANA FEEDER CATTLE, 1958-1963.	9
II	RANKING OF TOP TEN STATES RECEIVING MONTANA FEEDER CALVES, 1958-1963.	10
III	SHIPMENTS OF MONTANA STEERS AND HEIFERS OUT-OF-STATE, 1958-1963.	14
IV	OUT-OF-STATE SHIPMENTS OF MONTANA CALVES, 1958-1963. . . .	15
V	SHIPMENTS OF MONTANA CATTLE OUT-OF-STATE BY INSPECTION POINTS, 1958-1963.	27
VI	PREFERENCE OF MARKET METHODS FOR SELLING FEEDER CATTLE, 120 RANCHERS, MONTANA, 1963.	69
VII	PREFERENCE OF MARKET METHODS, 120 MONTANA RANCHERS, 1963 BY AREAS-WITHIN-STATE.	75
VIII	MARKETING METHODS USED FOR CLASS OF ANIMAL BY 120 MONTANA RANCHERS, 1962-63.	80
IX	ACTUAL MARKET CHANNEL USED, 120 MONTANA CATTLE PRODUCERS, 1963 BY AREAS-WITHIN-STATE	83
X	ACTUAL MARKET CHANNEL USED, 120 MONTANA CATTLE PRODUCERS, 1962, BY AREAS-WITHIN-STATE.	84
XI	CONTACTS RECEIVED BY RANCHERS FROM DIRECT BUYERS: STATE, TYPE AND NUMBER.	100
XII	CONTACTS RECEIVED BY 120 MONTANA RANCHERS FROM DIRECT BUYERS, 1963, BY AREAS-WITHIN-STATE.	102
XIII	CONTACTS RECEIVED BY 120 MONTANA RANCHERS FROM DIRECT BUYERS, 1962, BY AREAS-WITHIN-STATE.	103
XIV	SEASON OF FIRST CONTACT FROM THE DIRECT BUYER, BY STATE AND AREA-WITHIN-STATE, NUMBER AND TIME OF FIRST CONTACTS, 1963	106
XV	SEASON OF FIRST CONTACT FROM THE DIRECT BUYER, BY STATE AND AREAS-WITHIN-STATE, NUMBER AND TIME OF FIRST CONTACTS, 1962.	107

LIST OF TABLES
(Cont.)

Number		Page
XVI	ORIGINAL OFFER--ALL OFFERERS, 1963 OR 1962.	122
XVII	ORIGINAL OFFERS MADE BY BUYERS, 1963 OR 1962.	124
XVIII	ORIGINAL OFFER MADE BY SELLER.	125
XIX (a)	THE ORDER BUYER'S ORIGINAL OFFER IS REJECTED AND THE SELLER TAKES A FIRST COUNTER-OFFER	127
XIX (b)	THE FEEDLOT OPERATOR'S ORIGINAL OFFER IS REJECTED AND THE SELLER MAKES A FIRST COUNTER-OFFER	128
XX (a)	THE SELLER'S FIRST COUNTER-OFFER IS REJECTED AND THE ORDER BUYER MAKES A FIRST COUNTER-OFFER.	128
XX (b)	THE SELLER'S FIRST COUNTER-OFFER IS REJECTED AND THE FEEDLOT OPERATOR MAKES A FIRST COUNTER-OFFER	129
XXI (a)	THE ORDER BUYER'S FIRST COUNTER-OFFER IS REJECTED AND THE SELLER MAKES A SECOND COUNTER-OFFER.	130
XXI (b)	THE FEEDLOT OPERATOR'S FIRST COUNTER-OFFER IS REJECTED AND THE SELLER MAKES A SECOND COUNTER-OFFER.	130
XXII(a)	THE SELLER'S ORIGINAL OFFER IS REJECTED AND THE ORDER BUYER MAKES A FIRST COUNTER-OFFER.	131
XXII(b)	THE SELLER'S ORIGINAL OFFER IS REJECTED AND THE FEEDLOT OPERATOR MAKES A FIRST COUNTER-OFFER	131
XXIII(a)	THE ORDER BUYER'S FIRST COUNTER-OFFER IS REJECTED AND THE SELLER MAKES A FIRST COUNTER-OFFER	132
XXIII(b)	THE FEEDLOT OPERATOR'S FIRST COUNTER-OFFER IS REJECTED AND THE SELLER MAKES A FIRST COUNTER-OFFER	133
XXIV(a)	THE SELLER'S FIRST COUNTER-OFFER IS REJECTED AND THE ORDER BUYER MAKES A SECOND COUNTER-OFFER.	133
XXIV(b)	THE SELLER'S FIRST COUNTER-OFFER IS REJECTED AND THE ORDER BUYER MAKES A SECOND COUNTER OFFER.	134
XXV	ORIGINAL OFFER OF SHRINKAGE CONDITIONS BY OFFERER.	140
XXVI	SHRINKAGE CONDITIONS.	142

LIST OF TABLES
(Cont.)

Number		Page
XXVII	TIME INTERVAL BETWEEN SIGNATURE DATE AND DELIVERY DATE OF FEEDER CATTLE CONTRACT, 120 MONTANA RANCHERS, 1962 AND 1963	150
XXVIII	WEIGHT CONDITIONS SPECIFIED IN FEEDER CATTLE CONTRACTS, 1963 AND 1962	154
XXIX	MAGAZINES AND AGRICULTURAL NEWSLETTERS READ BY MONTANA CATTLEMEN	171
XXX	MARKET NEWS SOURCES RANKED BY 120 MONTANA RANCHERS AS MOST IMPORTANT IN MAKING MARKETING DECISIONS, 1963	176

LIST OF FIGURES

Figure		Page
1	Cash Receipts as a Percentage of Farm Marketings by Major Commodities, 1954-61	3
2	Cash Receipts as a Percentage of Farm Marketings by a Particular Commodity of Each Major Group, 1954-61	6
3	The Design for Area Sampling	31a
4	Individual Supply	39
5	Market Supply	39
6	Market Equilibrium	40
7	A Two-Person Constant Sum Game	46
8	Regret Matrix	48
9	A Game Matrix With a Dominated Strategy	59
10	Wold Criterion	60
11	Savage Criterion	61
12	Hurwicz Criterion	63
13	Price Bargaining Game Model	115
14	Feeder Cattle Producer and Feedlot Operator in Equilibrium	116
15	A Game Without a Saddle Point	119
16	A General Model For Feeder Cattle Bargaining	136
17	A Game Without a Saddle Point	138

ABSTRACT

The feeder cattle industry is vital to the economy of Montana. The customary market for the product of this industry is in danger from the encroachment of the produce of the feeder cattle industry in the Central and Southeaster states. The best means of blocking this encroachment is through improved marketing efficiency.

Methods of marketing feeder cattle have long been undergoing change. Resultant indications of each change are that the feeder cattle producer is attempting to reduce his marketing costs, retain more control over the marketing of his product, and attain more bargaining strength.

Observations of the rancher were primarily concerned with direct marketing because analysis of Montana brand inspection records shows an obvious movement of the feeder cattle producer toward this market. Analysis of survey data indicates a strong preference for this market. Even though the surveyed cattlemen were predominately marketing direct, they preferred to deal with the feedlot operator more often than the dealer--order buyer. Analysis of the actual marketing methods which they used demonstrated that they were dealing with these buyers in reverse order.

It is postulated that when the producer is facing the feedlot operator structural characteristics of the market approximate that of pure competition on both sides of the market. When the producer is facing the dealer order buyer, there are market conditions approaching pure competition on the selling side, but there are imperfect conditions on the buying side.

It was posited that these imperfections were due to an imbalance of market information. Models were constructed by which to examine differing posited levels of information. Observations of ranchers offer some empirical evidence to substantiate the resultant conduct indicated by these models. Analysis of market information used by the observed rancher indicates that he is largely unaware of much available information and that very little available information is meaningful in the market of his preference. At the same time, the observed rancher made many efforts to obtain better information.

Most of the sellers in the sample, for strategical reasons, engaged in forward contracting. Examination of contracting data indicated that these sellers were subject to disadvantage by the terms of these contracts. This disadvantage is brought about largely by lack of market information.

The observed rancher had definite ideas as to the type, form, and timing of needed information. Market information, designed along these lines, would enable the Montana rancher to increase his bargaining strength, improve his marketing efficiency, and thereby retain his share of the feeder cattle market.

CHAPTER I

INTRODUCTION

The General Problem Setting

Montana is experiencing a widening gap in her economic growth rate in comparison with that of most other states. 1/ In order to reduce this gap, political leaders and chambers of commerce have gone to great effort to induce outside industries to relocate to Montana, to entice new enterprise, promote tourism, and to devise promotional schemes of all sorts. Another way to attack the basic growth problem would be to seek ways to strengthen the basic industries already present.

It has become commonplace among land economists to divide industries into two major categories, those which are town-building and those which are town-serving. Those industries generally referred to as town-building industries are basic industries. There may be a particular characteristic such as geography, or several characteristics which explain the initiation of a basic industry. Around this basic industry springs a community. As the community becomes more concentrated the activities of its population become more specialized. Community growth brings with it many demands for diverse commodities and services. Town-serving industries are initiated and, in time, an economic complex is formed.

A basic industry is not typified. It can be any, but it must be primary in the sense that it provides the chief means of support in the area and

---

1/ Maurice C. Taylor, Income Trends in Montana, (in process of publication), page 1.

other industries in a large measure adjust themselves to it.

Another property of a basic industry is its export orientation. This is not a necessary condition, but most communities owe their origin to an export industry--one which produces for markets mainly out of its area.

General Economic Importance of Agriculture

Agriculture, mining and lumbering have historically been the three main basic industries in Montana. This is still true today even though there are fundamental changes taking place in each of them.

Of these, agriculture is foremost. Within agriculture the cash receipts from the marketing of livestock and livestock products have been increasing as a percentage of total receipts. The upward trend of cash receipts from livestock and livestock products has been under way since 1954. Cash receipts from crops have, during the same time, been declining as a percentage of total receipts. This is illustrated in Figure 1. The trends since 1957-58 have been more divergent.

Within the major classifications of livestock and products, and of crops, attention is drawn in Figure 2 to two particular commodities: (1) cattle and calves and (2) wheat. Each contributed largely to the trend of its commodity group. Cash receipts from other commodities within each group have remained relatively constant. Crops for livestock feed have at least held their position over the time period under consideration.

Beef cattle production is a basic industry to Montana. It was not always this type of an industry. In the beginning it was a non-basic industry. If one can ignore the early fur trading posts, it can be said

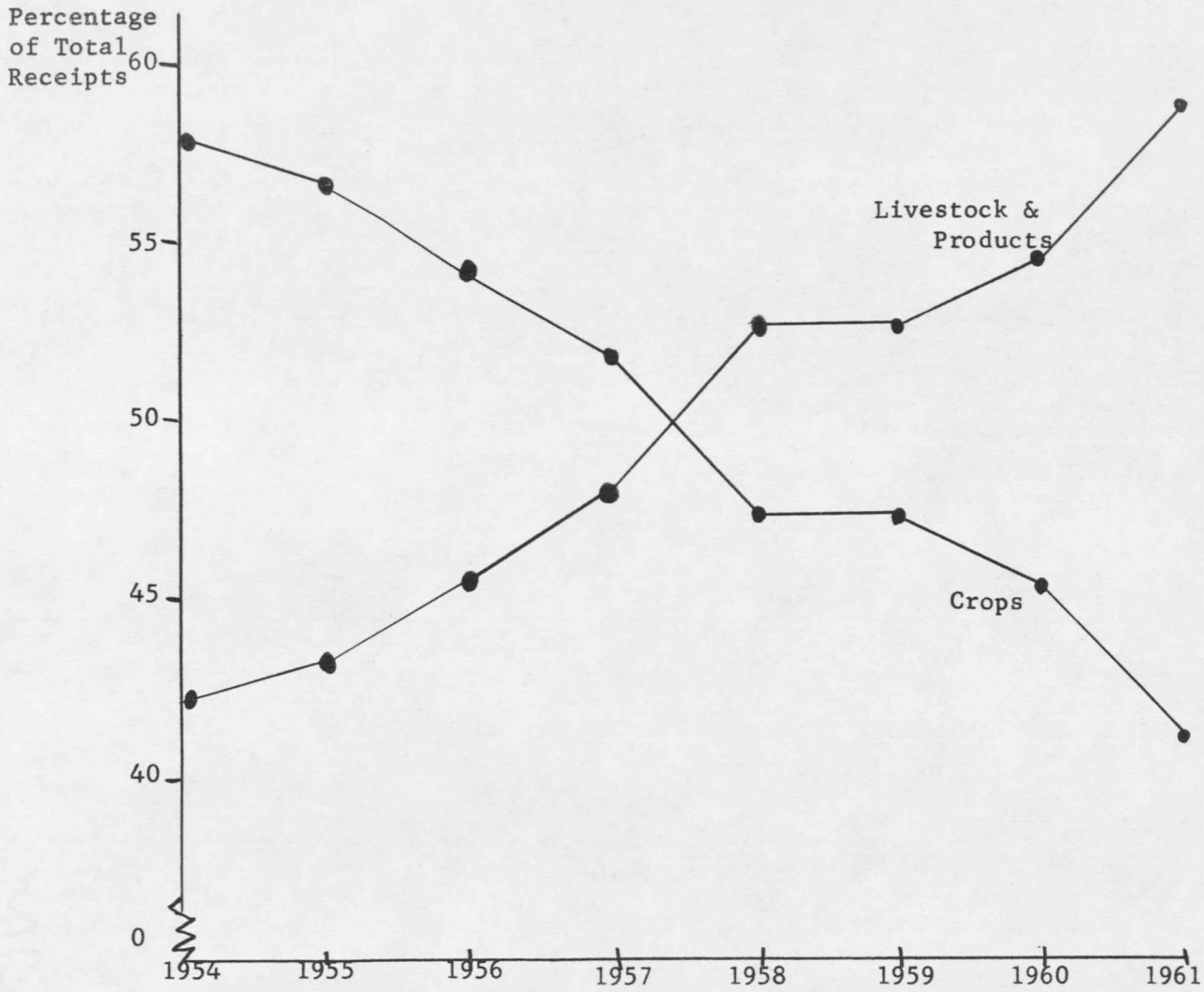


Figure 1. Cash Receipts as a Percentage of Farm Marketings by Major Commodities, 1954–61.*

* Source: Montana Department of Agricultura, Statistical Reporting Service, Helena, Montana.

that mining was the first industry which was basic to Montana and to early Montana communities.

Before the coming of the white man, it is said that certain Inter-mountain Indian Tribes annually traveled well-defined trails to the plains to hunt buffalo. These annual migrations, of course, were not possible before the taming of the horse. Days on the trail were many. The object was to return to home grounds with the heaviest possible payload of cured meat for winter use. This meant that the parties had to live off the country while on the trail. The accounts of Lewis and Clark make note of the scarcity of game on the portions of their journey which took them over these trails.

When the early prospectors made their finds and began working the pay dirt of Bannack, Nevada City, and Virginia City, they were in areas which had felt the hunting pressure of many such annual migrations. Game was scarce even from the beginning. As population increased in the mining camps, game had to be sought farther and farther away from the camps. Time spent hunting for food was time lost to the primary industry. To meet this demand cattle at first were trailed in for immediate slaughter. Soon herds were established on the grass ranges near the mining camps. Beef cattle production had become a town-serving industry in Montana.

Good grass was abundant. Of course, there were the original land owners--the Indians; and the original grass consumers--the buffalo. These though, were regarded by the white man as nothing more than hindrances to his "manifest destiny". Over uncertain and dangerous routes--great herds

from all directions were trailed into Montana.

On trail junctions and supply routes communities sprang up. At first, the industries were rudimentary; mostly food, drink, and shelter for horse and rider. The nature and number of the population changed rapidly; so did the industries serving them. Big money was being made running cattle on the free grass and shipping them to eastern markets. Big money was also being made providing commodities and services to those who herded the cattle. Beef cattle production had become an export or town-building industry long before the big bonanza days of the mining camps ended.

Types of beef cattle and techniques of producing them have undergone many changes. Beef production became a leading industry almost from its inception in Montana and has remained so ever since. Montana, in turn, has been for many years not only a leading state in feeder cattle production, but has a reputation for producing high quality feeder cattle.

There is nothing sacred about such a position, however. Most segments of the beef industry are in the midst of drastic changes. Many old areas are changing to new methods and new forms of production. New areas are now ready to challenge the position of areas holding historically prominent positions. Montana is one of the historic areas of beef production that are about to be challenged by the growing industry in the South and Southeast. This industry is vital to the economy of Montana. It is important to appraise the means at the industry's dispoal which can be used to keep and perhaps improve its position.

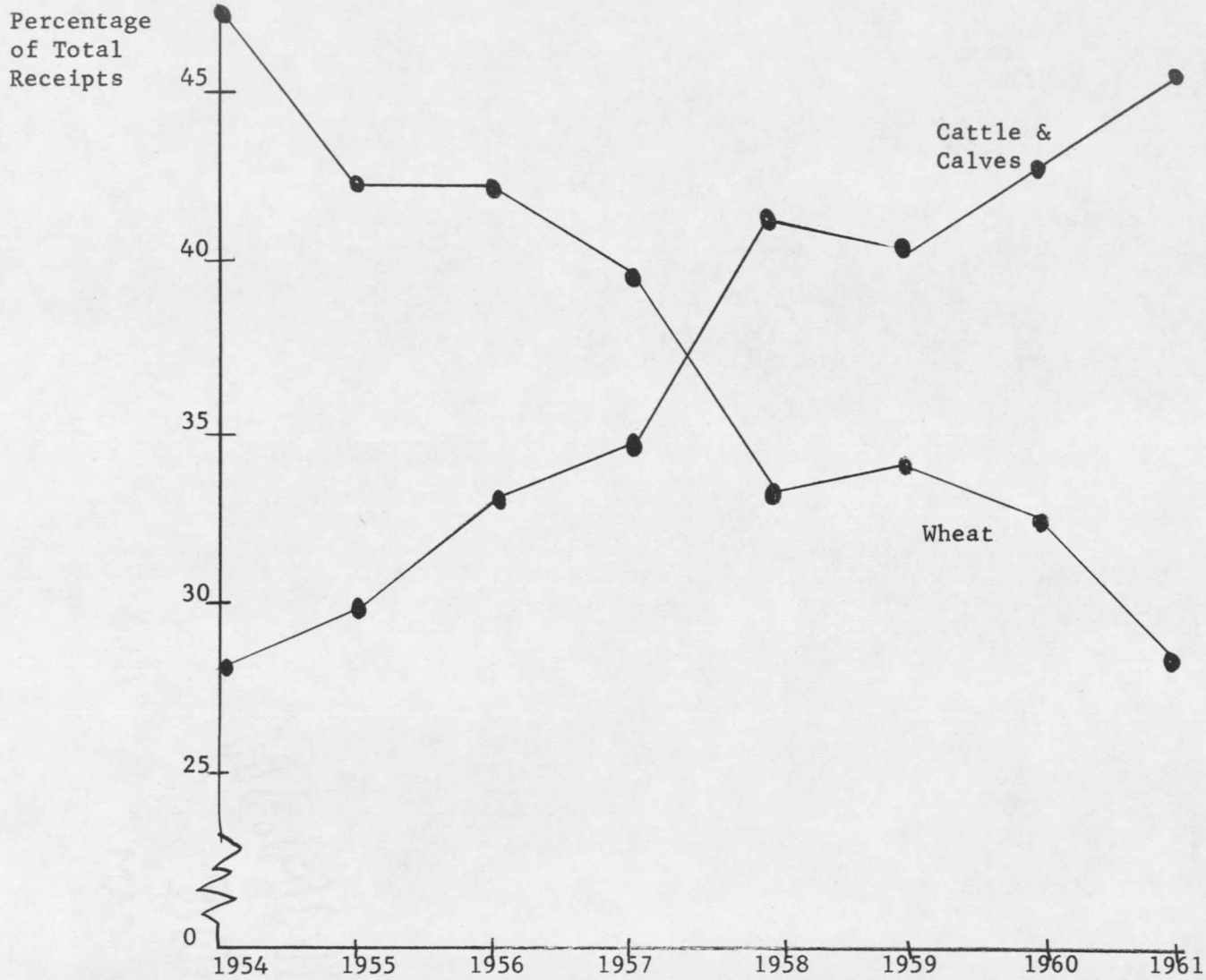


Figure 2. Cash Receipts as a Percentage of Farm Marketings by a Particular Commodity of Each Major Group, 1954-1961.*

* Source: Montana Department of Agriculture, Statistical Reporting Service, Helena, Montana.

Feeder Cattle are a Strategic Export Product

Within the Montana cattle industry the production of feeder and stocker cattle is the main enterprise of most operations. Other types of cattle sold for slaughter or finishing are largely by-products of this endeavor, i.e., cull cows and bulls, dry cows and such. The production of two and three-year olds has dropped to the point of insignificance. Seldom are animals held beyond the stage of long yearlings before starting finishing operations.

Montana cash receipts for cattle and calves in 1961 were $166,048,000; $156,934,000 in 1962; and $137,338,000 in 1963. Although some receipts are included for classes other than feeder cattle they are insignificant. Further, it is difficult to attribute an exact figure to classes and grades because of wide yearly and seasonal swings in prices, wide variability in weights and ages, and non-standard definitions of grades. Regular, reliable recordings of these factors are not made in Montana.

Statistical evidence does indicate, though, that in terms of gross income or cash receipts the feeder cattle industry is strategic to Montana's economic welfare. 2/ At this point two considerations are due. Because the industry is a significant source of income in all areas of the state, it exerts substantial leverage on agri-businesses throughout the state. Trade and service industries in all areas of the state extract varying

---

2/ Maxine C. Johnson, Beef Cattle in the Montana Economy, Montana State University, 1961, p. 13.

portions, all significant, from the feeder cattle industry. 3/

The second consideration due the feeder cattle industry is that of an export industry. Table I illustrates that a large portion of steers, heifers and calves inspected both at country points and at markets, and moved out of the county, were shipped out-of-state. Bear in mind that not all inspections necessarily represent sales. In addition, heifers were included in total movements and in shipments out-of-state. Sales of replacement heifers then would appear in total movements even though these cattle are not intended to be feeder cattle. Most of them would see the market again as dry or cull cows.

Slightly more than half of the total movements of feeder cattle were of calves. Over the six-year period shown, the variation was small. The largest change took place in 1961 due to drought conditions.

The portion of feeder cattle making up total out-of-state shipments ran rather steady, averaging about 74 percent. Calves again averaged around the 50 percent level of the feeder cattle in out-of-state shipments.

Table II gives a top ten ranking of states to which these feeder calves are shipped for the same years under consideration. Although there has been some slight shifting in recent years, the market for Montana feeder cattle is well defined. Among the top five states, no state has moved more than one place in rank over the six-year period. Iowa has remained first place through the period. Illinois has retained second place. Not

---

3/ Ibid., p. 16.

TABLE I. MOVEMENTS OF MONTANA FEEDER CATTLE, 1958-1963. *

Year	Total Movements of Feeder Cattle	Percentage of Calves	Total Out-of-State Shipments	Feeder Cattle Out-of-State Shipments	Column 5 as a Percentage of Column 4	Percentage Calves in Feeder Cattle Out-of-State Shipments
1958	1,232,312	51.46	1,086,491	761,101	70.05	50.71
1959	1,252,046	48.83	1,069,348	773,963	72.37	47.52
1960	1,473,528	50.61	1,227,835	916,202	74.62	50.76
1961	1,465,814	57.08	1,201,893	876,388	72.92	55.89
1962	1,321,997	55.10	977,406	739,367	75.65	55.63
1963	1,296,069	52.49	881,192	671,043	76.15	51.10
Average	1,340,294	52.58	1,074,028	789,677	73.63	51.94

* Source: Montana Department of Agriculture, Statistical Reporting Service, Helena, Montana.

TABLE II. RANKING OF TOP TEN STATES RECEIVING MONTANA FEEDER CALVES, 1958-1963. *

	1958	1959	1960	1961	1962	1963
1	Iowa	Iowa	Iowa	Iowa	Iowa	Iowa
2	Illinois	Illinois	Illinois	Illinois	Illinois	Illinois
3	Nebraska	Nebraska	Nebraska	Minnesota	Minnesota	Minnesota
4	Wyoming	Wyoming	Minnesota	Nebraska	Nebraska	Wyoming
5	Minnesota	Minnesota	Wyoming	South Dakota	Wyoming	Nebraska
6	South Dakota	South Dakota	South Dakota	Wyoming	South Dakota	South Dakota
7	Kansas	Colorado	North Dakota	Kansas	North Dakota	North Dakota
8	Colorado	Kansas	Kansas	Colorado	Idaho	Idaho
9	Idaho	Idaho	Colorado	Texas	Kansas	Wisconsin
10	North Dakota	North Dakota	Idaho	North Dakota	Wisconsin	Kansas

* Source: Montana Department of Agriculture, Statistical Reporting Service, Helena, Montana.

all feeder cattle went directly to users. Iowa, Illinois, Nebraska, and Minnesota each have collection yards belonging to speculators receiving large numbers of cattle from Montana. These speculators have buyers which operate in large, almost delineated areas of Montana. These same speculators also own holding yards and grazing land in Montana and other states in order to take advantage of market timing. Several of them own auction yards and other marketing facilities or have controlling interests in them. These structural aspects should be taken into consideration in making deductions from Table II.

There exists a practice, already pronounced and expected to grow, of crossing Angus bulls with Hereford Cows to obtain "black baldy" calves. This started out as a means of more safely calving heifers as 2-year olds and obtaining a higher percentage calf crop from these heifers. Feedlot performance, probably due to hybrid vigor, has increased the demand for this type of feeder calf. If this demand continues to increase, it means that marketing practices for heifers will be altered. All "cross" heifers will be sold as feeders and straight-bred replacement heifers will need to be purchased for the cow herd. Implications are that, if carried far enough, this practice could have the effect of restructuring production programs. It also could restructure individual marketing programs, and the numbers, types, classes and timing of "she-stuff" arriving on the market.

The production and marketing of feeder cattle in Montana are very seasonal operations. Some operators have lately undertaken fall calving enterprises and claim varying degrees of success. The weather in Montana

though, is a powerful limiting factor. One should not expect to obtain much cyclical dampening through this medium. Any investigation of cattle marketing problems in Montana should therefore be cognizant of this seasonal production and marketing pattern. Table III affords an examination of numbers of steers and heifers shipped out-of-state over the past six years. The percentage of the yearly total shipped in each month is listed. The percentage for like months over the six-year period is averaged. These average percentages show that September and October are the months in which more than half of the steers and heifers are shipped out-of-state. The build-up of numbers shipped starts and continues through August to the peaks in September and October. In November, numbers shipped let down to about the same volume as that of August. A first trough shows up in February after a continuing decline throughout December and January. A slight increase occurs in April and continues into May only to be converted into a decline, then another trough in June. Individual years have their own stories to tell. The early increase in numbers shipped in July, 1961 and reaching the high point earlier in September points to the drought which occurred that year. The higher numbers shipped in November and December of 1963 point to the drastically changing market conditions of that season.

Much of the same is given for number of calves shipped out-of-state in Table IV. Notable among the differences is that the peaks and troughs are more extreme in numbers. The highest number of calves shipped is in October. The next highest number, in November, is only little more than half of that in October. The fall-off is very rapid, followed by a

gradual reduction until the trough is reached in May and June. The build-up is very slight until suddenly October again. Again, each year reflects or fails to reflect disturbances. The conditions at work on shipments out-of-state of steers and heifers in 1961 and in 1963 had about the same effect on shipments of calves.

The Market Here in Montana

At the present time, a considerable portion of the finest quality feeder cattle in the nation, by generally accepted industry standards, is produced in Montana. The Montana Agricultural Experiment Station 4/ working in cooperation with the cattle industry has made tremendous progress in beef cattle improvement.

Much interest has been shown recently in Montana in the feeding of cattle within the state. Available feed grains could support an almost endless expansion of cattle feeding. Such an industry would be able to realize economies of transportation of basic inputs and be able to utilize labor and other resources which are in danger of under-utilization. However, recent research indicates that slaughter, packing, and processing facilities already in existence in the state could handle limited increased production of fed cattle 5/ It seems that there are restricted possibilities for such an industry.

4/ Contributions from animal scientists of the Montana Agricultural Experiment Station are extensive, with publications too numerous to cite. Many such contributions appear in proceedings of annual conferences.

5/ Charles H. Rust and Clive R. Harston, The Survival and Growth Potential of Small Meatpacking Businesses in Montana, a study prepared for the Montana State Planning Board (Bozeman, Mont. Ag Expt. Sta., MSC, 1963), p. 80.

TABLE III. SHIPMENTS OF MONTANA STEERS AND HEIFERS OUT-OF-STATE, 1958-1963. *

Month	1958	%[a/]	1959	%	1960	%	1961	%	1962	%	1963	%	Average %
January	8,964	2.3	10,400	2.5	15,349	3.4	18,030	4.7	13,694	4.2	7,698	2.3	3.2
February	7,691	2.0	7,871	1.8	11,498	2.6	12,142	3.1	12,000	3.7	8,362	2.5	2.6
March	9,587	2.5	18,823	4.9	21,582	5.2	22,824	6.1	16,337	5.0	19,904	6.0	5.0
April	18,248	5.6	19,035	5.1	25,004	5.8	26,804	7.1	27,553	8.4	18,656	5.6	6.3
May	15,798	5.0	9,063	2.3	17,470	4.1	15,130	3.8	11,571	3.5	12,704	3.9	3.8
June	10,065	3.0	5,675	1.4	17,526	4.0	13,487	3.5	5,659	1.7	7,338	2.2	2.6
July	9,217	2.7	10,250	2.6	22,398	5.2	31,448	8.7	7,027	2.1	9,241	2.8	3.9
August	24,637	6.7	32,989	8.2	58,105	13.7	55,923	15.0	18,633	5.7	22,523	6.9	9.4
September	124,373	33.5	112,568	28.0	112,430	24.5	76,978	20.3	86,537	26.5	62,429	19.0	25.3
October	113,898	28.1	107,301	24.2	102,627	21.0	78,025	18.5	92,002	28.1	94,305	28.7	24.8
November	22,105	5.7	53,530	13.6	35,950	7.9	27,385	7.0	26,977	8.2	48,789	14.9	9.5
December	10,567	2.9	19,757	5.0	11,172	2.5	8,436	2.2	9,101	2.8	16,193	4.9	3.4
TOTAL	375,150	100[b/]	406,164	100	451,111	100	386,612	100	327,091	100	328,142	100	

* Source: Montana Department of Agriculture, Statistical Reporting Service, Helena, Montana

a/ Percent of total number each month.

b/ Since percentages have been rounded off to one decimal point percentage columns will not necessarily total 100.

TABLE IV. OUT-OF-STATE SHIPMENTS OF MONTANA CALVES, 1958-1963. *

Month	1958	%[a]	1959	%	1960	%	1961	%	1962	%	1963	%	Average %
January	10,925	2.8	15,696	4.3	24,848	5.3	24,411	5.0	17,496	4.3	10,253	3.0	4.2
February	4,925	1.3	5,710	1.6	11,440	2.5	9,264	1.9	8,124	2.0	6,609	1.9	1.8
March	6,597	1.7	9,300	2.4	12,472	2.7	11,384	2.3	5,914	1.4	4,277	1.2	2.0
April	4,886	1.3	6,743	1.8	5,117	1.1	5,516	1.1	8,481	2.1	2,419	0.7	1.4
May	3,261	.8	1,363	.4	3,261	0.7	2,969	0.6	2,224	0.5	2,124	0.6	0.6
June	1,914	.5	1,309	.4	3,680	0.8	5,066	1.0	3,023	0.7	2,475	0.7	0.7
July	1,667	.4	1,112	.3	3,189	0.7	16,179	3.3	861	0.2	914	0.3	0.9
August	2,846	.7	3,261	.9	3,817	0.8	37,941	7.8	904	0.2	766	0.2	1.7
September	15,074	3.9	12,356	3.4	20,114	4.3	49,260	10.1	6,738	1.6	5,273	1.5	4.1
October	210,922	54.7	135,443	36.8	230,001	49.5	211,207	43.1	223,079	54.2	133,017	38.8	46.2
November	103,416	26.8	112,534	30.6	123,280	26.5	96,697	19.7	114,659	27.9	142,154	41.5	28.7
December	19,518	5.1	62,972	17.1	23,872	5.1	19,882	4.1	19,773	4.8	32,620	9.6	7.6
TOTAL	385,951	100[b]	367,799	100	465,091	100	489,776	100	411,276	100	342,901	100	

* Source: Montana Department of Agriculture, Statistical Reporting Service, Helena, Montana.

a/ Percentage of total number each month.

b/ Since percentages have been rounded off to one decimal point percentage columns will not necessarily total 100.

The Limit of the In-State Market

One collateral consideration comes to the fore; even if the cattle feeding industry should show anticipated growth in the near future, it still could not utilize to best advantage the quality of feeder cattle produced in Montana. A high percentage of Montana feeder cattle have inherent characteristics which, with efficient feeding operations, enable them to reach the higher slaughter grades. The demand on the West Coast and in the Intermountain states is for slaughter cattle which grade low choice and good. Those are the grades which one finds being predominately fed in Montana feedlots.

Evidence presented in a recent study indicates that beef slaughter and consumption in Montana are approximately in balance. 6/ Marketing of products from in-state expansion must look for out-of-state outlets. Since other intermountain states are in about the same position, near markets may be hard to come by.

Challenge to Montana's Export Market

That Montana's feeder cattle are today of top quality and bring commensurate prices is not enough. Montana has long had competition from other areas which have traditionally raised feeder cattle. A very rapid expansion of beef cattle production is now taking place outside the areas which are usually considered to be traditionally beef cattle or

---

6/ Ibid., pp. 14-15.

range country.

The growth of urban population on the East and West Coasts, the Ohio Valley, and in the Southwest has, it can be said, contributed indirectly to the shifting of areas of supply of feeder cattle. The increase in average income of these consumers has changed their meat preferences; they have continued to demand more beef.

The production of beef cattle is becoming an attractive economic alternative for agricultural resources. An outstanding area in point is the southeastern states. The area has the climate for almost year around production. When this area lost cotton as its big income producer, beef cattle production was the next best alternative. Conversion of tilled land to grazing land was also a conservation measure welcomed by many groups for many reasons.

Extension workers in these states aggressively spread the merits of beef cattle production testing and other recent findings of agricultural researchers. A very short time ago this area produced an insignificant number of beef cattle; now it ranks nearly the highest in the nation and is still growing rapidly. 7/ Virginia has gone from 50,000 beef cows in 1940 to 450,000 in 1963. Kentucky has more than doubled its beef cow numbers in the last six years. Mississippi started the year 1963 with 879,000 beef cows as compared with 1,210,000 in Montana. Whereas the January 1, 1963 inventory shows that nationally, beef cow numbers increased

---

7/ Warren L. Trock, Cattle Feeding in the Northern Great Plains, Bulletin 576, Montana Agricultural Experiment Station, Bozeman, Montana, April 1963, pp. 12-13.

6 percent; the western Corn Belt states show an increase of 7.5 percent and the Southcentral states show an increase of 6.5 percent. The Midwest and East show the biggest increase in beef heifers, which indicates intentions of increasing beef cattle numbers in that section.

There is ample evidence that the quality of calves from these areas is improving as rapidly as the number. As mentioned above, producers have shown that they are eager to put to use the findings of experiment stations. In addition extension agents in these areas are busy demonstrating the advantages of various marketing methods and techniques and these teachings are being well received.

Although the progress being made in these areas is the most spectacular, the movement is in the same direction in several other areas. The expansion of production and changes of movement of feeder cattle are very complex, and no attempt at treatment will be made in this study. It is the purpose of this section to point out that Montana could lose a substantial portion of its feeder cattle market.

Structural Changes in Feeder Cattle Marketing

From the foregoing it is evident that the ways in which the feeder cattle industry in Montana can maintain or increase its competitive position are limited. One way would be by achieving a greater measure of marketing efficiency. This study will concentrate on problems in the marketing of feeder cattle in Montana. To aid in establishing a perspective for such a study some of the market structural changes of the past need to be considered.

> "A livestock marketing system began with the growth of towns and cities during the latter part of the seventeenth and the early part of the eighteenth centuries. Prior to that time, most of the people lived on the land, and the individual family was entirely self-sufficient, producing its own supplies of meat, fats, leather and wool. There was no need for a marketing system, and the marketing problem did not exist. As cities developed and began to depend on nearby farmers for their meat and animal products, the marketing system emerged."8/

Changes Leading to Terminal Markets

Shortly after the close of the Civil War, it is estimated that cattle worth $4.00 in Texas would have been worth $40 on a Northern market.9/ First efforts to market these herds were uncertain, almost desperate, attempts to reach a rail-head. The drovers, in following a natural tendency to proceed directly, encountered irate farmers who blamed their cows' illnesses on the transient cattle, multitudes of bandits and poor feed conditions. It soon became apparent that cattle trails had to be more to the West. But this requirement added considerably to the distance and time of travel; J. G. McCoy, a livestock shipper from Illinois, is credited with being the first to see clearly what was needed to bring Southern drovers

---

8/ Steward H. Fowler, The Marketing of Livestock and Meat, Second Edition The Interstate Printers and Publishers, Inc., Danville, 1961 pp. 35-6.

9/ Walter Prescott Webb, The Great Plains, New York: Grosset & Dunlap, 1931 p. 216. This publication offers a complete and well documented study of the inception and early growth of cattle production as an industry.

and Northern buyers together. 10/ Railroads were going to push West anyway. His plan was to establish rail transportation and handling facilities farther to the West so that the cattle herds could remain on the prairie through their travel. McCoy, after refusals from other companies, convinced the Kansas Pacific to furnish service to the Missouri River and the Hannibal and St. Joe Railroad, at a special rate, to Chicago. The refusal by the Missouri Pacific, turned the cattle traffic from St. Louis, and McCoy thought, made Chicago the principal cattle market for many years. 11/ He selected as his terminal, the outpost of Abilene, Kansas.

It was in September, 1867, before the first shipment of cattle went out--destined for Chicago. But 35,000 head of Texas cattle went out that year, even with a late start. In 1871, five years later, 700,000 head were loaded and shipped out the same way. McCoy had intelligently diagnosed the critical need for change, i.e., large capacity of cheap transportation and expansive, permanent handling and shipping facilities--a cow town, if one wishes. Chicago grew rapidly as a railroad center, and as livestock production increased, became the livestock marketing capital of the United States.

10/ Ibid., pp. 219-20.

11/ Ibid., p. 220.

During the first decade following the Civil War, several railroad companies had built facilities there for the handling of livestock. In 1865, these companies consolidated their efforts and established the Union Stockyard of Chicago--the first modern public livestock market in the United States. The success of the Chicago public market led to the establishment of similar markets at other railroad centers and important river crossings.

During these years, the growth, development, and particularly, the location of the stockyards was closely associated with railroad expansion. Terminal markets and concentration yards became an important link in the livestock marketing chain. Another factor influencing the growth of terminals, particularly in the Midwest, was the development of the refrigerator car in the early 1860's. This permitted packing companies to gradually shift their slaughter operations from the consuming centers in the East to the more concentrated areas of livestock supplies in the Midwest, and ship their meat East. 12/ New and better markets for "western dressed beef" were the signals for greater cattle production in the western part of the nation. The rapid growth of the range cattle business also caused a marked change in beef production in the Corn Belt states. Feedlots could be filled with western cattle at a lower cost than native cattle could be raised at home. In addition, widespread use of improved breeding stock

---

12/ Edward Uvacek and D. L. Wilson, Livestock Terminal Markets, USDA Marketing Research Report No. 299, January, 1959 p. 2.

and feeding practices throughout the range country resulted in cattle that would fatten and finish out at an early age. Since these cattle proved highly satisfactory for feeding purposes, the beef cattle business in the Corn Belt became largely a finishing operation. 13/

Changes Leading to Auction Markets

Since the mid-twenties, the relative importance of terminal markets as an outlet for slaughter livestock has declined for all species of livestock, although less for cattle than others. The relative importance of feeder and stocker cattle declined from the 1920 to the mid-thirties then increased generally until 1957. 14/ Although total numbers of saleable receipts of cattle at 12 public stockyards combined has shown little change from 1940 to 1962, like receipts of calves have shown slight variability from 1940 to 1947 then an almost steady drop from 2,598,587 head to 935,996 head in 1962. 15/ Throughout this period, total marketings of cattle and calves have increased.

After World War I, the improvements in motor trucks, the vast expansion of hard-surfaced highways throughout the country, and the increasing use of the radio combined to reduce the advantage derived from the concentration of livestock at the terminal markets. The growth of packing plants within the areas of production and by the increasing popularity of live-

---

13/ Agricultural Research Bulletin No. 15, "Cattle and Calves--Where They're Raised and Beef is Eaten", Swift and Company, Agricultural Research Div., Chicago, 1963, pp. 5-6.

14/ Uvacek and Wilson, op. cit., p. 9.

15/ Livestock and Meat Statistics, 1962, USDA, Statistical Bulletin, No. 333, Washington, July, 1963, p. 51.

stock auction markets also played a role. 16/

The number of auction markets increased from about 200 operating in 1930 to 2,472 by 1949. The peak in numbers was reached in 1952 when over 2,500 auctions were holding sales. Factors, in addition to those above, leading to the growth of auction markets were the development of more uniform grades and weight classifications for livestock and improvements made by the Federal Government in providing more extensive collection and dissemination of market news. 17/

Harston indicates another growth factor, "The small local auction also serves as an afternoon social to many rural folks. Often it is difficult to find a place to sit at the local sale; yet the buying may be done primarily by those on the first two rows." 18/ The auction market is often conveniently located and the producer can follow his cattle through the sale. Since time in transportation is less than shipping to terminal markets, the producer has control over his product longer through the marketing process. Out West, a market was needed for cull cattle of too little value to warrant high marketing costs. "Special" feeder calf sales have attracted high quality calves in good number. Too, they have served an educational purpose. Producers have been able to witness the marginal value product differential attributable to better quality bulls and improved cow herds (MVP>MC).

16/ Fowler, op. cit., p. 226.

17/ Gerald Engelman and Betty Sue Pence, Livestock Auction Markets in the United States, USDA, Marketing Research Report, No. 223, March, 1958 pp. 5-6.

18/ Clive R. Harston, An Economics Study of Community Livestock Auctions In Washington, Bul. 545, Wash. Ag Expt. Sta., Pullman, April, 1954.

The peak in auction numbers, just over 2,500, was reached in 1952. But growth was slowing down. By 1955, auction market numbers had declined to 2,322. 19/

Changes Leading to Direct Marketing

The growth and relative importance of auctions by species of livestock and with other marketing methods varied considerably with regions and even by states within a region.

Many of the factors which caused the growth of the auction market may be found in element in the causes for increased direct marketing. 20/ Roads, highway and farms have continued to improve. Specialized cattle trucks have been designed and built for long distance hauling. Cattle frequently are picked up at the ranch loading chute and unloaded at the Midwestern farmer's feedlot. However, a large number of Montana feeder cattle are still shipped by rail, especially those going to the most distant points. Improvements of radio, telephone--especially rural telephone, and teletype service have affected direct marketing. And now, television. Educational programs of high schools, colleges, and government agencies have given the producer more confidence and an inclination to assume more of his marketing functions.

19/ Engelman and Pence, op. cit., p. 1

20/ Direct marketing of feeder cattle is defined for purposes of this study as sales directly from producer to feedlot operators, order buyers, dealers, and other ranchers, where the sale is completed between the seller and the buyer.

Table V shows how the cattle shipped out-of-state were dispersed through the various brand inspection points over the past six years. These figures afford the best indication of the distribution of marketing methods used, however, records with this particular information were not kept before 1958. In that year, a revised brand inspection form was put in use. No distinct trend in market change is discernable in this short time period. However, some observations can be advanced.

First, it can be noted that inspections at the country shipping points have averaged around 58 percent over the time period and make up more than half of the total shipments out-of-state. Second, inspections of this type have at least held their own and hint at an upward trend.

Also, it is noticeable that out-of-state shipments from Montana auctions have held about steady over the time period. This increase in inspections at country shipping points indicates an increase in direct marketing at the expense of out-of-state specified market shipments. Not all shipments in this category are to terminal markets. Some are to out-of-state auction markets. 21/

21/ Any attempt at complete tabulation of movement of feeder cattle from producer to next user is made complex and confusing by the interplay of dealers. Through some categories of inspection points, these movements are thought to be insignificant; others not.

The changes discussed in this section have been those concerning the marketing of live cattle. Many changes have taken place in other phases of the livestock-meat complex. These in turn have had a feedback effect on cattle production and marketing. To name a few; the many innovations of the packing industry, growing size and bargaining power of food retailers, less concentration of strength among the large packing firms, reduction in meat wholesaling and more direct sales between packers and retailers, immense growth of commercial feedlot operations, and more production specifications for livestock and meat. The automobile and the home refrigerator, enabling the consumer to buy less frequently and farther away, has been no less important.

The Research Problem

This paper will deal directly with the problem of increasing the efficiency of the marketing process. It will be specifically concerned with increasing the efficiency of direct marketing of feeder cattle. The market information level and informational equality as between the buyer and the seller are the primary measures of market efficiency to be examined.

The feeder cattle industry is made up of many firms of widely varying size but none large enough to affect pricing and output on an industry-wide scale. The problem situation was posed in terms of the industry. This specific research problem, though, examines a randomly-selected, representative sample of ranching firms on a state and area-within-state basis. Once this sample is identified and described, the market characteristics allow inferences drawn from the sample to be applied to the industry.

TABLE V. SHIPMENTS OF MONTANA CATTLE OUT-OF-STATE BY INSPECTION POINTS, 1958-1963. *

Year	Inspected at Country Shipping Points	Inspected at Montana Markets	Inspected at Specified Markets Out-Of-State	Total
		Number of Head		
1958	639,964	352,285	94,242	1,086,491
1959	558,578	388,033	122,737	1,069,348
1960	708,503	415,107	104,225	1,227,835
1961	697,052	410,822	94,019	1,201,893
1962	608,085	319,353	49,968	977,406
1963	536,263	295,587	49,340	881,192
		Percentages		
1958	58.9	32.4	8.7	100
1959	52.2	36.3	11.5	100
1960	57.7	33.8	8.5	100
1961	58.0	34.2	6.2	100
1962	62.2	32.7	5.1	100
1963	60.9	33.5	5.6	100

* Source: Montana Department of Agriculture, Statistical Reporting Service, Helena, Montana

Any means which will improve the bargaining position of the individual rancher, will increase his marketing efficiency. Such means when made available to all ranchers in the state, will increase the marketing efficiency of the industry in the state. This research was designed to isolate and define such means.

Objectives

This study will measure the relative extent to which direct marketing auction markets, and terminal markets are being used by the feeder cattle producers within the state. It will attempt to measure the producers' attitudes towards these marketing methods, reasons for these attitudes and aspirations toward methods of marketing. It will attempt to evaluate the bargaining position of the individual rancher and offer suggestions for improvement of this position. The study will pursue the following specific objectives:

1. To determine the preference the feeder cattle producer holds for direct marketing, auctions, and terminal markets, and to determine the extent to which he actually uses these marketing methods.

2. To determine why the feeder cattle rancher in Montana has generally increased his preference for direct marketing.

3. To delineate areas in the direct marketing process which may be improved in order to give the rancher a better bargaining position.

4. To evaluate the role the feeder cattle contract and examine extant contract arrangements.

5. To measure the use of available market information and to determine its adequacy for an evaluation by the rancher of his marketing alternatives and for the improvement of direct marketing.

Hypothesis

The feeder cattle producer in Montana, in order to maintain his economic position, needs to improve his marketing efficiency. There is an imbalance of bargaining power between the commercial direct buyer and the producer. Improved marketing information made readily available would do much toward increasing the equality of bargaining strength between the buyer and the producer. Little of the marketing information which is available is suited to the producer's preferred marketing method. The producer is not aware of much market information that is available, nor is he able to gather it and put it to use. The feeder cattle producer and the next user of the product, by bargaining more directly may improve market efficiency. The producer, the feedlot operator, and society in general will benefit. Regardless of which marketing method is used by the producer, an improved information level will increase his benefits to some extent.

Procedure

Source of Data

Information to place the cattle feeder marketing problems in perspective was developed primarily through the use of secondary material. However, analysis of the problems associated with direct transactions *per se* required information from the producers taking part in the bargaining process. To meet these data needs, a random sample of 120 ranchers located

throughout the state were interviewed. The fact that little was known of the actual parameters of the total population made the chosen sample size depend heavily on the judgment and experience of the researcher.

Sampling Considerations

Considerations of choice were the desired representativeness, degree of accuracy, time involved, and cost of travel. The definitive, climatic, and topographic regions of the state which likely affect the organization of beef cattle operations rather closely follow the delineation of the seven crop reporting districts used by the Montana Department of Agriculture as shown in Figure 3. These districts, then, were used as frame areas. Two districts were found to be distinctly lower in numbers of cattle and calves on ranches and in total movements of feeder cattle out of county. These two districts were assigned a quota of one sampling county each. The other five districts were assigned a quota of two sampling counties each. A random two-digit number list was formed. 22/ All number groups from 01 to 56 were allowed. Next, a table of Montana car license plant prefix numbers, which designate counties, was formed. Proceeding from the top of the two-digit number list, a selection was made of any county whose car license prefix number was identical to a two-digit number until the quota of counties for all seven districts had been filled. In areas having two sampling counties, the first and second county selected are marked so in Figure 3.

22/ G. W. Snedecor, Statistical Methods, 4th Edition, Iowa State College Press, Ames, Iowa, 1946, p. 4.

Ten observations from each county were needed. Names of ranchers were randomly drawn from the Brand Inspection Record files. Two criteria were set up for the selection of names: One, that a bill of sale was passed; two, that the inspection was made on the feeder class of cattle. The names could have been selected from out-of-state market files, Montana markets files, or Country Shipping Points files. Since the study is largely concerned with direct marketing, the latter file for the year 1962 was selected from which to draw names. This technique slightly biased the study but does not restrict it from rendering inferences which are applicable to a large portion of the feeder cattle industry. It restricted from selection only those cattle producers who had never sold feeder cattle and those who had never sold directly. The rancher selected did sell one group of feeder cattle in 1962 by direct marketing. He may have sold other groups of cattle, feeder or otherwise, the same year by another marketing method. He may have sold all classes of cattle by another marketing method the previous or following year. Within the sample, any or all those possible happenings frequently occurred. This circumstance, then, provided the opportunity to gather and analyze data concerning any marketing method which the rancher had been or was using. Table V illustrated in numbers and percentages the extent to which the marketing methods are used by feeder cattle producers. This table further points to trends in the use of these marketing methods.

Before taking observations in any particular county, the name list was checked for current applicability and location of ranch with an individual

MONTANA



Figure 3. The Design for Area Sampling.

Legend: Heavy Lines Are Divisions of Frame Areas. Sample Counties are lined diagonally.

who was familiar with the cattle industry within the county. County agents, livestock inspectors, and sheriffs were consulted. Without fail, each declared that he felt it would be difficult to devise a list which would be more representative.

CHAPTER II

COMPETITION AND THE FEEDER CATTLE MARKET

The Nature of the Market

Professor Lamborn offered the opinion that there are two distinct types of market studies. 23/ One type, he says, deals with the factors of supply and demand actually affecting or determining price. The other type studies the degree, the amount, or the kind of imperfection that is present in the market for a particular good to determine how well or how efficiently a market works to establish price.

The present analysis is of the second type and attempts to find out how the system of marketing for feeder cattle works and how it may be improved.

The terms "market" and "marketing" have a number of meanings. The following definition of marketing, though not extracted from an agricultural source, seems well applicable to feeder cattle marketing. It states, "marketing covers all business activities necessary to effect transfers in the ownership of goods and to provide for their physical distribution. It embraces the entire group of services and functions performed in the distribution of merchandise from producer to consumer, excluding only operations relating to changes in the form of goods normally regarded as processing or

---

23/ Ellis W. Lamborn, "Studies of Mechanics of Pricing vs. Studies of Underlying Price-Making Forces, A Discussion". Pricing as a Problem for Marketing Research, Report No. 5, Proceedings, Marketing Research Committee of the Western Agricultural Economic Research Council Berkeley, California: University of California, June 10-12, 1963 pp. 25-27.

manufacturing operations." 24/

Marshall said, "When demand and supply are spoken of in relation to one another, it is, of course, necessary that the markets to which they refer should be the same. As Cournot says, 'Economists understand by the term market, not any particular market place in which things are bought and sold, but the whole of any region in which buyers and sellers are in such free intercourse with one another that the prices of the same goods tend to equality easily and quickly', or again as Jevons says: '. . . Originally a market was a public place in a town where provisions and other objects were exposed for sale; but the word has been generalized so as to mean any body of persons who are in intimate business relations and carry on extensive transactions in any commodity. A great city may contain as many markets as there are important branches of trade, and these markets may or may not be localized. The central point of a market is the public exchange mart or auction rooms, where the traders agree to meet and transact business. In London, the Stock Market, the Corn Market, and many others are distinctly localized, in Manchester, the Cotton Market, the Cotton Waste Market and others. But this distinction of locality is not necessary. The traders may be spread over a whole town, or region of the country, and yet make a market, if they are, by means of fairs, meetings, published price lists, the post office or otherwise, in close communication with each

---

24/ Harold H. Maynard and Theodore N. Beckman, Principles of Marketing, Fifth Edition, The Ronald Press Company, New York, 1952, p. 3.

other'". 25/ Shepherd says that, "It will simplify matters a good deal if we recognize that a market is not a place, nor center, nor area, nor sphere. A market is a group of men (or women), a group of buyers and sellers with facilities for trading with each other. They may be gathered together at one point, or in one market place, or scattered over a large area--that is only incidental. The important thing which defines a market is the closeness of the communication between the men in it." 26/

A market then may be described in several ways--in terms of (1) the changes that have taken place in it, (2) the firms that are part of it, (3) their sources of supply and demand, and (4) their margins of costs of operation.

Perfect Competition as an "Ideal" Market

The theoretical model for a perfectly competitive market has been advanced by many economists as a model which prescribes an ideal market. 27/ If the conditions of perfect competition hold, it can be shown that the result would be the most efficient of all possible organizations of

---

25/ Alfred Marshal, Principals of Economics, Eighth Edition, Macmillan, London, 1959, p. 270.

26/ Geoffrey S. Shepherd, Marketing Farm Products--Economic Analysis, Third Edition, Iowa State College Press, Ames, 1958, p. 17.

27/ Donald S. Watson, Price Theory and Its Uses, Houghton Mifflin Company, Boston, 1963, pp. 232-233.

production and the best allocation of resources. 28/

The following conditions exist in a perfectly competitive market: 29/

1. The numbers of buyers and sellers are large enough so that none are able to exert a significant influence on the price of the goods.

2. The goods or services are homogeneous.

3. There is free entry into and exit from the market and no interference with the free determination of price either through collusion among firms or consumers or by government intervention.

4. Producers and consumers have knowledge of prices and quantities.

In general, the characteristics of firms producing feeder cattle suggest that the perfectly competitive market concept then is a proper framework for an analysis of the feeder cattle market.

It is not expected that the feeder cattle market will closely approximate the ideal market. However, this model does outline conditions against which the actual conditions of a particular market can be compared. Departures suggest areas of the market which can be improved.

28/ With reference to the first condition, there are examples of firms and industries in which fulfilling this would not provide commodities to society with maximum efficiency. In such cases, society has sanctioned the establishment of administrative and legal instruments to act in the public interest as a substitute for the competitive conditions. The feeder cattle industry, though, is characterized by many firms, none of which have a measurable impact on the general price level. There has, therefore, been little need for legislation to curb market power.

29/ Albert M. Levenson and Babette S. Solon, Outline of Price Theory, Holt, Rinehart and Winston, New York, 1964, p. 38.

Ideally, the feeder cattle industry would need to exhibit the following conditions:

1. The industry must be made up of a large number of producers so that any action on the part of any one producer will have no effect on the actions of other producers in the industry. The producer's output is such a small proportion of the total output that large changes on even cessation of output will have negligible effect on the output and price of the industry.

2. Grades are sufficiently precise and well understood. They are uniformly used through the industry. Transactions among grades are accurately recorded in market information.

3. There is no impediment to free entry or exit, either actual or potential, into or out of the feeder cattle producing industry.

4. There is perfect knowledge of market information about prices, numbers and conditions in the market on the part of all sellers and buyers. 30/

In general, the conditions of size are met. Even though there is a wide variance in the size of operations in Montana there are none large enough to have more than a negligible effect on output and price within the state's industry.

Grading is one of the critical areas in terms of needed improvement. In order to meet the homogeneity condition much needs to be done to make the grade descriptions communicable and more economically meaningful.

The conditions of entry and exit within the industry are generally met. Of course, there are financial considerations, as in any entrepreneurial undertaking. There are, though, no forces of collusion or other concerted barriers.

30/ Alfred W. Stonier and Douglas C. Hague, A Text Book of Economic Theory, second edition, Longmans, Green and Co., Ltd., London, 1957, pp. 123-126.

The other critical area in terms of needed improvement is that of market information. In consideration of the feeder cattle industry these two critical areas flow together. Prices must be based on grades. Market information in its entirety does not meet the conditions of perfect or even adequate knowledge. Knowledge is needed which can be relied on in considerations of market forecasting, pricing, cut-back, and shrinkage.

Henderson and Quandt, in discussing the assumptions of perfect competition say "Condition (3) guarantees perfect information on both sides of the market. Buyers and sellers possess complete information with respect to the quality and nature of the product and the prevailing price. Since there are no uninformed buyers, [sellers] cannot attempt to charge more than the prevailing price. [Buyers] cannot buy from some [sellers] at less than the prevailing price for analogous reasons. Since the product is homogeneous and everybody possesses perfect information, a single price must prevail in a perfectly competitive market." 31/

Conventional marginal analysis assumes, in perfect competition, that buyers and sellers make decisions in a timeless static world of perfect knowledge with no structural differences and all adjustments made instantaneously.

Marshall's concept of a market period would well apply to a single season's production of feeder cattle. 32/ Figure 4 depicts the supply

---

31/ James M. Henderson and Richard E. Quandt, Microeconomic Theory: A Mathematical Approach, McGraw-Hill Book Company, New York, 1958, p. 86.

32/ Marshall, op. cit., p. 309.

of an individual producer and assumes, in addition to the conditions of pure competition, no selling costs, and no storage costs. The supply

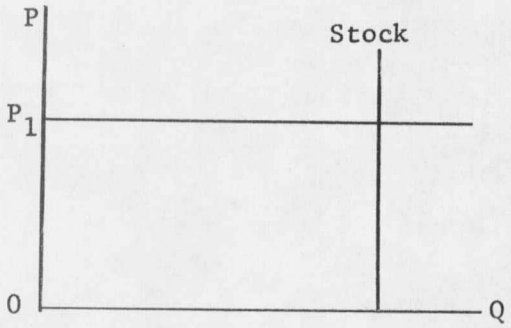


Figure 4. Individual Supply

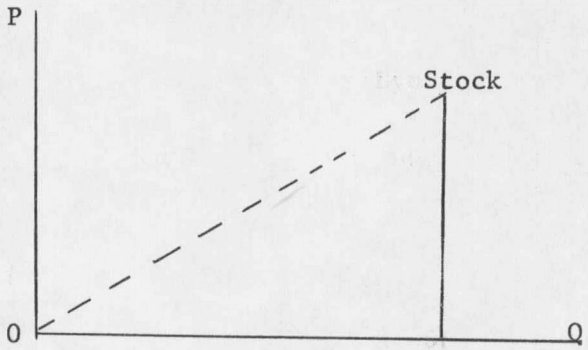


Figure 5. Market Supply

characteristics are such that the product can be withheld from the market depending on expectations; that is, the product may have a reservation price. If a producer expects a high price tomorrow, he may sell none of his products today. If he expects a lower price tomorrow he may sell all of it today. The nature of feeder cattle is such that beyond one marketing season the assumptions do not apply. The feeding efficiency potential of the cattle begins to diminish and storage costs set in. The product may be traded but need not be consumed (put to immediate use) that is, it may face a speculation demand. As in Figure 5, perfect market foresight would afford the stock of the product to be just exhausted at the end of the market period.

If there is perfect knowledge of the market, no one would trade off the equilibrium price. This is illustrated on an industry basis in Figure 6 by P_1 formed at the intersection of the Marshallian scissor blades.

If the market knowledge is something less than perfect, the transactions will be on and around the target as shown by (x). When the conditions of large numbers, homogeneous products, and free entry are held but there is less than perfect market knowledge, the conditions are known as purely competitive conditions. The conditions of pure competition are analogous to short-run situations.

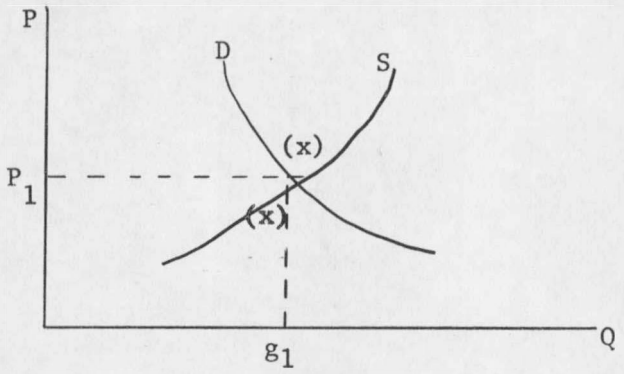


Figure 6. Market Equilibrium.

The Idol of Perfect Competition has not been struck down by those who have turned to other approaches. The model is still the standard of desirable social performance. Even the old master, Marshall, though, held it out as only an ideal and made explicit that the actual world did not even closely fit the model. It involves certainty of expectation and precise cost, return, and demand conditions. It is a normative concept based on optimization and is largely devoted to entrepreneural situations. But in a real world of uncertainty and imperfect knowledge there are market forms of oligopoly, oligopsony, monopolistic competition, and monopsonistic competition rather than perfect monopoly and perfect competition. Perfect competition still retains its position as one of the normal market models,

but as a tool of analysis it is recognized to have failings or unexplained spaces.

Market Structure Analysis

Professor Lamborn suggests "It might be possible to have workable models even if knowledge is not perfect. What is needed is not perfect knowledge but equal knowledge for both buyers and sellers--or if you prefer, equal amounts of ignorance." 33/ It is doubtful if we would accept equal amounts of ignorance as a goal. However, when it is found that inequality exists, any movement toward the equation of the buyer's and seller's market knowlege would improve marketing efficiency.

The perfectly competitive market model is a sufficient framework for the study of the feeder cattle industry. However, there are more "workable" measuring devices.

Several violent turns in world affairs which have occurred during the first half of the present century have made economists acutely aware of the need to develop analytic tools capable of dealing with extant problems. Market structure analysis is a set of criteria developed to test for "workable" rather than perfect competition. One of the characteristics of market structure analysis is the degree of product differentiation. Product differentiation has been defined generally to include market knowledge or information. Specifically for purposes at hand it refers to the availability of relevant market information and its relative distribution

---

33/ Lamborn, op. cit., p. 26.

among buyers and sellers. Product differentiation is concerned with the adequacy of market information for more precise price-quality comparisons and with decreasing the risks and uncertainties about the future.

Market structure analysis though is more concerned and more readily adaptable to markets as pertain to groups of firms and individual firm's behavioral pattern towards its market. Market structural analysis does not include any personal factors relating to individuals in the market. If it can be known what are the bargaining strategies used and what are the ingredients which determine these strategies of both buyer and seller on a case as well as a group basis the structural aspects may be more finely analyzed.

The Game Approach

The foregoing models offer aid in measuring the conditions of competition to be in the market for feeder cattle. Improvement in these conditions will increase market efficiency. It has been posited that there is inequality of bargaining power between the commercial direct buyer and the feeder cattle producer and that improvement between the equality of bargaining strength between the buyer and seller would increase marketing efficiency. Models are needed, then, which will aid in measuring the relative bargaining positions of the buyer and feeder cattle producers.

When the producer of feeder cattle and the buyer of feeder cattle find themselves in a bargaining situation, they are two individuals in economic conflict. There has been developed recently a problematic approach which has as its purpose the solution--or at least increased enlightenment toward

solution--of situations of opposing interests. This approach is a mathematical one which has come to be commonly known as Game Theory. This section will not deal with the theoretical mathematics of the approach and only with that part of the theory as is applicable to the problem at hand. Standard terms and models will be defined. Models will be developed and the extent of their application investigated. Certain terms used in the theory of games, because they are also in common use must be given precise definition. 34/

(1) A game is a conflict situation in which there is a collection of rules and conventions for playing.

(2) Players are assumed to know the rules before the game commences.

(3) Each player pursues his own interest and no single player can determine the outcome of the game.

(4) A play is a set of moves for a complete game.

(5) A move is a point in a game at which one of the players selects an alternative from a set of alternatives.

(6) A choice is that alternative selected.

(7) A strategy is a set of choices by one player. Instead of making a decision at each move, a player may formulate before the beginning of the play a plan for playing the game from beginning to end. This plan must be complete and include any information which may become available to player. Each different way that a player may play a game is a strategy

---

34/ Earl O. Heady and Wilford Candler, Linear Programming Methods, The Iowa State Press, Ames, 1958, p. 501. Concise terminology may be found here.

for that player.

(8) A pure strategy is a complete set of contingent situations with a specification as to what shall be done in each case.

(9) A mixed strategy is one selected on a probability basis from among those strategies pertinent to the game. This definition is strictly applicable to games being played more than once, and such games are not to be dealt with in this treatise.

(10) Games can be classified other ways, such as by the number of players. There are one-person, two-person, and on to n-person games. Rather than strict reference to people, this designates the sets of interests at play. This work concerns itself with two-person games. 35/ This means that there are two mutually exclusive sets to that the people within each set have identical interests--in this case opposing interests.

(11) A pay-off is a payment to be made after the completion of a game and is indicated by the selection of a particular strategy.

(12) A fair game is one in which one player cannot win more than the value of the game. If two players follow their optimal procedure and neither player wins from the other, the game is fair. A fair game has been posed as a social arbiter as between individuals and groups. From a market structural standpoint, it connotes that social devices should exist to take into account the preferences and strategic potentialities of each of

---

35/ J.C.C. McKinsey, Introduction to the Theory of Games, McGraw-Hill Book Company, New York, 1952. The mathematical treatment of this and other games is to be found here.

the players and to arrive at a fair solution of the conflict. This aspect, though, is outside of the consideration of this thesis. Also, a fair game implies utility values and rigorous treatment of such is outside this thesis.

(13) Finite games, such as those treated herein, are those in which the players make their choices from finite sets, or a finite number of moves.

(14) Other games are called infinite.

(15) The term, perfect information, has been used in previous discussion to refer to a state of market information. In this discussion of games the term shall mean that at each move the players are completely informed about the previous moves of the game. Such games have saddle points.

(16) Saddle points are equilibrium points in zero sum two-person games. The guaranteed minimum and maximum payoffs of the two contestants are exactly equal.

Elements of a Two-Person Constant Sum Game

The use of the term strictly competitive may seem redundant since in the opening paragraph of this section it was said that the two players had opposing interest. 36/ The situation is such that the decision-maker wants to choose his best strategy and match it against his opponents best strategy. The player "S" shall be considered the decision-maker and the player "B" his opponent. Assume that each player has two alternatives:

36/ Max R. Langham, Game Theory Applied to a Policy Problem of Rice Farmers November, 1962. D.A.E. Circular No. 317, Louisiana State University and Agricultural and Mechanical College, Agricultural Experiment Station, Baton Rouge, Louisiana.

$S = (s_1, s_2)$ and $B = (b_1, b_2)$. With each combination of opposing alternatives there is associated a number which constitutes the pay-off. A positive pay-off indicates the value received by the decision-maker from his opponent. A negative pay-off indicates the value of the payment from the decision-maker to his opponent. These pay-offs are arranged in a matrix to describe values players must pay each other at the end of the game. A basic assumption of game theory is that each of the players knows the value in the pay-off matrix. Convention has the player receiving the pay-offs, the decision maker, placed on the left side of the matrix. In the hypothetical pay-off matrix in Figure 7 if "S" chooses his first alternative, s_1, and "B" chooses his second alternative, b_2, and the value of the

		B		
		b_1	b_2	Row Minima
S	s_1	-1	20	-1
	s_2	5	15	5 *
	Column Maxima	5 *	20	

Figure 7. A Two-Person Constant Sum Game.

pay-off is measured in dollars, "S" would receive $20 from "B". A negative pay-off, such as if "S" chose his first alternative, s_1 and "B" chose first alternative, b_1, means that "S" pays "B". There are two players and what one loses the other gains. This then is the criteria which describes this game as a two-person, constant sum game.

Assume that the pay-offs are in dollars and that this assumption does not conflict with any other assumption held (as may be suspected, this will eventually be subjected to question). If maximization of profit is his

only consideration, "S" may be tempted to choose s_1 but if he did then "B" could choose b_1. "S" would lose, in fact, would get the least possible. By selecting as his strategy s_2 "S" would have assured himself of a $5 pay-off.

Various writers have offered criteria by which to resolve the decision problem. Several of these criteria will now be partially discussed and identified by the writer to which they are credited.

Wold Criterion.--This is a cautious approach which assumes the worst and requires the players to act accordingly. 37/ The decision-maker looks at the worst he can do and chooses the best among the worst. His opponent looks at the most he would have to pay among his choices and selects the least one. In Figure 7 "S" would choose s_2. This strategy contains the maximum of the row minima and for this reason is known as the maximin strategy. "B" would select b_1 because it has the minimum of the column maxima. It is known as the minimax strategy. The value of this game then is $5, received by "S". The players have each selected his best strategy and have therefore, arrived at a solution of the game. The solution of the game, where the row maximin is equal to the column minimax is known as the saddle point. The saddle point is a stable solution because if either player were to select any strategy not represented by the saddle point, he would be open to his opponent's attack. If the value of the

---

37/ Abraham Wold, Statistical Decision Functions, New York: John Wiley and Sons, Inc., 1950, p. 18.

pay-offs are such that no saddle point exists, a mixed strategy is required for a stable solution. This mixed strategy involves formulating a grand strategy made up of pure strategies, each one played at different plays according to some suitable chance event. This study necessitates the rule, though, that there be only one play to the game.

Savage Criterion.--The decision-maker in this criteria is assumed to be conscious of some spectrum of regret and is able to associate a regret matrix with the pay-off matrix. 38/ He attempts to minimize his maximum regret. Again using Figure 7, it was seen that by using s_2, "S" did the best he could and thereby has no regret. If he had chosen s_1 though he would have a regret of $6 (again heroically measuring in money). Instead of making $5, he would have to pay $1. A regret matrix which

		B		
		b_1	b_2	Row Maxima
S	s_1	6	0	6
	s_2	0	5	5

Figure 8. Regret Matrix.

corresponds to the pay-off matrix shown in Figure 7 is presented in Figure 8. The elements in this figure are the amounts which must be added to the corresponding elements in the pay-off matrix in order for them to equal the maximum element in the same column of the pay-off matrix. To conform to the

38/ L. S. Savage, "The Theory of Statistical Decisions", Journal of American Statistical Association, 46 (March, 1951), p. 55-67.

criteria "S" would again choose s_2 as his strategy since it contains the smaller of the row maxima.

Hurwicz Criterion.--The decision-maker considers a weighted average of the best as well as the worst possible outcome in considering each alternative. 39/ The criteria states that he should select that strategy which maximizes his pessimism-optimism index. Luce and Raiffa give the criteria thusly. 40/

> "For act A_i, let m_i be the minimum and M_i the maximum of the utility number $u_{i1}, u_{i2} \ldots u_{in}$. Let a fixed number α between 0 and 1, called the pessimism-optimism index, be given. To each A_i associate the index $\alpha m_i + (1-\alpha) M_i$, which we shall term the α-index of A_i. Of two acts, the one with the higher α-index is preferred.
>
> Note that, if $\alpha = 1$, the above procedure is the maximin (utility) criterion, whereas if $\alpha = 0$, it is the maximax (utility) criterion. If neither of these are satisfactory then how does one decide what α to use? One way is to see what happens in certain simple classes of decision-problems under uncertainty, for example, in the class:

	s_1	s_2
A_1	0	1
A_2	X	X

(utility pay-off)

> The α-indices of A_1 and A_2 are $1-\alpha$ and X respectively. Consequently, if one can choose an X such that A_1 and A_2 are indifferent, then one can impute an α-level to oneself. Thus, by resolving a simple decision problem an α-level can be chosen empirically, which, in turn, can be employed in more complicated decision."

39/ R. Duncan Luce and Howard Raiffa, Games and Decisions, New York: John Wiley and Sons, Inc., 1959, pp. 282-283.

40/ Ibid., pp. 282-283.

"Principle of Insufficient Reason" Criterion.--This criteria asserts that if the decision-maker is completely ignorant of what his opponent may do he should behave as if all of his opponent's choices were equal. 41/ A decision index is computed treating each possible outcome of a given alternative to be equally likely. The decision-maker's alternative with the largest index is chosen in the decision-making process. Decision index for the i^{th} alternative = $\frac{a_{i1} + a_{i2} + \ldots a_{in}}{n}$ where n is the number of choices of the opponent and a_{ij} is the payoff in the i^{th} row and the j^{th} column of the pay-off matrix. With the data from Figure 4:

$$S \begin{matrix} s_1 & \frac{-1 + 20}{2} = 9.5 \\ s_2 & \frac{5 + 15}{2} = 10 \end{matrix}$$

"S" still finds s_2 his best strategy in this simplified case.

The Case of "Partial Ignorance".--The foregoing criteria have been critically held as being rationalized on some notion of complete ignorance. 42/ In practice, the decision-maker usually has partial information, though it may be vague, concerning the true state of affairs. The decision-maker knows or wants to act as if he knows some *a priori* probability destribution

---

41/ Ibid., pp. 284-286.

42/ Ibid., pp. 299-306; this is a summary of the full treatment of the criteria given by the authors.

over the various outcomes of each of his alternatives.

Partial information may be processed and thereby an a priori distribution over the opponent's choices generated which is appropriate for making decisions. The decision problem then is reduced from one of uncertainty to one of risk. If there exists an appropriate a priori probability distribution over the opponent's choices, then this distribution depends solely upon the state of information concerning the choices of the opponent. The strategy then is to consider the acts of the decision problem under uncertainty with the opponent's choices, resolve them according to the best intuitive judgment, then to use these commitments to infer a plausible a priori distribution.

A Critique of Game Theory

Each of the criteria presented made certain assumptions such as the attitudes of the players and presented solutions in accordance with these behaviorial aspects. The solutions though have not been entirely satisfactory if for some reason the behavioral assumption of the players or the rules of the game are held in slightest question.

Wold Criterion.--This criteria has been criticized as being too conservative and for some it may well be. For instance, a decision-maker playing a game the outcome of which is not crucial to his well-being may feel no need to be conservative. If one is playing a game against nature in which nature is not necessarily a driving opponent and does not necessarily try to minimize the amount given up, one may object to the Wold criterion. However, a player who has severe resource limitations and feels his survival

in jeopardy may well use the Wold Criterion. A maximin though, may be a poor counter-move to a non-minimax strategy. The opponent may have poor information or be a dull player and may not employ the minimax strategy. In such case, the maximin strategy would be unprofitable to the decision-maker. The assumption of a prudent opponent must be strictly held in order that the maximin strategy be guaranteed good. 43/

Savage Criterion.--Most theoretical discussions of game theory involve values in utilities and use utility numerical designations in the elements of pay-off matrices. The use of utilities itself has raised serious question of empirical usefulness of the theory. If one can feel comfortable with the assumption of functional linearity between utility and money income, then this difficulty is resolved, but whether utility or money income is used in the elements of pay-off matrix the concept of regret used in this criterion has not set well with many reviewers. Many doubt that pay-offs in either utilities or money can logically measure regret. Comparative advantages of choices have also been questioned. 44/

Hurwicz Criterion.-- The most severe criticism of this criterion has centered around interpretations of what Hurwicz meant by "complete ignorance" of the states of the opponent. Most of the argument has been resolved

---

43/ William J. Baumol, Economic Theory and Operations Analysis, Englewood Cliffs: Prentice-Hall, Inc., 1961 p. 352.

44/ Herman Chernoff, "Rational Selection of Decision Functions", Econometrica, 22, October, 1954.

by Luce and Raiffa. The criterion has been particularly strengthened by their method of choosing an α (alpha) level in establishing the pessimism-optimism index. 45/ The criterion is more optimistic than either of the above criterion, being a weighted combination of the best and worst consequences. It is suitable for a player who is inclined to assume a risk-taking attitude concerning the outcome of the game.

"Principle of Insufficient Reason" Criterion.--This criterion asserts that if the decision-maker is completely ignorant of the rectangular states or elemental pay-offs, he should act as if they were equally likely. Luce and Raiffa list two criticisms to the criterion: One, the difficulty in an empirical problem of listing exhaustively and conclusively the possible states; two, the need for clarification of the term "equally likely". 46/ Nevertheless, many decision-makers apparently act as if they were using the concept. That is, many seem to acquire an image of average outputs and average expected prices then decide upon a production program based on these images. Difficulty of actual estimation, though, renders empirical use of the the criterion nearly impossible.

The Case of Partial Ignorance Criterion.--Criticism of this criterion is incorporated in the next section under the same heading.

45/ Supra, n. 10, p. 114.

46/ Luce and Raiffa, op. cit., p. 284-5.

The General Theory

Perhaps the presentation of several and diverse criteria has raised the suspicion that game theory is something less than a general theory. Shubik says, "It is trivially easy to concoct different reaction functions with a thousand and one portrayals of bargaining procedures. It is phenomenally difficult to demonstrate that many of the models so constructed have any realism or relevance or at least add sufficiently to the body of theory to merit their construction." 47/

Shubik goes on to say, "Thus the criteria of stability suggested are only of use in telling us what we can infer from an equilibrium state if it exists." 48/ It is unfortunate that Shubik entitled his book, "Strategy and Market Structure", when only the problem of oligopoly has been attacked: to wit, "The basic thesis in this book is that useful theory and applications can be found for oligopoly analysis without having to enter into the occupation of constructing extra, untestable models of learning psychology". 49/

That portion of the theory of games presented here is comparatively elementary and has been presented in a simplified manner. Baumol, in speaking of the indeterminancy of some of the more complex concepts, says "This points up what is admittedly the main weakness of game theory in its present stage of development--the relative lack of specific sociological, psychological, and economic content in its premises. Until such material

---

47/ Martin Shubik, Strategy and Market Structure, New York: John Wiley and Sons, Inc., 1959, p. 275.

48/ Ibid.

49/ Ibid.

is supplied, it is unreasonable to expect the mathematics to yield the empirically applicable results which are not contained in its assumptions . . . At any rate this section should suggest both the strength and weaknesses of game theory from the points of view of the economist and the operations researcher--its weaknesses as a source of devices for the calculation of categorical answers to competitive problems, and its strength as a suggestive frame of reference within which the structure of these problems and the alternatives available to the decision-maker may be seen more clearly." 50/ Hurwicz says that the major achievement of Game Theory is the analysis of the conditions and nature of coalition formations. Traditional theory only postulates a specific coalition. The existence of discriminatory solutions, accounting for deals, side payments, and collusions go beyond results usually obtained by customarily used methods and techniques of economic theory. Monopoly, monopsony and perfect competition have not been helped by the investigation but a lot of light has been thrown on oligopoly. The theory of games, Hurwicz says, does not give a model for general analysis. 51/ Luce and Raiffa point out the difficulties which arise in putting a measure to the value of games. 52/ They further say, "We belabor this point [rationality] because we feel that it is crucial that the social scientist recognize that game theory is not descriptive, but rather (conditionally) normative. It states neither how

---

50/ William J. Baumol, Economic Theory and Operations Analysis, Englewood Cliffs: Prentice-Hall, Inc., 1961 p. 366.

51/ Leonid Hurwicz, Readings in Price Theory, Richard D. Irwin, Inc., Homewood, 1952) pp. 522-26. Hurwicz offers a review of John von Neuman's and Oskar Norganstern's book entitled, Theory of Games and Economic Behavior.

52/ Luce and Raiffa, op. cit., p. 69.

people do behave nor how they should behave in an absolute sense, but how they should behave if they wish to achieve certain ends. It prescribed for given assumptions courses for action for the attainment of outcomes having certain formal "optimum properties". These properties may or may not be deemed pertinent in any given real world conflict of interest. If they are, the theory prescribes the choices which must be made to get that optimum." 53/

Dorfman, Samuelson, and Solow offer the general appraisal that game theory provides convincing solutions only in constant sum, two-person games. Even these games have two restrictive assumptions:

1. Pay-offs are objectively measurable and transferable.

2. Subjective attitudes of players toward pay-offs were such that they regarded the expected value of a probability distribution of pay-offs as equally desirable as the whole chance configuration represented by the probability distribution.

Most economic situations, they say, do not take this form of game and solutions are less definite. They feel that the concept has no important applications to concrete economic problems, the contribution is deemed more qualitative rather than quantitative. Economic problems, they opine and particularly the interactions of economic objectives of diverse

---

53/ Ibid., p. 63.

individuals are enormously complex and could not be reduced to the level of parlor games, even theoretically. 54/

When a form of economic analysis is held in such generally sceptical regard, one may begin to wonder why the approach is under consideration for use. Shubik gives a hint, "the best an economist can hope to do at this time is to try to specify the information conditions in the market he wishes to study and then use the criteria which appears to apply". 55/ Luce and Raiffa believe, "Many conflict situations are not bona fide games because the player's knowledge is limited (e.g., with respect to strategy domains, utility pay-offs, etc.), can be considered formally as games against nature. These games, however, are quite difficult to formulate realistically, since it is necessary to specify each player's a priori information about the states of nature." 56/ "Game theory provides solutions to simple conflict situations and valuable hints for understanding more complicated ones," say Dorfman, Samuelson, and Solow. 57/

The most ambitious undertaking in this work, then, as regards the application of game theory, will be to have it serve as an orientation to the bargaining situation between the feeder cattle producer and the feeder cattle buyer. Perhaps the concepts will aid in obtaining a clearer

---

54/ Robert Dorfman, Paul A. Samuelson, Robert M. Solow, Linear Programming and Economic Analysis, New York: McGraw-Hill Book Company, 1958, pp. 444-445.

55/ Shubik, op. cit., p. 179.

56/ Luce and Raiffa, op. cit., p. 309.

57/ Dorfman, Samuelson, and Solow, op. cit., p. 445.

focus on some of the subjective factors which enter into the conflict. If the theory can, even in a small way, demonstrate the role of market information, or lack thereof, in the bargaining act, it will have served well.

The Model for the Feeder Cattle Bargaining Game

It was said in effect earlier that if there were perfect market information as defined by classical perfectly competitive conditions, there would be no bargaining. The buyer and seller would know the value of the product and would instantaneously arrive at the price representing this value.

The two person constant-sum game does not assume perfect knowledge in the sense of market knowledge but does assume perfect knowledge of the rules of the game. The rules, however may change in accordance with received criteria.

Game situations will be presented in the same manner as in the foregoing section. The assumptions and criteria will hold except as otherwise made explicit. Conceptional application of the special criteria to the feeder cattle producer will be made. In a later section, actual data will be presented which may be related to the special criteria and from which inferences may be drawn.

Wold Criterion.--The feeder cattle producer represented by "S" has three sets, or strategies of prices which he believes to be reasonable and feasible prices for his feeder cattle. These are shown s_1, s_2, and s_3 in Figure 9.

		Buyer			
		b_1	b_2	b_3	Row Minima
Seller	s_1	25	26	26	
	s_2	26	27	29	
	s_3	24	28	28	
Column Maxima					

Figure 9. A Game Matrix with a Dominated Strategy.

The buyer represented by "B" also has three sets of prices or strategies shown as b_1, b_2, and b_3 which he believes to be reasonable and feasible. Although each knows the value of each element, neither knows which selection his opponent will make. Each contestant would like to choose the strategy with the highest pay-off to him, on the other hand, he wants to be protected so that his opponent, by his choice of strategy, will not leave him with less than his maximum security level.

First, the strategies should be scrutinized to find if any strategy is being "dominated" by another, that is, is there a strategy which is on element to element basis, weaker than another. Some elements may even be equal. A player would not reasonably choose a strategy when in all cases it would be worse than another choice. In Figure 9 such a strategy for the feeder cattle producer would be s_1. Element for element it is a worse strategy than s_2 and would not be rationally chosen by the seller. It, then, is dominated and can be eliminated from the matrix. The same can be said of the strategy b_3 for the buyer. If he chose it he would have to furnish an equal or higher pay-off in each case than if he chose the strategy

b_2. It can be eliminated from the matrix. The game then, can be reduced to that shown in Figure 10.

		Buyer b_1	Buyer b_2	Row Minima
Seller	s_1	26	27	26*
	s_2	24	28	24
Column Maxima		26	28	

Figure 10. Wold Criterion.

The seller, if maximization was his only objective, would tend to choose strategy s_2 in Figure 11, hoping to make 28. But if he were to make his choice and the buyer suspects such action, the buyer would choose strategy b_1. The seller then would make only 24. The seller reflects. If he were to choose s_1 as his strategy, he would be sure that his pay-off would not go below 26 and if the buyer made a poor choice the seller would even make a pay-off of 27. The buyer can see no reason why he should choose a strategy which requires him to make a higher pay-off than necessary so he chooses strategy b_1. Neither opponent could improve himself by changing to another strategy so the game has reached an equilibrium, that is, a saddle point as indicated by the asterick. The value of the game is 26.

A rancher who needs to maintain a conservative countenance may use this criterion. Perhaps he has a conservative personality; just abhors risk. Maybe he has limited operating capital and feels this approach a prudent one to take. It seems that this criterion well fits those ranchers who contract early in order to acquire funds for haying operations

that are under way. Other early contracts may be explained by the use of this criterion. This criterion may explain the behavior of those ranchers who are mindful of their neighborhood reputation for stability.

Savage Criterion.--Under the assumption of this criterion, it will be recalled, the decision-maker tries to minimize his maximum risks. One is required to associate a regret matrix with a pay-off matrix. Doubt has already been raised as to whether regret can be adequately measured and put in matrix form but it will be assumed in this discourse that it can be.

In the Wold Criterion treatment the feeder cattle producer chose strategy s_1, in Figure 10, and the buyer chose strategy b_1. The seller had no regrets; he did the best he could. Suppose he had chosen strategy s_2

		B		
		b_1	b_2	Row Maxima
S	s_1	0	1	1
	s_2	2	0	2

Figure 11. Savage Criterion.

and the buyer had chosen b_1. He would have a regret of 2. The element of the regret matrix is the amount which must be added to the corresponding element of the pay-off matrix in order that it equal the amount of the maximum element of that column in the pay-off matrix. Figure 11 demonstrates that the cattleman would again choose strategy s_1 for in this choice he would be able to reduce his maximum risk to a minimum.

Application of this criterion to the ranching community is difficult. It is likely, though, that this criterion may, in part, explain the behavior of those who practically refuse to try new or different methods of marketing. Also it applies to those ranchers who are staid in their production systems.

Hurwicz Criterion.--The solution to the game using this criterion depends on where between 0 and 1 that the seller selects α. If the seller selects $\alpha = 0$, the procedure is the same as a maximin selection. In other words, the seller is of a conservative bent. If the seller selects $\alpha = 1$ he chooses his strategy according to his adversary's brightest outlook. This criterion affords a weighted combination of the worst and best outlook and the solution depends directly upon the selection of an α level.

Again referring to Luce and Raiffa and applying their method of solution, the indices for the feeder cattle producer's alternative strategies are found to be as follows: 58/

$$s_1 = \alpha(26) + (1 - \alpha)\ 27 = 27 - 1\alpha$$

$$s_2 = \alpha(24) + (1 - \alpha)\ 28 = 28 - 4\alpha$$

These indices are graphed in Figure 12.

58/ Luce and Raiffa, op. cit., p. 282-3.

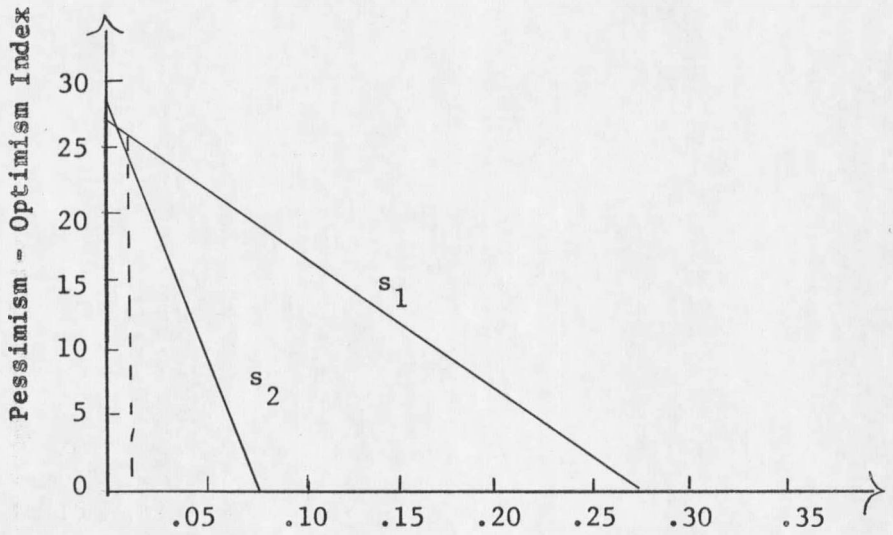


Figure 12. Hurwicz Criterion.

Both logically and intuitively one can deduce that this criterion has little application to the type of problem being studied. The graph shows that if the cattleman places a weight of less than .01 on the most pessimistic outcome of his available choices, then strategy s_2 is his best choice. For any greater weight, s_1 is still his best choice. Instinctively, the range of actual pay-off elements is narrow; so much so that it becomes difficult to demonstrate empirically the use of some criteria (strictly speaking, strategy b_2 is a weakly dominated strategy for the buyer). This criterion would be more useful, formal criticisms not withstanding, if the study were examining ranchers who had a rather indifferent attitude toward showing a rather steady net revenue each year. Such ranchers could afford to take a loss one year and maybe several years in a row. They could afford

the risk associated with making a higher net revenue. Surely there are some of this type of ranchers in Montana, but they are not thought to be representative. None of this type are thought to be included in the sample.

Many attitudinal influences, extremely difficult to obtain and measure empirically, affect the criterion and render its value for this study doubtful.

Principle of Insufficient Reason Criterion.--This criterion is more recently known as the Laplace criterion. It was first formulated by Jacob Bernoulli (1654-1705) who is more noted for his laws of physics. Since his work many others have modified it and each modification has retained the name of the modifier. This treatment shall stay with that of Luce and Raiffa. 59/

The criterion assumes that the feeder cattle producer is entirely ignorant of what course the buyer may take and therefore behaves as if the courses were equally likely. To arrive at a solution, a decision-index is computed using the formula given earlier in discussion of the criterion. The seller's alternative having the highest index is his best strategy. Using the empirical data from the pay-off matrix in Figure 10, the computations are:

Seller

$$s_1 = \frac{26 + 27}{2} = 26.5$$

$$s_2 = \frac{24 + 28}{2} = 26$$

The cattleman would again select s_1 as his best strategy.

59/ Ibid., pp. 284-285.

This criterion has a conceptionally opposite position from that of the Hurwicz criterion as far as its usability with this empirical problem. An earlier comment stated that its empirical value was in doubt due to the enormity of listing exclusively and mutually all states operative in a real problem of decision-making under uncertainty. In this particular study, the nature and the narrow range of feasible elements of the matrix nullify this objection. Whereas it is conceptionally difficult and particularly simple, the Hurwicz criterion, for this study, is conceptionally simple and particularly difficult.

No doubt many ranchers do form the average images and exhibit the behavior described in the foregoing criticism of this criterion. This type of individual, though, is perhaps too "average" to be isolated and his behavior measured.

The Case of Partial Ignorance Criterion.--The cattleman may not be ignorant or may feel that he is not entirely ignorant of the way the buyer plays the game. He has some *a priori* probability distribution over the outcomes of his strategies. Unfortunately a real solution is quite impossible. Gathering and measuring the data for each individual (and surely each would be different) which is needed for an empirical estimate of a probability distribution immediately presents itself as a task which would be much more costly than meaningful for this study.

However, something meaningful is salvagable from the idea. Analysis of the bargaining data and difficult-to-tie-down comments received during the process of schedule-taking lead one to believe that the substance of

this criterion is applicable to the decision-making of many cattlemen. Some ranchers have detected certain behavioral aspects of individual buyers, or of types of buyers.

For instance some sellers have said that they always set their opening prices high because they know that regardless of the opening price the buyer will attempt to dicker them down. On the other hand, it may be assumed, that the opposite holds true. At any rate, many ranchers attempted to arrive, by various media, at a market price and pitch their first asking price above it. Five ranchers started at one cent higher than they considered market price; one rancher at one and a half cents, thirteen ranchers at two cents and one rancher at five cents higher than market price.

Ranchers also pose nature in many forms as an opponent, established an *a priori* probability distribution over the outcomes, and make production and marketing decisions based on these expectations.

CHAPTER III

PREFERENCE AND USE OF MARKET METHODS BY MONTANA FEEDER CATTLE PRODUCERS

This chapter will first examine the Montana feeder cattle producer's marketing preferences. Marketing methods available include terminal markets, auction markets, and two types of direct buyers. Then, the actual use the cattleman makes of these alternative markets will be examined. This will indicate the importance of these markets. Once these things are known, the way is cleared for investigating means for attaining improvement in marketing by the preferred method.

Comparisons of marketing methods will be made for the state as a whole and for areas within the state. These seven areas are the frame areas for the sample design (see Figure 3).

Ranking of Preference and Reasons of Preference

The rancher in the sample, in the course of the interview, was asked to place in order the marketing method through which he would prefer to sell his feeder cattle if opportunities were available to sell by all methods. The marketing methods which he was asked to rank are those shown in Table VI. After the rancher had stated and ranked his preferences, he was asked to give his reasons for such ranking; to state the advantages and disadvantages he saw in each method.

State

Analysis of survey data shows a definite pattern of preferences of markets held by producers of feeder cattle. Although ranking of markets vary in different areas, markets preferred are clearly indicated.

Seventy-nine of 120 or 65.8 percent of the feeder cattle producers surveyed throughout the state preferred to sell directly to feedlot operators as a first choice (see in Table VI). Some 13 percent of the producers were indifferent as to first choice between feedlot operators and order buyers 60/ and over 18 percent chose order buyers.

As to a second place liking, the cattlemen took order buyers by 62.5 percent, 14.2 percent were indifferent between feedlot operators and order buyers, and 12.5 percent chose feedlot operators. Auctions were the second choice of .5 percent and 1.7 percent would rather send their feeder cattle to terminal markets.

60/ Strictly, an order buyer is a third party, a commission man, who is in receipt of an order for a specified type and a number of cattle to be delivered within a specified time to a second party, the buyer and user, and frequently a specified ceiling price to the first party, the seller. A dealer is one who purchases the cattle directly from the producer for his own account with the intended purpose of resale. The actual person who contacts the rancher in person and consummates the sale, may not be the dealer but his employee, either salaried or commission. He may in fact be a neighbor rancher working in the capacity of the buyer's representative. In actuality, many times the buyer who confronts the producer on the ranch performs the functions, depending on circumstances, of both order buyers and dealers. The seller usually knows not which. Sometimes, auction market representatives go out to the ranch and buy directly for resale through the auction ring. Because the producer commonly includes all of these in the term order buyer, this paper will do the same unless indicated otherwise.

Producers, in making a third place ranking, were grouped as follows: 58.3 percent for auctions, 16.7 percent for terminal markets, 5.8 percent--indifferent between auctions and terminal markets, and 0.8 percent for feedlot operators.

TABLE VI. PREFERENCE OF MARKET METHODS FOR SELLING FEEDER CATTLE, 120 RANCHERS, MONTANA, 1963.

Market Methods	Preference Rank			
	First	Second	Third	Fourth
	Number of Ranchers			
Terminal	1	2	20 } 7c/	67 } 7c/
Auction		6	70 }	19 }
Feedlot Operator	79 } 16c/	15 } 17c/	1	1
Order Buyer a/	22 }	75 }		
No Preference b/	2	5	22	26
Total	120	120	120	120

a/ See Footnote 60.

b/ No preference indicated for column of entry.

c/ Indicates number of interviewees who were indifferent between methods shown in bracket for this rank.

Last place ranking showed that 55.8 percent of the producers would go to terminal markets, 15.8 percent would go to auctions, 5.8 percent would be indifferent between auctions and terminal markets, and 0.8 percent would sell to feedlot operators. Some of the reasons offered by producers who preferred to sell to feedlot operators and order buyers were: they felt that in doing so they would attain the greatest possible bargaining strength and maintain the most control over the marketing of their product; they felt that by dealing directly, they could more carefully investigate current market information, test offerer's price with market quotes, and even turn down a price and hold cattle. There are, of course, many instances of buyers offering a price, having it turned down, and returning the next day, or even the same day, to offer a higher price. By the same token, buyers have returned with a lower price. Sellers say that they like the certainty of knowing the net price received when the buyer leaves the ranch or other delivery point. Sellers say that selling to these buyers removes the "gamble" from marketing his product. They can plan the movement of their cattle from the range and make other preparations with less concern as to timing.

Most Montana calves are "reputation" calves. 61/ Producers of fine

---

61/ Members of the Montana Beef Performance Association, through the use of bulls with individual performance records, are growing certified feeder calves. These bulls have been selected for outstanding demonstration in birthweight, nursing gain, weaning weight, feedlot gain and yearling weight. Use of this program is more likely to show greater net returns if feedlot operators are aware of the advantages to be had in feeding these calves and are willing to pay a premium to these producers.

quality calves in general have expressed the opinion that direct dealing with feedlot operators helps differentiate their product and establish an exchange of performance information. Mutual benefits of production programs would be realized and calves would enjoy an even better reputation.

Producers preferring to deal with feedlot operators believed that by dealing together, could perform the necessary marketing functions at a cheaper cost than by hiring marketing agencies, thereby attaining greater net returns for both. Because of direct contact, calves may be moved in a minimum of time, undergoing less shrinkage and arriving at the feedlot in better condition. These would not have mingled with other calves of unknown origin and condition and would likely not have contacted disease through co-mingling enroute. Some, using this method, say that it leads to a lower death loss in early stages of feeding.

Some producers who have dealt directly with feedlot operators in the Midwest say that after the first or second season, the buyer does not see the calves until the calves arrive. The deal is closed by the telephone and the producer delivers them for transport according to the buyer's instructions.

A few growers stated that at times they have received better prices at the ranch than were currently being offered by organized markets, others declared they could take a known lower price from a direct buyer and still be better off.

There are producers who say that bona fide order buyers earn their commission and perform a service; at the same time, they have uncomplimentary names for dealers and their place in the marketing process.

Not all producers have been satisfied in their dealings with feedlot operators. Some said that this method of selling works well until the feedlot operator receives a disappointment in profit then he changes to other markets. Others felt that farmers from the Midwest were not familiar with Montana and its production conditions; that they didn't know what they were looking for in the way of type, or quality, nor how to buy. They tried too hard to dicker; they wanted to cull heavy; their credit was not known; and they were not familiar with grades or prices. A few sellers would deal with commercial feeders but not farmer feeders for reasons just cited.

Those cattlemen who favor order buyers (dealers included unless otherwise indicated) usually indicated a long acquaintance and regard for integrity. It is convenient to sell to them, they said and their credit rating is firm. During bad years, they always live up to their contract even if they suffer. They are usually old timers in the business and know grades and value of cattle. They perform a service in sorting cattle to different buyers. Those sellers rating order buyers lower on the scale maintained they were constantly seeking undue advantage; that they reneged outright on a contract or used heavy cutback to bring a contract price to market price during a declining market; they "beat on the door" on a rising market and "hide in the bushes" on a falling market.

Those placing auctions high, named the ease of marketing, assurance of selling on the day they wanted to sell and alluded to an ego pleased by the nice things the auctioneer said about their cattle--one producer seemed to be more impressed with a trophy he had received than with price. Most

of the negative remarks were lack of reliable information, high shrinkage, extensive sorting which may give a higher price for top price but lower average price than for direct selling, exposure to disease and exhorbitant commission rates. Other remarks were: Collusion between buyers; same buyers as in country so why pay for selling; unfair treatment among sellers; don't follow instructions; poor service; no idea what price will be on sale day and once cattle are committed there is no recourse.

Very few considered terminal markets as a real alternative and offered few comments of any kind. Those comments that were offered had to do with inflexibility, high selling and transportation costs, deals made in alleys rather than pens, excessive time lag between shipping and sale date. Some of those commenting said they had only heard from neighbors, others once had a long record of selling at terminal markets.

Areas-Within-State

In Table VII the total number of replies of ranchers interviewed in each sample area are distributed among market methods according to preference by areas or within the state. References to preferences in this section will be in percentages. Comparisons by percentages and by numbers are afforded through this treatment.

Preference for markets in the Northwest area are as follows: 90 percent of the producers interviewed preferred first to sell to feedlot operators and 10 percent preferred to sell to order buyers. These percentages for these two markets were exactly reversed in a second place ranking. Half of the producers placed auction markets in third rank and 30 percent

of them placed terminal markets in this rank. Again, these last percentages were reversed for market place preference.

In the Northcentral area, ranchers interviewed would offer their feeder cattle first to feedlot operators and then to order buyers with 65 percent liking feedlot operators, 25 percent indifferent between feedlot operators and order buyers, and 10 percent preferring order buyers. On a second choice, 5 percent of the producers would offer their young stock to feedlot operators, 65 percent would sell to order buyers, and 25 percent would be indifferent between feedlot operators and order buyers. If feedlot operators and order buyers are not available, 65 percent of the ranchers will go to auctions, 25 percent to terminal markets, and 5 percent will be indifferent between auctions and terminal markets. For fourth place, the numbers of preferences for auction and terminal markets are reversed from that of third place.

Sixty percent of the producers interviewed in the Northeast area would first sell to feedlot operators, 10 percent would give the nod to order buyers, and 30 percent would not be distinctive between these two. The second preferences of 50 percent of the producers would be order buyers, 10 percent would choose feedlot operators, 30 percent would be indifferent between these buyers, and 10 percent would choose auctions. Auctions are the third place preference of 70 percent of the producers, as terminal markets are for 20 percent. These two markets have reverse standings for fourth place.

TABLE VII. PREFERENCE OF MARKET METHODS, 120 MONTANA RANCHERS, 1963, BY AREAS-WITHIN-STATE.

Area	Preference Rank	Total	MARKET METHODS: Terminal		Auction	Feedlot Operator	Order Buyer[a]	No Preference[b]
			Number of Ranchers					
Northwest								
	First	10				9	1	
	Second	10				1	9	
	Third	10	3		5			2
	Fourth	10	5		3			2
Northcentral								
	First	20				13	5 [c]	2
	Second	20				1	5 [c]	13 1
	Third	20	5	1[c]	13			1
	Fourth	20	13	1[c]	5			1
Northeast								
	First	10				6	3 [c]	1
	Second	10			1	1	3 [c]	5
	Third	10	2		7			1
	Fourth	10	7		2			1
Central								
	First	20				7	5 [c]	6 2
	Second	20			2	3	5 [c]	7 3
	Third	20	4	3[c]	9	1		3
	Fourth	20	10	3[c]	3	1		3
Southwest								
	First	20				15	1 [c]	4
	Second	20			1	4	2 [c]	13
	Third	20	1	1[c]	17			1
	Fourth	20	17	1[c]	1			1
Southcentral								
	First	20	1			13	2 [c]	4
	Second	20	1		1	2	2 [c]	13 1
	Third	20	4	1[c]	11			4
	Fourth	20	10	1[c]	4			5
Southeast								
	First	20				16		4
	Second	20	1		1	3		15
	Third	20	1	1[c]	15			3
	Fourth	20	13	1[c]	1			5

See Footnotes on following page.

TABLE VII. PREFERENCE OF MARKET METHODS, 120 MONTANA RANCHERS, 1963 BY AREAS-WITHIN-STATE. (continued)

Area	Preference Rank	Total	MARKET METHODS				
			Terminal	Auction	Feedlot Operator	Order Buyera/	No Preferenceb/
			Number of Ranchers				

a/ Refer to Footnote 60.

b/ No preference indicated for column with entry.

c/ Indicates number of interviewees who were indifferent between the market methods shown in columns on either side of symbol.

In the Central area, 35 percent of the producers would choose feedlot operators first from the alternative markets, 30 percent would choose order buyers first, and another 25 percent would be as likely to deal first with one as with the other. The producers' second rank preference proportionately is 35 percent for order buyers, 15 percent for feedlot operators, 25 percent indifferent for these markets, and 10 percent for auctions. Preferences of third place would be 45 percent for auctions, 20 percent for terminal markets, 15 percent indifferent for these markets, and 5 percent would be for feedlot operators. Half of the producers interviewed placed terminals last, 15 percent place auctions last, 15 percent are indifferent between the markets as to last place, and 5 percent place feedlot operators last.

In the Southwest area, market preferences are tightly grouped. First preference of 75 percent of the producers is feedlot operators, 20 percent prefer order buyers first and 5 percent find them equally attractive as a first choice of markets. Second preferences are thus: 65 percent like order buyers, 20 percent like feedlot operators, and 10 percent like these

two indifferently, and 5 percent like auctions. Auctions were a third preference for 85 percent of the ranchers, terminal markets were a third preference for 5 percent and 5 percent were indifferent. Auctions and terminal markets have four place standings which are reversed from those in third place.

Producers interviewed in the Southcentral area, if they could, would distribute their first choices as follows: 65 percent for feedlot operators, 20 percent for order buyers, 10 percent indifferent as to these markets, and 5 percent for terminal markets. The second preference turns out to be more widely distributed: 65 percent for order buyers, 10 percent for feedlot operators, 10 percent indifferent as to these markets, 5 percent for auctions, and 5 percent for terminal markets. Third place preferences are as follows: 55 percent of the producers would go to auctions, 20 percent would go to terminal markets, and 5 percent would be indifferent between these two markets. Half of the producers put terminal markets last, 20 percent put auctions last, and 5 percent are indifferent as to which of these is put last.

In the Southeast area, first choice would be 80 percent to feedlot operators and 20 percent to order buyers. On a second choice, 75 percent would deal with order buyers, 15 percent with feedlot operators, 5 percent with auctions, and 5 percent with terminals. For a third place preference, 75 percent of the producers would take their feeder cattle to an auction, 5 percent to a terminal market, and 5 percent would be indifferent between these markets. Last, 5 percent would go to auctions, 65 percent would go to terminal markets and 5 percent would be indifferent between these markets.

The analysis of market preferences for areas within the state show similarities and dissimilarities with the analysis of preferences on the state basis. When stated preferences, reasons for preferences, and market alternatives in the area are considered, it is suggested that strength of preference is related to competing alternative markets in the area. The producers questioned in the Northwest area expressed a much stronger preference for selling to feedlot operators and a weaker preference for order buyers, although none had sold to feedlot operators. The Northcentral area producers were about in line with the state average but showed more indifference between feedlot operators and order buyers and a slightly stronger preference for auctions. Preference in the Northeast area, compared to the state average, was less distinct for either feedlot operators or order buyers. The preference was high but indifferent for these two types of buyers. In the Central area, preference for feedlot operators was lower than state averages, higher for order buyers, more indifference between these two, and slightly lower for auctions and terminals. The Southwest area ranchers preferred feedlot operators more strongly than the state average but not as strongly as those in the Northwest. They also had a stronger than average preference for auctions. Preference for order buyers, feedlot operators, and auctions in the Southcentral area is about that of the state average. Producers in the Southeast area are prominent in their distinct preferences. Their indifference level for markets was much lower than state averages, but their preferences for feedlot operators, order buyers and auctions were higher.

Actual Marketing Methods Used

State

The previous section indicated how the feeder cattle producer in Montana said he would choose among the several methods of marketing if all of these choices were immediately available to him and alternative prices and market conditions were as he assumed them to be. Attention will now be turned to finding how his performance matches his preference.

In attempting to ascertain actual marketings, it should be noted that the year 1963 had its advantages and disadvantages of an unusual nature for a feeder cattle marketing study. In order to secure producer cooperation in any year, it is wise to wait until the haying season is past to begin a study. In addition, that marketing is highly seasonal. In 1963, however, by the normal marketing season the price trend was known to be down. The exact vector of this trend was not known among producers but it was causing them concern. Since they were more than normally anxious to discuss the cause of this concern with anyone who may have an insight, they responded to interviewing more readily. On the other hand, since they were not getting the higher prices which they expected, many were holding for a turn to the better. So at the time of questioning, many had not sold. This gives a distortion to analysis which is concerned with actual markets. This is apparent in Table XVI. There were no "not sold" in 1962 compared to 36 in 1963. Some producers sold later in the year but some did not sell at all and carried their stock over.

This does not pose a serious handicap, though, in drawing observations as to the feeder cattle producer's actual performance relative to his preferences. Market channels used in 1962 are available and even though there are variations in the 1963 analysis brought on by market conditions, the 1963 actual market data substantiates that of 1962.

TABLE VIII. MARKETING METHODS USED FOR CLASS OF ANIMAL BY 120 MONTANA RANCHERS, 1962-63.

Type of Market On Which Sold	Numbers of Ranchers Selling 1963		1962	
	Calves	Yearlings	Calves	Yearlings
Not Reported a/	2		3	
Not Sold	31	5	0	0
Feedlot Operator	4	9	11	8
Order Buyer	39	9	64	14
Another Rancher	2	0	1	0
Dealer	9	1	14	1
Auction	8	1	3	1
Terminal	0	0	0	0

a/ Entry is made in "Calves" column only since it is not recorded whether the non-respondent produced calves or yearlings.

Table VI showed that terminal markets ranked lowest in the preferences of ranchers. Table VIII shows that none reported selling through these in 1963 and in 1962. However, it is known that several groups in the Northwest area did sell through this method late in the marketing season of 1963. Now that depressed prices have forced attention to this market method, its consideration as an alternative may be renewed.

Auction markets, according to Table VI were chosen by no one as first preference and by 5 percent as second preference. Those reporting selling these in 1963 were 7.5 percent and in 1962 were 3.3 percent of the total ranchers reporting. Several of those reporting stated that they had sold to an auction in 1963, because even though they were not pleased, feasible alternatives were too few. Again, ranchers performed in accordance with their preferences.

Dealers are shown separately from order buyers in Table VIII. As explained earlier, these, in careful definition, perform different functions but many times one individual will perform both functions. In some areas, producers were acutely able to distinguish between the two; in other areas, hardly at all. Dealers shown in Table VIII were clearly distinguishable as such, however, many entries shown to order buyers were outright dealers, and many more performed dual functions.

This analysis combines the two types. In Table VI, it was seen that for first place, 18 percent of the producers chose order buyers. Table VIII shows that in 1963, 48.3 percent of producers sold to them and in 1962 an impressive 77.5 percent sold to them.

Again for purposes hereat "feedlot operator" and "another rancher" types are combined. Ranchers preferring to sell to these according to Table VI, were 65.8 percent. In 1963, 12.5 percent of the ranchers reported selling to them and in 1962, 16.7 percent of the ranchers reported selling to them.

Clearly, on a statewide basis, many more ranchers were selling to order buyers and dealers than preferred. On the other hand, many fewer ranchers were selling to feedlot operators than would prefer to.

A dissection of the statewide performance into performances by area may afford a more narrow focus on why preferences are what they are.

Areas Within-State

Table VII shows that 50 percent of the ranchers reporting in the Northwest area put terminal markets in fourth preference and 50 percent put auctions in third preference. Later discussion of organized markets closest in distance will disclose partial reason for these preferences. At any rate, no one reported selling their feeder stock to either terminal or auction markets as seen in Table IX and X. Feedlot operators were given first preference by 90 percent and order buyers by 10 percent of the ranchers. Ranchers reporting in this area typically were not able to distinguish between order buyers and dealers. There were very few direct buyers active in this area and although these very likely more closely resembled dealers than order buyers, they were not discernably more so than in most areas. In 1962, 100 percent sold to these order buyers. In 1963, 40 percent sold to them and 60 percent had not sold. At the time of interviewing, which was in November, these cattle normally would have been sold. Ranchers had been contacted by buyers but the conditions of offers gave the ranchers cause for concern. Presumably, many did later on sell to the same buyers. Many ranchers said that these buyers realized that they, the sellers, had no real alternative. Bargaining conditions, to be discussed later, uphold them in their apprehensions; the extreme variance in their preferences and performances point to their felt need for more feasible market alternatives of a competitive nature.

TABLE IX. ACTUAL MARKET CHANNEL USED, 120 MONTANA CATTLE PRODUCERS, 1963, BY AREAS-WITHIN-STATE.

Area	Number of Ranchers Selling							
	Terminal	Auction	Dealer	Other Ranchers	Order Buyers	Feedlot Oper.	Not Sold	Not Rept.a/
Northwest								
Calves	0	0	0	0	4	0	6	0
Yearlings	0	0	0	0	0	0	0	
Northcentral								
Calves	0	2	0	0	10	0	6	0
Yearlings	0	0	0	0	2	0	0	
Northeast								
Calves	0	0	0	0	2	1	6	0
Yearlings	0	0	0	0	0	1	0	
Central								
Calves	0	1	5	1	6	1	0	0
Yearlings	0	1	1	0	3	1	0	
Southwest								
Calves	0	4	0	0	6	2	2	1
Yearlings	0	0	0	0	0	4	1	
Southcentral								
Calves	0	1	0	1	13	0	1	1
Yearlings	-	-	-	-	1	2	0	
Southeast								
Calves	0	0	0	0	2	0	10	0
Yearlings	0	0	0	0	3	1	4	

a/ Entry made in "Calves" column only since it is not recorded whether the non-respondent produced calves or yearlings.

TABLE X. ACTUAL MARKET CHANNEL USED, 120 MONTANA CATTLE PRODUCERS, 1962, BY AREAS-WITHIN-STATE.

Area	Terminal	Auction	Dealer	Other Ranchers	Order Buyers	Feedlot Oper.	Not Sold	Not Repta/
Northwest								
Calves	0	0	0	0	10	0	0	0
Yearlings	0	0	0	0	0	0	0	
Northcentral								
Calves	0	0	0	1	16	1	0	0
Yearlings	0	0	0	0	2	0	0	
Northeast								
Calves	0	1	1	0	7	1	0	0
Yearlings	0	0	0	0	0	0	0	
Central								
Calves	0	0	3	0	11	0	0	0
Yearlings	0	1	1	0	4	0	0	
Southwest								
Calves	0	1	0	0	9	3	0	2
Yearlings	0	0	0	0	0	5	0	
Southcentral								
Calves	0	1	0	0	14	1	0	1
Yearlings	0	0	0	0	1	2	0	
Southeast								
Calves	0	0	0	0	7	5	0	0
Yearlings	0	0	0	0	7	1	0	

a/ Entry made in "Calves" column only since it is not recorded whether the non-respondent produced calves or yearlings.

Ranchers in the Northcentral area would have normally finished marketing their feeder cattle by the time of interviewing, but 5 percent of them had not done so. It may be reasonably assumed that these ranchers would sell later and in their usual pattern of markets. This is the reason: A large portion of this area has been a drought area for at least two years. The ranchers had to decide whether to sell in the face of a downward price trend or to hold over the stock, ship in hay from at least one hundred and fifty miles and run the chance of still selling on a down market. None of these ranchers sold to terminal markets in 1962 or 1963. None sold to auctions in 1962 but 10 percent sold to auctions in 1963. In 1962, 90 percent sold to order buyers and in 1963, 60 percent used this market. Only 10 percent of the ranchers reported selling to feedlot operators (and other ranchers) in 1962 and none reported selling this way in 1963. Many of these ranchers openly expressed need for assistance in finding better marketing conditions.

At time of schedule taking in the Northeast area, the marketing activities should have been at their highest peak. The high proportion of "not sold" entries in Table IX reveal the already apparent down turn of market price for feeder cattle. Range and winter feed conditions for this area were comparatively good so it is conceivable that some of the feeder cattle were carried on the range into the next season. Bear in mind that in this area there are several physical feasible market alternatives. No one reported selling to terminal markets in either year. No one reported selling to auctions in 1963 but 10 percent used this method of marketing in 1962. Ten percent of the producers sold to feedlot operators in 1962 and

20 percent of them did so in 1963. Eighty percent of the producers in 1962 and 20 percent of them in 1963 sold to order buyers.

Marketing activities of the Central area differs from those of other areas. No one sold to terminal markets in 1963 or 1962. Ten percent of the producers sold to auctions in 1962 and 20 percent did so in 1963. A brand inspector in this area offered the comment that inspections of cattle going to auctions in 1963 were decidedly up from 1962. Reports of ranchers show 95 percent selling to order buyers (and dealers) in 1962 and 75 percent selling to them in 1963. There is reason to think that a majority of these buyers in this area are employed by firms which buy for resale in the Midwest. None of the producers sold to feedlot operators in 1962. In 1963, 15 percent of the producers sold to them.

Ranchers in the Southwest area were interviewed long after the normal marketing season. Those not having sold at that time very likely will not do so before the next season. The area holds no characteristics which should unusually affect the marketing pattern. A possible exception was the good hay season. There are several physically feasible alternative markets in the area. Transportation distances to the Midwest are greater than from other areas. Nevertheless, most of the ranchers responding loaded their feeder cattle for shipment to the East. There were shipments, too, to the South and West; in fact this is one of two areas from which a significant number of feeder cattle are shipped to the West. No rancher reported selling feeder cattle to terminal markets. This is not to say that no one in the area shipped to such a market. It is known that a shipment to a terminal was organized in a county adjacent to this area and

that some individuals from this area included their feeder cattle in the shipment. The same is true of the Northwest Area. Five percent of the ranchers reporting sold through auctions in 1962 and 20 percent did so in 1963. Forty percent sold to feedlot operators in 1962. In 1963, 30 percent of the producers reporting sold to them. Forty-five percent of the ranchers sold to order buyers in 1962 and 30 percent sold to them in 1963.

Interviewing in the Southcentral area was done after the usual marketing season had past. Feed situation was good. Terminal markets were preferred first by 5 percent of those reporting. No one reporting sold to terminal markets in 1963 or 1962. Five percent sold through an auction market in each year in question. In 1962, 75 percent of the producers sold to order buyers, as did 70 percent in 1963. Fifteen percent of the ranchers sold to feedlot operators in each year in question. Again there were clear indications that the "order buyers" active in this area were largely commissioned employees of large firms which owned and operated various marketing facilities in the Midwest.

Although the time of interviewing in the Southeast area would normally have been in the middle of the marketing season, the marketing conditions shaping up were causing the producers to hesitate. Many had been contacted by buyers. The hay season had been unusually good. Alfalfa seed crop was the best in many years. This had been a drought area in 1960 and 1961 and with plenty of feed, many ranchers were in a frame of mind to hold and build back their herds rather than sell at what they considered an unwarranted low price. The year 1962, as shown in Table X, should be a representative year.

The producers reporting in this area did not sell to either auction or terminal markets in 1963 and 1962. These people had strong comments on auction markets which will be discussed in the next section. These ranchers were able to give a clear distinction especially in one county between order buyers and dealers. Seventy percent of those reporting sold to order buyers in 1962. Of those reporting and selling in 1963, 83 percent sold to order buyers. Ranchers in this area apparently have had some satisfying marketing relations with feedlot operators. Thirty percent sold to feedlot operators in 1962. Of those reporting and selling in 1963, 16.7 percent sold to feedlot operators.

More producers interviewed in the Northwest area sold to order buyers than did the average state producer. In fact they sold by no other method. Ranchers reporting in Northcentral area used order buyers as a market more but feedlot operators less than did the average state producer. Use of auctions was about the same as the state average. Use of auctions by reporting Northeast area ranchers was also about the state average. In fact these ranchers closely paralleled state averages in the use of all markets. Ranchers reporting from theCentral area used auctions slightly more, sold much more to order buyers, and less to feedlot operators than did the average state producer. Fewer ranchers in the Southwest area related selling to auctions than did the average state producer; they were about parallel in selling to order buyers but sold to feedlot operators nearly three times more frequently. Reporting Southcentral area ranchers about paralleled the average producer in the state in the use of market methods except that they made more use of order buyers in 1963. Much more

use of order buyers and feedlot operators was made by reporting ranchers in the Southeast area than did the state average, but auctions were used less.

Consistencies of the Marketing Pattern

State

The behavioral aspects of the producer, especially his habits, reveal a pattern in his marketing process.

In the last section, it was clearly shown that feeder cattle producers were not marketing in the method which they preferred. This section will be concerned with how he, the producer, views himself in relation to his marketing goals, and with his demonstrations, both active and passive of evaluating his position in relation to his market goals.

On a state-wide basis 80.8 percent of the feeder cattle producers interviewed reported that they stayed with the same method of marketing each year. These producers felt that there was an advantage to this. After all, if the best method of marketing had been determined what was there to be gained by changing. The method was familiar to them; the personalities involved were familiar to them; and the techniques of selling in this method were familiar to them. Efforts at determining from the interviewee exactly how well he had defined and appraised his position and been convinced that he was using the very best method available to him was met with little success. Most of the interviewees were not anxious to discuss the question and although they stated that they were convinced, their attitudes suggested to the interviewee that many of them stayed with their present method more through inertia than they cared to admit.

Fifteen percent of these producers stated that they shopped around for markets each season to locate the best price, to satisfy themselves that they had made an effort to do the best possible job of selling their feeder cattle. The query which followed, and to be discussed next, casts doubts, though, on how well even these producers investigated their marketing possibilities. This is not to say that a large portion of producers had been affected by mental and physical lethargy. Rather, it is easier to believe that most of them have done all they know how to do. Although they vaguely realized that something was missing, they did not exactly know what it was.

Producers were asked pointedly if they had gathered the necessary information and data and compared up-to-date marketing and transportation costs of the alternative marketing methods prior to selling either in 1962 or in 1963. Of those producers interviewed, 80.9 percent had never done this and 15.8 percent had made varying efforts in this direction.

On the assumption that the seller played a more passive role in marketing relations with direct buyers than with organized markets, the producer was asked to describe how buyers found out about his cattle. Of those producers interviewed, 67.5 percent said that the buyers for 1963 or potential buyers, had been active in their particular area so long that they did not recall. Some stated acquaintances of 15 and 20 years. Two of the potential buyers had been referred to the producer by his neighbor and eight others had made contacts through other means. In 1962, 75 percent of those interviewed had met the same old potential buyers, five had potential buyers referred to them by their neighbors, and 15 had potential

buyers find them through other means.

One direct buyer was mentioned by name by 11.7 percent of the producers, two direct buyers were mentioned by name by 16.7 percent more; and 6.7 mentioned at least three direct buyers by name.

Areas Within State

Eighty percent of the producers reporting in the Northwest area used the same way of marketing each year and 20 percent shopped around. But those who said that they shopped around admitted that the shopping around was limited to a very small number and types of markets.

Selling and transportation costs were pre-figured for alternate markets by 20 percent of the producers reporting. Other did not. Of those who did, half depended on long past experience in shipping to Omaha. The other half had written in 1963 to a county agent in Nebraska.

In 1962, all potential buyers inquiring about their cattle had been the same ones who had done so for many years. The same was so in 1963 except that one potential buyer had been referred to the producer by the producer's neighbor.

Each of the producers reporting had mentioned the names of two direct buyers, one particular buyer was mentioned by each producer.

All producers reporting in the Northcentral area had made no effort to try different marketing methods. Only 5 percent had gathered and compared selling and transportation cost data in 1962 or 1963 and this was done using data of four years past experience shipping to Omaha and Chicago.

In 1962 and 1963, the same potential buyers and inquired of the cattle of 90 percent of the producers. The buyers inquiring of stock of the other 20 percent of each of these years had become acquainted through a recently defunct feeder cattle marketing pool. Pieces of information were gathered from interviewees who were members of this pool. It seems that certain members of the Blackfoot Indian Tribe, on realizing the need for more bargaining strength, had organized and put into operation a marketing pool, facilities of which were located in Browning. Buying was by sealed bids. Buyers, it was reported by interviewees, would meet outside of the facilities before bids were opened and offer higher prices than they had in their sealed bid. Producers were not restricted from selling. This and other questionable activities soon led to the demise of the pool. Producers continue to lament the passing of what promised to be an improvement among their marketing alternatives.

Ranchers, reporting in the Northeast area, by 60 percent, continued to utilize each year the marketing method of the past year. In this area, most of them knew why they were doing so and believe that it was not within their immediate reach to do better. Forty percent of the ranchers did shop around, they said. Eighty percent had gotten local auction cost data from a neighbor and 20 percent had terminal market cost data which they had gained by selling there several years ago. This was the extent to which they had shopped around.

The same old potential buyers of previous years were the ones who inquired of the cattle of more than half of the producers reporting in 1962. One potential buyer had been referred by a neighbor and one was

a neighbor who was an agent for an extremely speculative dealer. Another buyer (feedlot operator) had been motivated to inquire because of an advertisement which the producer had placed in a Midwestern feeder journal. The buyer inquiry pattern was about the same for 1963 except that one buyer had been met at an auction two years previously.

More than three fourths of the producers reporting in the Central area had stayed with the same markets every year. Less than half of these were definitely convinced that they were doing the best possible. Of the producers reporting, 15.8 percent maintained that they shopped around each year.

When asked pointedly, the extent of their comparing of selling and transportation data, the replies of 84 percent of the producers revealed that they had done none. Of the remaining 16 percent, a majority had gathered useful recent data on an Iowa auction and terminal market.

All potential direct buyers making inquiries were the same order-buyer-dealers from years before. Some were neighbors acting as agents for these dealers.

Fifteen percent of the producers reporting mentioned one direct buyer by name; 25 percent mentioned two, and 15 percent mentioned three.

All producers reporting in the Southwest area maintained the same method of markets each year. Eighty-eight percent had made no cost comparisons of marketing methods. The remainder compared local markets and compared opinions of costs with neighbors.

Most of the potential direct buyers were the same persons from previous years but there were incidences of initial inquiries due to

referrals from bankers and motel operators to feedlot operators, to contacts made by feedlot operators during organized feeder tours, and to appearance of a representative of a Nebraska auction market.

One rancher mentioned one direct buyer by name, three mentioned two and one mentioned three by name.

Only 15 percent of the producers reporting in the Southcentral area claimed to have shopped around to test the market methods. Cost comparisons were made by 25 percent, they said, but local auctions were the sources from which they gathered data.

All potential direct buyers were old scouts in the area.

Three producers mentioned one direct buyer, one mentioned two, and one mentioned three direct buyers by name.

Sixty-five percent of the producers in the Southeast area had no inclination toward changing their marketing method and 30 percent shopped around to obtain a price pattern. Eighty percent had never made cost data comparison of market alternatives. Of the remainder, 75 percent had used local auctions for comparisons; the rest had gone to terminal markets several years before and were still using cost data gained from that experience.

Although there were small area differences in the manner and extent to which producers investigated their marketing possibilities, the similarities are more outstanding than the differences. Real attempts to compare markets were few. Active buyers in each area were about the same individuals each year, with only an occasional new-comer on the scene.

Although a majority of potential direct buyers were past acquaintances of long standing, some of the newer ones were contacted under interesting circumstances; one was met at an auction; one was met by the producer while the producer was on vacation in Florida; one, a feedlot operator, was met while vacationing in the area; two feedlot operators came directly because they were pleased with the cattle obtained through an order buyer the previous season; and another was referred by a trucker.

The Case of the Closest Organized Market

An auction was the closest organized cattle outlet for producers reporting in the Northwest area. Ten percent sold cull cows and bulls there because they liked the market; 40 percent sold cull cows and bulls there simply because it was the closest. Other took their dry and cull cows and bulls to Spokane, except one who sent his fat cows to a terminal market in Davenport, Iowa. These producers spoke highly of the Spokane market as a cow market. Ten percent of the reporting producers sold yearlings which had been cutback calves at the closest auction. None reported selling feeder calves there. To the query "why", 50 percent merely said they didn't trust the market.

Ranchers reporting in the Northcentral area were divided in proximity to organized markets. Sixty-five percent were closer to Shelby and 35 percent were closer to Great Falls Livestock Market Center. Of those closest to Great Falls, 50 percent sold some type of cattle there; of those closest to Shelby, 77 percent sold some type of cattle there. Ten percent reported selling feeder calves to these markets in 1963, none reported such

for 1962. Very few producers had comments on the markets except several saying "don't get as much".

Of the ranchers reporting in the Northeast area, 10 percent were closest to the Glasgow auction but none sold any cattle there. The remainder were closest to the Glendive auction and of these, 56 percent sold cull cows and bulls there. No feeder cattle were sold by these producers at either market. The only comment offered at this point was that too much shrinkage was realized by selling on these markets. The phrase "at this point" is used because in another stage of the study, other aspects of the producers' attitudes towards markets will be investigated.

Producers reporting in the Central area were locationally divided as to organized markets. Seventy percent of the reporters were closest to Central Livestock Auction at Lewistown, and 30 percent were closest to Great Falls. Of those closest to Great Falls, 83 percent sold cull cows and bulls there, and of those closest to Lewistown, 36 percent sold cull cows and bulls there. In 1963, 10 percent of reporting producers in the area sold feeder calves through one of these markets and another 10 percent sold feeder yearlings at one of these markets. In 1962, 10 percent of reporting producers sold feeder yearlings to one of these markets.

The Montana Livestock Auction at Butte was the closest organized market for 5 percent of the producers reporting from the Southwest area. Their culls were sold there. The remaining reporting producers in this area acclaimed the Dillon Auction their closest organized market but varied in their patronage. Ten percent of these producers sold calves there but half of this 10 percent said that this action was taken due to lack of "active"

direct buyers and not because they liked the market. Another 5 percent of these producers sold yearlings which had been cutback calves at Dillon. The remainder of the 60 percent selling there sold cull cows and bulls only. Many saying they did so simply because it was the closest market. Others reporting in this area sold nothing there. Ten percent sold culls at the Idaho Falls Auction because, even though it was farther, they liked the market better.

Sixty-five percent of the reporting ranchers in the Southcentral area were located nearer to Billings. The rest were located nearer to Sheridan. None of those located closer to the Sheridan Auction sold anything there--all of these said they liked more distant markets better. Of those reporting Billings as their closest organized market location, 85 percent sold to auctions there. Sixty-two percent sold there simply because it was the closest. The remainder indicated a definite preference for the market at which they sold. A third of this remainder sold feeder calves, all others selling at Billings sold culls only. There are two auction markets at Billings. One was named much more frequently than the other. The market functioning as a terminal was not mentioned.

Producers reporting in the Southeast area indicated a variety of closest organized markets.

Seventy percent indicated Schnell's Livestock Auction at Miles City. Of those naming Miles City, 64 percent sold culls there simply because it was the closest. The others went farther to Belle Fourche to an auction declaring it the best among several alternatives.

The Gillette Auction was the closest for 5 percent of the total reporting but none of these sold there. They all went to Belle Fourche.

The Glendive Auction was the closest for 10 percent of the total and they sold culls there because it was the closest.

Five percent of the total reporting went to the Sheridan Auction with culls because it was the closest.

Another 5 percent being closest to Belle Fourche sold there, but did so also because they liked the market. Why did these and others prefer Belle Fourche? They named reliable market information, prices, pleasant and fair treatment to sellers by management, proper handling of livestock, lack of favoritism toward buyers, and adequate prices, in that order.

The Direct Buyer

In prior sections, the feeder cattle producer's relationship with his market has been pried into through several means. His market preferences have been ranked. The market at which he actually disposed of his primary product has been reduced to comparative figures. His attitude toward his marketing method--complacent or ever searching--has been indicated, as have been his efforts toward measuring his alternates. A measure of his use and of his evaluation, though it be only rough, of nearby organized markets have been made, even to the extent of his tendency to use these markets for disposal of part of his obsolete and reject capital equipment. Some of the ways in which his potential direct buyers found their way to him have been pointed out. To aid in obtaining a sharper appreciation of an increasingly important market for the feeder cattle producer, this section will scrutinize

quite closely the type of direct buyer that has been contacting the producer, and the number of contacts made by type.

State

An analysis of contacts from the two prominent categories of direct buyers affords a partial explanation of the gap between the producer's preference and his present potential direct market. Also, it affords an assessment of the degree of saturation of present market types when measured against the producer's preference and points to types of markets which may reasonably be expected to increase. An analysis by areas lends a more micronic examination of market potentials.

Many producers and other market observers have contended that direct buyers did not make an appearance during 1963 because of a detected price trend downward. The analysis of contacts does not substantiate this claim.

Table XI shows that the number of ranchers receiving one contact from direct buyers was actually more in 1963 than in 1962. There were fewer receiving two, three and four contacts in 1963 than in 1962, but more received five contacts in 1963. Totally there were more contacts from order buyers than feedlot operators; in 1963, there were 273 contacts from order buyers and 26 contacts from feedlot operators. In 1962, there were 272 contacts from order buyers and 45 contacts from feedlot operators. Each rancher reporting, then, received on the average in 1963, a contact from .217 feedlot operator and 2.275 contacts from order buyers. The year before, each rancher reporting received on the average a contact from .375 feedlot operator and 2.267 contacts from order buyers. It can be said

TABLE XI. CONTACTS RECEIVED BY RANCHERS FROM DIRECT BUYERS: STATE, TYPE AND NUMBER.

Number of Contacts Received By Rancher	1963 Number of Ranchers Receiving Contacts From Feedlot Operators	1963 Number of Ranchers Receiving Contacts From Order Buyers	1962 Number of Ranchers Receiving Contacts From Feedlot Operators	1962 Number of Ranchers Receiving Contacts From Order Buyers
0	100	23	95	19
1	16	20	12	23
2	2	20	9	27
3	2	28	2	19
4	0	16	1	22
5	0	13	1	10

therefore, that the increasingly questionable prospects for improved prices may have reduced the number of feedlot operators engaging in market activities in Montana but did not reduce the number or order buyers on the country roads. Data in Table XI and statements concerning potential direct buyers in the previous section would indicate that the pattern and number of order buyers are well fixed.

Areas Within State

The rancher in the Northwest area is not surrounded with alternate methods of marketing his feeder cattle. All auction markets are quite distant. Of the two nearest, according to the sample, one was a good market for cows but not feeder stock, the other he did not trust. No feedlot operators got to this area as shown in Table XII and XIII. The average rancher reporting received 1.8 contacts from order buyers in 1963 as shown in Table XII, and 2.0 contacts in 1962, as shown in Table XIII;

slightly less than the state averages. The ranchers interviewed were depressively aware of their marketing disadvantages.

Tables XII and XIII suggest that the Northcentral area was not much heavier traveled by feedlot operator-buyers than its neighboring area to the West. Order buyer contacts, though, were 2.8 per rancher in 1963 and 2.6 per rancher in 1962. Contacts of this type were more, rather than less in 1963; both were above the average for the state.

Although interviewing was done in the Northeast area earlier than in other northern areas, it is apparent in Tables XII and XIII that feedlot operators were more active. In 1963, the average producer received 0.6 contacts from feedlot operators and 0.4 contacts in 1962. His contacts, though, with order buyers were 1.0 in 1963 and 1.8 in 1962, well below the average producer for the entire state.

Tables XII and XIII leads one to believe that little has been done to attract feedlot operators into the country in the Central area. On the other hand, the average producer received from order buyers 2.8 and 2.75 contacts, respectively in 1963 and 1962. These are both higher than for the average producer in the state. These and the proximity of several organized markets make a noticable difference in the attitude of the producer as compared to those in the Northwest Area. Producers here were either consciously or unconsciously aware that they have a selection of real market alternatives.

Feedlot operators have shown marketing activity in the Southwest area of Montana. Producers received an average of 0.5 and 0.4 contact -

TABLE XII. CONTACTS RECEIVED BY 120 MONTANA RANCHERS FROM DIRECT BUYERS, 1963, BY AREAS-WITHIN-STATE.

Area	No. of Ranchers Receiving Contacts From	0	1	2	3	4	5
Northwest							
	Feedlot Operators	10	0	0	0	0	0
	Order Buyers	1	5	1	2	0	1
Northcentral							
	Feedlot Operators	19	1	0	0	0	0
	Order Buyers	1	3	5	4	4	3
Northeast							
	Feedlot Operators	7	1	1	1	0	0
	Order Buyers	6	1	2	0	0	1
Central							
	Feedlot Operators	20	0	0	0	0	0
	Order Buyers	0	4	4	7	2	3
Southwest							
	Feedlot Operators	13	5	1	1	0	0
	Order Buyers	1	2	4	6	4	3 a/
Southcentral							
	Feedlot Operators	16	4	0	0	0	0
	Order Buyers	5	3	1	7	3	1
Southeast							
	Feedlot Operators	15	5	0	0	0	0
	Order Buyers	9	2	3	2	3	1

a/ One of these was definitely an auction representative.

TABLE XIII. CONTACTS RECEIVED BY 120 MONTANA RANCHERS FROM DIRECT BUYERS, 1962, BY AREAS-WITHIN-STATE.

Area	No. of Ranchers Receiving Contacts From	Number of Contacts Received by Ranchers					
		0	1	2	3	4	5
Northwest							
	Feedlot Operators	10	0	0	0	0	0
	Order Buyers	0	5	1	3	1	0
Northcentral							
	Feedlot Operators	18	1	1	0	0	0
	Order Buyers	1	6	3	3	4	3
Northeast							
	Feedlot Operators	8	1	0	1	0	0
	Order Buyers	1	3	4	1	1	0
Central							
	Feedlot Operators	20	0	0	0	0	0
	Order Buyers	2	2	7	1	4	4
Southwest							
	Feedlot Operators	15	2	3	0	0	0
	Order Buyers	5	1	4	6	2	2 a/
Southcentral							
	Feedlot Operators	14	4	2	0	0	0
	Order Buyers	7	3	5	1	4	0
Southeast							
	Feedlot Operators	10	4	3	1	1	1
	Order Buyers	3	3	3	4	6	1

a/ One of these was definitely an auction representative.

respectively in 1963 and in 1962 from this type of buyer. There were 2.95 contacts made by order buyers per producer in 1963 and 2.25 contacts per producer in 1962. Both feedlot operator and order buyer contacts were above the average for the state.

There were feedlot operator contacts in the Southcentral area but not many. Producers averaged receiving 0.2 contacts in 1963 and 0.4 contact in 1962. Average contacts from order buyers were fewer than the state average with 2.15 in 1963 and 1.6 in 1962.

The Southeast area was the earliest interviewed and it is reasonable to believe that in the unusual year of 1963, more contacts were made later. Interviewing in this area was conducted during the first half of October. Contacts made after then are unknown. Ranchers in this area were unusually aware of the difference between bona fide order buyers and dealers. Those listed in Tables XII and XIII are bona fide order buyers. In addition to these buyers in 1963, ranchers in this area had one contact by a representative of an auction market; in 1962, they had one contact by a representative of an auction market and one contact by a dealer.

Producers averaged receiving in 1963, 0.25 contact and in 1962, 1.1 contacts from feedlot operators. The same average producer received 1.55 contacts in 1963 and 2.5 contacts in 1962 from order buyers. It may be surmised then, that producers in this area received more contacts from direct buyers than the average producer in the state.

Season of Contact

If the feeder cattle producers' preferences are to be properly assessed and recommendations made toward furnishing assistance in attaining bargaining equality, a knowledge of the seasons in which bargaining contacts are made is necessary.

The analysis of contacts shown above from direct buyers leads one to think that the argument for lack of direct buyers put forth during the 1963 marketing season is not well founded. In some areas there were fewer than in the previous year, but at least some were in the country. A look at when contacts were made may give an insight to the basis for such an argument.

State

Tables XIV and XV sum the first contacts received by reporting feeder cattle producers from direct buyers and distributes them according to the month of contact and by year for years 1963 and 1962. In the season of most frequent contacts, the distribution is made by half-months. The seasons of these contacts have an important bearing on a later discourse on contracts.

Until July, few contacts were made, although a slight pick-up of numbers was detected in June. A surge of contacts occurred in July with a larger proportion falling in the second half of the month in both years under study. However, there were fewer contacts the first half of July, 1963, than in the last half of July, the same year, and more contacts the first half of July, 1962. The differences were by the same digit.

TABLE XIV. SEASON OF FIRST CONTACT FROM THE DIRECT BUYER, BY STATE AND AREAS-WITHIN-STATE, NUMBER AND TIME OF FIRST CONTACTS, 1963.

	Before June	June	July 1st Half	July 2nd Half	Aug. 1st Half	Aug. 2nd Half	Sept. 1st Half	Sept. 2nd Half	Oct. 1st Half	Oct. 2nd Half	Nov.	Dec.	None Reported
State	5	8	7	19	9	8	7	5	18	6	8	0	20
Northwest	0	4	1	2	0	0	0	0	0	1	0	0	2
Northcentral	1	0	1	7	0	3	0	2	4	0	1	0	1
Northeast	0	1	0	0	0	0	0	1	0	3	0	0	5
Central	3	2	2	6	0	2	1	0	2	1	1	0	0
Southwest	0	1	3	4	4	0	1	0	4	0	2	0	1
Southcentral	0	0	0	0	0	3	3	0	6	1	4	0	3
Southeast	1	0	0	0	5	0	2	2	2	0	0	0	8

TABLE XV. SEASON OF FIRST CONTACT FROM THE DIRECT BUYER, BY STATE AND AREAS-WITHIN-STATE, NUMBER AND TIME OF FIRST CONTACTS, 1962.

	Before June	June	July 1st Half	July 2nd Half	Aug. 1st Half	Aug. 2nd Half	Sept. 1st Half	Sept. 2nd Half	Oct. 1st Half	Oct. 2nd Half	Nov.	Dec.	None Reported
State	5	7	11	15	15	10	6	8	14	11	3	2	13
Northwest	0	2	2	5	0	1	0	0	0	0	0	0	0
Northcentral	1	1	2	5	4	3	1	0	0	1	0	0	2
Northeast	0	1	0	0	1	0	0	1	0	5	0	1	1
Central	3	2	0	4	1	4	0	2	0	0	1	0	3
Southwest	0	0	6	0	2	2	2	0	2	2	1	0	3
Southcentral	0	0	1	1	0	0	2	2	8	1	1	0	4
Southeast	1	1	0	0	7	0	1	3	4	2	0	1	0

The contacts in August, 1962, although reversed as to the halves, are nearly identical in number to those in July, 1962. There were almost the same number of contacts in the two halves of August, 1963 but for the month, there were eight fewer than in August, 1962 and nine fewer than in July, 1963. Buyers, it seems, were beginning to get the message of the price-making forces. A reference back to Tables VIII and XI shows that it was the feedlot operators who cancelled or changed their method of buying.

The situation in September is a reversal of the trend for July, but at lower numbers. The proportionate drop-off of contacts from August to September was not as large in 1963 as in 1962. This gives evidence to the notion that order buyers' activity was not greatly affected in 1963.

In Chapter I it was pointed out that the peak of the feeder calf movement out-of-state was in September and October, and the peak of the feeder steer and heifer movement was in October and November. Although order buyer contact strength was high in October, the height of both order buyer and feedlot operator marketing activity was much earlier in the latter half of July and in the first half of August.

It is seen in Tables XIV and XV that direct buyer activity picked up considerably in the first half of October only to fall almost to the September level in the last half of October.

In November and December there was very little marketing activity by direct buyers. In November 1963, however, there was considerably more activity than in November, 1962.

The wider swings in marketing activity which occurred in 1963 are attributable to swings in price expections--a good example of the effects

of a weak market information system.

These comments have noted the characteristics of direct buyer contacts in the state. A few statements noting individual characteristics of areas follow in order to complete the assessment of direct buyer contacts.

Areas-Within-State

Tables XIV and XV suggest that contacts from direct buyers in the Northwest area are made seasonally early, normally reaching a peak in the second half of July. The year 1962 was a year in which much optimism was gathered for the feeder cattle industry. Perhaps direct buyers felt this early in the season of 1963. Contacts started off unusually high in number and rapidly decreased.

Contacts in the Northcentral area nearly parallel the state pattern. The peak normally is the last half of July and the first half of August. Like the state pattern, the high numbers in 1963 were in the second half of July and first half of October.

Although producers in the Northeast area were surveyed relatively early, any further direct buyer contacts would, of necessity, have been late ones. Tables XIV and XV record that those already made were late, being grouped in the second half of October both years. There is no immediate explanation for this other than the randomness of the sample.

There was an early spurt of contacts in the Central area but the second half of July, as in the state pattern, was a high point in number of contacts. Unlike the state pattern there was a falling off of contacts in the first half of August and a rising again for the second half of August.

Contacts in the Southwest area reach the highest number in July then tend to be rather steady throughout the marketing season.

The pattern of contacts in the Southcentral area did not conform to that of the state except in one period; the first half of October. There were some contacts in July in 1962 but an increase was not realized until latter August and September either year.

Contacts in the Southeast area peaked in the first half of August only to decline rapidly. A build-up of about half of top strength appeared in the last half of September and first half of October. There is a tendency to follow the state pattern. The deviations are very likely due to sample randomness.

Summary

A predominant number of feeder cattle producers in the sample preferred to sell to feedlot operators. The other market methods in order of predominant preference were order buyers, auctions, and terminal markets. There were some producers who expressed indifference between market methods but the indifference was between feedlot operators and order buyers, and between auctions and terminal markets. There were none who were indifferent between direct markets and organized markets.

Some areas within the state show large amounts of indifference between preferences for markets and some show very distinct preferences. Highly distinct preferences by area seem to correlate with few feasible and actively competitive market alternatives.

Ranchers in the sample, when actually selling feeder cattle, used auctions and terminal markets generally in accordance with their preferences. Most of the ranchers in the sample would have preferred to sell to feedlot operators but most of these ranchers actually sold to order buyers. They were not able to utilize the exact market of their choice. They felt that if they were able to market as they preferred, they would improve their production efficiency, maintain more control over the marketing of their product, attain greater bargaining strength, and increase their marketing efficiency.

Although ranchers reporting in the separate areas varied considerably in their use of alternative markets, this was a passive circumstance.

Most of the ranchers in the sample stayed with the same method of marketing that they used for several years without energetically trying to evaluate and compare other marketing methods. For some producers this behavior was due to inertia but for many more, it was due to a lack of understanding as to what could be done. Most producers expressed an eagerness for sound advice, but they did not know what information would be needed for market comparisons nor where to get such information.

Ranchers in the sample generally used the closest organized market on which to sell cut-back calves and culls but few sold their primary product on these markets. In addition, many ranchers traveled to more distant auction markets because they preferred their services over those offered by the closest markets.

Rancher contacts from order buyers were about steady for the two years under study. The indication is, considered with expressions of preference,

that marketing through this type of buyer is not likely to increase in the long run. On the other hand, there is an indication that numbers of contacts from feedlot operators vary with the price trend.

An analysis of the season of the rancher's first contact from the direct buyer shows two distinct peaks of contact numbers. The first peak consists of number of buyers offering forward contracts, and the second peak is made of numbers of buyers seeking what must be considered immediate purchases. The seasonality of contacts also reflects expected price trends and points toward effects of deficient market information. The seasonality of contacts also points to the periods during which market information for direct marketing is most needed.

CHAPTER IV

BARGAINING IN THE DIRECT MARKET

Introduction

In the foregoing chapter the feeder cattle producer's relationships with his markets, both extant and potential, were examined. This chapter will be directed toward a very thorough view of the bargaining transactions of one market. This is being done for two reasons: one, much is known or can easily be known of the mechanics and techniques of exchange on other types of markets on which feeder cattle are sold; two, the feeder cattle producer has emphatically chosen the direct market yet comparatively little is known of the position from which he bargains.

The Strategies of Price Bargaining

A General Model for Price Bargaining

Feeder calf prices per pound over what was considered a feasible range were used in Chapter II as pay-off matrix element to demonstrate applicability of some of the received game criteria. These prices were realistic and most solutions were realistically applicable to a portion of the ranchers in the sample.

The study is not dedicated to demonstration of achievement of maximum price for the seller nor is it interested in price as such. It is interested in equality of bargaining power between the buyer and seller and holds the assumption that improvement of marketing information would be instrumental in narrowing the divergence of this bargaining power. Not all sellers have the same native bargaining ability, nor all buyers for

that matter. If the buyers are feedlot operators, buying is assumed to be a secondary function for them as selling is for feeder cattle producers. But order buyers are assumed to be engaged in a primary function when bargaining. They can logically be expected to have more bargaining ability. They can devote more time to the function and have regular and frequent access to sources of systematic marketing information. This subject will be delved into in detail in the next chapter.

One can assume then, and realistically so, that in a bargaining situation between a feeder cattle producer and a buyer there is a range of prices in cents per pound such as $p, +2$, $p + 1$, p, $p - 1$, $p - 2$ in which the bargaining process is bracketed.

Assuming such a price range as above, a game matrix such as Figure 13 can be constructed and the individual prices within the range can be considered as elements of payoff. The buyer's strategies are b_1, b_2, and b_3. The seller can choose strategies from s_1, s_2, and s_3.

First, consider a game between the range cowman and the feedlot operator. It must be realized right off that within an undefined time period there will be many variables which will affect prices and bargaining attitudes of either or both buyer and seller. Some of these are weather, government programs, financial conditions and financier attitudes, regional production programs, consumer demand patterns and many more. Some of these factors have been and will be discussed in other sections of the study. For purposes of this section, marketing information will be considered as the only factor affecting the position of the players. All other variables will be considered uncontolled and outside the game unless otherwise made

		B			
		b_1	b_2	b_3	Row Minima
S	s_1	p + 2	p - 1	p - 2	p-2
	s_2	p + 1	p	p + 1	p*
	s_3	p + 1	p - 1	p - 2	p-2
Column Maxima		p + 2	p*	p + 1	

Figure 13. Price Bargaining Game Model.

explicit.

Ignoring what is known about dominance, inferences as to the actions that a producer and a feedlot operator may take can be gathered from Figure 13. It can be assumed, and reasonably so, that over a large sample of producers and feedlot operators the average will have equal market information and equal bargaining ability. If this is so, then it may further be reasonable to expect the seller to select strategy s_2 and the buyer to select as his strategy b_2. The game has a saddle point and would be in equilibrium at price p. Price p is the payoff and the game can be considered to be a fair game. These games are being played according to the rules prescribed in the Wold Criterion and may be compared with the game in Figure 10.

It is not too much to say that these contestants in the game conform somewhat nearly to the conditions of pure competition. Assuming that they

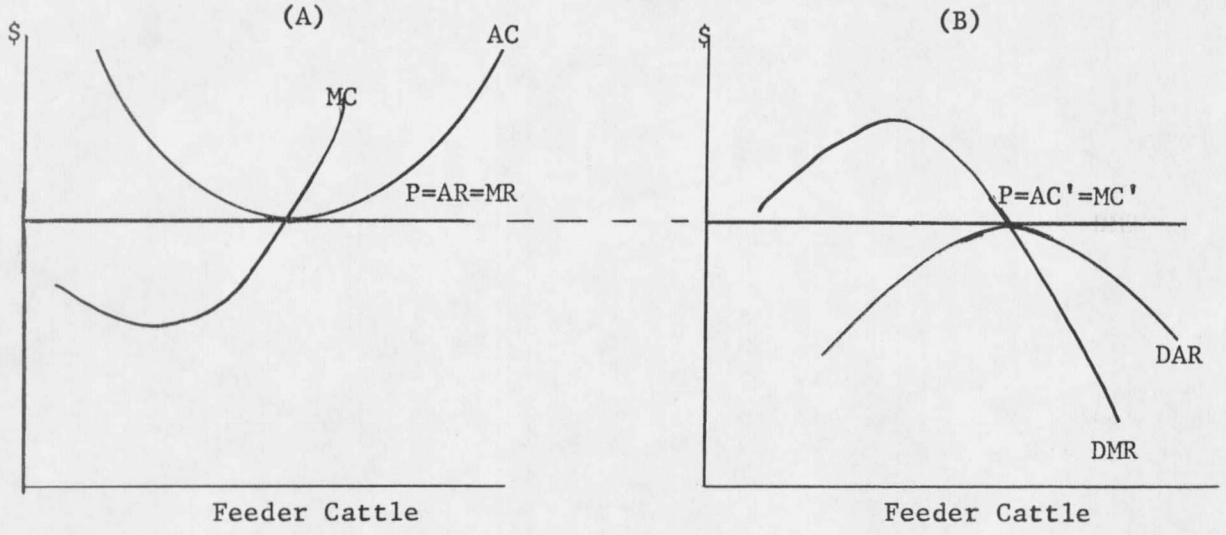


Figure 14. Feeder Cattle Producer and Feedlot Operator in Equilibrium.

do, the marginal analyst would see them as in Figure 14. The derived average revenue curve (DAR) and the derived marginal revenue curve (DMR) of the feedlot operator is seen in Figure 14 (B). The derived marginal revenue curve is the feedlot operator's derived demand curve for feeder cattle. The feedlot operator's purchase curve is the average cost curve (AC'). Under conditions of pure competition, which has been assumed, this purchase curve is a horizontal straight line, and is at the height of the industry price in the overall market. The derived marginal revenue curve cuts the derived average revenue curve from above and at its highest point, and the feedlot operator's average cost coincides with his marginal cost, therefore his profits are normal and he, as a firm, can be considered in equilibrium. His price curve (a straight line) is fixed by the intersection of the Feeder Cattle Industry's supply and demand curves and is the same price curve that the feeder cattle producer faces. This price

curve coincides with the minimum point of the feeder cattle producers average cost curve (AC), the point at which this curve is cut from below by his marginal cost curve (MC) in Figure 14 (A). The feeder cattle producer can then be considered as a firm in equilibrium also; and his profits are normal.

Of course, this portrayal is not characteristic of real firms in this extreme. There were, though, ranchers interviewed during the study which, dealing directly with feedlot operators, seemed to arrive each year at what could be considered an equilibrium price, and this conceivably renders more stability to each in his operation. They dealt through personal contact. In a year of general accentuated price upswing, such as in 1962, the producer sold his calves to his regular feedlot operator-purchaser at less than the "going" price. In a year of general accentuated price downtrend, such as in 1964, the feedlot operator gave his regular supplier higher than "going" price. This should not be mistaken to be a general case--it only happened in a few observations. Recall that in Chapter III some producers were dissatisfied with their experience in dealing with feedlot operators because they were too poorly informed, producers felt, on marketing conditions. Although it was assumed at the outset that the feedlot operator and producer were equally matched, or nearly so, in marketing information and bargaining ability, there is no compelling reason why this should be so in all cases. In Figure 13, then, the feedlot operator or the producer is likely to choose any of his strategies depending on his evaluation of his own marketing information and that of his opponent.

Now, consider a game between a cowman and an order buyer. In using the term "order buyer", tongue must be kept in cheek. The term was carefully defined in Chapter III and found not to identify very well most direct buyers in Montana who nevertheless go by the name. For convenience use the use of the name will be carried throughout this chapter.

Near equality of price information and bargaining ability, ceteris paribus, was assumed to exist between the feedlot operator and feeder cattle producer. The same could be assumed in the case of the order buyer and the producer, but the assumption would not be nearly so realistic. This type of buyer, which in reality is, in most cases a speculator, is a professional. 62/ Intuitively one would surmise that this type of direct buyer has the advantage of more information and ability in the bargaining contest. Data will be offered in the following chapter to support this intuition. Without excluding the possibility of cases to the contrary, one would be safe in saying that the seller is at a disadvantage in playing a bargaining game with an order buyer, therefore the outcome of the game is determined in favor of the buyer. The pay-off, however, is undetermined.

Such a game is depicted in Figure 15. The assumptions of the game are the same as in Figure 13, except that the order buyer and the cattleman are not maintained in near equality. The same symbolic pay-off elements are used. The game is not in equilibrium and there is no saddle point. The seller's maximin is at p-1 and the buyer's minimax is at p. The imbalance is in the price information available to and used by each contestant. The seller's pay-off is somewhere between that of a fair game and one unit less than the value of a fair game.

62/ Harvey H. Smith, Livestock Marketing in the United States, Bulletin 442-A, Colorado Agricultural and Mechanical College, Fort Collins, 1956.

S \ B	b_1	b_2	b_3	Row Minima
s_1	p	p - 1	p	p - 1*
s_2	p - 1	p	p - 2	p - 2
s_3	p + 1	p - 1	p + 1	p - 1*
Column Maxima	p + 1	p*	p + 1	

Figure 15. A Game Without a Saddlepoint.

This, of course, depends on the relative difference between the two individuals. The buyer has calculated, in addition to profit and other costs, the cost of risk and has arrived at a price ceiling. He generally is experienced in the area. He realizes that individuals and neighborhoods have marketing characteristics and information levels. He attempts to begin his bargaining below his ceiling price. How far below depends on the individual and the area.

Referring again to Figure 13, it can be seen that this buyer would hope that the seller would select strategy s_1 or s_3 in which case he, the buyer, would select strategy b_3. Never would he select strategy b_1. If the seller were to select strategy s_2, only under the direst circumstances would the buyer select strategy b_2. More likely the buyer would quit the game.

Now it is well suspected that in any given neighborhood once a price is set early in the season this price becomes an orbit around which prices for the remainder of the season tend to revolve. This is especially so in districts which have, and most districts do, a rancher which tends to be a price thermometer and to which others in the neighborhood ascribe.

Going back to the game in Figure 13, it would seem that as the seller acquired more and better marketing information, more familiarity with his alternatives, if there are in fact real ones, the order buyer-speculator would find it increasingly difficult to head directly to a strategy such as b_3. Even if the bargaining leader in the neighborhood were to realize an increase in his bargaining ability through better information he would raise the level of price received for the entire neighborhood.

Most of the above discussion has taken place within the confines of the minimax or Wold Criterion, although some of the latter part wavered toward the "Principle of Insufficient Reason" criterion.

There is another even more general model of bargaining for feeder cattle to be dealt with, and for the sake of continuity should be dealt with immediately. However, there is also actual bargaining data which should be fitted into the context at this point. After a discourse on this data, the study will be directed back to general model discussion.

Price Bargaining Sequence

All Original Offers.--Of the 120 interviewees in the sample, 117 had sold their feeder cattle to a direct buyer either in 1962 or 1963. The remaining three had sold either to auctions or terminal markets. Data

from these 117 interviews will be used in the analyses which follow in this chapter. If a producer had sold to a direct buyer in 1963, data from this observation was used; if he had not sold to a direct buyer in 1963 but had done so in 1962, this data was used.

The 117 sellers who did sell directly were grouped according to who the buyer or the seller, uttered the first offer of price and according to whether this offer was accepted or rejected. The grouping is shown in Table XVI. A chi-square test for independence of principles of classification was performed. There are two principles of classification: classification with respect to who was the first offerer, and classification as to whether the offer was accepted or rejected. Each principle then is divided into two classes. The chi-square test was accomplished for the 5 percent level of significance and 1 degree of freedom. The hypothesis of independence was not rejected. Whether the original offer was accepted or rejected is not dependent upon whether the offer was made by the buyer or the seller. Calculations are to be found in Appendix A, page 195.

Buyers made 61 percent of all first offers made. Acceptance was made of 39 percent of all first offers. Of the first offers which were made by sellers, 43.5 percent were accepted; of the first offers made by buyers 36.6 percent were accepted.

Since a larger percentage of seller first offers were accepted than were those of the buyer, one might be tempted to hypothesize that the seller started off in closer proximity to the fair value of the product. There is little evidence obtained in the study which would support such a statement. A statement which could be better supported would be one to

the effect that the seller is more or less aware of what the buyer has been paying in the neighborhood and bases his price accordingly. The order buyer, of course, never goes over his ceiling price, which is something under fair value. Fair value is being used in the sense that it is equivalent to a product and input factor value which would be found under purely competitive conditions. The seller's first price, then, based as above, would be more likely accepted by the buyer than one based near to fair value.

The buyer, on the other hand, customarily sets his first offer low. How low usually is a function of how well he has analyzed the seller's marketing psychology and how long he has dealt with the seller.

TABLE XVI. ORIGINAL OFFER--ALL OFFERERS, 1963 OR 1962.

Offers	Number of First Offers Made by Buyers	Sellers	Total
Accepted	26	20	46
Rejected	45	26	71
Total	71	46	117

Of course, expectation plays an important role for both buyer and seller; to wit, in the late fall of 1963 the price trend was definitely downward but buyers could not gauge the pace; therefore, they simply did not go out in the country and make bids for a period. It was this period to which the seller was referring when he said "the buyers are hiding in the bushes".

An order buyer, dealing with a seller whom he knows to be informed (and not prone to dicker) will set his first offer relatively near fair value. Otherwise he will set his first price low either hoping to catch the seller uninformed or realizing that a period of dickering will ensue.

If the seller is poorly informed he may accept the buyer's first offer, thinking he has found a fair value; or poor information may lead him to have an unwarranted dismal expectancy and again accept a low offer. Some sellers have said that they never accept a first price offer or even deal with the first buyer; "this gives me something to dicker with". Buyers of course, realize this and plug it in as a variable in their decision-making. Given a state of information near equality, the higher the offer or counter-offer above or below extant market price, the more likely the opponent is to reject it.

Original Offers by Buyers.--One may be able to extract further inference by taking the column headed "Buyers" in Table XVI and sub-classifying the buyers into feedlot operators and order buyers. This has been done in Table XVII. Original offers made by feedlot operators and order buyers have been classified according to acceptance or rejection. A chi-square test for independence of principles of classification was again performed. Calculations are to be found in Appendix A, page 196. The test was accomplished at the 5 percent level of significance and 1 degree of freedom. The hypothesis of independence was rejected. Classifications in Table XVII were dependent on one another. Acceptances were highly influenced by offers made by feedlot operators. In other words, whether the original offer was accepted or rejected is significantly dependent upon whether the offer was made by a feedlot operator or an order buyer.

This substantiates the hypothesis that the seller and the next user of the product by dealing directly are more likely to arrive quickly at a fair value of the product. Further it indicates that the seller's actions and his preference of markets as set forth in Chapter III are consistent; when he meets the feedlot operator, the bargaining is quickly concluded. This result further indicates that in spite of complaints some producers have of their dealing with feedlot operators, increased numbers of attempts at dealing would probably bring improved results. All of the producers who complained had experienced only a single deal. An improved state of information could only lead to improved marketing efficiency for both producers and feedlot operator.

TABLE XVII. ORIGINAL OFFERS MADE BY BUYERS, 1963 OR 1962.

Offers	Number of Offers by Feedlot Operators	Order Buyers	Total
Accepted	7	19	26
Rejected	3	42	45
Total	10	61	71

When order buyers made the original offer, 31 percent of the offers were accepted. Original offers made by feedlot operators received 70 percent acceptance.

Original Offers By Sellers.--Again, data shown in Table XVI was further refined and analyzed. This time the column of sellers making offers was given further classification as to whether the offer was made to a feedlot operator or an order buyer. These were then classified according to acceptance or rejection.

Expected frequency in two of the classification cells was less than five. When such occurs the use of the chi-square test is not recommended. The results become inexact. A test was made on these cells in Table XVIII, however, and the calculations may be found in Appendix A, page 197. The result shows that the hypothesis of independence is not to be rejected. Again a warning is issued that when more than 20 percent of the expected frequency cells are less than five the results of the chi-square test are not to be trusted.

TABLE XVIII. ORIGINAL OFFER MADE BY SELLER.

Offers	Number of Offers to Feedlot Operator	Order-Buyer	Total
Accepted	4	16	20
Rejected	3	23	26
Total	7	39	46

Earlier, on page 121, it was said that a larger percentage of original offers made by feedlot operators were accepted much more readily by the sellers. Table XVIII shows that original offers made by sellers to feedlot operators received 57 percent acceptance while those made to order buyers were accepted by only 41 percent of the order buyers.

The analyses of these tables again support the notion that feedlot operators and feeder cattle producers could reduce their marketing costs through informed direct bargaining. The costs to them of place and time utilities are higher than would be necessitated by pure competition. A large number of feeder cattle each season pass through the hands of several dealers before arriving at a feedlot. This handling is not prima facie

evidence of a market structure defect, but no doubt would be found to be defective in market structure in most cases. The important thing is that no handling should be done and no transportation expense should be incurred which does not add utility in line with its costs.

The Buyer's Original Offer Is Rejected And A Counter-Offer Is Made.-- The discussion now becomes more difficult to handle. A rather complex schedule design was required in order for the questioning to be able to extract in a meaningful order the bargaining steps. A dichotomy was first established from original offers made by buyers and by sellers. If this original offer was rejected, the questionnaire was capable of making record of any ensuing counter-offers and offers. Steps were provided for a sufficient number of counter-offers which the designer judged should exhaust any genuine bargaining attempts. In none of the interviews were the number of bargaining steps greater than provided for in the questionnaire. This section of the questionnaire may be found in the Appendix C. The discussion will follow the course of the questionnaire; first taking those original offers of the buyer which were rejected. For more penetrating investigation the rejected original offers of the order buyer and feedlot operator have been separated into two tables.

Table XIX (a) shows the sellers' first counter-offers to the rejected original offers of the order buyers. It is seen that 59 percent of the sellers' first counter-offers were made at less than 2 cents per pound over the original offers. Twenty-six percent of these counter-offers were made at 2 cents per pound over the original offers and 15 percent

were made at more than 2 cents per pound over the original offers. Of the "less than 2 cents" counter-offers, 78 percent of them were accepted; 40 percent of the "2 cents" counter-offers were accepted; and only 17 percent of the "more than 2 cents" counter-offers were accepted.

A chi-square test for independence of principles of classification was not made because calculation of expected frequency cells revealed that 75 percent of these cells were less than 5. The test is unreliable if more than 20 percent of these cells are less than 5. Calculations of these expected frequency cells are to be found in Appendix A, page 198.

TABLE XIX. (a). THE ORDER BUYER'S ORIGINAL OFFER IS REJECTED AND THE SELLER TAKES A FIRST COUNTER-OFFER.

Counter Offer	Amount Over Original Offer			
	Less Than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	18	4	1	23
Rejected	5	6	5	16
Total	23	10	6	39

Expected frequency cells of counter-offer classifications to follow were obviously less than those in Table XIX (a); therefore, no calculations were made.

Table XIX (b) classifies the first counter-offers made by sellers to the original offers made by feedlot operators which were rejected. All of these counter-offers were made at less than 2 cents per pound over the original offer. Of these counter-offers, 67 percent were accepted. These two tables afford another opportunity to compare the bargaining steps required for an exchange of goods, and indirectly the bargaining power

which exists between the feeder cattle producer and the two types of direct buyers. Bear in mind again that a bona fide order buyer more nearly fits the image of a feedlot operator in the concept of pure competition. He is being paid for performance of a marketing service.

TABLE XIX (b). THE FEEDLOT OPERATOR'S ORIGINAL OFFER IS REJECTED AND THE SELLER MAKES A FIRST COUNTER-OFFER.

	Amount Over Original Offer			
Counter-Offer	Less than 2¢/lb.	2¢/lb.	More than 2¢/lb.	Total
Accepted	2	0	0	2
Rejected	1	0	0	1
Total	3	0	0	3

The Seller's First Counter-Offer Is Rejected And The Order Buyer Makes A First Counter-Offer.--Table XX (a) illustrates the first counter-offer made by the order buyer after he has rejected the seller's first counter-offer.

Of these second order offers 69 percent were made at less than 2 cents per pound under the last offer, and 91 percent of these offers were accepted by the seller. Thirty-one percent of these offers were made at 2 cents per pound under the last offer and 40 percent of these were accepted by the seller. No first counter-offers were made by the order buyer at more than 2 cents under the last offer.

TABLE XX (a). THE SELLER'S FIRST COUNTER-OFFER IS REJECTED AND THE ORDER BUYER MAKES A FIRST COUNTER-OFFER.

	Amount Under Last Offer			
Counter-Offer	Less than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	10	2	0	12
Rejected	1	3	0	4
Total	11	5	0	16

Table XX (b) shows the first counter-offer made by the feedlot operator after he has rejected the seller's first counter-offer.

All such second order offers were made at the "less than 2 cents a pound under last offer" level and all such offers were accepted.

TABLE XX (b). THE SELLER'S FIRST COUNTER-OFFER IS REJECTED AND THE FEEDLOT OPERATOR MAKES A FIRST COUNTER-OFFER.

	Amount Under Last Offer			
Counter-Offer	Less Than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	1	0	0	1
Rejected	0	0	0	0
Total	1	0	0	1

Again counter-offers from feedlot operators were made at less margin than comparable offers from order buyers and there was a higher degree of acceptance. The bargaining terminated at a comparably earlier stage.

The Seller Rejects The Buyer's First Counter-Offer And Makes His Second Counter-Offer.--Table XXI (a) classifies the second counter-offer made by sellers after they have rejected the order buyers' first counter-offers. The entries in the table disclose that 75 percent of these second seller-counter-offers were made in the "less than 2 cents per pound over last offer" classification. All of these counter-offers were accepted by the order buyers. Twenty-five percent of these counter-offers were made in the "2 cents per pound over last offer" classification and all of them were accepted.

TABLE XXI (a). THE ORDER BUYER'S FIRST COUNTER-OFFER IS REJECTED AND THE SELLER MAKES A SECOND COUNTER-OFFER.

Counter-Offer	Amount Over Last Offer			
	Less Than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	3	1	0	4
Rejected	0	0	0	0
Total	3	1	0	4

Table XXI (b), which would have classified the second counter-offers made by sellers after they had rejected the feedlot operator's first counter-offer, reveals that no such counter-offers were made. The bargaining between the last of the feedlot operators and sellers in this dichotomy had been consummated in the previous stage.

TABLE XXI (b). THE FEEDLOT OPERATOR'S FIRST COUNTER-OFFER IS REJECTED AND THE SELLER MAKES A SECOND COUNTER-OFFER.

Counter-Offer	Amount Over Last Offer			
	Less Than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	0	0	0	0
Rejected	0	0	0	0
Total	0	0	0	0

The Buyer Makes A First Counter-Offer After He Has Rejected The Seller's Original Offer.--Now the discussion regresses to the point which would sequentially follow that of Table XVIII.

Table XXII (a) relates the way the first counter-offers from the order buyers, after the sellers' original offers have been rejected, are classified.

TABLE XXII (a). THE SELLER'S ORIGINAL OFFER IS REJECTED AND THE ORDER BUYER MAKES A FIRST COUNTER-OFFER.

Counter-Offer	Amount Under Original Offer: Less Than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	14	1	0	15
Rejected	4	1	3	8
Total	18	2	3	23

In the "less than 2 cents per pound under the original offer" classification, there were 78 percent of the first counter-offers and of these, 78 percent were accepted. Nine percent of the first counter-offers were in the "2 cents per pound under original offer" category, and 50 percent of these were accepted. Thirteen percent of the first counter-offers were in the "more than 2 cents per pound under original offer" category, but none of these were accepted.

Table XXII (b) performs the same classification function as Table XXII (a) except this time the buyer is a feedlot operator.

TABLE XXII (b). THE SELLER'S ORIGINAL OFFER IS REJECTED AND THE FEEDLOT OPERATOR MAKES A FIRST COUNTER-OFFER.

Counter-Offer	Amount Under Original Offer: Less Than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	1	1	0	2
Rejected	1	1	0	2
Total	2	2	0	4

It can be told from the table that half of the first counter-offers were in the "less than 2 cents per pound under original offer" class and the other half were in the "2 cents per pound under original offer" class.

Half of the counter-offers in each class were accepted.

The Buyer's First Counter-Offer Is Rejected And The Seller Makes A First Counter-Offer.--In Table XXIII (a) the sellers' first counter-offers, after the order buyers' first counter-offers have been rejected, are classified.

TABLE XXIII (a). THE ORDER BUYER'S FIRST COUNTER-OFFER IS REJECTED AND THE SELLER MAKES A FIRST COUNTER-OFFER.

Counter-Offer	Amount Over Last Offer			
	Less Than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	4	1	0	5
Rejected	1	1	1	3
Total	5	2	1	8

There were 62.5 percent of these first counter-offers in the "less than 2 cents per pound over last offer" class and 80 percent of them were accepted. Twenty-five percent of the counter-offers were in the middle category, of which 50 percent were accepted. The "More than 2 cents per pounds over last offer" class held 12.5 percent of the counter-offers, but none of them were accepted.

Table XXIII (b) performs the same categorization, but replaces the order buyer with the feedlot operator. Half of the first counter-offers were in the "less than 2 cents per pound over last offer" class and all of these were accepted. The other half of the first counter-offers were in the "2 cents per pound over last offer" class and all of these were accepted.

TABLE XXIII (b). THE FEEDLOT OPERATOR'S FIRST COUNTER-OFFER IS REJECTED AND THE SELLER MAKES A FIRST COUNTER-OFFER.

	Amount Over Last Offer			
Counter-Offer	Less Than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	1	1	0	2
Rejected	0	0	0	0
Total	1	1	0	2

The Seller's First Counter-Offer Is Rejected And The Buyer Makes A Second Counter-Offer.--The classification of second counter-offers made by order buyers when the sellers' first counter-offers have been rejected is illustrated in Table XXIV (a). In the "less than 2 cents per pound under last offer" class there were 67 percent of the counter-offers. All of these counter-offers were in the "2 cents per pound under last offer" class. All were accepted.

TABLE XXIV. (a). THE SELLER'S FIRST COUNTER-OFFER IS REJECTED AND THE ORDER BUYER MAKES A SECOND COUNTER-OFFER.

	Amount Under Last Offer			
Counter-Offer	Less Than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	2	1	0	2
Rejected	0	0	0	1
Total	2	1	0	3

Table XXIV (b) which would have classified the second counter-offers made feedlot operators after the sellers first counter-offer had been rejected, reveals that no such counter-offers were made. The bargaining in this side of the dichotomy between the feedlot operator and the seller had been consummated in the previous stage.

TABLE XXIV (b). THE SELLER'S FIRST COUNTER-OFFER IS REJECTED AND THE ORDER-BUYER MAKES A SECOND COUNTER-OFFER.

Counter-Offer	Amount Under Last Offer: Less Than 2¢/lb.	2¢/lb.	More Than 2¢/lb.	Total
Accepted	0	0	0	0
Rejected	0	0	0	0
Total	0	0	0	0

Once more it has been demonstrated that feedlot operators and sellers arrive at a value for the product at an earlier stage than do the order buyers and sellers. There is nothing to indicate a different informational level between those who sell to feedlot operators and those who sell to order buyers. One may reasonably deduce then that the feedlot operator and the producer in their bargaining process are chiefly concerned with the marginal value of product, the marginal factor cost and marketing costs. The speculator, in order buyer's clothing, must add a cost for risk and in addition see a possible abnormal profit. If he did not, he would not be in the business.

The Strategies of Bargaining For Shrinkage Conditions

Earlier in this chapter, at the close of a discussion on a general model for price bargaining for feeder cattle, it was said that another more general model for bargaining could be posited.

The general model mentioned was concerned with price bargaining within a limited price range. If the two contestants were to find price p then the two could be considered as firms in equilibrium as in the purely competitive sense. Price p would be a saddle point and the game would be

a fair one. If was found also that for some individual cases a model employing digital pay-off calls was of value. However, in order to accomplish the inductive aims of the study a general price model was needed.

There are areas of strategies in feeder cattle bargaining in which values are even more difficult to reduce to a digital element most especially in a general concept. Nor is it necessary to ascribe specific digital value to the elements of these strategies. Two such areas, both of which are significant in the overall bargaining act are (1) bargaining for shrinkage conditions and (2) bargaining for cutback conditions. Both of these areas are in a state of change as far as their influence on total bargaining power. This renders them even more difficult to pin down precisely. Bargaining for shrinkage conditions will be dealt with in this section and treatment of cutback conditions will follow.

One can assume, as in the case of price bargaining, that in a bargaining situation between a buyer and a cattleman there is a range of conditions within which the bargaining process is contained. Assuming such a range of conditions, a game matrix may be constructed such as Figure 16, and conditions can be designated and entered as elements of pay-off.

Shrinkage conditions can be said to exist generally in localities in a customary manner. One shrinkage condition may be a custom in a particular area while a different condition may be prevelant in another area. Variance among individuals within a particular area is more narrow than among areas. Too, it was said that shrinkage conditions are presently and generally undergoing change.

B \ S	s_1	s_2	s_3	Row Minima
b_1	p	f	g	p
b_2	f	f	g	f*
b_3	p	e	e	p
Column Maxima	f*	e	e	

Figure 16. A General Model For Feeder Cattle Bargaining.

However, it can be said that as one set of conditions would be preferable to another, the range of conditions can be ordered and designated as excellent (e), good (g), fair (f), and poor (p) shrinkage conditions. These designations can be entered as elements of pay-off in Figure 16.

Now notice that for the first time the buyer has been posed as the decision-maker. This was done for two reasons: one, he has traditionally been the active or aggressive player in this phase of feeder cattle bargaining; two, an observer feels more comfortable with this sort of pay-off designation pertaining to the buyer. Another sort of pay-off designations could have been devised and the seller posed as the decision-maker, but it is suspected that some realism would have been lost. The seller's strategies are the rows marked b_1, b_2 and b_3.

A knowledge of the ordering enables one to make partial inferences pertaining to the optimum strategies and value of the game. Shrinkage

information, along with other types of marketing information is, in addition to other functional variables, a function of bargaining power.

Consider, ceteris paribus, a buyer and a producer of feeder cattle in a bargaining situation as in Figure 16, and with equal shrinkage information. Both players are completely informed as to the value of the pay-offs. "B" would prefer to select b_3 as his strategy. But if he did, then "S" would select s_1 as his strategy. The seller would be committed to the lowest possible pay-off in the game. As a matter of fact, the seller would prefer to select s_1 as his strategy, but according to the rules of the game the player "B" has the first move. "B", of course, sees that player "S" would like to select his s_1 strategy and could not improve his position by selecting any other. Therefore, the buyer selects strategy b_2 so that he may maximize his security level. The pay-off of the game is "F". Neither player could improve himself by selecting any other strategy, therefore, a saddle point has been reached and the game is in equilibrium. It is a fair game. Again a condition comparable to equilibrium between the two firms as in the purely competitive concept has been reached.

Various assumptions of shrinkage information levels as pertain to the two contestants would render varying pay-off results, as was done in the price bargaining model in Figure 15. Needless to say, the player with the greater amount of shrinkage information has the advantage. Consider a buyer and a seller with unequal levels of shrinkage information, ceteris paribus, and engaged in a bargaining game with a pay-off matrix

B \ S	s_1	s_2	s_3	Row Minima
b_1	g	f	g	f*
b_2	p	e	f	p
b_3	p	g	p	p
Column Maxima	g*	e	g*	

Figure 17. A Game Without a Saddlepoint.

such as that in Figure 17. The buyer is again the decision-maker and his strategies are b_1, b_2 and b_3. The seller's strategies are s_1, s_2 and s_3. According to the Wold Criterion, and ignoring what is known about dominance, the minimax is g, or good, and the maximin is f, or fair. There is no saddle point. The game is not in equilibrium. But at least it has been learned that the value of the game to the buyer is between good and fair.

Not many years ago it was not unusual for a buyer to obtain 5 percent pencil shrink after a 10 mile haul to a railroad loading point or 5 percent at ranch loading point. To arrive at such a condition was logically easy. Ranchers customarily shipped to distant terminals and took heavy shrinkage as a matter of course. With the rise in popularity of the auction market the pressure for disadvantageous shrinkage conditions for the rancher became less severe. An order buyer, in order to meet competition, had to give shrinkage conditions at least comparable to those obtainable at an auction

market.

In a time sense two things began to happen which accelerated the improvement of shrinkage conditions.

At the outset of World War II there was a strong increase in the demand for beef. Up to the present, demand has continued to increase as to both quantity and quality. Through most of these years the market could be characterized as a seller's market. The seller could make felt his dissatisfaction with offered shrinkage conditions which hithertofore had been customary.

At about the same time more attention was being given to shrinkage research. During the 1950's much of this work was being published and made available to the public, especially to the feeder cattle producing public. Several publications were made available to cattlemen in Montana by the Montana Agricultural Experiment Station and the Montana Extension Service. 63/

63/ See especially:
(a) Montana Agricultural Experiment Station Circular 220, April, 1959, "Shrinkage Is Important" by Clive R. Harston.
(b) Montana Agricultural Experiment Station Circular 221, April, 1959, "Cattle Shrinkage Depends on Where, When, and What You Market" by Clive R. Harston.
(c) Montana Agricultural Experiment Station Circular 222, April, 1959, "Shrinkage Depends on How You Market" by Clive R. Harston.
(d) Stewart H. Fowler, The Marketing of Livestock and Meat, (Danville: The Interstate Printers and Publishers, Inc., 1961) Chapter XVI.

As was said, "customary" conditions are still changing; the full benefit of shrinkage information referred to above has not yet been realized.

Table XXV allows inferences as to the present comparative bargaining power. It classifies the number of original offers of shrinkage conditions as to whether they were offered by the seller or by the buyer. It further classifies these offers as to whether they were accepted or rejected. No further tabulation was made of the rejected offers because they were all accepted after minor adjustments. The table shows that 35 percent of the original offers were made by the buyer and 65 percent of them were made by the seller. One might infer that the seller had considerably the most bargaining power and was the most aggressive bargainer. Such an inference would be erroneous.

TABLE XXV. ORIGINAL OFFER OF SHRINKAGE CONDITIONS BY OFFERER.

Conditions	Number of Original Conditions Offered By Buyer	Offered By Seller	Total
Accepted	30	71	101
Rejected	8	1	9
Not Reporting	--	--	10
Total	38	72	120

More nearly correct is the following explanation. The seller is familiar with the "customary" shrinkage conditions of his area. Even though these are changing--and the change is at a fantastic rate when compared with changes occurring in any other like time period--the change is slow enough so that all are familiar with the "going" conditions of the area. The buyer (feedlot operators not included) is of course also

familiar with the "going" conditions of the area. He knows that he has small chance of doing better. Therefore, he accedes the privilege of first offer to the seller, hoping to gain a psychological position which he can use to advantage in the next round of bargaining. If he gives in readily to the seller on shrinkage conditions he can prevail upon the seller's sense of fairness to give the buyer an advantage in cutback bargaining. So, even though the seller's shrinkage bargaining position has been much improved of recent, it is not quite so good as Table XXV indicates. This explanation is not a canvas one, however. There are many buyers who are well able to measure the prospective seller's information level and are aware of the competitive conditions in the area. Therefore, bargaining by a well-informed pair is more straight forward with very little haggling.

Table XXVI depicts the status of shrinkage conditions that presently exist in Montana. Most sales were with no pencil shrink regardless of the hauling distance. Most of the feeder cattle sold with a 3 percent shrinkage allowance were loaded at the ranch. Only in two cases were there more than 3 percent pencil shrink allowed. One could say that the solutions for most of the games played would be the same or nearly the same as that of the game in Figure 16.

The "no replies" of tables XXV and XXVI are largely those who sold by the head and had no shrinkage conditions.

Most of the feeder cattle sold were moved from the ranch by truck, either weighed or to be weighed. Eighty percent of them were moved this way.

TABLE XXVI. SHRINKAGE CONDITIONS.

Miles of Haul	Range of Percentage of Pencil Shrink 0%	1%	2%	3%	4%	5% & Over	Total
0	3		1	6	1		11
1-10	18	1	5	2			26
11-25	29			2	1		32
26-50	26			1			27
51-75	6						6
76-100	3		1				4
Over 100	4						4
No Reply							10
Total	89	1	7	11	2	0	120

But the old ways of the West are not entirely gone. Along the trail went 10 percent of the feeder cattle to a distant loading point.

When the cattle arrived at the weighing point there was no waiting time for 75 percent of them. Only 4 percent of them had an overnight stand before weighing. Two percent stood from 4 to 8 hours before being weighed. One percent stood for 2 hours and another 1 percent stood for 24 hours before being weighed.

The improvement in shrinkage conditions is a clear indication of the potential of improved market information.

The Strategies of Bargaining For Cutback Conditions

The general models constructed in the previous section and presented in Figure 13 and in Figure 14 are equally applicable to the bargaining process of the two players for cutback conditions.

The term "cutback" means the extraction from the group of cattle to be sold any animal which is considered undesirable by the standards set

for the purchase or potential purchase of the entire group. Cutback conditions may be composed of specifications of weight, alteration, color, markings, health, conformation, and other possible attributes. Each reasonable set of such specifications put forth, or subject to being put forth, in the bargaining act by the buyer and the seller constitutes a strategy of cutback conditions.

Cutback conditions are not as amenable to definition by area as were shrinkage conditions. They differ from region to region but not in any customary way. Variation among individuals within a particular area is wider than among areas. The cutback conditions accruing to an individual seller are functions of his bargaining ability, bargaining power, the quality of his product, and the general market conditions. In addition, the competitive conditions of the area is a factor in the level of cutback conditions; in fact, the largest factor. The improvement of the general market and production information level can be said to have mitigated the cutback conditions to the seller somewhat, but inroads are nowhere comparable to those of shrinkage conditions.

It was noticeable that cutback conditions were less severe when there were other feasible marketing alternatives. The term "feasible" is used because the physical proximity of another market does not necessarily constitute a feasible alternative. For example, in the Northwest area, where the cutback conditions were more severe, there was an auction market within a reasonable distance. There were few order buyers and no feedlot operators active in the area. The auction market, though, did not enjoy a high reputation with producers reporting in the area, as indicated in

Chapter III. The producers feel, therefore, that they would only be compounding a bad situation by adding transportation costs.

Cutback conditions are strategies more readily, and easily, used by buyers during a change in the general price trend than shrinkage conditions. When the general price trend is up, cutback conditions are used lightly; when the general price trend is down the conditions which the buyer seeks are more severe.

The use of contracts is an area in which the order buyer is especially adept at applying cutback conditions. When he writes the contract a month or two early he often writes the terms so loosely that he can interpret them freely. If, at delivery time, the general price level has fallen from the time the contract was written, the order buyer applies cutback conditions to bring the actual price paid down to the price prevalent at delivery time. Again, this is not a blanket statement. More than a few sellers stated that buyers, whom they had dealt with for years, always made their contracts good regardless of market conditions. This behavior, though was found to be a function of the competitive conditions of the area.

Cutback conditions was the area of complaint most frequently mentioned by those sellers who were displeased with their bargaining relations with feedlot operators. Several sellers complained that feedlot operators "did not know what they were looking for in the first place", and, in addition, tried to pick out only the top of the bunch and offer average price. There are, of course, ways to rectify such a complaint and some will be mentioned in Chapter VI.

Of the total sample, 88 percent reported that they had bargained for cutback conditions. Not sorting the feeder cattle before showing to the buyer were 48 percent of those reporting. The buyer accepted the cattle without sorting for cutbacks from 47 percent of those sellers who did not sort. But the buyer sorted out cutbacks from the other 53 percent of sellers who did not sort.

Fifty-two percent of the sellers reporting sorted cutbacks before showing to the buyers. The cattle of 73 percent of these sellers were directly accepted by the buyer. The buyer though re-sorted for cutback the cattle of the remaining sellers in this group.

The complaints were several. Of the cutback cattle of the total reporting sellers, 17 percent were said to have been too heavy. This is a complaint being increasingly heard, and more so in 1963 because of the general price trend. On the other hand, 13 percent of the sellers received complaints that a portion of their cattle were being cutback because they were too light. One would suspect this not to be the real reason in most cases.

Off-color, brockle-faced, and red-necked were reasons given for cutting back cattle to 7 percent of the sellers. This reason has no economic foundation but is still being used as a price-reducing gimmick.

Milk type cattle were cut out from 2 percent of the sellers bunches.

Buyers complained that 9 percent of the sellers had cattle with bad eyes, lump jaw, or were otherwise sick or crippled.

Buyers cut back the cattle of 2 percent of the sellers just because they didn't like their conformation.

Of those buyers who had cutback cattle, 72 percent offered to buy the cutbacks, but at a reduced price; i.e., from 2 to 5 cents per pound less than the regular price.

Forty-one percent of the sellers having cutbacks kept them and stocked them to yearlings themselves. Another 37 percent of sellers sold their cutbacks at auctions. The remaining 22 percent of the sellers sold their cutbacks to the order buyers at the reduced prices preferred.

Strategies In The Use of Feeder Cattle Purchase Contract

Contracts are used as tools of strategy by the order buyer, feedlot operator and producer. A contract would hold no purpose for a bona fide order buyer himself. The term "contract" will later in the section be carefully defined. Until then the term will be used to include all negotiations for the exchange, other than immediate, of ownership of feeder cattle between the seller and the buyer.

The order buyer's motive for using the contract is simple and straight forward: he expects the price to be higher at delivery time and is willing to speculate. Or, to put it another way, if he believes he has a future buyer, either feedlot operator or intermediate handler, who will buy within a particular price range; and if he can find a seller willing to sell in advance appreciably below this expected price range, he will offer him a contract.

Producer's motives for contracting are usually two. Most of them have a market price expectancy. If a buyer should offer a contract price which is compatible with the producer's expectancy he may accept and meet

his price criterion. At the same time he reduces the element of risk (as in the Wold Criterion). Many others contract because buyers are out offering contracts during the middle of the haying season when the cattleman's operating costs are highest and his cash reserve at its lowest. Some have a debt situation such that a contract is guaranteed against loss which he cannot afford to by-pass.

Roy says that contracting of feeder cattle is affected by the following factors: (1) expectations of profits in cattle feeding, (2) over-and-under supply of good feeder cattle, (3) quality of feeder cattle available, (4) competition among feeding areas, and (5) long-range economic prospects for beef cattle as indicated by whether heifer calves are sold or held for breeding stock. 64/

Sellers in Montana were asked, in the course of this study, what in their opinion made the buyer contract for their cattle. Of those who had contracting experience, 20 percent stated they thought the buyer was speculating on a price rise. Nearly all of these producers had sold to dealers. Another 15 percent of the sellers said they thought the buyer was seeking insurance against a price rise. Sixty-three, or 65 percent of the contracting sellers felt that the buyer was seeking a dependable supply of specified quality cattle.

64/ Ewell Paul Roy, Contract Farming, U.S.A., Danville, The Interstate Printers and Publishers, Inc., 1963, p. 158.

Some sellers said they were more inclined to contract some years than others; 18 percent were so inclined. Reasons given were: when more security is needed, when outlook is bad, and when running short of feed or money.

There was no definite reply from 16 percent, but 9 percent of the sellers said that they usually did not contract. Another 57 percent of the sellers, though, said that they usually did contract.

Buyers are not more inclined to contract in some years than others, 7 percent of the sellers thought. Another 15 percent had no opinion, but 78 percent of the producers contacted thought that buyers were more inclined to contract some years than others. They felt that the reasons were general market conditions, bankers' attitudes, feed conditions (such as corn crop and winter wheat), weather conditions, and feeders' general outlook.

Sellers were even more varied in their opinions as to whether early contracting had an effect on the market for cattle. Forty-one ranchers thought early contracting had no effect on the market. Thirteen said that the amount of early contracting set the price trend. Forty-two ranchers didn't know if there was any market effect. Early contracting stabilized the price, thought four ranchers. Three producers felt that such a negotiation set a floor to price and one thought it set a ceiling. It sends price up, said thirteen ranchers; it sends it down, said three more.

From observations of opinion, inquiry was directed gradually to extent of use of the contract by the individual rancher.

Of the total sample, only nine ranchers stated definitely to the affirmative on whether a contract to which they were a party had been broken. One rancher broke his contract because the buyer later wanted to change some of the terms. Two contracts were broken by the buyer and the ranchers didn't know why. Three were broken by dealers when the price level went down. One buyer passed away, another went broke and contracts were voided. One seller bitterly stated that the dealer used an unwarranted heavy cutback, and, as far as he was concerned, that constituted a broken contract. He felt he had no choice, though, but to go through with the sale.

Seventy-nine ranchers stated that they had in recent years delivered their cattle to the original buyer with whom they had contracted. Eleven said that their contract had been bought by others before delivery time. One buyer stated that his contract had been bought from the original contractor by a california buyer, then in turn by an Iowa buyer before delivery time.

In 1962, 85 ranchers in the sample contracted their feeder cattle and 78 of these had written contracts; the others were verbal.

Thirty-two of the ranchers reporting had not sold their feeder cattle in 1963. A contract had been signed by 51 ranchers in 1963 and nine ranchers had made verbal contracts.

The contract form had always been furnished by the buyer to 94 of the ranchers; only one rancher had used his own form.

The Time Element of Contracting and Delivery

Early in the study it became apparent that some ranchers regarded any signed paper, or sometimes even oral comments, as a contract. In fact, many producers had only a hazy notion of a precise contract definition. What constitutes a contract to purchase cattle may be examined as to time and form. Table XXVII afford an examination of the time element in contracting in Montana; contract form will be taken up shortly.

A tabulation was made of Table XXVII of the time lapse between the date of signing the contract and the delivery date entered in the contract. The delivery dates, incidentally, were set nearly evenly by the buyer and by the seller. When set by the buyer, it was usually according to availability of transportation facilities, requirements of next user and buyer operational plans--at least these are the factors reported by the seller.

TABLE XXVII. TIME INTERVAL BETWEEN SIGNATURE DATE AND DELIVERY DATE OF FEEDER CATTLE CONTRACT, 120 MONTANA RANCHERS, 1962 AND 1963.

Lapse Time Between Contract Signature Date And Contract Delivery Date	Number of Ranchers In Each Time Category	
	1963	1962
3 days or less	13	5
1 week	12	4
2 weeks	8	7
1 month	13	17
2 months	20	16
3 months	18	14
4 months and more	6	3
No Reply	30	54
Total	120	120

When the delivery date was set by the seller, it was influenced by Forest Service grazing permits, weather forecasts for higher elevations, end of pasture season, grazing rights on Indian reservations, weaning time, whether yearlings or calves, drought conditions, and seller's tax situation.

Although the delivery dates were reported to be about evenly set by buyer and seller in the total sample, there are differences in areas which may be correlated with other attributes of the competitive situation in the particular area. For instance, in the Northwest area, all delivery dates were set by the buyer.

In Table XXVII the large number of "no reply" in 1963 was because, due to the general market condition, many ranchers had not been offered a contract or had been dissatisfied with the offered price. In 1962, the large number of "no reply" is due to memory lapse of the ranchers. Many did not have records of the past year sufficient to render this information.

From an examination of the time element in Table XXVII one can see that many ranchers who reported having contracts, merely had formalized sales. Delivery dates of two weeks or less could hardly be considered advance contracting. In fact, only those agreements with delivery dates one month or more in advance of signature date should be considered to be advance contracts.

Granted this restriction, only 63 percent of those reporting in 1963 had advance contracts from a time view point; in 1962, 76 percent had advance contracts.

The Contract Form

Anderson and Kumpf define a contract: "In order to be an enforceable contract, there must be (1) an agreement, (2) based upon the genuine assent of the parties, (3) supported by consideration, (4) made for a lawful object, (5) between competent parties, and (6) in the form required by law, if any". 65/

They say, "A valid contract is an agreement that is binding and enforceable". It has all of the essential requirements mentioned above.66/ And, "An agreement arises when one person, the offerer, makes an offer and the person to whom the offer is made, the offerer, accepts. In any case there must be both an offer and an acceptance. If either is lacking, there is no contract." 67/ They define a definite offer, "An offer must be definite and certain. If it is indefinite or vague or if an essential provision is lacking, it cannot be accepted. The reason is that the courts cannot tell what the parties are to do." 68/

65/ Ronald A. Anderson and Walter A. Kumpf, Business Law, Sixth, Edition, Cincinnati; Southwestern Publishing Company, 1961, p. 41.

66/ Ibid, p. 46.

67/ Ibid, p. 48.

68/ Ibid, p. 52.

Of a discharge of contract they say, "Since the contract bound the defaulting party to perform, the injured party may insist on the observance of the contract and resort to legal remedies". 69/

These two writers define an option contract, "An option contract is a binding promise to keep an offer open for a stated period of time or until a specified date... Under an option contract there is no obligation on the offeree to exercise the option... If the option is exercised, the money paid to obtain the option is ordinarily applied as a down payment on the purchase price. If the option is not exercised, the offeror keeps the money paid him... If the offeror retains any choice, there is no option contract, but merely an agreement to negotiate at a future date". 70/

The above is only a scant treatment of the legal aspects of contracts, but will serve as measures which are adequate enough to indicate whether the instruments being used in negotiations by sellers and buyers in Montana are indeed contracts. Whether the negotiation was in fact a contract would, of course, need to be determined by the courts on an individual basis.

The terms and conditions in contracts did not vary widely. It can be seen in Table XXVIII that in fewer than two-thirds of the contracts were there any kind of weight conditions. These then were open for the buyer to specify at time of delivery time. One contract specified that the buyer was entitled to a 10 percent cutback at delivery time for either heavy or lightweight; one other contract gave the buyer a 5 percent cutback. In Table XXVIII any upper limit over 500 pounds applied to yearlings.

69/ Ibid, p. 170.

70/ Ibid, pp. 55-56.

Five hundred and three hundred pounds are the bounds within which most basic price bargains apply. Only one seller claimed that he laid down the weight specifications; others were made by the buyers.

TABLE XXVIII. WEIGHT CONDITIONS SPECIFIED IN FEEDER CATTLE CONTRACTS, 1963 AND 1962.

MAXIMUM WEIGHT		MINIMUM WEIGHT	
Limit In Pounds	Number of Contacts In Which Specified	Limits in Pounds	Number of Contacts In Which Specified
400	1	250	2
Average 400	1	300	16
425	4	325	3
450	6	350	8
465	1	375	1
475	4	400	1
500	14	Average 400	1
600	1	None	63
650	1		
None	61		
Total	94		95

In referring to the grade of cattle only six contracts made reference to USDA grades. One contract required that the grade be at least USDA Good and five contracts required that the calves be USDA Good and Choice. A few contracts used non-descript terms but most made no written specification as to grades.

The basic price was in all cases entered into the contract.

The amount of deposit required by 75 ranchers was $10 per head. Two ranchers required $15 per head and seven required $20 deposit per head. A 5 percent deposit, based on total purchase price, was required by one rancher and another required 15 percent deposit. Four ranchers did not demand a deposit. Of those ranchers who required a deposit, 78 considered

this fund to be a forfeiture or "earnest money" deposit and 13 ranchers considered it as a part payment with the buyer held responsible for acceptance of the cattle and payment in full on delivery date. In fact, all conditions for balance of payment were on delivery date. Payments on delivery in a large number of cases were in the form of sight drafts.

The seller did not extensively check the buyer's financial status or his authorization as an agent. In 22 instances the seller asked his bank to check on the buyer. Twelve sellers felt that the buyer's reputation, passed by word of mouth, was sufficient. One seller stated that the buyer was his friend. Two other sellers asked about the potential buyer from another order buyer. There were 54 ranchers, though, who made no effort to inquire as to the character or solvency of the buyer to whom they sold.

There were no provisions for costs of holding cattle beyond specified delivery date. There were some cases of cattle being held beyond such date, but only a very few gave indication of advantage being taken. Most cases of delayed delivery date were due to weather and seller as well as buyers initiated requests for delays. There were only two cases in which the buyer attempted to get staggered delivery dates from the seller.

There were no cases of contractual provision for arbitration of differences between buyer and seller.

Sellers were asked for comments on contract forms and recommendations for change. Most of them indicated a bewildered and helpless attitude. Comments commonly offered are listed below:

(1) "We need a better form".

(2) "I don't understand these forms".

(3) "The contract says 'buyer option on delivery date and cutback'".

(4) "Contracts are buyer oriented. They are difficult to read. The wording is unclear. The forms need to be standardized".

(5) "There is too much unclear fine print on cutback and weighing conditions."

(6) "We need a standardized contract form which gives us an even break".

(7) "The wording 'on deposit' should make clear what kind of payment this is".

(8) "When the cattle are unloaded and delivered to the buyer, the seller's duties should cease".

The comments and analysis clearly demonstrate that the contract forms available and used and the state of information concerning contracts are something less than satisfactory. Exhibits of feeder cattle contracts to be found in Appendix B are believed to be fairly typical of the instruments and terms negotiated. Comparison of analytical data and definitions given earlier make it obvious that instruments typically being negotiated in Montana contain elements of contracts and of options, but do not qualify fully as either.

Fowler (1961) 71/ and Roy (1963) 72/ in their recent work have treated feeder livestock purchase contracts. Fowler lists the essentials

---

71/ Fowler, op. cit., p. 366.

72/ Roy, op. cit., pp. 158-160.

of a good contract as presented by Taylor (1950) 73/ Further, he presents what he calls a simple but sound contract form. 74/ The form is better described as indefinite and unsound. Roy merely repeats work which has been repeated by Fowler and posed a contract form presented by Taylor (1950) 75/. There is nothing wrong with this procedure. These writers, though, have taken work which was 13 years old (for Roy), added nothing original to it, and presented it as being completely adequate for present conditions. The western cattle industry and western feeder cattle marketing are changing too fast for this to be so. Nevertheless, Taylor did do a very good job. His Cattle Purchase Contract could, with minor changes, be used as a model today and as he says, "protect the interest of both producer and buyer". 76/

The contract, then, is used as an implement of strategy, by both the seller and the buyer. Under the present conditions of contract form and bargaining power, though, it must be conceded that the balance of power is tilted to the side of the buyer.

73/ Morris H. Taylor, Livestock Purchase and Sale Contracts, Extension Bulletin 211, Utah State Agricultural College, Extension Service, Logan, Utah, 1950.

74/ Fowler, op. cit. p. 365.

75/ Roy, op. cit., p. 493.

76/ Taylor, op. cit., p. 1.

CHAPTER V

MARKET INFORMATION--ITS ROLE IN DIRECT SELLING

The data presented in the previous chapter suggests "level of information" as a critical problem in the transaction process. It also examines the use of price and quality information by the rancher. Models presented suggest changes in firm conduct and industry performance to be expected from changes in levels of market information. This chapter points the way to market information which is needed to bring about these structural changes and to make more effective the expenditure of public funds for the gathering and dissemination of market information. This chapter examines the availability of relevant market information, its distribution among sellers, and its adequacy for grade and weight comparisons as reported by surveyed ranchers. This frame of reference will allow deductions as to how well able the seller is to play his optimal strategies. Suggestions from the rancher for improvement of market information are noted. Possible institutional impediments to improvements in marketing information will be suggested.

Seller's View of the Adequacy of His Market Information In Relation To That of The Buyer

Ranchers were asked if they thought they had available to them as much up to the minute market information as the buyer. If this was answered by anything other than an unqualified affirmative, a sequential inquiry as to how he felt this affected his ability to bargain with the buyer was made.

There were no unqualified affirmatives except from some of those who dealt regularly with farmer-feedlot operators. These producers suspected

that this class of buyers was about on the same level as they were.

There were 24 ranchers who gave an affirmative answer, but followed with a qualification. Of these, 16 ranchers felt that market information was equally available to them and the buyer, but they did not know how to get it nor did they know how to use it as it pertained to their own product. Three of the 24 ranchers felt that they were in balance with the buyer except for sudden changes in market with the buyer except they had such little time to allocate to gathering and evaluating market information. The buyer has more time to get and means by which to get and analyze this information, they said.

Ninety ranchers replied to the inquiry in a negative manner. Twenty-four of these ranchers were not really sure that the market information was not available, but they were sure that they had not the time and means by which to obtain and analyze it. The seller's production problems and his work load are probably the heaviest about the time he should be tuning in to the market more sharply. Thirty-one ranchers giving this class of reply felt that the buyer had a well-established system of personal contacts and a highly developed pipeline of obtaining formal, instantaneous, and accurate information. Whereas, they, the ranchers, have only newspapers, and radios neither of which furnish them with information which is complete, reliable, or very useful in any way.

"He is looking at my hold cards", or some other cryptic comment was made by eight other producers.

Practically all of the ranchers in the sample felt that the buyer had a top price in mind before he started talking to the seller.

Types of Market Information Received And Types Used In The Seller's Decision-Making

USDA Mailed Livestock Market News Reports

The fundamental reason for the authorization by Congress of a market news service was to improve the bargaining position of the farmer and rancher, says Fowler. 77/ The livestock market news reports were initiated at a time when most selling was done at terminal markets. Reporting facilities were logically established at the livestock terminal markets. Reports from these facilities, giving market conditions and price information, were reasonably adequate when the primary selling of feeder cattle was done at these terminal markets.

Fowler further says that the coverage of the Federal market news reporting system, as of May, 1960, includes range and feedlot direct sales throughout the West and Southwest. 78/ Such a statement is woefully in error. This service covers only a very few small widely dispersed areas in the Southwest. The Federal livestock market news has not kept up with the changing marketing conditions in the West. The present USDA livestock market news reports are based on market conditions which are not comparable to the conditions of direct marketing.

77/ Stewart H. Fowler, The Marketing of Livestock and Meat, Danville, The Interstate Printers and Publishers, Inc., 1961, p. 589.

78/ Ibid., p. 590.

The USDA presently maintains 49 livestock market news field offices, most of which not only collect market data, but also disseminate news through the mail, radio, newspapers, and other news media. 79/ A few of these field offices report on activities at auction markets, but by far the most of the markets reported on are terminal markets. In the state of Montana there is one such office. This office collects data from two auction markets in the same city and transmits such to Denver and San Francisco where it is then disseminated in weekly livestock reports. Very few Montana ranchers are aware that such an office ever did exist in Billings and still fewer are aware that it no longer issues its own reports.

It was shown in Chapter I that the total numbers of feeder cattle being sent to terminal markets from Montana were decreasing and becoming relatively less important. In Chapter III it was shown that the ranchers sampled in this study indicated the lowest preference for this marketing method. They followed through by indicating the lowest number of actual sales on this type of market. Since most of the cattle market news, feeder and otherwise, is either directly or indirectly from USDA market news reports, a measure will now be made of the extent to which the rancher received and used mailed reports from these USDA field offices and subsequently news reports by other media.

79/ AMS-524, Directory of Federal-State Market News Reports, USDA, Agricultural Marketing Service, Washington, D. C., January, 1964, p. 3.

Ranchers in the sample were asked which USDA mailed reports were received by them. The specification "news" was not used so as to make eligible in the reply any USDA publication which ranchers received, but may not be classed by him as news. Ninety-nine ranchers, or 82.5 percent of all possible replies, said that they did not and had never received a mailed livestock report from the USDA. The ranchers were than asked if they were familiar with the procedure for getting on mailing lists for market news reports. Almost the same number replied in the negative. They were then asked if they would like to get on such mailing lists. They were shown a sample copy of two different reports from this worker's file. Most of them expressed gratefulness for the opportunity of getting on such a mailing list. They were then shown the Livestock Market News Reports section in the Directory of Federal-State Market News Reports. After a selection was made, this worker supplied them with the address of the selected field office and instructions for applying. These ranchers did not by any means indicate that these reports would fulfill their needs, but did say that the reports would be a vast improvement over their present informational status. The demand for reports from some field offices, particularly Denver and Omaha, should now be increasing. It is hoped that this increased demand will not be interpreted as an upgraded appraisal of the reports.

In the Northwest area, 80 percent of the ranchers received no USDA reports. All ranchers in this area asked for addresses of mailing offices. Two ranchers received the Western Livestock Roundup. One found it generally useful. One sheepishly admitted that he found it confusing; there were

probably many who could read it and use it, he said, but he was not one of them.

Five of the ranchers in the Northcentral area received the Western Livestock Roundup. One found it unuseable and three found it generally useful. One found it valuable in informing him of the grazing and weather conditions in the Central Plains and Southwestern states. Other ranchers in the area sample received no USDA reports.

One Northeastern area rancher received the Western Livestock Roundup but did not find it very useful. Others in the area sample received no USDA reports.

In the Central area, three ranchers in the area sample received the Western Livestock Roundup and one received a news report from the Denver office. These ranchers found the reports to be generally useful.

Two ranchers in the Southwest area sample received the Western Livestock Roundup; one also received a news report from the Denver and Chicago offices. The latter rancher had attended Beef Production Schools and in other ways had associated himself with activities at Montana State College. The Western Livestock Roundup was found by these to be quite useful for an understanding of the general situation in a particular season.

In the Southcentral area only two ranchers reported receiving mailed USDA releases and these were copies of the Western Livestock Roundup. These ranchers liked this publication and found it helpful in understanding the general market situation.

No reporting rancher in the Southeast area received or had ever received a mailed USDA market report.

Commission Firm Mailed Reports.--Of the total possible replies, 80 ranchers replied that they did not receive mailed reports from a commission firm located at terminal markets.

In the Northwest area, one rancher received a mailed report--the "Stockland News"--from a commission firm in Spokane. The rancher used this report when deciding on selling his cull cows and usually sold through this firm. Another rancher received a mailed report from a firm in Omaha. Although he said he did not use this report in making his marketing decisions, other ranchers in the area did receive reports of market conditions in Omaha through word of mouth and indications were that these reports did affect their marketing decisions.

Fourteen of 20 ranchers in the Northcentral area received no mailed reports from commission firms at terminal markets. Two ranchers received mailed reports from a firm in Sioux City, and two ranchers received reports from a firm in Chicago. A firm in Portland, Oregon, mailed a report to one rancher. Three ranchers received mailed market reports from St. Paul. Three ranchers used them quite a bit in molding a frame of prices. Two were able to use them generally in conjunction with other information.

Commission firms had mailed no market reports to six of the ten sample ranchers in the Northeast area. Four ranchers did receive reports; two of them found the reports useful and two did not. Three of these ranchers received reports from Sioux City and one of them received a report

from Omaha. Two of the ranchers received an additional report from St. Paul.

In the Central area, 12 of 20 ranchers in the sample received no reports from commission firms. Seven ranchers received such reports, but only two found them of even slight value. Five of these ranchers received reports from Simon and Steele in Sioux City, one rancher received a report from St. Paul, and another received one from Omaha. One producer received an additional report from Chicago.

Seventeen of 20 ranchers in the Southwest received no commission firm mailed reports. The three that did receive them did not find them of value. Reports were received from Sioux City and Los Angeles.

In the Southcentral area 12 of 20 producers did not receive commission firm reports. Eight received such reports; three found them of no use, and five found them of some value in building an image of market conditions. Reports came from Sioux City and Omaha.

In the Southeast area, 11 ranchers did not receive market reports from commission firms. Of the nine who did, two found them useless and five found they gave a general picture of market conditions and possibly may have something to do with establishing price trends. Six ranchers received reports from Sioux City, two received them from Denver, and one received them from Omaha.

Auction Market Reports.--Only 35 ranchers in the entire reporting sample did not receive a mailed report from an auction market. Auctions are unquestionably, then, the source of the largest number of mailed

reports which are received by Montana feeder cattle producers.

Northwest area: None received.

Northcentral area: Nine ranchers received auction reports and nine did not. The reports were used for comparison with current country prices. Great Falls and Shelby were the auctions from which written reports were received.

Northeast area: All but one of the 10 ranchers in the area sample received auction mailed reports. Two ranchers did not use them at all, the others used them as another means of comparison with country prices. Numbers of ranchers receiving written reports and markets were: 7, Miles City; 2, Billings; 2, Glasgow; 1, Sidney.

Central area: All but two of the 20 ranchers reporting received auction reports. Numbers of ranchers receiving written reports and markets were: 12, Lewistown; 1, Great Falls; 5, Billings Livestock Commission; 3, Billings Public; 1, Butte. Two ranchers receiving Billings Livestock Commission reports said they used the report considerably in making marketing decisions; others expressed only a mild interest in the reports.

Southwest area: Two ranchers in the report did not receive written reports from auction markets. Numbers of ranchers receiving written reports and markets were: 16, Butte; 6, Dillon; 3, Bozeman; 1, Idaho Falls. Some ranchers said they sold too early for these reports; or others for that matter, to be beneficial to them. Three ranchers said they used the reports for comparison purposes and one said he used it when ready to sell culls.

Southcentral area: Nine of the 20 ranchers in the sample received no written reports from auctions. Numbers of ranchers receiving reports and markets were: 9, Billings Livestock Commission; 3, Billings Public. Three of these ranchers did not use the reports, one depended entirely on his, and one read it with mild interest.

Southeast area: Eighteen of 20 ranchers in the sample did receive written reports. Numbers of ranchers receiving reports and markets were: 9, Belle Fourche; 10, Miles City; 6, Gillette; 4, Billings Livestock Commission; 1, Sturgis. All of these, however, except those receiving Belle Fourche, used the reports for comparison purposes. Those receiving the Belle Fourche report usually sold some classes of cattle on this market.

Bank Reports.--Thirty-eight producers received mailed feeder cattle market reports from banks. Banks, then, are the source of the second largest volume of mailed cattle market reports received by ranchers in Montana. These reports seem to represent extremes in value. Reports from most banks are excerpts from the Doanes Agricultural Newsletter. Ranchers found this type of report written in vague terms and was practically worthless. On the other hand, everyone who received the feeder cattle market report published by the 1st National Bank of Great Falls labeled it unquestionably the most valuable market news report ever received. Several ranchers stated that it was the first piece of mail anyone opened. It was praised highly by everyone who had seen it. It is known in every area of the state and is disseminated by several news media. Its influence is far

out of proportion to all other feeder cattle market news reports combined.

Northwest area: Six ranchers in the sample did or had and four did not receive market reports from banks. Four ranchers had received a report from the Conrad Bank, but the bank quit publishing the report. One rancher received a report from a Hamilton bank, but he felt that the feeder cattle described in the report were much higher quality than his. The report lost value in comparison. Another rancher received a report from a Klamath Falls bank, but said he always sold his feeder cattle before the report came out.

Northcentral area: Eleven of 20 ranchers received market reports from banks. Reports came to nine of them from the 1st National Bank of Great Falls; to one from the Glacier Bank of Cut Bank; and to one from the Production Credit Association.

Northeast area: No market reports from banks received.

Central area: Seven of 20 ranchers received mailed reports from banks. Reports came to four of them from the 1st National Bank of Great Falls, and to three from a Harlowton bank.

Southwest area: Three ranchers received market reports from banks. Two of the mailed reports were from a Dillon bank and one was from the 1st National Bank of Great Falls.

Southcentral area: Six ranchers received market reports from a bank; all were from the Yellowstone Bank at Columbus.

Southeastern area: Five ranchers received market reports from a bank; all were from the 1st National Bank of Great Falls.

Farm Magazines and Agricultural Newsletters

There can be no doubt that the rancher in Montana was seeking market information on feeder cattle almost to the extent of his knowledge of the subject and his ability. It is true, as some of the foregoing discussion has pointed out, that he is not making full use of that which is available. This in practically all cases is because he either has tried the information and found it very inadequate or he is not aware of its existence, how to get it, or how to use it.

Only 23 ranchers in the sample did not subscribe to or regularly read farm magazines having market news reports or market forecasts. The term "farm magazines" was intended to include agricultural newsletters and trade weekly newspapers. As will be seen, the ranchers in the sample generously responded with any periodical which contained market news reports or business forecasts even though some of these were only indirectly related to the cattle industry. Ranchers in the sample subscribed to as many as ten periodicals from which they hoped to get marketing guidance. If they subscribed to any, they subscribed to at least three such periodicals. Although there was this difference among individuals in the sample, there was no significant difference among areas. It will suffice, then, to list the periodicals in order of the reported reading frequency and to follow with a disclosure of the most frequent sample comments.

Table XXIX is such a list. One may offer several hypotheses as to why a rancher subscribes to a particular magazine. This inquiry was only

concerned with his search for market news and forecasts. The rancher was also asked to comment on whether these publications were useful in making marketing decisions. It can be said that subscription frequency does not necessarily coincide with opinions of news worthiness. On the whole, subscribers found these periodicals to be useful in providing a frame of the general situation.

All who commented thought that newsletters, both Doane's and Kiplinger's were entirely useless. This was the same opinion held of excerpts of newsletters from these services which were printed and distributed by most banks in Montana; those which were, of course, in sampled areas. Montana banks, then appear to be achieving no advertising value through this medium. These reports have little relevance to the producer's problems and product, he says.

Farm Journal, although high on the list, was not well thought of. Even the western edition was thought to be slanted to the benefit of the Corn Belt.

Montana Farmer Stockman was mildly received as a source of market news.

Western Livestock Reporter was well received by nearly all who subscribed. Two main reasons were given: it carried USDA market reports and it carried a direct marketing report from the 1st National Bank of Great Falls. This type of comment does not correlate well with data submitted above under "USDA Mailed Livestock Market News Reports", nor with comments concerning accuracy of reports to be presented later. An explanation will be offered at that time. There were criticisms leveled

at this periodical even by those who praised it for its market news. Most of these criticisms were comments on editorial over-optimism.

TABLE XXIX. MAGAZINES AND AGRICULTURAL NEWSLETTERS READ BY MONTANA CATTLEMEN.

Title of Periodical	Number of Ranchers In Study Subscribing to Each
Montana Farmer-Stockman	72
Farm Journal	58
Western Livestock Reporter	44
Successful Farmer	21
The Montana Stockgrower (Mont. Stockgrower's Ass'n)	14
Western Farm Life	9
Doane's Agricultural Letter	9
Record Stockman	7
Cow Business (American National Cattleman's Ass'n)	5
Western Livestock Journal	3
Breeder's Gazette	2
Kiplinger Newsletter	1
US News and World Report	1
Dakota Farmer	1
Minnesota Farmer	1

Newspapers.--Twenty-eight of the producers in the study did not receive a newspaper. The majority of the ranchers who did receive newspapers had a local one and one from the nearest large town. For instance, those in the Northwest area received the "Interlake" from Kalispell and the "Missoulian" from Missoula. These papers carry news wire releases from terminal markets, frequently only Chicago, and usually short reports from nearby auctions. Most comments on the usefulness of market reports contained in newspapers were just to that effect: "they only cover one or two terminal markets and an auction, the auction people tell them what to say".

Radio Reports.--Thirty-one of the producers interviewed did not receive market news reports by radio. Ranchers in some areas reported having very poor reception. One to three stations were reported being received depending on proximity of the ranch to a larger town. Ranchers preferred the reports either at noontime or between 6 and 8 o'clock in the evening. Several commented that the reports were given too fast, were not clearly articulated, and were at bad hours. Some felt the reports should be repeated several times a day during the market season in case they were missed just at a particular hour.

Again the reports were in some cases wire releases from terminal markets, mainly Chicago, and local auction markets. Therefore, the comments were the same as those offered in other sections of this study which were concerned with these markets and reports therefrom.

"Last Minute" News.--Ranchers were asked if they were aware of the market news on the day that they sold, or shipped if they shipped to distant markets on which cattle would not be sold on game day as shipped. Of those who had sold in 1963, fifty-six had not checked the news on the day of sale or shipping. Twenty-two ranchers had. In 1962, 77 ranchers were not aware of the market news on the day they sold and seven ranchers were. Many said that they did not recall. Some had telephoned an auction market or their banker, a few had telephoned back to a Corn Belt state. Some had read a newspaper or the latest issue of the Western Livestock Reporter or the Great Falls bank report. Most of the ranchers, though, had listened to the radio market report on that day.

Television-Reports.--Television reception was not possible for 21 of the ranchers interviewed. Seven others did not desire to have a television market report furnished. The remainder in the sample expressed a keen desire for such a report. They were definite in their desires. They wanted a presentation which utilized a blackboard or chart. Well defined grades and weights as well as prices were desired. The best time was well divided between 6 to 8 o'clock and 7 to 9 o'clock in the evening.

A few of these ranchers were speaking from experience. Lethbridge, Alberta, was reported to have an excellent cattle market report much as described above. Williston, North Dakota, was reported to have a similar report which is well thought of. Billings had a report which was not as well defined as these others; however, it was reported to have been discontinued soon after the marketing season began in 1963.

Ranchers expressed the opinion that television market reports could have an educational value in helping the producer create an image of grade and quality in relation to price.

A Critique of Market Reports

Ranchers were asked if they felt that there were any market reports with which they were familiar that were intentionally misleading or consistently inaccurate.

Many producers complained that grade descriptions were much to vague. Words used in reports which are supposed to be descriptive of the conditions in the market convey little meaning to the rancher. Also they complained that there was too much price spread reported for each grade. This again

made it difficult for the rancher to correlate his feeder cattle with those reported on.

Seventy-three of the ranchers interviewed stated that all known auction markets, with the exception of Belle Fourche, intentionally issued misleading market reports. These reports, the cattlemen said, quote the prices paid for the few top-selling feeder cattle, or other classes, and present it as if the price pertained to the average animal of that class which was sold on the particular day or week. This complaint applied wherever and however the report appeared; in mailed form, in the newspaper, in the weekly, on the radio, or on a television program.

Many producers complained that any market information they received was too late to be of benefit. For those who wish to contract this is, of course, especially true.

After these above, the most frequent complaint made was of USDA releases in general and the 1960 cattle-on-farm number in particular. This refers to an original release which was later found to be in error. A change in numbers was disseminated as soon as the error was apparent. If and to what extent the producer suffered because of this error is open to question. It is offered without attempt to support that many ranchers which reported this complaint were aware of the error only through reading periodical editorials.

Seller's Ranking of Market News Sources

Ranchers were asked to place in rank the top three most important market news sources which were used in making marketing decisions. This

ranking is shown in Table XXX.

The word-of-mouth method of communicating market news is obviously the most important state-wide source of market news. Cattlemen talked to other cattlemen on the ranch, in town, in bars, and at rodeos. They talked to merchants in town and to their banker. They talked to order buyers and truckers.

Although little enthusiasm was expressed in answers directly to previous questions on radio reports, this source was the third most frequently named in first place importance. A look at the area breakdown in Table XXX reveals that this news media is important in areas which have several auction markets in proximity.

Magazines were the fourth most important sources of market news in first place ranking and placings were spread rather evenly among areas. Logically, there should be no differences for this media.

Feeder cattle reports from the 1st National Bank of Great Falls were mentioned by ranchers in every area in the sample. Sometimes the rancher had seen them republished in other media, sometimes he or a neighbor had received a copy in the mail. Much of the importance of other bank reports and of the Western Livestock Reporter depended on this report. Table XXX shows it to be second of importance in first place ranking. Notice is directed, though, to the areas of most frequent placing. These areas are the Northcentral and Central areas for here the report has the most meaning. The report mentions numbers, describes grades, and shrinkage and cutback conditions. The report is describing marketing conditions in these two areas, for most of the bank's clients come from these areas. Although

TABLE XXX. MARKET NEWS SOURCES RANKED BY 120 MONTANA RANCHERS AS MOST IMPORTANT IN MAKING MARKETING DECISIONS, 1963.

Most Frequently Listed Important Market News Sources	By Rank and By Area																					By Rank State		
	NW			NC			NE			C			SW			SC			SE					
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Word-of-Mouth	6	3	1	1	3	1	3	1	1	7	1		5	2		7	2	1	6	4	3	35	16	7
Radio		3	1	2	7		2	2	4	1	6	2	1			6	3		6	4	3	18	25	10
Magazines (Excluding Separate Listings)	3	1			4		2		1	2	2		2	4		2	3	2		2	2	11	16	5
Western Livestock Reporter	1	1		1			1	1		1	3					2	4			1		6	10	0
Attending Auction				3			1	1	1	1				4		1	2		3	2		9	9	1
Auction Written Reports								4	2	2	1		1		1				4	2	1	7	7	4
Montana Stockgrow Ass'n (Magazine)											1											0	1	0
Newspapers					3		1				1		1	2	1	1	3	1		4		3	13	2
1st Nat'l. Bank of Great Falls	1			11	1	3	1				6		3			1				1		**23**	2	3
Not Wishing to Make A choice or Not Reporting	0	2	18	0	2	16	0	1	1	0	5	18	7	8	18	0	3	16	1	3	13	8	24	100

no names are mentioned, ranchers in these areas can relate the marketing conditions described in the report almost directly to their own situation.

Sellers' Views On Suggested Market News Improvements

Auction Market News.--Producers were asked if it would be helpful to have a weekly market news report covering prices, grades, and volume of sales for auctions.

Nineteen ranchers in the sample did not feel they needed such a report. They either did not use auction markets at all or felt that their present informational status for auctions was sufficient.

All others stated that they would find such a report useful if the data were gathered and reports disseminated by a disinterested party.

These ranchers were asked to describe a geographical area of desired coverage. With few exceptions, the described areas which corresponded almost precisely with the frame areas of this study (See Figure 3).

Next they were asked to indicate a time period or periods for which a report would be most beneficial. A reporting period from September through November would please 81 of the ranchers in the sample. This is clearly the period to be considered for any planning purpose. It indicates that the rancher is still primarily interested in better market information for his primary product; feeder cattle.

Direct Market News.--Feeder cattle producers were asked if it would be helpful to have a weekly market news report covering prices, grades, and volume of sales for direct selling.

Six ranchers in the entire sample did not reply as wanting such a report. The "yes" replies were emphatic, but were followed frequently by an emotional trough with a remark that such a happening would likely be impossible.

At this point it should be pointed out that an institutional barrier to this type of report exists. Ranchers and other rural dwellers are highly reticent to release conditions of their own sales except as their own impulses may dictate. Each rancher resents having his product compared with that of his neighbor, most especially by a third party, unless such comparison has institutional acceptance such as at county fairs or 4-H contests. Very likely a well thought out process, handled with great finesse, would be required in order to extract sales information directly from the producer.

These ranchers were asked to describe a geographical area of desired coverage. Again, with few exceptions, the areas described aligned closely with the Montana crop reporting districts.

They were asked to indicate a time period over which such a report would be most beneficial. Thirty-nine producers desired a period from September through November, 36 desired the report from June through August, and 28 preferred it from August through October. A report issued from June through November then would satisfy the requirements of practically all the responding ranchers. Seven asked for a period from July through November, three wanted December through February, and one wanted March through May.

The responding ranchers were asked by what media would they prefer such a report. Ninety-four cattlemen would prefer a mailed report and eight would like it over the radio.

It should be recognized that the following two questions were too difficult to allow a high number of prompt, well thought out responses.

The rancher was asked to describe the person, agency, or entity who he thought was or could be made capable and responsible for bringing such a report to reality. Twelve ranchers thought the Montana Extension Service at Bozeman a best choice, 12 thought the county agent a best prospect, and 10 nodded at the State Government. Banks were the selection of nine ranchers, seven others selected the USDA. Seven ranchers thought that the Montana Stockgrowers Association should take this responsibility. One rancher pointed to the Montana Livestock Commission.

The responding ranchers were asked who, if anyone, in addition to the agencies mentioned above, should pay for the cost of producing and distributing such a market report. Most of them firmly stated that the rancher should in some way share the expense either through an assessment of some type such as is done with the National Livestock and Meat Board, or by subscription.

Summary

Most of the ranchers in the sample thought that their information level, compared to that of the buyer, was low. Even those ranchers who thought that somehow there may be as much information available to them as to the buyer were sure that this information to them was not as easily available and as meaningful. Nearly all ranchers thought that the information difference considerably affected their ability to bargain with the buyer.

An agency of the federal government maintains a substantial livestock market reporting service. This service, though, reports on markets which are of least importance to the Montana feeder cattle producer. Very few producers in the sample even realized there were such reports and that the reports were available to them without charge.

Very few producers received commission firm reports from terminal markets. These reports did not significantly effect the marketing decisions of these ranchers.

The source of the longest number of market reports was auctions, as reported by the ranchers in the sample. These reports had a significant effect on decisions on marketing culls but had little effect on feeder cattle marketing decisions.

A feeder cattle marketing report from one particular bank was influential in marketing decisions throughout the state sample of ranchers and was reported to be the most valuable written report used.

Ranchers in the sample subscribed to farm magazines and other periodicals in plenty but did not find them a satisfactory source of market information. One periodical was well-received mainly because it carried the bank report mentioned above and USDA market reports.

Newspapers, for the ranchers sampled, were not a source of relatively useful market information.

Ranchers in the sample would like to have television reports but found radio reports deficient in quantity, quality and timing. Even at that, these rankers ranked radio reports as their third most important source of market news; second rank was the report from the 1st National Bank at Great Falls, and first rank was word-of-mouth.

Most of the ranchers in the sample would like to have additional marketing information from auctions providing it was gathered and disseminated by a disinterested party. Nearly all of these ranchers would like very much to have a comprehensive report on direct marketing of feeder cattle. They seemed to feel that such a thing would be too good to have much chance of becoming fact. They would like a mailed report and would like to share the expense of producing such a report.

Clearly, the Montana producer of feeder cattle is seeking, almost, desperately, additional and better market information.

CHAPTER VI

SUMMARY, CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Summary

The feeder cattle industry is the primary export industry in Montana. Montana is still basically an agricultural state and generally, a larger portion of income to the state accrues from feeder cattle than from any other segment of agriculture. Feeder cattle from Montana have long been noted for high quality and have been in relative heavy demand.

However, it is no secret that the central and southern states are rapidly becoming serious competitors for the traditional markets of Montana feeder cattle. Technological changes and government agricultural programs have affected the agricultural output of several areas. Some areas, particularly southern and central states, now find the production of feeder cattle to their comparative advantage. These areas have expansion capabilities in excess of other areas. Feeder cattle from these areas may not be able to reach quite the same quality level as those of Montana. Feedlot operators, though, are exhibiting a growing feeling that the best profit position may not be in feeding the highest quality straight-bred feeder cattle.

Montana's position as a leading feeder cattle producing state depends on how well its producer keeps abreast of changing production requirements and improved marketing efficiency. This study is concerned with the latter.

Changes in methods of cattle marketing have long been underway. The producer has ever been attempting to reduce his costs of marketing and to

gain for himself more bargaining strength. The changes from one method of marketing to another have been motivated by these two aims.

The empirical sections of this thesis are primarily concerned with the direct market. This emphasis is because of the cattleman's expressed desire for and obvious movement toward this market. It is postulated that when the producer is facing the feedlot operator or his representative, the structural characteristics of the market more nearly approximate that of pure competition on the selling side and that of pure competition on the buying side. When the cattleman faces the dealer--order buyer, data examined indicate conditions approaching pure competition on the selling side but show considerable imperfection on the buying side.

Analysis of brand inspection records by the Montana State Department of Agriculture shows that cattle being shipped out-of-state are more frequently being inspected at country points than at all organized markets combined. Analysis of market method preferences conclude that interviewed producers prefer direct marketing to other methods. Further, interviewed producers decidedly prefer to sell directly to feedlot operators above all other buyers. Upon analysis of the actual markets used by the interviewed producers, it was found that they were selling direct nearly according to their desires but that far fewer are selling to feedlot operators than desire.

The producer in the sample believes more direct selling will afford him more bargaining strength and reduce his marketing costs. He even believes that with some educational help this will aid him in improving the quality of his product and in reducing his overall production costs.

Table V and the statistical design of this study make possible the general inference of these findings to the industry.

The seller in the sample is characterized by the consistency with which he has sold to the same buyers even though he has expressed a desire for market change. An agent is needed by means of which preference and performance may be bridged.

That which has normally been thought of as the marketing season as pertains to direct marketing can now be questioned. Responses from ranchers in the sample show that they have had more contacts from direct buyers in July than they have had in the peak marketing month of October.

It was first posited that if the degree of market information was equally available to the rancher and to the buyer, then a particular conduct pattern would be followed. Next it was posited that if the degrees of market information available to each contestant were not equal another conduct pattern would be followed. These conduct patterns of firms would flow from the structural characteristics which are in existance in the industry. Models were constructed which, in effect, demonstrated how changes in the degree of market information between seller and buyer would effect their conduct. Examination of the models, supported by the data provided demonstrated how changes in the degree of market information between seller and buyer would effect their conduct. Examination of the models, supported by the data provided, demonstrated that such differences in conduct of the contestants did in fact exist; and, therefore, allowed a conclusion that the structural characteristics of parts of the industry could be defined.

A model was presented by which the conduct of the two contestants could be characterized in a bargaining contest for shrinkage conditions. An examination of the shrinkage data confirmed the posited conduct of the two contestants under the assumed conditions of pure competition. It was further presented that this behavioral status had not always existed, but was a recent phenomena. The cause of this improved conduct was due to the research of and dissemination of shrinkage information in recent years. Therefore, it was demonstrated that improved market information as pertained to this particular set of bargaining strategies had indeed improved the bargaining position of the producer and, therefore, had improved the marketing efficiency of the feeder cattle industry.

Actual data for cutback bargaining conditions were examined. Again there was found to be an imbalance of bargaining strength with the scales favoring the buyer. There is reason to think that improved information as would pertain to other sets of bargaining strategies would even further improve the efficiency of this industry.

Most sellers in the sample, in order to play this optimal strategy sets according to certain posited behavioral patterns, engaged in forward contracting. Upon examination of contracting data, it was found that contract terms being used leaves many of these sellers much disadvantaged. This disadvantage is brought about to a large extent by lack of market information. But more than this, many sellers seemed to feel that their contract terms were oppressive, still they believed their bargaining position to be too weak to resist.

The importance of a market is determined by the volume of trading therein. A market is not necessarily a location: it is made of a freely competing buyer and a seller who have facilities for trading. At least as far as pertains to Montana the market has moved away from the once-big terminal markets. It has moved out into the plains and the mountain valleys; wherever the ranchers' gates happen to be. This has been clearly shown by data offered in previous chapters.

This survey indicates that while the market for Montana feeder cattle is in the country, the source of market information conclusively is not. And since these marketings are not made public information, the total marketing information level can be considered inadequate; that amount coming from and pertaining to direct sales is in minute quantities. Even news of the terminal markets, to which he has lost contact, was welcome when it could be obtained in the form of a mailed report, according to the ranchers in the sample. He realized that such reports were far from adequate for his purposes; they are straws and he is grasping for straws even.

The ranchers surveyed subscribed to a variety of magazines and periodicals. These, he felt, offered little aid; in fact he said reports offered in this media tend to confuse him.

The rancher in the sample was distrustful of market reports eminating from auction yards. This may be one of the reasons he was unwilling to offer more patronage to them. Only when he had time to personally attend a sale did he put credence on this market as an information source.

A revamping of terminology in all market reports would aid him in analyzing the value of his own product.

Ranchers in the sample indicated that there would be an almost unanimous reception to market reports designed specifically for their market preferences for both feeder and cull cattle. They distinctly indicated the type of market report desired and the season of best use.

Substantial resources are today being expended for the market reporting of feeder cattle, along with other classes of cattle. One need only to contemplate the data presented in the second chapter of this work to become skeptical of the effectiveness of these expenditures. Is there any real reason the rancher cannot be furnished information better suited to his marketing aims?

Suggestions for Improvement of the Feeder Cattle Producer's Bargaining Position

There are many things which can be done to rectify the producers' informational deficiency. Some can be done in a short time, some not so short. Some are lent to simplicity; some are very complex.

Grading and Sorting Demonstrations

There have in the past been grading and sorting demonstrations conducted through the cooperation of Montana Extension Livestock and Marketing Specialists, and County Agents, using locally grown feeder cattle. This program needs to be expanded and accelerated.

Contract Forms

Many ranchers, when interviewed, said that they would have had their own contract forms printed but unless others in the neighborhood did like-

wise it would be useless. Since the contract which is being used in its present form can be and occasionally is detrimental to the well being of a substantial number of Montana citizens, it behooves the state to provide them with a form whose terms make the buyer and the seller equal. This can be done two ways: (1) The Montana Extension Service can print and make available through county agents pads of contract forms; (2) The Montana Experiment Station can produce a bulletin exhibiting and explaining a model for an equitable contract form.

Auction Market Reports

This study, as well as similar studies conducted by experimenters from Arizona and New Mexico, has demonstrated that the western rancher is little concerned with terminal markets. Yet that is where most of the USDA market news reporting dollar is spent. A portion of this dollar should, as soon as possible, be moved to the feeder cattle producing areas to provide a reliable and meaningful report of the market activities. Ranchers in Montana and elsewhere in the West have said that they would like a news report of auction market activities if the report were gathered and disseminated by a disinterested party. Further details on the need for this report is to be found in Chapter V.

Description of Price-Quality

USDA and State Agricultural experimenters need to devise means of purveying price-quality relationships to the producer in such a manner that he can, through use of such a descriptive market report, reasonably evaluate his own product. Many of the producers interviewed complained

that market reports contained in periodicals and other media do not aid at all in value judgments of his cattle.

Regional Coordinated Extension Programs

There were indications obtained during this study that the Corn Belt feeder may be relatively well-informed on general market conditions, but that he is not well informed on the more detailed attributed of direct buying. A coordinated educational effort of the Extension Services of the Western Range and Corn Belt Regions could go far toward alleviating this deficiency.

Beef Advertising Campaign

More returns may accrue to the feeder cattle industry's advertising dollar through a revamped advertising campaign. It is suggested that rather than wage an "Eat More Beef" type of campaign, the feeder cattle industry should, through advertising in Corn Belt dailies and periodicals, inform the feedlot operator of the advantages of feeding high quality Montana feeder cattle.

Knowledge of Presently Available Reports

The rancher interviewed has shown in Chapter V that he is almost totally ignorant of the existance of mailed USDA market reports. And inadequate as most of these are for his purpose, he has said, when he was made aware of them, that they would improve his informational level. It is suggested that the Montana Extension Service become more aggressive in informing the rancher of these available reports and offer him definite assistance in being placed on mailing lists of his choice. The Western

Livestock Roundup was generally liked by those who received it; but woefully few received it or knew of its existence. Some ranchers did suggest however, that it contain more timely information on the feed grain situation in the Corn Belt states, the winter wheat situation in the Central Plains states and the grazing situation in the Southwest states.

Radio Reports

Whatever market reports are disseminated by radio, they should be repeated frequently daily during the marketing season. Enunciation by announcers should be clear and at a pace which makes understanding easy. Stations should offer a variety of reports. Recommend that Montana Extension Service convey through letter or pamphlet to radio stations, suggestions for improving markets reporting techniques, means of acquiring more and better market information, and also proffer assistance in planning and formulating feeder cattle market news reports.

Television Reports

Stations wishing to perform a service to the rancher should devise market news programs to be presented during the marketing season. The presentation should employ a chart of display board much in the manner of the weather report and be as descriptive as possible. The pace should be such that the observer can fully assimilate meanings. Live demonstrations of price and grade should be employed wherever possible. Recommend Montana Extension Service take action as outlined in Radio Reports above.

Shrinkage Information Booklets

These booklets are presently available through the Montana Extension Service. Only in one county, though, was a significant number of the sampled ranchers aware of its existance. This type of booklet should be made available to ranchers at more than one location in the county. When this reporter offered them a copy, they took and expressed gratefulness.

This booklet could be made much more inclusive, thereby more helpful than it is at present. Suggest that revisions be performed and new booklets be made aggressively available to the ranchers.

Educational Programs

Many ranchers are interested in educational programs, such as the Beef Production School, offered by Montana State College. Sometimes these programs are held during the rancher's critical production or marketing season, and he cannot attend. Suggest that time plans for programs be reviewed with the rancher's convenience in mind.

Direct Market Report

In Chapter V, it was demonstrated that the producer intensively desired a report which would inform him of conditions in the direct market. He has made known the type of report he wants, the periods of the year he wants it, and the geographical area he wants it to cover. He has given indications as to who he thinks is capable of producing such a report. He has, to an extent, demanded that he be allowed to share in production and dissemination costs. With this peripheral information, a study group

could be formed and assigned the task of producing firm recommendations for bringing a direct market report into being. That it can be done has already been demonstrated by the 1st National Bank of Great Falls. Its report enjoys by far the highest regard of any. This institution has graciously volunteered its services in aiding a program to produce a comprehensive direct market report.

Further Research

Optimal Size of Feeder Calves

Chapter IV, under the section on contracts, revealed that feeder calves over a certain weight limit were not allowed. Producers have said that buyer resistance is met if the calves approach 500 pounds in weight. Yet production selection programs are partially based on fast gain. A study of a farm management nature should be conducted which has as its purpose the comparison of advantages in feeding types and weights of calves and of the timing of the feeding program in relation to the size, age, and quality of the feeder calf.

Game Model

Theoretical economists of a mathematical bent should give thought to developing a game model which would be directly relevant to a bargaining contest between a buyer and a seller such as in this problem. Most extant game models are concerned with contestants on the same side of the market, i.e., a seller and a seller, or a buyer and a buyer.

Buying Side of the Direct Market

On several instances in this work, it was mentioned that there were indications that dealer-buyers of feeder cattle in Montana exhibited imperfect competitive behavior. Rudimentary evidence was gathered incidentally in the course of this study. A study of the buying side of the feeder cattle industry needs to be done in order to more clearly define the market structure of this industry which is so vital to the economic well-being of Montana.

APPENDICES

APPENDIX A

$$\frac{(.607)}{\frac{71}{117}} \times 46 = 27.922 \qquad \frac{(.393)}{\frac{46}{117}} \times 46 = 18.078$$

$$\frac{71}{117} \times 71 = 43.097 \qquad \frac{46}{117} \times 71 = 27.903$$

$(r-1)\,(c-1) = (2-1)\,(2-1) = 1df$

$$\frac{-27.922}{26.} \qquad \frac{20.000}{-18.078} \qquad \frac{45.000}{-43.097} \qquad \frac{-27.903}{26.000}$$

$$\frac{-1.922}{1.922} \qquad \frac{1.922}{1.903} \qquad \frac{1.903}{-1.903}$$

$$x^2 = \frac{(-1.922)^2}{27.922} + \frac{(1.922)^2}{18,078} + \frac{(1.903)^2}{43,097} + \frac{(-1.903)^2}{27.903} =$$

$$\frac{3.69}{27.922} + \frac{3.69}{18.078} + \frac{3.62}{43.097} + \frac{3.62}{27.903} =$$

$$.132 + .204 + .084 + 1.30 = .550$$

$X_{.95}^2\,(1) = 3.84 \quad \therefore \quad H_o$ of independence not rejected.

$$\frac{10}{71}(.141) \times 26 = 3.666 \qquad \frac{61}{71}(.859) \times 26 = 22.334$$

$$\frac{10}{71} \times 45 = 6.345 \qquad \frac{61}{71} \times 45 = 38.655$$

$(r-1)(c-1) = (2-1)(2-1) = 1df$

7.000	-22.334	-6.345	42.000
-3.666	19.	3.	-38.655
3.334	-3.334	-3.345	3.345

$$\frac{(3.334)^2}{3.666} + \frac{(-3.334)^2}{22.334} + \frac{(-3.345)^2}{6.345} + \frac{(3.345)^2}{38.655} =$$

$$\frac{11.12}{3.666} + \frac{11.12}{22.334} + \frac{11.19}{6.345} + \frac{11.19}{38.655} =$$

$3.033 + .498 + 1.764 + .289 = 5.584$

$X^2_{.95}(1) = 3.84 \therefore H_o$ of independence is rejected.

$\frac{(.152)}{\frac{7}{46}} \times 20 = 3.040$ $\qquad$ $\frac{(.848)}{\frac{39}{46}} \times 20 = 16.960$

$\frac{7}{46} \times 26 = 3.952$ $\qquad$ $\frac{39}{46} \times 26 = 22.048$

More than 20 percent of Fi are less than 5.

(r-1) (c-1) = (2-1) (2-1) = 1df

4.000	-16.960	-3.952	23.000
-3.666	16.000	3.000	-22.048
.334	- .960	- .952	.952

$$\frac{(.334)^2}{3.04} + \frac{(-.960)^2}{16.96} + \frac{(-.952)^2}{3.952} + \frac{(.952)^2}{22.048} =$$

$$\frac{.112}{3.04} + \frac{.922}{16.96} + \frac{.314}{3.952} + \frac{.314}{22.048} =$$

$.037 + .054 + .079 + .014 = .184$

$\therefore$ H_o of Independence is not rejected.

$$\frac{23}{39}(.590) \times 23 = 13.570 \qquad \frac{10}{39}(.256) \times 23 = 5.888 \qquad \frac{6}{39}(.154) \times 23 = 3.542$$

$$\frac{23}{39} \times 16 = 9.440 \qquad \frac{10}{39} \times 16 = 4.096 \qquad \frac{6}{39} \times 16 = 2.464$$

More than 20 percent of F_i are less than 5.

APPENDIX B

LIVESTOCK BILL OF SALE AND CONTRACT

This Certifies, That George Sparboe of Black Rock has this day bargained and sold to about 200 head of mixed calves to be delivered F.O.B. cars, on or before 20 days of Oct to Nov 1 19 63 at $_____ per head or at $_____ per cwt, to be weighed on twelve hours shrink or None % shrink at Black Rock with Burns ~~percent~~ cut back. Received as part payment $2000 balance of $_____ to be paid on delivery. I hereby guarantee title thereto, viz:

No. Head	Description	Brands	Location of Brands	Price Per Head
about	60 mixed Hereford calves		HV 7/8 U	Hf 26¢ St 28¢
about	60 Hereford and Angus cross		HB 5 =	
about	80 Angus mixed calves			
all	Good to Choice calves 310# to 500# Blacks & Cross			Hf 26¢ Steer 29¢
11	Heifers Balance			

All of above stock to be free from encumbrance, including taxes for year of delivery, and to pass federal and state inspection for interstate shipment. Health and brand certificates to be furnished purchaser, free of charge on delivery. Above to be free of contagious disease and in merchantable condition. Trucked 15 miles and weighed before noon

Witness: _____ Seller: George Sparboe

Purchaser: Arthur Keller

TWO DOT CATTLE CO.
Belt, Maine

THIS AGREEMENT, executed this 12 day of Oct 1963, between John King of Cabot, Montana hereinafter called "Seller," and Jim Richmond of Midway Iowa, hereinafter called "Buyer."

WITNESSETH: For the sum of Nine hundred — Dollars ($900.00) as part purchase price paid to the Seller, the receipt of which is hereby acknowledged, said Seller sells and agrees to deliver to said Buyer, or his order, the following described livestock F.O.B. cars at Hudson between the dates of Oct 12 and Oct 15 1963 inclusive, at the Buyer's option. Buyer agrees to pay balance of the purchase price at time of delivery. Seller hereby guarantees title to same, free of all encumbrances, including taxes for year of delivery, viz:

No. Head	Description	Brands	Location of Brands	Price Per Cwt.
about 60	Angus steer calves		2	28.00
about 30	Angus heifer calves		"	26.00

These cattle are vaccinated against Blackleg
Livestock are to be weighed as follows: off trucks at Hudson with no shrink.

All livestock are to be sound and in merchantable condition, free of any contagious disease, crippled, deformed, blind, pink-eyed, locoed, lumpjawed, or otherwise deformed animals may be rejected by the buyer. All livestock must pass Federal and State inspection for interstate shipment. Health and brand certificates to be furnished by the seller.

Remarks: all Brand inspection fees to be paid by seller

The livestock under this contract is _____ mortgaged to _____

Witness _____

John King
(Seller)

Jim Richmond
(Buyer) William Young

APPENDIX C

C O N F I D E N T I A L

Rancher Schedule

A. Operation

Area:

County:

Name:

Location of ranch headquarters:

1. Type of Operation

(a) ( ) Cattle only ( ) Cattle and crops_____.

( ) Cattle and sheep_____. ( ) Other (specify)

( ) Cattle and horses_____.

(b) ( ) Cow-calf ( ) Yearling (stocker) only

( ) Cow-yearling ( ) Other (specify)

( ) Calf-yearling combination

(c) If cow-calf operation: Do you sometimes carry your calves over to sell as yearlings? ( ) No ( ) Yes Why?

Did you carry any over in 1962; 1961?

(d) ( ) Hereford ( ) Angus ( ) Other (specify)

(e) If cow operation: Which two months do you have the heaviest calving?

( ) February ( ) March ( ) April

2. Size of Operation

(a) Any type cow operation:

Number of brood cows_____.

2. (a) Continued

Number of replacement heifers_____.

Number of bulls_____.

(b) Yearling operation only:

Number of yearlings run_____. Dates of season

3. If your present operation about the usual size or have you had some unusual changes in the past five years?

B. MARKETING METHOD

CODE OF BUYERS

1. Feedlot Operator
2. Order Buyer
3. Rancher
4. Dealer/Trader
5. Auction
6. Terminal
7. Other (Specify)
   a) Contract
   b) Immediate Delivery

1. How many and what kind of buyers contacted you about purchasing your feeder/stocker cattle in:

	No. & Code By Order of Date Contacted	Dates of Contact	Number of Cattle and Price Offered	Code of Buyer To Which Cattle Were Sold
1963				
1962				
1961				

(If cattle not sold for 1963, ask "How do you expect to market this year?" and enter in column 4 with brackets.)

2. How did buyers find out about your cattle in --

1963_____

1962_____

1961_____

3. Rank your preference of kinds of markets _____

Why have you ranked them this way, that is, what are the advantages and disadvantages you see in each? _____

_____

4. What is the closest market to your ranch? _____

Do you ever sell there? No Yes What?

_____

( ) Only because it is the closest?

( ) Other? Explain _____

_____

5. What method of selling affords you the best prices for your top cut cattle _____; bottom cut _____?

What are the things that make this so? _____

_____

_____

6. Do you stay with the same way of marketing each year ( ) or do you shop around ( )?

Why do you feel that is an advantage in this? _____

_____

_____

7. Were you aware of the market news on the day that you sold (or shipped)?

In 1963 ( ) No ( ) Yes In 1962 ( ) No ( ) Yes

What Source? What Source?

a) _____ a) _____

b) _____ b) _____

8. Did you prefigure and compare up-to-date (within a month) marketing and transportation costs of alternate marketing methods prior to selling?

( ) No ( ) Yes; which markets did you consider?

1963:

1962:

What sources did you go to for cost figures?

PRICE BARGAINING

9. a) When you and the buyer began to bargain for the cattle, who made the first offer?

( ) Buyer ( ) You (go to Z)

b) Did you accept his first offer?

( ) No ( ) Yes (go to Y)

c) Did you make a counter offer?

( ) No (out) ( ) Less than 2¢/lb. over his price

( ) 2¢/lb. over his price

( ) More than 2¢/lb. over his price

e) Did he accept your counter offer?

( ) No ( ) Yes (go to Y)

f) Did he make a second offer?

( ) No (out) ( ) Less than 2¢/lb. under your offer

( ) 2¢/lb. under your offer

( ) More than 2¢/lb. under your offer

9. g) Did you accept his second offer?

( ) No ( ) Yes (go to Y)

h) Did you make a second counter offer?

( ) No

(go to Y)

( ) Less than 2¢/lb. over his price

( ) 2¢/lb. over his price

( ) More than 2¢/lb. over his price

Z.

a) Did he accept your first offer?

( ) No ( ) Yes (go to Y)

b) Did he make a counter offer?

( ) No (out) ( ) Less than 2¢/lb. under your price

( ) 2¢/lb. under your price

( ) More than 2¢/lb. under your price

c) Did you accept his counter offer?

( ) No ( ) Yes (go to Y)

d) Did you make a second offer?

( ) No (out) ( ) Less than 2¢/lb. over his offer

( ) 2¢/lb. over his offer

( ) More than 2¢/lb. over his offer

e) Did he accept your second offer?

( ) No ( ) Yes (go to Y)

f) Did he make a second counter offer?

( ) No (out) ( ) Less than 2¢/lb. under your price

( ) 2¢/lb. under your price

( ) More than 2¢/lb. under your price

SHRINKAGE BARGAINING

Y.

a) Who made the first offer of shrinkage conditions?

( ) Buyer ( ) You

b) Was the first offer accepted?

( ) Yes (go to "Conditions") ( ) No

c) Was a counter offer made by (you) (buyer)?

( ) No (out) ( ) Yes ( ) Accepted (go to "Conditions")

d) Was a second offer made by (you) (buyer)?

( ) No (out) ( ) Yes ( ) Accepted (go to "Conditions")

e) Was a second counter offer made by (you) (buyer)?

( ) No (out) ( ) Yes ( ) Accepted (go to "Conditions")

f)

Conditions of:	Percent Shrink	Miles Traveled	Type Transportation	Time of Stand	Feed
1st Offer					
1st Counter Offer					
2nd Offer					
2nd Counter Offer					

g) Do you have a rule of thumb for making counter offers, say 2 cents over his price?

( ) No ( ) Yes What? _____

What do you base it on? _____

_____

CUTBACK BARGAINING

X.

a) Did you sort your cattle before showing to buyer?

( ) No ( ) Yes (Number____)

Did He Sort

( ) No (out) ( ) He accepted

( ) Yes (Number____) ( ) He resorted (Number____)

b) What were his reasons for cutting back?_____

_____

c) Did he offer to buy the cutbacks?

( ) No (out) ( ) Yes

What was his price_____, and other conditions for buying the cutbacks?_____

_____

d) If this buyer didn't take them, how were your cutbacks sold?

( ) Direct (Order Buyer) (Feedlot Operator) ( ) Terminal

( ) Auction ( ) Other (Specify)

Price Received_____

10. a) What weights do buyers prefer for:

( ) Calves ( ) Yearlings

11. Does your bank cooperate with you on making marketing decisions?

( ) No ( ) Yes; How?_____

*First enter 1962 data. If seller has 1963 contract enter data along side of block on margin.

C. CONTRACT TERMS AND PROCEDURES

1. What do you think made the buyer contract for your cattle:

( ) a) Speculating on a price rise.

( ) b) Insurance against a price rise.

( ) c) Dependable supply of specified quality cattle.

( ) d) Other (Specify)_____

2. Have you ever had a contract broken or failed to be completed?

( ) No ( ) Yes

Why, what caused it?_____

What action did you take?_____

3. Was (were) your contract (s): Form furnished by:

( ) Written ( ) Verbal ( ) Buyer ( ) Seller

4. Do you have an extra copy of the contract you use which you could spare for attachment to this questionnaire.

5. Have cattle been delivered to original contractor on each contract, ( ) or has the original contractor sometimes sold the contract to another buyer? ( )

6. What were the dates contracts were signed in:

1963:_____
1962:_____
1961:_____

7. What were the contract delivery dates in:

1963:_____
1962:_____
1961:_____

7. (continued)

How arrived at and why?_____

_____

8. Did the buyer want to stagger the delivery dates: ( ) No ( ) Yes; what were your reactions?

*9. a) What were the maximum and minimum weight limits specified in the contract(s)?

Maximum_____ Minimum_____

b) How did you and the buyer go about getting agreement on this?

c) What was the spread of the actual delivery weights?

*10. a) What percentage of number rejection was buyer entitled to because of light weight?_____ Heavy Weight?_____

b) How did you and the buyer go about getting agreement on this?

c) Other conditions?

*11. Was grade of cattle specified? ( ) No ( ) Yes What Grade?

_____ Was the grade actually traded on set by:

( ) Bargaining, Describe_____

( ) Buyer

( ) You

*12. Was the price entered in the contract?_____

*13. What was the deposit or down payment by amount and/or percentage of total purchase price?

*14. Is this sum considered by you to be a "forfeiture" or "earnest money" deposit?_____ Or a part payment with buyer held entirely accountable?_____

*15. What were the conditions for balance of payment?

*16. How do you check buyer's financial status or his authorization as an agent?

*17. Were there provisions for costs of holding cattle beyond specified delivery date:

Determined by whom?

Paid by whom?

*18. Were there provisions for arbitration of differences between you and the buyer in the contract?

( ) Yes ( ) No ( ) What?_____

19. What would you recommend that would improve contractual arrangements and terms from the sellers view point?

20. Are you more inclined to contract in some years than in others?

( ) Yes ( ) No

What are the things that make up this inclination?

21. Are buyers more inclined to seek contracts in some years than in others?

( ) No ( ) Yes

What are the things that make him want to do this?

22. Do you think that contracting early effects the market later on?

( ) No ( ) Yes

In what way?

D. MARKET INFORMATION

1. a) Do you think you have available to you as much up to the minute market information as the buyer?

( ) Yes ( ) No

Just how seriously do you think this affects your ability to bargain with him?

b) Have you had any indication that the buyer had a top price set in his mind before he started talking to you?

( ) Yes ( ) No

2. What do you need in the way of a mailed report to help you decide how to sell your cattle?

3. Which USDA mailed reports do you receive? ( ) None; if none are you familiar with the procedure for getting on the mailing list?

( ) Yes ( ) No; if no, would you like to get on the mailing list

( ) No ( ) Yes; if yes, give interviewee address from AMS-48.

	Have Received	Receive Now	Use in Making Marketing Decisions
a) Denver (Billings) L.S. Market and News Report	( )	( )	( )
b) Chicago L.S. Market and News Report	( )	( )	( )
c) Sioux Falls L.S. Market and News Report	( )	( )	( )
d) Spokane L.S. Market and News Report	( )	( )	( )
e) Other L.S. Market and News Report	( )	( )	( )
f) Livestock and Meat Situation	( )	( )	( )
g) Western Livestock Roundup	( )	( )	( )
h) Other	( )	( )	( )

Comments extracted on use:

Do these reports meet your need? ( ) Yes ( ) No

In what way do you think they could be improved?

4. Commission Firm Mail Reports that you receive ( ) None

	Have Received	Receive Now	Use in Making Marketing Decisions
a)	( )	( )	( )
b)	( )	( )	( )

Comments extracted on use:

5. Other market mail reports such as banks, auction markets ( ) None

	Have Received	Receive Now	Use in Making Marketing Decisions
a)	( )	( )	( )
b)	( )	( )	( )
c)	( )	( )	( )

Comments extracted on use:

6. Do you read regularly the market news and forecasts in any farm magazines or agricultural newsletters?

( ) No ( ) Yes

Use in making marketing decisions?

( ) No ( ) Yes; In what way?

7. Do you read regularly livestock market reports in newspapers? ( ) No

	Yes	Use in Making Marketing Decisions
a) (daily)	( )	( )
b) (daily)	( )	( )
c) (weekly)	( )	( )

Do you feel these should be improved? ( ) Yes ( ) No

How?

8. Do you listen to livestock market reports on the radio? ◯ No

Station & City & Time	Yes	Use in Making Marketing Decisions
a)	( )	( )
b)	( )	( )
c)	( )	( )

Do you feel that these programs should be improved?

◯ Yes ◯ No

How?

9. Are livestock reports clearly written and easily understood?

◯ Yes ◯ No

Explain:

10. Are there any market reports which you feel are intentionally misleading or consistently inaccurate?

◯ Yes ◯ No

Which?

11. Do you have good TV reception? ◯ Yes ◯ No

Would you like to be furnished a TV market report? ◯ Yes ◯ No

If so, what time, station and type of report?

12. Any other information that you receive that we have not discussed?

13. Do you have telephone conversations concerning marketing? ◯ None

13. (continued)

	Frequently During Marketing Season	Seldom Except When Ready to Sell	Seldom at All
a) Local Ranchers	( )	( )	( )
b) Feedlot Operators	( )	( )	( )
c) Order Buyers	( )	( )	( )
d) Dealer/traders	( )	( )	( )
e) Auction Markets	( )	( )	( )
f) Terminal Markets	( )	( )	( )
g) Others (specify)	( )	( )	( )

Comments:

14. Would you rank the market news sources which you use in making marketing decisions from the most important down:

a) _____

b) _____

c) _____

15. a) Would it help to have a weekly market news report covering prices, grades, and volume of sales for auctions?

( ) Yes ( ) No

If yes, indicate period and area of desired coverage.

	Area
December thru February	
March thru May	
June thru August	
September thru November	

Would it help to have a weekly market news report covering prices, grades, and volume of sales for direct selling?

( ) Yes ( ) No

If yes, indicate period and area.

15 a) (continued)

Area

December thru February
March thru May
June thru August
September thru November

b) If yes, do you think this should be like the Billings Radio Report or what other ideas would you have?

c) If yes, who do you think should do this? And who should pay for the cost?

16. Other comments or suggestions for marketing information which you feel would improve your marketing position.

LITERATURE CITED

Anderson, Ronald A., and Walter A. Kumpf, Business Law, Cincinnati, South Western Publishing Co., Sixth Edition, 1961.

Bain, Joe S., Industrial Organization, New York, John Wiley & Sons, Inc., 1959.

Baumol, William J., Economic Theory and Operations Analysis, Englewood Cliffs, Prentice Hall, Inc., 1961.

Dorfman, Robert, Paul A. Samuelson, and Robert M. Solow, Linear Programming and Economic Analysis, New York, McGraw-Hill Book Company, 1958.

Fowler, Stewart H., The Marketing of Livestock and Meat, Danville, The Interstate Printers and Publishers, Inc., 1961.

Heady, Earl O. and Wilford Chandler, Linear Programming Methods, Ames, The Iowa State Press, 1958.

Henderson, James M., and Richard E. Quandt, Microeconomic Theory: A Mathematical Approach, New York, McGraw-Hill Book Company, 1958.

Hurwicz, Leonid, Readings in Price Theory, Homewood, Richard D. Irwin, Inc., 1952.

Levenson, Albert M. and Babette S., Outline of Price Theory, New York, Holt, Rinehart and Winston, 1964.

Luce, Duncan R., and Howard Raiffa, Games and Decisions, New York, John Wiley and Sons, Inc., 1959.

Marshal, Alfred, Principles of Economics, London, Macmillan Company, Eighth Edition, 1959.

Maynard, Harold H. and Theodore N. Beckman, Principles of Marketing, New York, Ronald Press Company, Fifth Edition, 1952.

McKinsey, J.C.C., Introduction to the Theory of Games, New York, McGraw-Hill Book Company, 1952.

Roy, Ewell Paul, Contract Farming, USA, Danville, The Interstate Printers and Publishers, Inc., 1963.

Shepherd, Geoffrey S., Marketing Farm Products Economic Analysis, Published by the Iowa State College Press, Ames, Iowa, Third Edition, 1958.

Shubik, Martin, Strategy and Market Structure, New York, John Wiley and Sons, Inc., 1959.

Snedecor, G. W., Statistical Methods, Ames, Iowa State College Press, Ames, Iowa, Fourth Edition, 1946.

Stonier, Alfred W., and Douglas C. Hague, A Text Book of Economic Theory, London, Longman's, Green and Co., Ltd., Second Edition, 1957.

Watson, Donald S., Price Theory and its Uses, Boston, Houghton Mifflin Company, 1963.

Webb, Walter Prescott, The Great Plains, New York, Grosset & Dunlap, 1931.

Wold, Abraham, Statistical Decision Functions, New York, John Wiley and Sons, Inc., 1950.

Magazines

Chernoff, Herman, "Rational Selection of Decision Functions", Econometrica, 22, October, 1954.

Clark, J. M., "Toward a Concept of Workable Competition, AER, June, 1940.

Clodius, Robert L., and Willerd F. Mueller, "Market Structure Analysis as an Orientation for Research in Agricultural Economics", Journal of Farm Economics, Vol. XLIII, No. 3, August, 1961, p. 516.

Savage, L. S., "The Theory of Statistical Decisions", Journal of American Statistical Association, 46, March, 1951, pp. 55-67.

Reports

Engleman, Gerald and Betty Sue Pence, "Livestock Auction Markets in the United States", USDA Marketing Research Report, No. 223, March, 1958, pp. 3-6.

Johnson, Maxine C., Beef Cattle in the Montana Economy, Missoula, Montana State University, 1961.

Lamborn, Ellis W., "Studies of Mechanics of Pricing vs. Studies of underlying Price-Making Forces: A Discussion", Pricing as a Problem for Marketing Research, Report No. 5, Proceedings, Marketing Research Committee of the Western Agricultural Economic Research Council, Berkeley, California, University of California, June 10-12, 1963, pp. 25-29.

Uvacek, Edward and D. L. Wilson, "Livestock Terminal Market", USDA Marketing Research Report, No. 299, January, 1959, p. 2.

Bulletins

Agricultural Research Division, "Cattle and Calves--Where They're Raised and Beef is Eaten", Agricultural Research Bulletin, Swift & Company, Chicago, 1963, pp. 5-6.

Harston, Clive R., "Shrinkage is Important", Montana Agricultural Experiment Station Circular 220, April, 1959.

Harston, Clive R., "Cattle Shrinkage Depends on Where, When, and What You Market", Bozeman, Montana Agricultural Experiment Station, Circular 221, April, 1959.

Harston, Clive R., "Shrinkage Depends on How You Market", Bozeman, Montana Agricultural Experiment Station, Circular 222, April, 1959.

Harston, Clive R., "An Economic Study of Community Livestock Auctions in Washington", Pullman, Washington, Washington Agricultural Experiment Station, Bulletin 545, April, 1954.

Langham, Max R., Game Theory Applied to a Policy Problem of Rice Farmers, DAE Circular No. 317, November, 1962.

USDA, "Livestock and Meat Statistics", USDA Statistical Bulletin, No. 333, Washington, July, 1963, p. 51.

Rust, Charles H. and Clive R. Harston, "The Survival and Growth Potential of Small Meatpacking Businesses in Montana", a study prepared for the Montana State Planning Board, Bozeman, Montana, Montana Agricultural Experiment Station, Montana State College, 1963, p. 80.

Smith, Harvey H., "Livestock Marketing in the United States", Fort Collins, Colorado, Colorado Agricultural and Mechanical College, Bulletin 442A, 1956.

Taylor, Maurice C., Montana In the Economic Doldrums, Bozeman, Montana, Montana Agricultural Experiment Station, Unpublished manuscript.

Taylor, Morris H., "Livestock Purchase and Sale Contracts", Logan, Utah, Utah State Agricultural College Extension Service, Extension Bulletin 211, 1950.

Trock, Warren L., "Cattle Feeding in the Northern Great Plains", Bozeman, Montana, Montana Agricultural Experiment Station, Bulletin 576. April, 1963.

MONTANA STATE UNIVERSITY LIBRARIES
3 1762 10010717 4

D378
D323
cop.2
Dawson, D. R.
An economic analysis of feeder cattle marketing in Montana

NAME AND ADDRESS

Don Bacon 401 S Bozeman
JUN 2 1965
3-28-66
APR 11 1966
Tom Bennett 410 W Garfield
10/26/67
Charlie Miller Quad C
INTERLI
Roger

D378
D323
cop.2