



An analysis of the feeder cattle marketing associations in Montana
by Mark Elwood Clark

A THESIS Submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree
of Master of Science in Agricultural Economics
Montana State University
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Abstract:

This research problem is concerned with the effect of the several feeder cattle marketing associations on the Montana market structure. Descriptions of the operations of the associations and the attitudes of the producers in a background of the changing market structure for feeder cattle were evaluated.

A comparison of net prices received by producers who sold feeder cattle via the associations versus net prices which would have been received had the cattle been sold via the Billings market was made.

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A recommendation was made that the various associations consider becoming coordinated into one larger effective group. The associations and their members must become better informed about marketing methods, prices and cattle movements. As coordinated associations they could hire a specialist in marketing and be better able to be effective bargaining agents.

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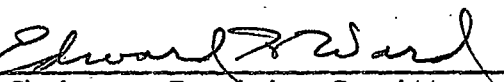
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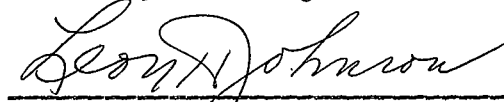
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All errors and omissions are the responsibility of the author.

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ABSTRACT

This research problem is concerned with the effect of the several feeder cattle marketing associations on the Montana market structure. Descriptions of the operations of the associations and the attitudes of the producers in a background of the changing market structure for feeder cattle were evaluated.

A comparison of net prices received by producers who sold feeder cattle via the associations versus net prices which would have been received had the cattle been sold via the Billings market was made. A statistical test was applied to determine if the price spread between the two methods of marketing were significant. In addition, a test was made to determine the association between net prices and number of cattle sold per transaction.

A general conclusion from the study is that the producers received a greater net price by marketing through a direct marketing association rather than through a regular organized market. There was no statistically significant relationship between net prices received and number of cattle sold per transaction through the Park County Association.

A recommendation was made that the various associations consider becoming coordinated into one larger effective group. The associations and their members must become better informed about marketing methods, prices and cattle movements. As coordinated associations they could hire a specialist in marketing and be better able to be effective bargaining agents.

CHAPTER I

INTRODUCTION

The Importance of the Livestock Industry

The estimated total cash receipts from the marketing of cattle and calves in Montana in 1959 was \$164.5 million. ^{1/} The investment by Montana's livestock producers in land, buildings, equipment and cattle in the same year was estimated to be approximately \$1 billion. Employment, however, was only 15,000 ranchers and workers, ^{2/} or about 8 percent of the total agricultural and non-agricultural employment in Montana. ^{3/} The 1959 cash receipts from marketing cattle and calves in Montana were 40.7 percent of the total receipts from all farm marketings in 1959. ^{4/}

Meat production and consumption statistics indicate that the livestock industry in Montana should continue to be important. For example, beef production has generally increased in the United States from about 7 billion pounds in 1930 to nearly 15 billion pounds in 1960. ^{5/} The

^{1/} Montana Department of Agriculture, Montana Agricultural Statistics, United States Department of Agriculture, Agricultural Marketing Service, Cooperating, Helena, Montana, Volume VIII, 1960, p. 7.

^{2/} Maxine C. Johnson, "What the Beef Cattle Industry Means to Montana," Montana Business Review, Volume 13, Number 6, Bureau of Business and Economic Research, School of Business Administration, Montana State University, Missoula, Montana, June, 1961, p. 3

^{3/} Agricultural Experiment Station and Extension Service, Montana Agriculture Basic Facts, Montana State College, Bulletin 293, Bozeman, Montana, October, 1956, p. 65.

^{4/} Montana Department of Agriculture, op. cit., p. 7.

^{5/} Agricultural Marketing Service, Livestock and Meat Situation, United States Department of Agriculture, LMS-112, Washington, D. C., September, 1960, p. 2.

predicted production for 1961 is a record-breaking 15.9 billion pounds. 6/ Consumption per capita also has generally increased in the United States from about 50 pounds in 1930 to about 86 pounds in 1960. 7/ Consumption of beef per capita in 1961 is expected to continue upward to about 89.5 pounds. 8/ Montana, as the tenth largest feeder cattle producing state in the nation, is in a rather favorable agricultural position to benefit from increasing consumption of beef.

There are, however, large fluctuations in receipts from cattle and calf marketings in Montana. For instance, the annual cash receipts from cattle and calves have fluctuated from about \$90 million to \$200 million over the past decade. 9/ These fluctuations are typical for the cattle and calf producers in Montana; therefore, cattlemen must consider substantial fluctuations in income when making their marketing decisions. Individually, however, cattle producers can do relatively little to reduce the risks involved with fluctuations in their incomes. Marketing associations have been organized by several commodity groups

6/ Agricultural Marketing Service, Livestock and Meat Situation, United States Department of Agriculture, LMS-113, Washington, D. C., November, 1960, p. 6.

7/ Agricultural Marketing Service, LMS-112, op. cit., p. 2.

8/ Agricultural Marketing Service, LMS-113, op. cit., p. 6.

9/ Montana Department of Agriculture, Montana Agricultural Statistics, United States Department of Agriculture, Agricultural Marketing Service, Cooperating, Helena, Montana, Volume VII, 1958, p. 7, and Montana Department of Agriculture, Volume VIII, op. cit., p. 7.

in agriculture which have employed effective methods of reducing these fluctuations in income. 10/ As of recently, some Montana feeder cattle producers also have organized marketing associations. These particular associations were organized not to control fluctuations in income per se, but, in general, to provide greater bargaining power for producers.

10/ James R. Bowring, Herman M. Southworth, Frederick V. Waugh, Marketing Policies for Agriculture, Prentice-Hall, Inc. Englewood Cliffs, New Jersey, 1960, pp. 164-169.

The Contemporary Marketing Associations

During the 1950's efforts were applied to form marketing associations in Montana. One of the principal reasons for the vital interest of producers in livestock marketing associations is the belief that producers with small herds benefit from such organizations. In previous decades as well as in the 1950's, the majority of Montana's feed cattle producers have been small. As late as 1954, it was estimated that only 26 percent of Montana's producers had over 100 head of cattle. 11/

Various forms of feeder cattle marketing associations have been organized in Montana. Four of the marketing associations were organized between 1952 and 1956. These associations were designed to either eliminate or control certain sales services performed for cattle feeders. In the latter design, the associations provided an agent to act on behalf of members as direct selling was promoted between cattle producers and potential buyers. Each of the four associations were designed to fit the particular marketing situation as assessed by the members. For example, the Vigilante Cattlemen marketing association of Madison and Jefferson Counties was basically designed to eliminate the need of the services normally performed by independent order buyers, cattle dealers or other cattle buyers or by an association official.

11/ Morris H. Taylor, "Possibilities for New Livestock Markets and Services in the Western Region," American Cooperation, 1960, Thirty-second Session of the American Institute of Cooperation, American Institute of Cooperation, Washington, D. C., 1960, p. 499.

This group promoted the original contact between the cattle feeders and the cattle producers through its own advertising program. The Meagher County Livestock Association was designed to either eliminate or control the need of the services performed by one of the above types of agents at the option of the individual members. This Association had an advertising program, an individual member selling program similar to the Vigilante Cattlemen and also an Association official to act as an agent if desired by the buyer and seller. The Park County Ranchers Marketing Association had a program designed to control and direct the sales services of an agent. This group had an Association advertising program and an Association manager to act as an agent in a public relations capacity in addition to the normal services performed in selling cattle. The program of the Park County Association is generally conceded to be the most successful of the programs employed. The Foothills Livestock Association of Cascade County also has been quite successful even though it is the youngest of the four direct marketing associations. The Cascade County Association has operated since 1958 in a similar manner to that described for the Park County Association.

In 1958, another distinctly different type of marketing association was organized in Montana. In that year, some of the producers with small herds formed the Gallatin Beef Producers Association. This marketing association was basically designed to sponsor an auction market sale to provide what the producers believed to be the best type of out-

let for their small lots of cattle. The Association in cooperation with the local auction company advertised the special feeder sale and graded the cattle in advance of the sale.

The Changing Structure of the Montana Cattle Market

Among the changes in feeder cattle marketing during recent years has been the growth of direct and auction marketing in the Western Region of the United States. ^{12/} Montana, as the largest producer of feeder cattle west of Nebraska, is quite typical of this change.

As direct marketing is a widely used and a vaguely defined economic term, the definition used for direct marketing of livestock is:

"...marketing of livestock through channels other than the regular organized markets such as auction and terminal markets." ^{13/}

There are two more economic terms which must be defined before a discussion of the changing structure of the cattle market is possible.

Willard Cochrane defines a market as follows:

"A market is some sphere or space, where (a) the forces of supply and demand are at work (b) to determine or modify price (c) as the ownership of some quantity of a good or service is transferred and (d) certain physical and institutional arrangements may be in evidence." ^{14/}

Cochrane continues and defines market structure as:

"...some characteristic or consideration or condition in a market which influences the behavior of firms in the market;

^{12/} Clive R. Harston and Edwin C. Voorhies, Trade in Western Livestock at Auctions, Western Regional Research Publication, Bulletin 537, Washington Agricultural Experiment Station, Pullman, Washington, 1952, p. 1.

^{13/} Adopted as the definition by the Technical Committee on livestock marketing, Western Regional Research Project, WM-39, 1960.

^{14/} Willard W. Cochrane, "The Market as a Unit of Inquiry in Agricultural Economic Research," Journal of Farm Economics, Volume XXXIX, Number 1, February, 1957, pp. 21-22.

hence the performance of the market." 15/

A review of the history of the development of market structure in Montana will serve as a basis of reference to facilitate an easier assessment of the recent changes. Montana's livestock market structure has evolved in much the same manner as the structure in the other western states. In pioneer days there was nothing but a primitive form of direct marketing because regular organized markets did not exist in the West. During the 1870's and subsequent years terminal markets developed along the eastern edge of the Great Plains. Since railroads were the dominant form of transportation between the Midwest and the West, the largest terminal markets developed at railroad centers. By the late 1920's the market structure and class of cattle began to change. Auction markets became the dominant feature in the market by about the mid-1940's. Also the grass-fat cattle were being replaced by feeder cattle and direct marketing was becoming important. 16/ Cattle feeding rapidly developed during the period when auction and direct marketing began to replace terminals as the principal markets for livestock.

15/ Ibid., p. 29.

16/ Stewart H. Fowler, The Marketing of Livestock and Meat, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1957, pp. 326-329.

Decentralization, the marketing of livestock away from the big terminal markets, has been the basic change in marketing. The phenomenon began in 1915 with the development of nine western terminal markets. 17/ The process of decentralization in Montana was typical of the West as twelve auction markets were established between 1935 and 1949 in addition to the one terminal market already in the state. 18/ Since about 1950 the popularity of direct marketing has increased in several states which are large producers of feeder cattle, including Montana.

The effect of direct marketing of feeder cattle may have many results. For example, there are indications that there is a price leadership tendency as a result of contracts made well in advance of shipments. The prices, agreed upon in contracts written in June and July, seem to have considerable influence on the prices received for the majority of the calves, yearling and two-year-old feeders which are sold principally in the late summer and fall. 19/

17/ Harold Abel and Dee A. Broadbent, Trade in Western Livestock at Auctions, Western Regional Research Publication, Bulletin 352, Utah Agricultural Experiment Station, Logan, Utah, 1952, p. 33.

18/ Ibid, Appendix A, Table 4, p. 122.

19/ Interview with Mr. Gerry Goodall, Chief, Program Analysis Group, Economic Research Service of the United States Department of Agriculture, August 9, 1961.

The market structure has changed not only in the methods of marketing and classes of cattle produced but also in the changes in supply and demand factors. The new supply and demand conditions have developed mainly as a result of an expanding and affluent consuming population in the United States. This very favorable condition is due almost entirely to developments not directly influenced by the beef industry.

Cattle Movements

Cattle movements are important in assessing the present day feeder cattle market structure. Historically the principal movements of stockers and feeders in the United States have occurred in the fall. During the years of 1932 to 1936 it was observed by Slagsvold and Eckert that Montana feeder cattle producers exported 30 percent of their cattle in October and 77 percent of all shipments were delivered in the months of August through November. Slagsvold and Eckert concluded that producers continued marketing during this traditional fall period even though they did receive an appreciable lower price by not selling somewhat earlier. 20/ By 1960, there was a significant decrease in the concentration of the movements of Montana cattle. In that year 64 percent of all the cattle and calves were recorded as movements during August through November, 13.7 percent during March

20/ P. L. Slagsvold and P. S. Eckert, Montana Cattle Shipments: Sources, Destinations and Character of Montana's Cattle Shipments, Montana Agricultural Experiment Station, Bulletin No. 358, Bozeman, Montana, May, 1938, pp. 37-44.

through May, 13.9 percent during December through February, and 8.4 percent during June and July. Twenty-eight percent of the 1960 Montana cattle movements were recorded in October. 21/ This was a two percent decrease from the 1929-1935 percentage recorded in October.

Montana feeder cattle movements have become characterized by a predominance of direct marketing plus a shift to calves. The change from older cattle to the predominance of calves in the Montana movements has occurred within a 30-year period. During the 1929 to 1935 period the total exports from Montana to organized markets were composed of 51 percent steers, 37 percent cows, 11 percent calves and 1 percent bulls. 22/ By 1946 classified cattle in the out-of-state shipments totaling 278,967 head were 48 percent steers, 37 percent calves, only 14 percent cows and 1 percent bulls. 23/ The total cattle shipments out-of-state in 1960 involved 1,227,835 head. These shipments were 25.3 percent steers, 37.9 percent calves, 11.5 percent heifers, 12.2 percent cows, 12.0 percent unclassified and 1.1 percent

21/ United States Department of Agriculture, Montana Cattle Movements: 1960 Annual Marketings and Movements, Montana Crop and Livestock Reporting Service, Montana Livestock Commission, and the Montana Agricultural Experiment Station, Helena, Montana, March 6, 1961.

22/ P. L. Slagsvold and P. S. Echert, op. cit., p. 1.

23/ Allen R. Clark, Cattle Movements and Livestock Auction Markets in Montana, Master's Thesis, Department of Agricultural Economics and Rural Sociology, Montana State College, Bozeman, Montana, 1947, p. 18.

bulls. 24/

The more recent trend away from auction markets toward direct marketing is evident between 1946 and 1960. Clark found that in 1946, 49 percent of the cattle producers mainly used the auction, 20 percent used direct marketing, 12 percent used terminals and 19 percent of the 393 producers sampled did not report the principal method utilized. 25/ By 1960, 58.5 percent of the 1,911,995 head of cattle recorded in the Montana movements were direct shipments from country shipping points (shipped out-of-state) and from local country movements (movements in-state). 26/ Only 35.9 percent of the total 1960 movements were sold through Montana markets (these movements are predominantly from Montana's auction markets); the remaining 5.6 percent were movements to specified out-of-state markets. 27/

Regardless of the methods of marketing employed by Montana producers, most of their feeder cattle are shipped out-of-state to the Midwest and the Plains States. This represented 73.6 percent of the 1,227,835 head shipped out of Montana in that year. Seven states in

24/ United States Department of Agriculture, Montana Cattle Movements, Montana Crop and Livestock Reporting Service, Montana Livestock Commission, and the Montana Agricultural Experiment Station, Helena, Montana, May 26, 1961.

25/ Allen R. Clark, op. cit., p. 70.

26/ Direct shipments are predominantly movements of cattle which were from direct marketings. There are some cattle movements which involve no sales but are movements to distant grazing localities, etc.

27/ United States Dept. of Agriculture, Montana Cattle Movements, May 26, 1961, op. cit.

the western region in 1960 received about 25.6 percent of the out-of-state shipments, while the remaining 0.8 percent went to other states.

28/ Montana's direct shipments of stocker and feeder cattle to nine north-central states in 1949 totaled 279,288 head. By 1957, 409,604 head or about 14 percent of the 2,955,000 head shipped direct from all states were from Montana. Only Nebraska and South Dakota sent more direct shipments to these nine north-central states in 1957 than did Montana. 29/

Cooperative Activities

Cooperative activities related directly to feeder cattle marketing in Montana have been rather unimportant in the state's market structure. A study of most of the cooperatives operating in Montana in 1946 indicated that there were four attempting to increase the efficiency of livestock marketing. There were two livestock marketing cooperatives, one in Lake County and one in Richland County. The Lake County marketing cooperative located at Ronan was organized by a purchasing cooperative. The other livestock marketing cooperative, located in Richland County, was concerned solely with swine

28/ United States Department of Agriculture, Montana Cattle Movements: 1960 Annual Marketings and Movements, March 6, 1961, op. cit.

29/ United States Department of Agriculture, Direct Shipments into Selected North-Central States by State of Origin, Agricultural Marketing Service, Statistical Bulletin No. 242, Washington, D.C., January, 1959, pp. 7 and 11.

marketing. 30/ There were two trucking cooperatives, one in each of Roosevelt and Richland counties. 31/ All four of these organizations have ceased to function. Their influence has consequently been nominal.

Objectives of the Study

Feeder cattle producers in Montana and elsewhere have limited knowledge relative to the organization, operation, advantages and disadvantages of these marketing associations in Montana. This study has, therefore, pursued the following objectives in attempting to provide the necessary information:

1. To analyze the net market prices received from auction and terminal marketing compared with the net market price received through the Park and Cascade County direct marketing associations.
2. To compare and evaluate the marketing attitudes and actions of producers who were aligned with those who were not aligned with marketing associations in Park, Cascade, Lewis and Clark, and Gallatin Counties in 1959.
3. To evaluate the operation of the associations in Park, Cascade, Meagher, Gallatin, and Madison and Jefferson Counties, and to formulate recommendations.
4. To compare the attitudes of producers in Park, Cascade, Lewis and Clark, and Gallatin Counties relative to auction, direct and terminal methods of marketing.

30/ Harold F. Hollands, Montana Farmers Cooperatives, 1941 and 1946, unpublished research, Montana Agricultural Experiment Station, Bozeman, Montana, 1947, p. 40.

31/ Ibid, p. 43.

Procedure

The research procedure used in this paper revolves substantially around case studies of the associations. Both random sampling and complete enumeration were utilized to obtain data. The data gathered by the former method was used in the attitude evaluation of Chapter III, while the data from the latter procedure was used in the price analysis of Chapter II. In addition, interviews and secondary information were used especially for the discussions on operation of the associations.

Attitudes and Actions

Specifically, the marketing attitudes and actions of all producers relative to the 1959 marketing season were obtained from seven random samples. The attitudes and actions were compared mainly in pairs, thus the sampling procedure was designed so that the type and size of the ranch operations were equal for each pair. The samples of producers who sold some feeder cattle through an association in 1959 were drawn randomly from a list provided by the association. Three samples were drawn from Park, Cascade, and Gallatin Counties in this manner. The samples of producers who did not sell feeder cattle through an association in 1959 were drawn randomly from the 1959 county tax assessment books. These four samples were from Park, Cascade, Lewis and Clark, and Gallatin Counties. Lewis and Clark County was included in the sample to obtain the attitudes of producers in a county not influenced directly by an association. This particular county was selected because it adequately approximated the type of marketing opportunities which

existed in Park County prior to 1954 and was not too different from the Cascade County types of livestock operations either. In each case the four samples were drawn from the lists of livestock owners in the 1959 county tax assessment books. The four populations sampled were, however, smaller than the total number listed in the assessment books because producers who had a larger number of breeding cows than the largest operation represented in the paired association were excluded. Conversely, producers who had a smaller number of breeding cows than the smallest operation represented in the paired association were also excluded. In this connection, Lewis and Clark County was paired with the Cascade County association; thus Lewis and Clark County producers were excluded from the population sampled if they had more breeding cows than the largest Cascade County association member or fewer than the smallest association member. In the three other pairings, producers who did not sell through an association in 1959 were paired with producers who did sell through an association in 1959. The samples of producers who sold through an association in Park, Cascade and Gallatin Counties were thus paired with a sample of producers from the same county who did not sell through an association in 1959.

Price Analysis

Data was obtained for the net market price analysis from an enumeration of all good to choice feeder cattle sold through an association in 1958, 1959 and 1960. The two direct marketing associations operating during these years supplied information from their official records

which included data on seller, and buyer identification, number of head per transaction, class of feeder cattle, average weight per head, gross price received per hundred-weight, or in the case of some yearling and two-year-old feeders, gross price less two percent pencil shrink, and date of the sale. The above information was obtained from the official weight slips which provided complete marketing information for the Foothills Livestock Association of Cascade County for the years of 1958 and 1960. Similarly the data for 1959 was obtained from official marketing receipt books of the Park County Ranchers Marketing Association.

Two assumptions were made relative to the price analysis of Chapter II. First, it was assumed that the feeder cattle involved in the price analysis would grade good to choice. Of course any cattle which were of dairy background or below the grade of good, in the opinion of the association representative, were not included in the net market price analysis data. A second assumption was made in connection with the price analysis portion of this marketing study. It was assumed that the two Billings markets are used as a basing point for pricing all Montana feeder cattle sold at auctions and terminal markets. The principal basis for this assumption is that these two markets combined are the largest regular organized market for Montana feeder cattle. The Market Reporter for the United States Department of Agriculture located at Billings, Montana, does in fact, report the gross market prices per hundred-weight from these two markets as the price from one market.

This price information, summarized into an average gross market price for each class of animals for each week from the Billings market report, was procured for the years of 1958, 1959, and 1960, to compare with prices received through the associations. However, there were three principal marketing costs, shrinkage, transportation and selling costs, which were subtracted from the gross market price to obtain the estimated net price at Billings. Likewise, the gross prices received for the cattle sold through the two associations were converted to net prices by subtracting these marketing costs. Comparisons were made between the estimated Billings net price for corresponding dates and classes of animals with the net prices received from cattle sold via the Cascade and Park County Associations.

Information on the shrinkage and transportation costs was not complete so it was necessary to estimate these from secondary data. The shrinkage information used was largely obtained from a study of in-transit shrinkage by Tippetts, Stevens, Brotherton and Abel. ^{32/} Supporting evidence was drawn from a Thesis by Purnell and a research report by Winn. ^{33/} The estimates of transportation costs were based

^{32/} Neff Tippetts, Ira M. Stevens, C. B. Brotherton and Harold Abel, In-Transit Shrinkage of Cattle, Wyoming Agricultural Experiment Station, Mimeograph Circular Number 78, Laramie, Wyoming, pp. 92-97.

^{33/} Glen R. Purnell, Economic Analysis of Cattle Shrinkage, Master's Thesis, Department of Agricultural Economics and Rural Sociology, Montana State College, Bozeman, Montana, 1953, pp. 29-33, 36-52; & J. Hugh Winn, Preconditioning of Feeder Calves and Its Effect on Shrinkage, Montana Agricultural Experiment Station, Research Report Number 13, Bozeman, Montana, May, 1960, p. 7.

almost completely on the work of Menzie. ^{34/} Both the shrinkage and transportation costs were determined on the basis of the distances from the ranch loading chutes to the locations where the transactions occurred. An average distance for the four situations was used for this purpose. For example, all of the Park County Association sales were determined on an average of 22 miles from the ranch and 130 miles if the cattle had been transported to the Billings market. Similarly, the Cascade County Association sale was an average of 30 miles from the ranch and 230 miles if the cattle had been shipped to the Billings market. Selling costs were obtained directly from the associations and the Billings auction market. The auction market was selected since its selling charges were not much different than the Billings terminal's commission charges. Statistical tests were made to determine the significance of the differences in the net prices received from the two methods.

Tests were also conducted to determine if there was an association between net prices and the number of animals sold per transaction in the 1959 Park County Association marketing operation. Two regression equations were constructed to determine the association of price and number sold for steer calves and yearling steers in Park County. Both of these statistical tests discussed are used in Chapter II.

^{34/} Elmer L. Menzie, Unpublished data, Asst. Professor in Agricultural Economics, Department of Agricultural Economics and Rural Sociology, Montana State College, 1961, Bozeman, Montana.

Knowledge about the operations of the five associations was obtained from interviews with Extension personnel and others who have worked with or studied the associations. Much data was also obtained from the annual reports in several of the countries where the Extension Agent was involved.

Limitations.--There are three principal limitations to the procedure used in this study. First, the generalizations which can be drawn from the analysis of the net prices received are quite limited. This study does not attempt to compare the prices received by producers selling individually direct with the prices received through an association of producers selling direct. Since direct marketing is the main method of marketing used in Montana, this latter comparison of prices would be more adequate as an aide for Montana producers in deciding whether they can benefit from a marketing association. Second, the Billings market prices used in the comparison of prices are not adequate for specific price comparisons. ^{35/} The prices used are simply a rough average of the price range rather than a weighted average. Third, the data used in this study does not cover a sufficiently long period to allow accurate long-run predictions. This study is a description of what has happened in several counties of Montana over a few short years.

^{35/} There is reason to believe that the number of good to choice feeder cattle sold through regular organized markets may be relatively fewer than the number sold direct. The Billings market average prices used during periods of slack receipts may, therefore, be unreliable as a basis for comparison.

CHAPTER II

ANALYSIS OF NET MARKET PRICES RECEIVED FROM THREE MARKETING METHODS

Montana feeder cattle producers must decide how to market their product most efficiently. The producers who ranch in the Central Montana counties of Park and Cascade have a peculiar decision to assess in this respect. These producers, who number approximately 1,000, have the normal alternatives of marketing their cattle through the local auction, terminal or by individual direct marketing in addition to their producer-organized direct marketing associations. Producers must make their decision on the basis of prices received and costs of marketing.

Costs of marketing which include shrinkage, transportation and selling, have amounted to as much as 20 percent of the gross price received for feeder cattle and calves. ^{1/} It must be remembered, however, that prices received through different marketing channels may be more important than costs.

Shrinkage Cost

Shrinkage is the most important marketing cost for feeder cattle producers. Information with respect to shrinkage of feeder cattle and calves is relatively scarce and inadequate. For example, one investigation revealed an inverse relationship between distance shipped and shrinkage. The author was conscious of this paradox resulting from lack of reliable data. ^{2/} An investigation with considerably more data did

^{1/} Glen R. Purnell, op. cit., p. 84.

^{2/} Ibid., p. 37.

conclude that calves shrink more than older cattle. 3/ Unweaned calves shrink the most. Also time in-transit was concluded as the major factor influencing shrinkage. 4/ The first hour in-transit was associated with nearly 50 percent of all of the shrinkage on yearlings which occurred during six hours in-transit. 5/ The yearling steer and heifer shrinkage rates were determined mainly from the above sources cited. In general the calf shrinkages were estimated from the same data and checked against data from a study by Winn. 6/ Shrinkage rates, with distance in-transit as the only variable, reveal more than one-half of the shrink occurring in the first few miles for calves and slightly less than this for yearlings. (See Table I).

3/ Op. Cit., Neff Tippetts, and et. al., p. 19.

4/ Ibid., p. 29.

5/ Ibid., Table 9, p. 27.

6/ J. Hugh Winn, op. cit., p. 7.

TABLE I. SHRINKAGE RATES PER HEAD FOR STEER AND HEIFER CALVES, AND YEARLING STEERS AND HEIFERS AT SELECTED MILES IN-TRANSIT.*

| Method of Marketing | Distance In-Transit (miles) | Steer ^{a/} Calves | Heifer ^{a/} Calves | Yearling Steers | Yearling Heifers |
|---------------------|-----------------------------|----------------------------|-----------------------------|-----------------|------------------|
| | | % | % | % | % |
| 1. Direct | 22 ^{b/} | 3.25 | 3.20 | 1.80 | 1.75 |
| 2. Direct | 30 ^{c/} | 3.70 | 3.65 | 3.20 | 3.15 |
| 3. Billings | 130 ^{d/} | 5.20 | 5.10 | 3.76 | 3.70 |
| 4. Billings | 230 ^{e/} | 6.00 | 5.90 | 4.80 | 4.70 |

* Source: Compiled and estimated from the data of: Glen R. Purnell, op. cit., p. 87; Neff Tippetts and et. al., pp. 19, 27 and 29; and J. Hugh Winn, op. cit., p. 7. These shrinkage rates are for feeder cattle and calves moving out-of-first hands (e.g., transported from original native range by the producer to the first transfer of ownership destination) under the generally prevailing conditions of Central Montana. These percentages will vary a great deal but are assumed to be accurate averages.

a/ Calves not preconditioned.

b/ Park County Ranchers Marketing Association members are on the average 22 miles from the closest railhead. Interview with the association representative, May 25, 1961.

c/ Foothills Livestock Association members are on the average 30 miles from the closest railhead. Interview with the association representative, May 27, 1961.

d/ The average distance to the Billings Livestock Market (Billings Terminal and Auction Markets) from Park County, Montana. Both of the markets are AMS reported as an integrated single market.

e/ The average distance to the Billings Livestock Market from Cascade County, Montana.

Older cattle have lower shrinkage costs per hundred-weight than do calves. For example, a yearling weighing 750 pounds, sold for \$24.00 per hundred-weight and at 1.8 percent shrink would have a cost of 77 cents per hundred-weight. A 425-pound calf at \$24.00 and at 3.25 percent would cost 88 cents per hundred-weight for shrink. (See Appendix I, Tables A through L for the shrinkage cost per hundred-weight for Foot-

hills Livestock Association, 1958, Foothills Livestock Association, 1960, and Park County Ranchers Marketing Association, 1959, respectively.)

Transportation Cost

The costs of transportation per hundred-weight were estimated from the number of animals loaded for a given length of truck box and indicated truck rates. (See Tables II and III.) According to the indicated rates and recommended numbers of animals for each size of truck the larger trucks are able to haul capacity loads at a lower cost per animal than the smaller trucks. (Appendix II, Tables A,B,C,D,E,F, and G show the cost of transportation per head with varying truck sizes, mileages, and weight of animals.)

Selling Cost

Actual selling costs include commission or representative's fee and insurance, yardage, and feed when applicable. These costs were obtained for the producer selling through an association or selling at the Billings market. The brand inspection charge, normally 10 cents per head, was excluded as it is the same for all producers except those few selling to someone who will keep them in the original county and not let the cattle cross the county line. A significant difference in selling cost per head is readily apparent for the three methods of selling observed in Table IV. The Park County Ranchers Marketing Association cost per head was less than one tenth of the cost for the Foothills Livestock Association. Likewise the Foothills Livestock Association's

TABLE II. HIRED TRUCK COSTS PER LENGTH OF BOX AT SELECTED DISTANCES IN-TRANSIT.*

| Type of Sale | Distance In-transit (miles) | Length of Truck Box (Feet) | | | | | | | | | |
|--------------|-----------------------------|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 16 | 18 | 28 | 30 | 32 | 34 | 36 | 38 | 39 | 40 |
| 1. Direct | 20-25 | \$11.50 | \$13.40 | \$21.80 | \$23.45 | \$25.20 | \$26.85 | \$28.50 | \$30.30 | \$31.20 | \$32.30 |
| 2. Direct | 30-35 | 14.40 | 16.50 | 27.00 | 28.90 | 31.00 | 33.00 | 35.10 | 36.90 | 38.40 | 39.60 |
| 3. Billings | 130-135 | 43.80 | 49.30 | 76.70 | 82.15 | 87.60 | 93.10 | 98.60 | 104.10 | 106.80 | 109.50 |
| 4. Billings | 230-235 | 70.10 | 78.90 | 122.70 | 131.00 | 140.00 | 149.00 | 157.80 | 166.50 | 170.90 | 175.30 |

* Source: Elmer L. Menzie, op. cit. Note: These rates may vary as much as 25%.

TABLE III. THE NUMBER OF HEAD OF FEEDER CATTLE AND CALVES WHICH CAN BE TRANSPORTED SAFELY WITH DIFFERENT LENGTHS OF TRUCK BOX.*

| Size of Animal (pounds) | Length of Truck Box in Feet (7'x10" width) | | | | | | | | | |
|-------------------------|--|----|----|----|----|----|----|----|----|----|
| | 16 | 18 | 28 | 30 | 32 | 34 | 36 | 38 | 39 | 40 |
| 375-424 | 18 | 21 | 36 | 39 | 42 | 45 | 48 | 51 | 53 | 55 |
| 424-474 | 17 | 20 | 34 | 37 | 40 | 43 | 45 | 48 | 48 | 52 |
| 475-549 | 17 | 20 | 34 | 37 | 39 | 41 | 44 | 46 | 48 | 50 |
| 550-649 | 16 | 19 | 29 | 31 | 33 | 35 | 37 | 39 | 40 | 42 |
| 650-749 | 14 | 16 | 25 | 27 | 28 | 30 | 32 | 33 | 34 | 36 |
| 750-849 | 12 | 14 | 22 | 24 | 25 | 27 | 28 | 30 | 31 | 32 |
| 850-1050 | 10 | 12 | 19 | 20 | 22 | 23 | 24 | 26 | 27 | 28 |

* Source: Livestock Conservative, Inc., "Suggested Number of Animals to Haul Safely," and interview with Mr. Todd, State Brand Inspector, Bozeman Auction, Bozeman, Montana.

cost per head was only about 75 percent of that charged at the Billings market.

TABLE IV. TOTAL SELLING COST PER HEAD BY WEIGHT AND METHOD OF SELLING IN 1959 AND 1960.

| Method of Selling | Weight of Animal (pounds) | |
|---|---------------------------|----------|
| | 0-399 | over 450 |
| Park County Ranchers Mktg. Assn. | \$.15 | \$.15 |
| Foothills Livestock Assn. ^{a/} | 1.65 | 1.65 |
| Billings Market | 2.30 | 2.75 |

a/ The 1958 selling cost was \$1.60 per head for all animals.

The conversion of the selling cost per head into per hundred-weight units was accomplished by a simple division of per head cost by average weight of the animals in the transaction. (Tables A, B, C, D, and E in Appendix III show the selling cost per hundred-weight for the Foothills Livestock Association, 1958, and 1960, and Park County Ranchers Marketing Association, 1959, and the Billings Livestock Commission Company for cattle under 399 pounds and for cattle 400 pounds and over respectively.)

The Net Price Spread

The null hypothesis that the marketing associations have no significant effect in increasing net prices received from the sale of cattle over that received when sold through an organized livestock market was tested.

Net market prices as used in this study are those which the producer realizes after shrinkage, transportation and selling costs are subtracted from the original gross prices. (Data used in determining the marketing costs are in the tables in Appendices I through III.) For example, 31

head of steer calves sold through the Foothills Livestock Association in 1960 averaged 433.9 pounds at a gross price of \$26.00. The transaction was made October 7 at \$.96, \$.18 and \$0.40 per hundred-weight for skrinkage, transportation and selling costs respectively. The resulting net price was \$26.00 minus \$1.54 or \$24.46 per hundred-weight. The estimated net price for the same package of steer calves sold on the same date at the Billings market was \$24.30 minus \$2.91 (total marketing cost) or \$21.39 per hundred-weight. The remaining 38 association net prices, and Billings net market prices were determined in the same manner. Likewise the association and Billings net market prices were determined for the heifer calf, yearling steer, and yearling heifer transactions. Similarly the Billings market and association net prices were computed for the Foothills Livestock Association operations in 1958 and for the Park County Ranchers Marketing Association operations in 1961.

The net market price spread or difference in the above transaction was \$24.46 minus \$21.39 or \$3.07. The spread is a positive difference which represents an association net price greater than the Billings net price. Repetition of the above process resulted in a series of 39 net price spreads or differences for the Cascade County Association marketings of steer calves in 1960. A statistical test of the significance of this spread was conducted. 7/ The hypothesis was rejected meaning that the

7/ The test used was: $t = \frac{\bar{D}-0}{S_m}$ where $S_m = \frac{S}{\sqrt{N}}$ and $S = \sqrt{\frac{\sum D^2}{N} - \frac{(\sum D)^2}{N^2}}$

the producer received a greater net price if he sold his steer calves via the Foothills Livestock Association in 1960 rather than through an organized cattle market. Similarly the net price spread was significant and indicated a greater net price for the heifer calves, yearling steers and yearling heifers if sold via the association rather than an organized public market. (Appendix IV, Table B shows the results).

The association operations in 1958 were not as overwhelmingly favorable. The seven transactions involving yearling heifers did not produce a net price spread significantly different from zero. The statistical test reveals no significant difference between the net prices at the .05 level of significance. The yearling steers, steer calves and heifer calves on the other hand had a significant price spread such that the grower maximized his returns by selling through the association rather than an organized market. (See Appendix IV, Table A for the results of the T-test employed). The Park County Ranchers Marketing Association's members also realized a significant difference in the net price spread for the steer and heifer calves, the yearling and two-year old steers and the yearling heifers. (Appendix IV, Table C likewise shows the statistical procedure, etc., for Park County Ranchers Marketing Association, 1959).

General Characteristics of the Transactions

The Foothills Livestock Association in 1958 functioned in a generally favorable market climate. The association average gross price per hundred-weight for steer calves was \$31.20 while the Billings gross price was \$29.75. The total of the averages for shrinkage, transportation and sell-

ing costs was \$1.80 and \$3.60 per hundred-weight for the Association and Billings market respectively. An average of 21.9 steer calves at 430.8 pounds was sold per transaction. Of the 69 transactions involving steer calves, 68 percent were contracted two or more weeks before the date of delivery. (Contracted sales are preferred by many producers because they can be more certain about the market. Fluctuations in price are theoretically of no consequence as the price and date of delivery are legally set. Often during declining feeder cattle prices the security envisioned by the producer does not develop. Due to fluctuations in price the customary deposit of 5 to 10 percent of the expected gross receipts is not sufficient to bind the buyer to the contract, thus leaving the producer with the lower priced cattle and no buyer.) In the fall of 1958 the price maintained an upward trend and contracts were honored. One half of the transactions involving 1,510 head of steer calves were consummated by October 17. The average association price for the 1,266 head of heifer calves sold in 1958 was \$2.35 below that received for steer calves. The estimated Billings average gross price was \$27.19 or \$1.64 below that of the average association sale. The average yearling steer transaction contrived by the association representative involved only 19.1 head. In contrast to the calves, the majority of the yearling deals were completed by October 2, but only 40 percent were contracted. The yearling heifers sold by the association representative averaged \$24.09 or about \$2.90 below that of the yearling steers. This price was only about \$1.00 more than the average Billings gross price. (The various averages for the Foothills

Livestock Association in 1958 are encompassed in Appendix V, Table A.)^{8/}

Generally the gross prices were considerably lower for the Foothills Livestock Association in 1960 than in 1958. Also the number of cattle sold through the representative in 1960 declined about 20 percent from the quantity sold in 1958. Generally, however, the other characteristics of the association sales in 1960 were not appreciably different from those in the prior year. (Appendix V, Table B shows the characteristics for 1960 Foothills Livestock Association operations.)^{9/}

The Park County Ranchers Marketing Association in 1959 appeared to be quite successful in marketing its members' cattle. The 3,322 steer calves sold ranged from 234 to 11 head per transaction with an average of 49.6. The gross prices ranged from \$37.36 to \$23.93 with \$31.73 as the average price. The estimated Billings gross price averaged \$25.41 and these prices ranged from \$11.95 to \$.43 less than the respective association gross prices. This difference was due mainly to the prices received by some producers who had contracted early in the summer. An average of 45.7 head of heifers were sold per transaction at an average weight of 20 pounds less than the 441.9 pound average of the steer calves. The heifer calf prices averaged \$2.50 per hundred-weight less than the \$31.73 average gross price for the steer calves.

^{8/} Complete data from which the averages, T-test, etc., were drawn and were available on only 3,547 out of 3,811 head of yearlings and calves sold in 1958.

^{9/} Complete data from which the averages, etc., were drawn were available on only 2,864 head out of a total of 3,005 head sold in 1960.

Of the 9,168 head of good to choice cattle sold via the association in 1959, 26 percent were yearling and two-year old steers. The average number sold per transaction was 35.3 head at an average weight of 735.3 pounds. About one-third of the yearling and two-year-old transactions were characterized by a two percent pencil shrink which the association representative administered so as to equalize the shrinkage cost between buyer and producer, thus some yearling deals were on a pay-weight basis which was less than the scale-weight. 10/

Also a portion of the yearling heifers were on a pay-weight basis. The average weight was 609.6 pounds. Association marketed heifers averaged \$24.89 which was about \$4.00 higher than the average for the estimated Billings price. (Appendix V, Table C shows the various averages for the Park County Ranchers Marketing Association.)

What price does the producer with a small number of cattle receive relative to the producer with around 100 head? The following null hypothesis was tested to answer this question. The number of animals sold per transaction is associated with the net price spread or difference between the estimated Billings net price and the association net price. A statistical test of the net price spread from 1959 Park County Ranchers Marketing Association data was computed. (Appendix VI, Tables A and B shows the procedure used, formulas and the results.) The data from both the steer calves and the yearling steers sold through the association in

10/ For this study pay-weight is the scale-weight minus pencil shrink or the net pounds upon which the price per hundred-weight is applied.

1959 revealed no association between number of animals sold and net price spread.

The Effect of a Decrease in the Marketing Margin

The effect which a decrease in the marketing margin may have on the prices which the feeder cattle producer receives and the cattle feeder pays is important in this study of marketing associations. The following is a graphic analysis of this relationship between the producers and the consumers (the feedlot operators who feed the cattle to slaughter weights) of feeder cattle. (See Figure I.) There are three assumptions which are involved in this analysis of the separated producers' and consumers' markets. First, it is assumed that there was a marketing margin of \$6.00 per hundred-weight between the prices which the producers received and the consumers paid for feeder cattle. (The price paid by the consumers of

PART 1. Cattle Producers-Producers' Market

PART 2. Cattle Feeders-Consumers' Market

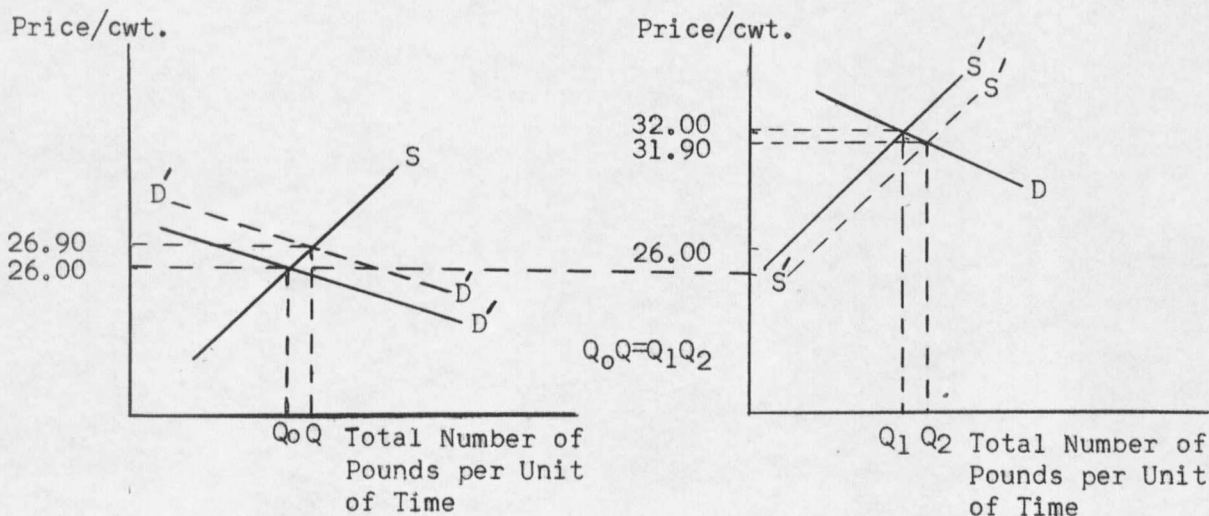


Figure I. Demand and Supply Curves in the Producers' and Consumers' Markets for Feeder Cattle Before and After a Decrease in the Marketing Margin.

feeder cattle was \$32.00 per hundred-weight, as shown in Part 2 of Fig. I; the price received by producers of feeder cattle was \$26.00 per hundred-weight as shown in Part 1 of Figure I.) Second, it is assumed that the supply curve S (in Part 1) is a primary supply curve since it represents the final or real supply of the feeder cattle and the demand curve D (in Part 2) is a primary demand curve since it represents the final or real demand for feeder cattle. The other demand and supply curves may be called derived supply and demand curves. The demand in the producers' market is derived from the demand in the consumers' market. In other words, the prices which consumers (or their financiers) are willing to pay for various quantities of feeder cattle less the marketing margins charged (shrinkage, transportation and selling costs) determines the demand in the producers' market; thus demand curve D' is derived from the primary demand curve D in the consumers' market. The supply in the consumers market is similarly derived from the supply in the producers' market. The quantities which producers are willing to produce at various prices of feeder cattle less the marketing margins charged (shrinkage, transportation and selling costs) determines the supply in the consumers' market; thus supply curve S' is derived from the primary supply curve S in the producers' market. The third assumption is that the demand curves for feeder cattle in both the producers' and consumers' markets are relatively more elastic than the supply curves in the two markets. Over a one to two-year short-run period the aggregate of the feeder cattle producers could only slightly increase their production in response to an increase in price. Thus the supply curve is quite inelastic since only

small adjustments in production relative to price changes are possible. On the other hand the consumers' of feeder cattle in the aggregate could simply refuse to buy cattle at any price even in a short one or two-year period. In general, if feeders or their financiers decide that buying cattle at a certain price and feeding them to a slaughter weight would not even minimize losses for the feeding enterprise, they would not purchase feeder cattle. Some households will, however, continue to demand beef even at very high prices so there will be some demand for feeder cattle by cattle feeders. (In this static analysis the marketing margin is assumed to be a constant function relative to changes in quantity produced; thus the slopes of the derived curves are the same as the slopes of the primary curves and are linear.)

What then is the effect on the two markets if there is a reduction in the \$6.00 marketing margin to \$5.00 per hundred-weight? The new derived demand curve in the producers' market, $D' D'$, moves upward and to the right until the number of head become $Q_0 Q$ which is equal to $Q_1 Q_2$ in the consumers' market. Since the new demand curve $D' D'$ is also relatively elastic in comparison with the supply curve S , in the short-run the producers would obtain \$.90 of the \$1.00 per hundred-weight reduction in the marketing margin. Conversely only \$.10 of the \$1.00 per hundred-weight reduction in the marketing margins for feeder cattle will be left for the cattle feeders. The point of equilibrium in these two separated markets is then determined by price and number of heads. In this case, the equilibrium existed where \$.90 plus \$.10 equaled \$1.00 (the change in the marketing margin) and simultaneously, $Q_0 Q$ equaled $Q_1 Q_2$. Generally the

change in the cost of an old marketing service such as those related to purchasing cattle (as opposed to a new one such as packaging or freezing edible products, etc.) will change the price to both consumers and producers in relation to the elasticities of the supply and demand curves. ^{11/} (In contemporary situations at least, neither the cattle producers nor the cattle feeders have much control over the supply and demand for feeder cattle.)

It seems probable that producers who now sell direct through one of Montana's marketing associations rather than through an organized market also have a reduced marketing margin. Economic theory indicates that the producers of feeder cattle who are members of one of these marketing associations, may benefit more from the reduced margin than will the consumers of feeder cattle (cattle feeders). However, if the slopes of the supply and demand curves are the same the producers and consumers will each receive one-half of the decrease in the marketing margin.

Net Prices Received

Costs of marketing are one of the factors which determines the significance of the net prices received by producers. Obviously, the method of marketing selected affects these costs. For instance, producers selling direct through an association have a lower selling cost than do producers who sell through a market. However, even the pro-

^{11/} Warren C. Waite, and Harry C. Trelogan, Agricultural Market Prices, Second Edition, John Wiley and Sons, Inc., New York, 1951, pp. 205-209.

ducers who sell direct from their ranches, nearly always have transportation and shrinkage costs. (Table V shows the effect of different methods of marketing on costs of marketing.) The greater the shrinkage, transportation, and selling costs, the larger must be the gross price to yield an equal net price of \$20.00 per hundred-weight.

Shrinkage is the most important marketing cost for most producers. A producer who markets direct independent of an association has an estimated shrinkage cost of \$.67 per hundred-weight (\$20.67 less \$20.00, Table B) versus only \$.16 per hundred-weight for transportation. His total marketing cost is only \$.83 per hundred-weight. A Cascade County Association member has an estimated average shrinkage cost of \$.80 per hundred-weight versus \$.57 in cash costs which includes transportation and the representatives fee. His total marketing costs are \$1.37 per hundred-weight, which is about 65 percent more than the non-member paid for his marketing costs. There will only be an estimated one cent per hundred-weight difference in the marketing costs paid by the Cascade County Association member and the producer who sells at an auction market twenty-five miles from his ranch (assuming a three percent shrink in the latter case). If a six percent shrink is assumed and the market is 230 miles away, shrinkage cost will be \$1.28 per hundred-weight and cash costs \$1.54. Total marketing costs will be 240 percent more than the \$.86 per hundred-weight paid by the producer who sold direct through the Park County Association (assuming a 3.25 percent shrink and twenty miles to the point of transaction).

TABLE V. GROSS PRICES NECESSARY TO YIELD AN EQUAL NET PRICE OF \$20.00 PER HUNDRED-WEIGHT FROM A 425 POUND FEEDER CALF WITH SELECTED ALTERNATIVE METHODS OF MARKETING.

| Sales Channel | Shrinkage Rate % | Distance to the Location of the Transaction (miles) | Cash Costs /cwt. <u>a/</u> (dols.) | Asking Price /cwt. plus shrinkages <u>b/</u> (dols.) | Prices Necessary to yield an equal net price/cwt. <u>c/</u> (dols.) |
|-----------------------|---------------------|--|---------------------------------------|---|--|
| Billings Market | 6 | 230 <u>d/</u> | 1.54 | 21.28 | 22.82 |
| | 5 | 130 <u>e/</u> | 1.16 | 21.05 | 22.21 |
| | 4 | 50 | .88 | 20.83 | 21.71 |
| | 3 | 25 | .76 | 20.62 | 21.38 |
| Direct Marketing: | | | | | |
| Cascade County Assn. | 3.7 | 30 | .57 | 20.80 | 21.37 |
| Park County Assn. | 3.25 | 20 | .19 | 20.67 | 20.86 |
| Individual Non-member | 3.25 | 20 | .16 | 20.67 | 20.83 |

* Source: Estimated from Appendix I, Tables A and I; Appendix V, Tables A and C; and Western Livestock Marketing Research Committee, Livestock Marketing Handbook, Livestock Market News Service, Agricultural Marketing Service cooperating, Denver, Colorado, 1958, p. 35.

a/ Cash costs/cwt. include: transportation, commission, yardage and feed costs (where applicable) per cwt.

b/ Figured from an asking price of \$20.00/cwt. with the respective shrinkages in the Table from the Livestock Marketing Handbook, p. 35.

c/ Gross prices necessary to yield an equal net price/cwt. of \$20.00/cwt. were derived by adding cash costs/cwt. to the asking price/cwt. plus shrinkage.

d/ The average distance from Cascade County to Billings.

e/ The average distance from Park County to Billings.

In 1958 there was a difference of \$1.44 between the average gross prices per hundred-weight received from steer calves when sold through the Cascade County Association and when sold through the Billings market (see Table VI). There was a \$3.25 difference between the average net prices per hundred-weight received when the above two sales channels were compared in 1958. In 1959 the differences between the Park County Ranchers Marketing Association's average prices and the Billings market prices were even greater. The difference in the average gross prices per hundred-weight for the two sales channels was \$6.32. The differences in the average net prices per hundred-weight was \$7.72 in 1959. In 1960 the difference between the Cascade County Association's average gross price per hundred-weight and the estimated gross price received when the calves were sold through the Billings market was \$2.22. ^{12/} The difference in the average net prices per hundred-weight was \$3.71 in 1960.

^{12/} A price advantage was realized by some Colorado producers who individually sold direct in 1957 rather than through a regular organized market. The net price spread ranged from \$3.28 to \$.02 per hundred-weight with an average spread of about \$2.00. Yearling steers, two-year-old steers, yearling heifers and calves totaling 4,334 head were involved in price comparisons similar to the analysis used in this thesis. See: Donald F. Jones, North Park Country Market Report, Colorado Agricultural Experiment Station, General series 691, Fort Collins, Colorado, December 1958, p. 8.

TABLE VI. AVERAGE NET PRICES PER HUNDRED-WEIGHT RECEIVED FROM STEER CALVES WHEN SOLD DIRECT VIA AN ASSOCIATION AND WHEN SOLD THROUGH THE BILLINGS MARKET IN 1958, 1959 and 1960. *

| Sales Channel | Year | Average Total Marketing Costs/cwt. <u>a/</u> (dols.) | Average Gross Prices/cwt. <u>b/</u> (dols.) | Average Net Prices/cwt. <u>c/</u> (dols.) |
|----------------------|------|---|--|--|
| Cascade County Assn. | 1958 | 1.79 | 31.19 | 29.40 |
| Billings Market | | 3.60 | 29.75 | 26.15 |
| Park County Assn. | 1959 | 1.26 | 31.73 | 30.47 |
| Billings Market | | 2.66 | 25.41 | 22.75 |
| Cascade County Assn. | 1960 | 3.04 | 21.93 | 22.60 |
| Billings Market | | 3.04 | 21.93 | 18.89 |

* Source: Appendix V, Tables A, B, and C.

a/ Average total marketing costs/cwt. include average shrinkage, average transportation and average selling costs/cwt.

b/ The average gross prices/cwt. for the Billings market are estimates of the prices which would have been received had the cattle been sold through the Billings market. The association prices are actual prices which producers received in 1958, 1959, and 1960.

c/ Average net price/cwt. equals average gross price/cwt. less average total marketing cost/cwt.

CHAPTER III

OPERATION OF THE ASSOCIATIONS AND THE ATTITUDES OF PRODUCERS

The Operation of the Park County Ranchers Marketing Association

The older of the two associations analyzed in the previous chapter is the Park County Ranchers Marketing Association. Feeder cattle producers in Park County were encouraged in their efforts to organize a marketing association by E. P. Orcutt, Extension Livestock Specialist, Park County Farm Bureau and the Livingston Chamber of Commerce. The Park County Ranchers Marketing Association was, as a result, organized in 1954 as a Montana corporation for ranchers. 1/ Guidance and advice for the cattlemen was provided by the County Extension Agent, Mr. Lenix Badger. At the request of the members, Mr. Badger was granted a leave of absence without pay by the County Commissioners and the Extension Service to act as the associations hired manager in the fall of 1954. During the first six years of operation the county agent was employed by the Association for a two-month period each year; more recently however, he has been employed for six months of each year. 2/ A five-man board of directors is elected annually consisting of a president, vice-president, secretary-treasurer and two other members.

The above described organization has had three main objectives as follows: (1) increase net returns for Park County feeder lamb and cattle producers, (2) promote the production of quality Park County Livestock,
1/ Vaughan, op. cit., p. 5.

2/ Lenix Badger and Thomas N. Glennie, Annual Report of the County Extension Agent, Park County, 1960, Cooperative Extension Work in Agriculture and Home Economics, Montana State College and the United States Department of Agriculture, Livingston, Montana, 1960, p. 23.

(3) eventually obtain a premium for the feeder cattle. 3/

The Association has two methods in its program to attain the objectives. The first is the advertising program consisting of an annual catalog printed by the association, miscellaneous advertising in stockmen's journals and a Midwest tour. The catalog describes the approximate number of head of each class, breed and grade available with the producer's name and address. In addition, the approximate sale date of each offering and the manager's telephone number and address are included. Two thousand such catalogs were printed in 1954 listing 4,677 cattle and 362 sheep for 93 producer-members. In the first year of operation, classified ads were placed in 48 publications generally read by feedlot operators in the Midwest and West. As a result of these ads, 276 inquiries were received by the Association manager from potential buyers in 18 different states. In recent years the manager has toured several Midwestern states to maintain the interest of the buyers and to learn how each lot of cattle performed in the feedlot.

The actual selling procedure is the second method in the Association's program to attain its goals. The manager is the principal agent in the Park County Association selling procedure. He functions as the hired middleman of the producer-members and the cattle buyers. The typical selling procedure occurs in the following manner: The prospective buyer makes his contact with the producer of the desired lot or lots of cattle through the manager. The buyer and seller express their ideas on price to the manager. The weighing conditions and expenses accepted by both

parties are generally the same for all cattle sold by the manager; thus 3/ Lenix Badger, Annual Report of the County Extension Agent, Park County, 1954, Cooperative Extension Work in Agriculture and Home Economics, Montana State College and U.S. Dept. of Agriculture, Livingston, Mont., 1954, p. 9.

when the price, approximate average weight, number of head, breed, class, grade, and delivery date are accepted the transaction is completed. If the transaction is a contract for delivery in several weeks, a 10 percent down-payment with the balance on delivery is generally required. In many cases the buyer consummates the deal with the manager during a phone conversation from his home in the Midwest. The producer has the responsibility of delivering the cattle to the closest railhead. Meanwhile, the manager may have other cattle for delivery at the same railhead on the same date, and has ordered a sufficient number of railroad cars. Weighing conditions, for that portion of the yearling and two-year-old cattle deemed necessary for equitable sharing of shrink by seller and buyer, are on two percent pencil shrink. The manager has the responsibility of weighing, grading, loading, billing and shipping the cattle.

The purchasing services and the other services listed above, performed by the manager, are charged to the buyer at \$35.00 per carload. In a number of instances the manager of the Association is granted the responsibility of composing bank drafts for the absent buyer equal to the amount of money due the seller. Such an arrangement demands that the manager be bonded. The brand inspection fee of \$.10 per head is paid by the seller. Any health certification fees required are paid by the manager in behalf of the buyer. The membership responsibilities in financing the advertising program and the Association manager were moderate in the first several years of operation. Producers who paid the membership fee of \$1.00 were charged \$.15 per head for cattle and \$.03 per head for lambs listed in the

catalog. Non-member producers could sell feeder cattle through the association at a charge of \$.50 per head.

In 1960, steps were taken to increase membership responsibility in the financial affairs of the Association. Beginning with 1960, the manager was on the Extension Service payroll with another agent only six months. During the other six months of the year, he is free to conduct the marketing transactions of the Association. As a result of the additional manager expense the membership agreed to raise the assessment on feeders advertised in the catalog to \$.75 per head for calves and \$1.00 per head for yearlings and two-year-olds. Persons not members of the Association and therefore with cattle not advertised in the catalog are assessed at double this rate. ^{4/}

A Recap of the Prices Received

A recapitulation of the price analysis in Chapter II and the association prices for 1960 may be of some value in summarizing the benefits accruing to Park County Ranchers Marketing Association members. The producers who had their feeders sold through the Association manager in 1959 realized a greater net return than did the producers who sold through an organized public market. The average gross prices per hundred-weight received in 1959 for steer calves, heifer calves, yearling heifers and yearling and two-year-old steers sold via the Association were \$33.57, \$31.06, \$25.79, and \$27.32 respectively. The range in gross prices per hundred-weight for the various classes of cattle sold in 1960 via the Park County

^{4/} Lenix Badger and Thomas N. Glennie, op. cit., p. 23.

Ranchers Marketing Association are significantly lower than the prices of the previous year. (See Table VII for the gross prices received in 1960 by association members.)

TABLE VII. THE GROSS PRICES RECEIVED FOR VARIOUS CLASSES OF FEEDER CATTLE SOLD VIA THE PARK COUNTY RANCHERS MARKETING ASSOCIATION IN 1960. *

| Class of Feeder Cattle | Gross Price Range (dollars per hundred-weight) |
|--------------------------------------|---|
| Angus Steer Calves | \$27.00 - \$28.50 |
| Angus Heifer Calves | 24.00 - 25.50 |
| Hereford and Shorthorn Steer Calves | 25.00 - 28.00 |
| mode | 26.00 |
| Hereford and Shorthorn Heifer Calves | 22.00 - 24.00 |
| mode | 24.00 |
| Yearling Steers | 22.00 - 25.00 |
| mode | 23.00 - 24.00 |
| Two-Year-Old Steers | 21.00 - 21.50 |
| Yearling Heifers | 23.00 - 24.00 |

* Source: Lenix Badger and Thomas N. Glennie, Annual Report of the County Extension Agent, Park County, 1960, Cooperation Extension Work in Agriculture and Home Economics, Montana State College and United States Department of Agriculture, Livingston, Montana, 1960, p. 24.

The shipments of cattle handled by the Association's manager in 1960 were purchased by people from seven different Midwestern states. Buyers from three of the seven states purchased 8,662 of the 10,145 head sold through the manager. (See Table VIII for the breakdown by state of destination for the shipments from the Park County Ranchers Marketing Association in 1960.)

TABLE VIII. NUMBER OF FEEDER CATTLE SHIPPED IN 1960 FROM THE PARK COUNTY RANCHERS MARKETING ASSOCIATION BY STATE OF DESTINATION. *

| State of Destination | Number of Head |
|----------------------|----------------|
| Iowa | 3,896 |
| Minnesota | 3,160 |
| Wisconsin | 1,606 |
| Illinois | 782 |
| Nebraska | 280 |
| Michigan | 247 |
| Indiana | 174 |
| Total | 10,145 |

* Source: Lenix Badger and Thomas N. Glennie, Annual Report of the County Extension Agent, Park County, 1960, Cooperative Extension Work in Agriculture and Home Economics, Montana State College and United States Department of Agriculture, Livingston, Montana, 1960, p. 24.

Actions and Attitudes In Park County

The marketing actions and attitudes of both member and non-member producers are quite important in determining the success and size of any marketing association. A survey of producer attitudes and actions related to where, when, why and how to market revealed a number of facts. 5/ (See Appendix X for the questionnaire.)

5/ The Park County survey results were obtained from a random sample of 12 non-members. The sample was drawn from the 1959 tax assessment books containing about 300 producers who did not belong to the association in that year, and were within the same size range of cattle operations as the size range of members of the Park County Association. Similarly, a sample of seven members who sold cattle through the Association in 1959 was drawn randomly from the 1959 Park County Ranchers Marketing Association catalog. The catalog contained 114 members - 100 of whom sold through the Association in 1959. The survey was taken in June of 1960.

Only one of the 12 non-members did not sell some of his feeders through the Bozeman auction or one of the Billings markets. A total of 400 yearlings and calves were sold through the organized markets while only 275 head were sold direct and independent of an association. Only two of these seven direct transactions were made with cattle feeders and none of them involved a contract. Eight of the 12 non-members interviewed felt they were not as well informed about marketing as an auction or Association representative. Only four of the seven Association members sold feeders at the Billings markets and Bozeman auction. These four organized market sales involved only 44 head of calves and yearlings while the seven direct sales involved 434 head of calves. All but one of the direct sales handled by the Park County Association manager involved cattle feeders. The other transaction involved a cattle buyer. Three of the seven deals were committed by contracts before the delivery date. Six of the seven Association members felt that they were not as well informed about marketing as an auction or Association representative.

When the seven Association members were asked if they thought a group of ranchers organized to sell feeder cattle had an advantage over the producer selling as an individual, two replied in the negative, two felt that there should be an advantage, and three replied in the affirmative. The opinions which non-members in Park County had relative to the question, however, were the reverse of their actions. Of the 12 non-members, only four felt there was no advantage in a group marketing

effort, one felt there should be an advantage and seven felt there was an advantage. The majority of the non-members sampled in Park County felt there was an advantage in a group marketing effort. Upon examination of the reasons why two of the Association members felt negatively inclined to group selling, an aversion to pooling cattle became evident. The two producer-members both claimed that it was impossible to pool the cattle of different producers. Varying quality of the cattle, different range grazing conditions and the resulting variation in shrinkages were the main reasons cited by the producers. The seven producers who were non-members felt there was an advantage in such an association but were not members of the Park County Association for reasons not ascertained.

Finally a series of three questions was asked to determine if the producer based his decision of when to market on a traditional (non-variable) sale date each year or the time when the calves and/or yearlings were of the same weight as the previous year's crop or when the price was highest or a combination of factors. Ten of the 12 non-members responded to the questions adequate enough to allow summarization. Three producers considered feed and weather conditions and expected market supply and demand as factors. Two of the 10 non-members considered only feed and weather conditions, while five based their decisions on when to sell their feeder cattle on a traditional (non-variable) date. One of these five producers said that he sold his hundred head of yearlings when ever he could get around to marketing them.

Three of the five responding Association members determined their marketing date by using factors such as expected market supply and demand, feed conditions and the weight of the feeder cattle under consideration. One of the other member-producers, however, used the traditional (non-variable) sale date as the basis for deciding when to market. The remaining individuals felt that the buyers determine when the cattle are to be sold.

The Operation of the Foothills Livestock Association
of Cascade County

The organization of the Foothills Livestock Association of Cascade County was designed principally after the Park County Association. Originally a group of six feeder cattle producers approached Mr. Ted Fosse, Cascade County Agent, Mr. Paul Orcutt, Extension Livestock Specialist and several farm organizations for help in selecting a procedure to organize a marketing association. ^{6/} As a result, the Association was organized on October 30, 1956, in a manner similar to the Park County Association. The actual marketing activities of the Association did not commence until the following summer. During the six-month interval, important deliberations took place. The board of directors met with representatives of local banking concerns and the Park County Ranchers Marketing Association to make a study of livestock marketing. By early

^{6/} Thrasher, William, "History of the Foothills Livestock Association of Cascade County," unpublished Secretary-Treasurer's report, Foothills Livestock Association of Cascade County, Stockett, Montana, 1959.

summer: the board had selected an Association sales representative and a marketing procedure had been accepted.

The following objectives of the Foothills Livestock Association of Cascade County were adopted: (1) to promote cooperation between livestock producers in the county so that the livestock interests of members might be advanced; (2) to advertise all of the Association members' cattle so that more buyers might know about all of the lots available; and (3) to encourage the production of quality cattle so that all members will have a more powerful bargaining position. ^{7/}

The Cascade County Association originally hired a local cattle buyer as its sales representative. Orders were secured through inquiries received from the advertising of Association cattle in publications read by feedlot operators. An Association catalog, which contained essentially the same information as that found in the Park County Association catalog, was sent free upon request to interested feeders. The remaining portion of the original marketing procedure however, was quite different from the method employed by the Park County Association. Any purchasing or contracting activities were on an individual basis between the buyer and seller. The sales representative did receive \$35.00 per car to cover the sorting, receiving, weighing and loading services provided for the buyer. Approximately 3,600 head of cattle were handled in this manner in 1957.

^{7/} Ibid.

Although the Association's objectives remained unchanged, the marketing procedure in 1958 was considerably altered. A new sales representative was hired who functioned essentially in the same manner as the Park County Association's manager. The representative acts as the middleman and actually does the purchasing. (A copy of the contract used frequently is in Appendix VIII). He has the authority to compose bank drafts in behalf of the buyer. In addition, he also tours the Midwest to see his buyers. The Cascade County Association sales representative since 1958, however, has dealt with shrinkage in a manner different from that described previously under the functions of the Park County Association manager. All cattle including yearlings are priced under full scale-weight conditions.

A less effective marketing procedure in the Cascade County Association compared to Park County seems to be due to the lesser experience of the Cascade County Association representative. The Park County Ranchers Marketing Association manager has more experience with shrinkage and transportation problems. In addition, the Foothills Livestock Association of Cascade County had not had a bonded representative. The vigor of the younger Association, however, may have partially overcome the inexperience handicap in marketing effectiveness. For example, at the invitation of the officers of the Cascade County Association, 19 members of a Minnesota county feeders association toured the county visiting several ranches, a cattle feeding operation and the Great Falls auction market during a three-day August visit. ^{8/} Several of the visiting feeders planned on buying

^{8/} Great Falls Tribune, August 21, 1961, p. 7.

feeder cattle as a result of the tour. Another result of the vigorous interest of members is the publication of the Foothills Livestock Bulletin which generally contains economic reports of vital interest to stockmen, a report by the sales representative of the Association, an advertisement column, and other services such as information pertaining to the Association's business. Reports from a group of members interested in big game and wild fowl have been in the publication also.

The membership of the Foothills Livestock Association of Cascade County represents producers with a wide range between the largest and smallest sizes of producing units. Furthermore, this disparity in size appears to be increasing. For example in 1958, 53 percent of the members listed less than 61 head in the Association catalog. The remaining 47 percent had from 61 to 250 head listed. (See Table IX.) By 1960, only about 48 percent of the members had fewer than 61 head listed in the catalog. More than 52 percent listed from 61 to 375 head.

TABLE IX: THE SIZES OF LOTS OF FEEDER CATTLE LISTED BY MEMBERS IN THE FOOTHILLS LIVESTOCK ASSOCIATION'S CATALOGS IN 1958 AND 1960. *

| The Number of Head in Selected Sizes of Lots of Feeder Cattle | Number of Producers by Sizes of Lots | |
|--|---|------|
| | 1958 | 1960 |
| 5 - 10 | 2 | 2 |
| 11 - 20 | 5 | 6 |
| 21 - 30 | 5 | 9 |
| 31 - 40 | 10 | 10 |
| 41 - 50 | 9 | 8 |
| 51 - 60 | 4 | 9 |
| 61 - 70 | 6 | 7 |
| 71 - 80 | 6 | 7 |
| 81 - 90 | 3 | 10 |
| 91 - 100 | 1 | 5 |
| 101 - 140 | 5 | 7 |
| 141 - a/ | 10 | 11 |
| Total number of producers | 66 | 91 |

* Source: The 1958 and 1960 catalogs published by the Foothills Livestock Association of Cascade County.

a/ No. head listed 1958--141 to 250; 1960--141 to 375.

The financing of the marketing operations and advertising and educational programs of the Foothills Livestock Association since 1958 have developed in a manner peculiar to that organization. Members were charged \$1.60 per head for cattle sold through the association up to 1959. Since that year the members have been assessed \$1.75 per head. The additional \$.15 are paid to the sales representative who pays the brand inspector fee of \$.10 per head for each producer and keeps the rest. The remainder is divided so that \$.35 per head sold is used to operate the association's programs and \$1.25 per head is the sales representatives commission for the marketing services performed. The \$1.60 fee assessed before 1959 was also divided in this manner. Non-members since 1959 have been charged a total of \$2.25 per head for feeder cattle and calves which the representative markets for them.

The expenses and income of an organization which has a variety of publications and diverse interests, including a large marketing program, are rather extensive. In 1958 the total expenses, including the sales representative's commission, amounted to \$5,688.87 while in 1959, expenses including brand inspection fees and the representative's commission were \$5,471.32. Incomes in 1958 and 1959 amounted to \$6,477.10 and \$5,831.05 respectively. (A more complete breakdown of incomes and expenses in these two years are found in Table X.)

TABLE X. EXPENSES AND INCOMES IN 1958 and 1959 FOR THE FOOTHILLS LIVESTOCK ASSOCIATION OF CASCADE COUNTY. *

| Expenses | 1959 | 1958 |
|---|---------------------|-------------------|
| Advertising | \$425.00 | \$303.05 |
| Printing: | | |
| Envelopes and Stationery | \$ 45.00 | No |
| Catalogs | 171.40 | fig- |
| Weight Slips, Contracts, etc. | 92.40 | ures |
| Signs for the Wildlife Committee | 55.00 | obtain- |
| | <u>\$363.80</u> | <u>able</u> |
| | | \$233.90 |
| All Printing Costs | 363.80 | 233.90 |
| Postage | 81.98 | 103.47 |
| Telephone (less the sales representative's share) | 218.29 | 336.68 |
| Office Supplies | 14.20 | 32.73 |
| Flowers | 15.00 | 0.00 |
| Semi-annual Meeting | 9.80 | 12.00 |
| Feeder Tour | 75.00 | 0.00 |
| Miscellaneous Publications | 20.00 | 0.00 |
| Bank Service Charges | 4.25 | 8.44 |
| Refunds on Commissions | 5.05 | 8.60 |
| Brand Inspection Fees | 385.20 | 0.00 |
| Total ₁ | \$1,617.57 | \$1,038.87 |
| Sales Representative's Commission | | 3,800 head |
| @ \$1.25/head | 3,083 head 3,853.75 | 4,650.00 |
| Total ₂ | \$5,471.32 | \$5,688.87 |
| Outstanding checks carried over from 1958 | -260.74 | 0.00 |
| TOTAL EXPENSES | <u>\$5,732.06</u> | <u>\$5,688.87</u> |
| <hr/> | | |
| Income | | |
| <hr/> | | |
| Association's share of the commissions | | |
| @ \$.35/head | \$1,079.05 | \$1,358.00 |
| Representative's share of the commissions | | |
| @ \$1.25/head | 3,853.75 | 4,650.00 |
| Brand Inspection Fee | 385.20 | 0.00 |
| Memberships @ \$1.00 a/ | 182.00 | 150.00 |
| Miscellaneous Income | 331.05 | 319.10 |
| Total | <u>\$5,831.05</u> | <u>\$6,477.10</u> |
| December 31, 1958 Bank Balance | 788.23 | 0.00 |
| TOTAL INCOME | <u>\$6,619.28</u> | <u>\$6,477.10</u> |
| <hr/> | | |
| Balance | | |
| <hr/> | | |
| Total Income | \$6,619.28 | \$6,477.10 |
| Less Total Expenses | <u>5,732.06</u> | <u>5,688.87</u> |
| BALANCE ON DECEMBER 31 | \$ 887.22 | \$ 788.23 |

TABLE X. (continued)

* Source: Reports from the Association's Secretary-Treasurer.

a/ A considerable number of bank representatives and other interested persons who are not cattle producers have associate memberships. The 1958 membership of 150 members is an estimate by the author.

From the Table, a noteworthy conclusion may be drawn. The Association spent more money on printing, advertising, etc., in 1959 than in 1958 as revealed by total₁ for these two years; however, nearly 800 fewer feeder cattle and calves were sold through the Association in 1959. (See Table X.)

Actions and Attitudes in Cascade County

The same method of surveying producer actions and attitudes as used in Park County was also used in Cascade County. 9/ Nearly all methods of marketing were employed by the 10 non-members interviewed. Of the producers in 1959 who were not members of the Foothills Livestock Association of Cascade County, one shipped 22 calves to a special feeder sale at the Chicago terminal and one, in coordination with four other neighbors, shipped his 17 calves to an Iowa auction market. Eight of the non-members sold lots of cattle at the Great Falls auction market amounting to 145 head. Two of these lots were sold at the annual Montana Angus Association-sponsored sale. Three of the non-members split their lots between two different marketing methods such that 128 calves and yearlings were sold direct by these three producers. Even the producers who were members of the Association in Cascade County sold their cattle utilizing several different marketing methods. Four of the members sold 57 yearlings and calves at the auction market in addition to the eight lots which they

9/ A sample of eight was drawn from the list of 49 producers who sold feeders through the Foothills Livestock Association in 1959. The 10 in the sample of non-members were from a population of about 400 who manage ranches within the same size range of cattle operations as the size range of members.

sold through their own marketing Association. A total of 606 calves and yearlings were sold through the Association. Seven of the eight lots were sold direct to feeders. One of the four members who used the auction method sold one lot of cattle at the sale sponsored by the Angus Association mentioned above.

During 1959 producers faced declining market prices. The real price of feeder calves and yearlings declined about \$10,000 per hundred-weight from a high in early July to a low during the severe early November storm. If producers were able or lucky enough to contract their cattle in July they benefited by receiving a much higher return than the producer who held no contract. Nine of the 12 non-members did not sell direct and were thus not protected against declining prices by contracts. The actual decisions made by those who sold direct when asked whether they had contracted their feeders for purchase were as follows; two of the three non-members, and only three of the eight members contracted in 1959. Out of the total sample of 10 non-members, three were former members of the Foothill's Livestock Association.

Of the 10 non-members, five said there was an advantage in selling as a group rather than as individuals, four felt that it depended upon which way the market price was going and one felt that there definitely was no advantage. The eight members all felt that an advantage was obtained by selling in a group rather than as individuals.

Six of the eight member-producers felt that they were not as well informed as their Association representative, while two of them felt as well informed. Of the 10 non-members, four felt adequately informed,

four felt inadequately informed and two did not know how they rated. One of the producers who was not a member of the Foothills Livestock Association in 1959 felt that he lost some of his bargaining power when selling direct. Only two of the non-members sampled had never sold via the direct method.

Actions and Attitudes in Lewis and Clark County

Producers' actions and attitudes relative to the marketing of feeder calves and yearlings from Lewis and Clark County ranches in 1959 were quite uniform. 10/ All of the six producers had never been members of a marketing association. All of the 327 head of feeder cattle they sold in 1959 were sold direct to cattle buyers and only one of these was a contract sale. Four of the producers from Lewis and Clark County had never sold any cattle through a terminal market. Several of them sold many of their lower quality cattle through an auction. Four of the six producers were of the opinion that there was an advantage in group marketing over individual marketing, one producer thought there might be an advantage and one producer did not reply in a definite manner.

Of the six producers questioned, three did not feel as well informed about marketing as an auction or association representative, one producer felt he was as well informed and two producers did not reply in a definite manner. Three of the producers based their decision of when to sell on

10/ A sample of six producers was drawn from the 1959 Lewis and Clark County Assessment books which contained producers who manage ranches which are within the same size range of cattle operations as those selected in Cascade County.

price, weight of the animals, and season of the year. Finally, two of the remaining three producers based their decision on the time when the cattle moved from the high mountain areas to the more accessible valleys, while one producer stated simply that he sold his feeder cattle about the same time each fall.

A summary of the opinions of Lewis and Clark County producers sampled in 1959 indicates a belief that they could increase their bargaining power. All six of the producers sampled, individually decided and acted so that they could sell their cattle direct. The quite favorable attitudes and actions of these six producers toward group action may be indicative of a desire for a direct marketing association in Lewis and Clark County.

The Operation of the Vigilante Cattlemen

Many important principles for producers interested in organizing direct marketing associations can be obtained by reviewing the instances of success as well as the reasons for failure of the Vigilante Cattlemen. This organization designed in general to promote the direct marketing of feeder calves and yearlings from Madison and Jefferson Counties was organized on March 2, 1954 and incorporated in that same year. The organization's two objectives which embody the promotion of direct marketing are: (1) to advertise Madison and Jefferson County feeder calves and yearlings in the main cattle feeding areas of the country, and (2) to establish direct contact between cattle feeders and cattle producers. These objectives were based upon the following two situations which the membership felt existed: (1) a number of feeders had expressed definite

interest in receiving cattle of one brand which were loaded direct from a ranch; also (2) producers wished to sell their cattle to a feeder who would take the cattle every year and (3) this allowed the producer a better chance to discover how his cattle would gain in the feedlot and thus permitted changes in management to insure the continued satisfaction of the cattle feeder. 11/

The method of operation selected was an individual, decentralized procedure with no one person in authority. Officers and a board of directors were elected. All negotiations were between the producers and buyers directly. The terms of the transaction were between the producers and buyers directly. The terms of the transaction such as price, weighing conditions, shipping conditions, the payment of transportation, and brand and health inspection fees were determined by each individual buyer and member-producer. The original contacts between the prospective buyers and the members were arranged by the secretary of the organization who was the Madison-Jefferson County Extension Agent. As there was no Association representative, the individual member was the only person during the selling procedure representing the Association. No restrictions as to whom or what the members could sell were adopted by the organization.

In contrast to the decentralized selling procedure designed by the members was the rather extensive group advertising program utilized. In the summer of 1954, eight coupon-type advertisements were placed in three different livestock publications read by most cattle feeders. Human in-

11/ Edwin D. Atkins, 1954 Annual Report - Madison-Jefferson Counties, Cooperative Extension Work in Agriculture and Home Economics, Montana State College and the USDA, Whitehall, Montana, p. 12.

terest stories related to the Vigilante Cattlemen were placed in papers throughout the country. Like the other associations discussed previously, the Vigilante Cattlemen also published an annual catalog listing the members' cattle. For this organization which received and handled about 300 letters from cattle feeders in 22 states inquiring about 1,000 car-loads of cattle, the response was overwhelming. 12/

These inquiries which specified the approximate number, weight and breed of animals desired were referred by the association secretary to the members. Reportedly an organizational problem grew from this lack of coordination between the buyers, secretary and the members. For example, in several instances the secretary referred prospective buyers to certain producer-members stating that the producers had cattle to sell. Because these members had not previously informed the secretary that they had sold all of their cattle, the association began to be viewed as unreliable. As there were 62 Vigilante Cattlemen members in the fall of 1954 who wanted to sell over 30,000 head of feeder calves and yearlings the financial importance of a well coordinated procedure would have been worth a great deal. In spite of the lack of coordination, approximately one-third of the members sold cattle through the contacts made via the Vigilante Cattlemen's secretary. Several of the members who sold independently to local buyers felt that the Vigilante Cattlemen had helped them obtain a better price because they were in a better position to bargain. 13/

12/ Ibid, p. 12.

13/ Ibid, p. 12.

The financial plan designed to pay for the organization's large advertising program was based upon a \$.20 per breeding cow assessment. Vigilante Cattlemen spent about \$4,500.00 on advertising the first year. After 1954 members were charged \$.20 per head on cattle sold through the organization. Apparently, membership and numbers of cattle listed in the catalog declined every year after the initial year of 1954. By 1957, the advertising program was down to a budget of approximately \$500.00. Since that year, the organization has not been functioning in any substantial manner.

Reasons for Failure and Instances of Success

The main weakness of the Vigilante Cattlemen's organization is traceable to the almost complete lack of a centralized authority. Consequently, an uncertainty existed in the organizational procedure which was probably very distasteful to the buyers; thus few of them were willing to seek cattle, no matter how desirable, that might not exist. In several instances, some of the producers with very large operations developed direct marketing contacts through the large Vigilante Cattlemen's advertising program and then dropped out of the organization. Why should they continue supporting an advertising program which no longer benefited the big producer who had already established a secure market for his product? Lack of membership loyalty was not the basic problem; rather it was the lack of a proper organizational structure.

Finally, some reports stated that the average-sized operators felt that the big producers received more of the organization's benefits than were equitable. In addition, they felt that the big producers dominated

the organization. This kind of attitude, regardless of its validity, did decrease the stability and life span of the organization.

Not all of the results of the Vigilante Cattlemen's organization were negative. First of all, several producers did benefit financially from the operation of the organization even though it operated only a short time. 14/ And finally, people who are interested in such producer organizations can learn a great deal about how to organize a direct marketing association.

The Operation of the Meagher County Livestock Association

The Meagher County Livestock Association in 1952 organized a Livestock Publicity Committee which was designed to operate much like the Vigilante Cattlemen's organization. The Association itself was organized in 1939 and was incorporated as a non-profit organization with the more conventional objectives of contemporary associations. Livestock disease and cattle rustling prevention were some of the more important activities. In 1952, the Meagher County Livestock Association started its marketing program with the inception of the Livestock Publicity Committee. The objective of the newly formed committee was to advertise the availability of the livestock in the area. The Committee operated to fulfill this objective from 1952 to 1953 and then ceased functioning for two years. In 1956, 44 ranches from Meagher County and adjoining Wheatland County again cooperated and contributed \$700 to the Livestock Publicity Committee for

14/ Interview with E. Dean Vaughan, Extension Marketing Specialist, Montana State College, August 21, 1961

the purpose of advertising. ^{15/} The Association's Livestock Publicity Committee once more instituted its program of advertising in Midwestern farm publications and annually publishing a booklet listing the cattle available from the ranchers in the two counties. The contributing producers always had the alternatives of selling individually, or having the County Extension Agent act as a middleman. In this role, the Extension Agent was empowered to either write bank drafts in behalf of the buyers or simply receive personal checks for the amount due and present them to the seller upon weighing, grading, loading and billing the shipment. For these services, the Association received \$35.00 per carload from the buyer.

A list of about 2,000 potential cattle buyers was accumulated from the contacts made initially through the advertisements. Two thousand catalogs, which cost about \$100 to have printed and mailed were sent to these buyers annually to provoke interest in the specified lots of cattle available. Mainly due to the lack of a full-time active Association representative the contacts obtained were not always reliable especially during the summer of 1959, when prices dropped drastically. ^{16/} After 1959 the Livestock Publicity Committee became inactive and the Meagher County Livestock Association returned to its pre-1952 activities.

^{15/} T. J. Svaren, 1955, Meagher County Annual Report, Cooperative Extension Work in Agriculture and Home Economics, Montana State College and the United States Department of Agriculture Cooperating, White Sulphur Springs, Montana: By the author, 1955, p. 26.

^{16/} Interview with Herbert Townsend, former Meagher County Extension Agent, August 29, 1961.

The Operation of the Gallatin Beef Producers' Association

The Gallatin County feeder cattle producers felt that their own particular situation called for an approach quite different than that attempted by the others. As a result the Gallatin Beef Producers' Association was organized in April of 1958 with the following objectives: (1) to acquaint cattle feeders with the quality of beef produced in the region, (2) to facilitate the direct selling of feeder calves and yearlings, (3) to promote and sponsor an annual Association sale and (4) to provide an opportunity for cattle producers to learn about the cattle feeding industry. 17/

The members of the Association decided to adopt a marketing program considerably different from that of any of the other associations in order to achieve these objectives. The most important phase of the program is the Annual Reputation Feeder Sale which the Association sponsors in cooperation with the local Bozeman Livestock Auction Company. The members favored an auction sale because neither direct marketing nor shipping to the regular public markets was believed to be advantageous for the producer with a small herd. Consequently, the Association-sponsored auction sale was designed to bring together the many small lots of feeder cattle in the region. The sales since their inception in 1958, have been organized by a sales committee appointed by the Board of Directors of the

17/ Owen S. Wirak, 41st Annual Report of Cooperative Extension Work in Gallatin County, Montana, Cooperative Extension Work in Agriculture and Home Economics, Montana State College and the United States Department of Agriculture Cooperating, Bozeman, Montana: By the author, 1960, p. 33.

Gallatin Beef Producers' Association. The board of directors and the sales committee, with the assistance of the auctioneer sort and package the lots of cattle consigned.

As the cooperating agency, the auction also provided the Association with several special concessions. They provide their regular services such as feed, water and an auctioneer. Over and above these services, the auction company helps finance the advertising costs of the sale, assists in getting consignments for the sale and contacts specific buyers, urging their attendance at the sale. 18/

Both members and non-members in the region are eligible to sell their feeder calves and yearlings at the annual sale. Producers from Gallatin County may become members when they pay \$2.00 in annual dues. Producers who do not live in Gallatin County or interested persons who are not cattle producers may become associate members of the Gallatin Beef Producers Association at annual dues of \$5.00. The latter type of member is not eligible for office and cannot vote on Association affairs. All producers from the region regardless of their affiliation, however, are eligible to market cattle at the Association-sponsored sale at no increased assessment. 19/ Many producers, who were not members, sold their cattle at the annual sales and paid the same auction market charges as the members and associate members. At the second annual Association-

18/ E. Dean Vaughan, Beef Cattle Marketing Associations, Montana Cooperative Extension Work in Agriculture and Home Economics, United States Department of Agriculture and Montana State College, Circular 273, Bozeman, Montana, April, 1959, p. 8.

19/ Interview with Gallatin County Extension Agent, August 29, 1961.

sponsored sale in 1959 only 28 of the 110 producers were members. Among the consignors to the sale were 20 producers from Park, Broadwater, Madison and Jefferson Counties - none of whom were associate members of the Gallatin Beef Producers Association in 1959. 20/ All 110 producers had to pay the regular Bozeman auction market charges of \$2.60 per head for cattle under 400 pounds and \$3.10 per head for cattle 400 pounds and over. All consignments to the sale are sold in the same order in which they are received except for non-member consignments which are sold last. It is possible that there might be some management decision made such that the delayed selling procedure confronting non-members would be of no significance if it is, in fact, significant at all.

Benefits

The impact of the organization and growth of the above described marketing association can be observed in several situations. First of all, the quality of the feeder calves and yearlings consigned for the sale has improved as a result of dehorning. At the initial sale in 1958 there were 11 lots of cattle which were not dehorned. In 1960 however, there was only one lot of cattle not dehorned in the consignments received from 119 producers from Gallatin, Park, Madison, Sweet Grass and Jefferson Counties. Secondly, the number of cattle buyers at the Third Annual Reputation Feeder Sale, October 19, 1960 was considerably greater than the number who attended the previous sales. There were 27 buyers from Montana, Idaho, Illinois, Wisconsin, Michigan and Iowa at the 1960 Association-

20/ Interview with the Gallatin County Extension Agent, September 20, 1960.

sponsored sale. One of the principal reasons attributed to the greater number of buyers was the presence of several buyers (cattle feeders) from Carrol County, Illinois. These feeders, who were interested in buying cattle, were present at the sale as a result of having been guests of the Gallatin Beef Producers' Association in early October. In all, a total of 24 Carrol County, Illinois cattle feeders and an agricultural advisor were guests in Gallatin County in 1960 as part of the Gallatin County Association's program of cooperation between groups of cattlemen. Undoubtedly the addition of these feeders to the regular group of buyers, helped to make a better market for the cattle sold at the October, 1960, sale. (See Table XI for the prices received.)

TABLE XI. THE PRICE RANGE PER HUNDRED-WEIGHT RECEIVED FOR FOUR CLASSES OF FEEDER CATTLE BY CONSIGNORS AT THE THIRD ANNUAL REPUTATION FEEDER SALE. *

| Class of Feeder Cattle | Price Range (\$/cwt.) |
|------------------------|-----------------------|
| All Steer Calves | \$24.00 to \$28.00 |
| Mode | 25.75 to 27.00 |
| All Heifer Calves | 22.50 to 24.00 |
| Mode | 23.00 to 23.50 |
| All Yearling Steers | 21.50 to 23.00 |
| All Yearling Heifers | 21.20 to 22.30 |

* Source: Owen S. Wirak, 41st Annual Report of Cooperative Extension Work in Gallatin County, Montana, Cooperation Extension Work in Agriculture and Home Economics, Montana State College and the United States Department of Agriculture, Bozeman, Montana, 1960, p. 33.

Not all of the efforts of the Gallatin Beef Producers' Association have been fruitful, however. Since the 1958 sale, efforts have been made to have all producers planning to sell through Association-sponsored sale pay in advance a fee of \$1.00 per head for all cattle consigned. Only

upon the sale of the animals at the Association sale would the fee be refunded. This effort has not been successful up to the present time.

In conclusion it seems probable that the Gallatin Beef Producer's Association, which is in the process of becoming a corporate body this fall (1961), has fulfilled its main purpose of promoting cooperation among cattlemen. The feeder cattle producers in the region served by the Gallatin Beef Producers' Association now have more contacts with cattle feeders. Increased popularity of the sales indicates that the activities of the organization have probably been successful.

A Recommendation

The problem of spreading the costs of advertising the auction sale equitably among the producers could become serious. The 1960 financial statement of the association reveals that all but \$27.25 of the total 1960 expenses were spent on advertising, (i.e., \$11.25 plus \$16.00 versus \$170.53; see Table XII).

TABLE XII. THE GALLATIN BEEF PRODUCERS' ASSOCIATION'S 1960 FINANCIAL STATEMENT. *

| | | |
|-------------------------------|--------------|---------------|
| Income: | | |
| 64 memberships @ \$2.00 | | \$128.00 |
| Sale of Brand Books | | 75.00 |
| Bozeman Livestock Auction Co. | | <u>150.00</u> |
| Total a/ | | \$353.00 |
| Expenses: | | |
| Postage - annual meeting | | 11.25 |
| Bowling team - sponsor | | 16.00 |
| Carrol County Feeder's Tour | | |
| Pictures | \$21.00 | |
| Meal | <u>30.26</u> | |
| | \$51.27 | |
| Total | | 51.26 |

TABLE XII. (continued)

Expenses: (continued)

| | |
|--|--------------|
| Letter to feeders (re: sponsored sale) | 32.63 |
| Advertisements in publications | <u>86.64</u> |
| Total | \$197.78 |

Balance:

| | |
|--------------------------------|---------------|
| Total 1960 Income | \$353.00 |
| Less Total 1960 Expenses | <u>197.78</u> |
| Total Balance on Dec. 31, 1960 | \$155.22 |

* Source: Gallatin County Extension Office, September 15, 1961.

a/ The total real income for 1960 is somewhat less than \$353.00 because some of the members have prepaid their annual membership fees for as many as three years in advance. The estimated income from the sale of brand books is, therefore, greater than actual because of the inclusion of these prepaid fees in this item of income.

The Association in 1960 received \$150 from the cooperating auction company for purposes of advertising. This was not sufficient to cover all of the Association's expense of advertising which amounted to \$170.53. It is evident that the non-members who sold through the sponsored sale did not help make up the difference between the amount received from the auction company and that amount actually expended by the Association in advertising. In 1960 this difference was only \$20.53 whereas it was probably more in 1959 when only 25 percent of the producers who sold through the Association were members.

This inequity between members and non-members in financing the Association's operations may introduce some instability and reduce the effectiveness of the organization. The Association could induce a plan whereby all producers who sold through the sponsored-sale would pay \$3.15

per head rather than \$3.10, etc. (At the regular Bozeman Livestock Auction Company sales producers pay \$3.10 per head for cattle 400 pounds and over and \$2.60 per head for cattle up to 400 pounds.) The extra five cents received for each head of cattle sold could be matched by an additional five cents per head by the auction thus leaving the auction with \$3.05 and \$2.55 as commissions for cattle of 400 pounds and over and under 400 pounds respectively. The total of 10 cents per head could be used to run the Association's programs. A minimal \$1.00 membership fee could be sufficient to handle most of the bank service charges, audit fees and other expenses related directly to an incorporated association.

Actions and Attitudes in Gallatin County

The actions and attitudes of producers who operate in Gallatin County were surveyed in 1960. 21/ As 20 producers from counties other than Gallatin also used the Association sale, a sample previously discussed may be reviewed. (Attitudes from Park County producers (15 of the above 20 were from Park County) who sold independent of an association in 1959 can be obtained by referring to the first par of this Chapter.)

Producers who sold cattle at the Association sale in 1959 and those who did not were generally quite similar in all of their actions and attitudes. For example, all but one of the 13 producers sold all of their

21/ The sample of eight producers, both members and non-members who sold through the 1949 Association sale were taken from a population of 110. The five producers sampled who sold their cattle independent of an association in 1959 were drawn from 670 producers in Gallatin County.

cattle through the Bozeman auction market either at a regular sale or obviously at the Association-sponsored one. The one exception was a producer who sold his total crop of 20 calves direct. Two of the producers who sold cattle at the sale sponsored by the Association also sold cattle on a regular market day at the Bozeman auction. Eleven of the 13 felt that there was an advantage in group selling, whereas only one producer who sold independently and one of the Association members replied in the negative. (The latter producer was a member of the organization principally to maintain good relationships and not because he thought there was an advantage.) Although a considerable majority of the producers felt less well informed about marketing than an auction or association representative, the only four (three of whom were members) who did feel as well informed were producers who sold through the Association's sale in 1959. During their years as producers only three of the 13 had never had experience in direct marketing.

Summary and the Ranking of Marketing Methods

The actions and attitudes of producers from Park, Cascade, Lewis and Clark and Gallatin Counties discussed above, are herein summarized in two groups. Producers who did not sell through a marketing association comprise one group. Producers who did sell through one of the three associations comprise the second group. Of the 33 producers in the first group, 25 sold 639 head through an organized market. More than one-half (i.e. 17 of 33) of the producers sold 750 cattle direct. Only three of

the 17 selling direct made advance contracts and only two of the 17 producers sold direct to cattle feeders. In the second group, 15 out of a total of 23 producers sold 1,040 head direct. Eight producers (who sold through the Gallatin County Association) sold 407 head via the auction method. Another eight producers sold 101 head through an organized market after they had culled their lots of cattle for direct sale through an association. One-half (i.e. 6 of 15) of the direct transactions were contracted by association members in 1959. About three-fourths (i.e. 13 of 15) of the sales were direct to cattle feeders.

Generally, more producers in the second group than in the first group considered both price and weight as the bases for determining when to market. Fifty-nine percent (14) of the producers sampled who sold through an association considered price and weight as the principal bases. Seven (31 percent) of those in this second group considered only feed conditions, weight and a non-variable date as their principal bases. Two out of the second group of 23 producers did not state their bases for determining when to sell. Of the producers who did not sell through an association, 17 (51 percent) considered price and weight as the principal bases for determining when to market their feeders. Fourteen of the 33 producers (42 percent) considered only feed conditions, weight and a non-variable date as their principal bases for determining when to market; whereas two producers did not state their bases.

About 70 percent of the producers selling through an association or

producer-organized auction sale felt that they were not as well informed as their respective representatives. The other 30 percent felt that they were as well informed. Only 61 percent of the producers who did not sell through an association felt that they were not as well informed as an association or auction representative. About 27 percent (9) felt as well informed. Four producers did not know how they rated in this comparison.

Finally, 87 percent of the producers who were affiliated with an association felt that there was or should be an advantage in group marketing. Three producers in this group felt that there was no advantage. About 67 percent of the producers not affiliated with an association felt there was or should be an advantage in group marketing. Six producers who had not sold via an association felt there was no advantage; while four producers believed that it depended upon market conditions.

Opinions of these same producers relative to direct, auction and terminal marketing were also obtained. The majority of the producers who responded felt that direct marketing was the superior method of marketing. More specifically, when producers were asked to rank direct, auction and terminal markets for seven selected characteristics, five of the seven characteristics were believed to be best achieved through the direct marketing method. (See Appendix VII for the ranking of marketing methods for selected marketing characteristics.) The characteristics of lowest selling and transportation, least shrink, highest price, most convenient

method and greatest premium for quality were believed best achieved through direct marketing. 22/ (i.e., in Appendix VII, where the marketing method employed is direct, the number of times these above characteristics were ranked first out of seven times were 7, 7, 7, 7 and 6 respectively.) Auction marketing was second and terminal marketing was ranked as the least most desirable method of marketing. The two characteristics which most producers felt were best achieved by auction marketing rather than direct marketing were most bids received and best way to sell cutbacks. None of the seven characteristics were believed to be best obtained via terminals.

An evaluation of the rankings, when they are summarized not by characteristics but by member and non-member producer groups, reveal no definite difference between the groups. Members in the sample of the Park County Ranchers Marketing Association, for example, felt that five of the characteristics were best obtained by direct marketing, while the non-members interviewed in Park County felt that there were six best obtained by direct marketing. In Cascade County, however, the situation was just the reverse. Five characteristics were believed by the non-members sampled to be best obtained by direct marketing; while the members of the Foothills

22/ Individual producers ranked each of the characteristics 1-first, 2-second, and 3-third best obtainable through the three methods of marketing. The ranking discussed in the text was obtained from this individual ranking by determining the marketing method which had the largest number of 1's, 2's and 3's for each of the 7 characteristics.

Livestock Association of Cascade County felt six were best obtained by direct marketing.

Conclusions on the Operations of the Associations

The Park County Ranchers Marketing Association is generally considered to be the most successful of the direct marketing associations. In the year of 1959, when most producers in Montana received considerably less per hundred-weight than they did in 1958, about one-half of the Park County Association members had contracts which assured them of obtaining about the same price as they had received in the previous year. The prices which they received in 1959 were significantly greater than the prices they would have received by selling at a market in that year. The confidence of potential of buyers in the Association's manager is probably the greatest asset of the Park County group.

The Foothills Livestock Association of Cascade County uses a market procedure essentially the same as the one employed in Park County. Tests indicate that the prices which these members received in 1958 and 1960, excluding the prices received for the yearling heifers sold in 1958, were significantly greater than the prices which would have been received if they had been sold via a market.

The principal deficiency inherent in the marketing operations in Madison and Jefferson Counties and Meagher and Wheatland Counties was the lack of an association representative to act in an adequate manner for all members. It also appears that the large difference between sizes of the feeder cattle operations represented in the Vigilante Cattlemen organization

was a disintegrating force.

As there is no economic force strengthening the membership of the Gallatin Beef Producers' Association, it may become less effective in providing bargaining power for producers. The Association, however, seems to have been beneficial in providing a better market than would have been available had there not been a sponsored sale in 1960.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

General Considerations for Marketing Associations

Each of the four direct marketing associations, as they have been observed in Montana, have unique characteristics. Each association's marketing program is designed to meet the needs of producers as determined by the organization's members.

It has been noted that there are three basic requirements which should be inherent in all successful direct marketing associations. Foremost of these requirements is a highly qualified, bonded association representative or manager. The second requirement is that the association have a loyal and aggressive membership. The third basic requirement is an adequate educational & advertising program.

The specific functions deemed necessary for the first of the three basic requirements are rigorous and extensive in nature. The highly qualified association representative should understand; (1) the seasonal and annual movements of cattle prices, (2) the function of prices in the market, (3) cattle population cycles and cattle movements, and (4) the marketing procedures employed by other agricultural marketing organizations including marketing agreements, etc. In addition to knowledge about marketing, there are certain skills which a representative should have. These are; (1) an ability to work aggressively, imaginatively and effectively with the group of producers involved, (2) an ability to sort and grade feeder cattle according to the United States Department of Agriculture grading standards, (3) an understanding of shrinkage and how and

when it occurs, (4) an understanding of accounting and sales procedures so that he may handle the accounts of both the association and the buyers, and (5) an ability to communicate effectively with both the buyers and the sellers as the marketing season progresses.

Selecting and training people who will become competent representatives for a group of cattle producers is probably the greatest task of an association. The necessity of obtaining a representative who understands the requirements for successful group action cannot be over-emphasized.

A loyal and aggressive membership, the second basic requirement, should be effectively involved in the operations of the association. Experience indicates that these characteristics, which lead to an effective involvement, are more likely to appear if the membership has certain features in common. Generally these features should be such that the members tend to have opinions and goals which are quite similar. It is not a necessary condition that the producers have similar sizes of producing units in order to have similar opinions and goals. There are three specific suggestions relative to this membership involvement. First, since a large group of producers does have responsibilities and is subject to law suits, they should become incorporated so that they may limit their liabilities. The positive effect, which allows the association greater powers to act collectively, is also a good reason for incorporating. Second, methods which encourage evaluation of and changes in the association should be part of the organization's structure. Third, all possible methods should be applied so that the members and the association representative may work together closely and in confidence. Weekly discussions

of specific transactions and market conditions would be helpful in more reliably determining the price and proper timing of sales.

The concluding and third basic requirement which should be inherent in all successful direct marketing associations is an adequate educational and advertising program. The educational program should be aimed at the members so that they might regularly gain (1) knowledge about marketing alternatives 1/, (2) knowledge about factors which determine supply and demand of feeder cattle and (3) knowledge about seasonal and cyclical fluctuations in prices and cattle numbers. In addition to knowledge about marketing per se, other basics should be learned such as (1) an appreciation of the developments in other areas of the economy and culture, both national and international and (2) the value of cooperation with other marketing associations, and feeder cattle associations.

The advertising program of the association should attempt to gain and maintain the interest of a number of potential alternative buyers. This program should include more than ads in papers and the publication of a catalog. Annual spring tours through the important feeding areas by the association representative and the exchange of visits with members of feeders' associations should be of prime importance. Members should be encouraged to provide the class and quality of product desired by the

1/ All producers should be aware of the importance of all types of buyers of cattle: Even the speculator active in the cattle market, especially during periods of drought, should not be excluded from the list of cattle feeders, bankers, order buyers, cattle dealers and traders, etc., who are potential buyers. In the final analysis, the competitiveness of the market is measured by all of the potential alternative buyers. Source: Joseph P. McKenna, Aggregate Economic Analysis, The Dryden Press, New York, 1955, p. 134.

buyers. Beef production testing associations are especially commended to producers who see the necessity of producing a quality product. Satisfied customers are the best means of advertising available to the producer.

The Importance of Contracting

Contracting can be an important feature of an association's marketing procedure. The Park County producers, for example, received a large average net price in 1959 mainly because they had contracted. In order to make this a main procedure, an association must offer the classes and qualities of feeder cattle demanded and be able to deliver when the feeder requires them. Since many feeders are commencing to operate on a year-around basis, adjustments in the feeder cattle supply are necessary. Whether Montana feeder cattle producers can and/or will adapt to such an increased year-around demand is not known. Furthermore, additional information is necessary with respect to the economics of shifts in production patterns before a general recommendation may be made as to the desirability of any attempt to adapt to year-around demand.

If marketing associations do evolve and cultivate contracting as a main procedure, they have two principal responsibilities. First, all contracts should be written and legally sound. (See Appendix VIII for an example of a contract as used by one of the associations. Also see Appendix IX for a contract recommended by the Western Extension Farm Management Committee). Second, the down payment or deposit should be at least 15 percent of the contract's value. Many contracts are so worded that if the market price goes down to such an extent that the down payment

does not cover the margin between the contracted price and the lower market price, the buyer is not obligated to take the cattle. A larger down payment and a legally secure contract would lessen the element of risk for the seller. 2/

Possible Benefits from Marketing Associations

The following is a summary of the possible benefits which producers have realized from being aligned with both types of feeder cattle marketing associations. The auction marketing association has employed programs which seem to have been effective in helping the organization attain its goals. For the producers with small herds in the region served, the organization's program of sponsoring a feeder cattle sale at the local auction appeared to be successful, especially in 1960.

The direct marketing association members from Cascade County in 1958 received average net prices of \$31.20, \$27.17, \$25.58 and \$22.89 per hundred-weight for steer calves, heifer calves, yearling and two-year-old steers and yearling heifers respectively. Producers who were members in 1960 received average net prices of \$22.60, \$20.68, \$20.84 and \$18.79 for steer calves, heifer calves, yearling steers and yearling heifers respectively. All of the net prices received from the classes of cattle sold during these two years, except for the yearling heifers sold in 1958, were significantly greater than the prices which would have been received had the cattle been sold via Billings. The Cascade County tour of the Minnesota cattle feeders in 1961 is indicative of the possible benefits from the educational viewpoint.

2/ Stewart H. Fowler, op. cit., pp. 338-339.

The Park County Ranchers Marketing Association members in 1959 received average net prices of \$31.73, \$28.93, \$25.64, and \$24.89 for steer calves, heifer calves, yearling and two-year-old steers, and yearling heifers respectively. In each of the four tests the prices received via the Association were significantly greater than the prices which would have been received had the cattle been sold via the Billings market. In fact, the estimated Billings net market prices ranged from \$11.95 to \$7.43 less than the respective Association net prices. The principal reason for the large price spread was due to the large number of head which were contracted before the July through November drop in prices in that year.

A Recommendation for Future Action

While certain minor changes in organization as suggested above may be sufficient to bring about substantial gains for the members of marketing associations, there are indications that some major organizational changes may be in order. If marketing associations are to be accepted as a means of improving the producers bargaining position, they can be expected to grow both in numbers and in members. In order for them to be accepted and to grow they must be organized for effective and efficient operation. The principal recommendation is that the several associations should operate as a coordinated whole. In order for the coordinated associations to be large enough in the aggregate to affect the supply conditions, considerably more associations would have to be organized. In addition to the highly qualified representatives hired by each association, the coordinated associations probably would benefit by hiring a general

manager. This specialist's responsibility, other than the routine business with the coordinated groups, would be specifically related to market development. He would develop insights into market conditions such that he could inform the association representatives about significant changes in the supply and demand for feeder cattle. The representatives would then be able to inform the association members of the optimum time to contract and the price to expect.

APPENDICES

TABLE A, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR FOOTHILLS PRODUCERS IN 1958. (STEER CALVES)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.7% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 6.0% (dols.) |
|------------------------------|---|------------------------------|---|
| 35.00 | 1.29 | 33.95 | 2.04 |
| 34.50 | 1.28 | 33.85 | 2.03 |
| 34.00 | 1.26 | 33.50 | 2.01 |
| 33.50 | 1.24 | 33.25 | 1.99 |
| 33.00 | 1.22 | | |
| 32.50 | 1.20 | | |
| 32.00 | 1.18 | | |
| 31.08 | 1.15 | | |
| 31.00 | 1.15 | | |

TABLE B, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR FOOTHILLS PRODUCERS IN 1958. (HEIFER CALVES)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.6% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 5.8% (dols.) |
|------------------------------|---|------------------------------|---|
| 32.00 | 1.17 | 31.20 | 1.84 |
| 31.50 | 1.15 | 31.10 | 1.83 |
| 31.34 | 1.14 | 31.00 | 1.83 |
| 31.00 | 1.13 | 30.75 | 1.81 |
| 30.00 | 1.09 | | |
| 29.50 | 1.08 | | |

TABLE C, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR FOOTHILLS PRODUCERS IN 1958. (YEARLING HEIFERS)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.15% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 4.7% (dols.) |
|------------------------------|--|------------------------------|---|
| 33.00 | 1.04 | 26.00 | 1.22 |
| 24.50 | .77 | 25.75 | 1.21 |
| 24.00 | .76 | 24.88 | 1.17 |
| 22.00 | .69 | 24.25 | 1.14 |

TABLE D, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR FOOTHILLS PRODUCERS IN 1958. (YEARLING STEERS)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.2% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 4.8% (dols.) |
|------------------------------|---|------------------------------|---|
| 33.50 | 1.14 | 27.88 | 1.34 |
| 35.00 | 1.12 | 27.75 | 1.32 |
| 34.00 | 1.09 | 27.50 | 1.32 |
| 33.00 | 1.06 | 27.38 | 1.31 |
| 32.46 | 1.03 | 27.35 | 1.31 |
| 32.00 | 1.02 | 27.13 | 1.30 |
| 30.00 | .96 | 25.63 | 1.23 |
| 28.00 | .90 | 25.50 | 1.22 |
| 27.25 | .87 | | |
| 26.50 | .85 | | |
| 26.25 | .84 | | |
| 26.00 | .83 | | |
| 24.50 | .78 | | |
| 23.00 | .74 | | |

TABLE E, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR FOOTHILLS PRODUCERS IN 1960. (STEER CALVES)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.7% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 6.0% (dols.) |
|------------------------------|---|------------------------------|---|
| 28.00 | 1.04 | 25.60 | 1.54 |
| 27.00 | 1.00 | 25.45 | 1.53 |
| 26.00 | .96 | 25.25 | 1.51 |
| 25.91 | .96 | 24.80 | 1.49 |
| 25.50 | .94 | 24.55 | 1.47 |
| 25.36 | .94 | 24.30 | 1.46 |
| 25.00 | .92 | | |
| 24.75 | .92 | | |
| 23.50 | .87 | | |

TABLE F, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR FOOTHILLS PRODUCERS IN 1960. (HEIFER CALVES)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.65% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 5.9% (dols.) |
|------------------------------|--|------------------------------|---|
| 25.00 | .91 | 23.00 | 1.36 |
| 24.00 | .88 | 22.50 | 1.33 |
| 23.00 | .84 | 22.45 | 1.32 |
| 22.50 | .82 | 22.10 | 1.30 |
| 22.00 | .80 | 21.95 | 1.29 |
| 21.55 | .79 | | |
| 21.50 | .78 | | |

TABLE G, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR FOOTHILLS PRODUCERS IN 1960. (YEARLING HEIFERS)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.15% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 4.7% (dols.) |
|------------------------------|--|------------------------------|---|
| 22.00 | .69 | 20.88 | .98 |
| 21.00 | .66 | 20.69 | .97 |
| | | 19.63 | .92 |

TABLE H, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR FOOTHILLS PRODUCERS IN 1960. (YEARLING STEERS)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.2% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 4.8% (dols.) |
|------------------------------|---|------------------------------|---|
| 25.00 | .80 | 23.38 | 1.12 |
| 24.00 | .77 | 23.25 | 1.12 |
| 23.50 | .75 | 22.95 | 1.10 |
| 23.00 | .74 | 21.88 | 1.05 |
| 22.00 | .70 | 21.38 | 1.03 |

TABLE I, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR PARK COUNTY PRODUCERS IN 1959. (STEER CALVES)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.24% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 5.2% (dols.) |
|------------------------------|--|------------------------------|---|
| 40.00 | 1.30 | 30.95 | 1.61 |
| 39.50 | 1.28 | 30.75 | 1.60 |
| 39.00 | 1.27 | 29.70 | 1.54 |
| 38.50 | 1.25 | 29.50 | 1.53 |
| 38.00 | 1.23 | 29.25 | 1.52 |
| 37.50 | 1.22 | 28.90 | 1.50 |
| 37.00 | 1.20 | 28.85 | 1.50 |
| 36.50 | 1.19 | 27.90 | 1.45 |
| 36.00 | 1.17 | 27.05 | 1.41 |
| 35.75 | 1.16 | 25.90 | 1.35 |
| 35.50 | 1.15 | | |
| 35.00 | 1.14 | | |
| 34.50 | 1.12 | | |
| 34.00 | 1.10 | | |
| 33.50 | 1.09 | | |
| 31.00 | 1.01 | | |
| 30.00 | .97 | | |
| 29.50 | .96 | | |
| 29.00 | .94 | | |
| 27.50 | .89 | | |
| 27.00 | .88 | | |
| 26.00 | .85 | | |
| 25.00 | .81 | | |

TABLE J, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR PARK COUNTY PRODUCERS IN 1959. (HEIFER CALVES)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.2% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 5.1% (dols.) |
|------------------------------|---|------------------------------|---|
| 38.00 | 1.22 | 27.25 | 1.39 |
| 37.00 | 1.18 | 26.85 | 1.37 |
| 36.50 | 1.17 | 26.40 | 1.35 |
| 36.00 | 1.15 | 26.15 | 1.33 |
| 35.00 | 1.12 | 25.55 | 1.30 |
| 34.00 | 1.09 | 25.30 | 1.29 |
| 32.50 | 1.04 | 25.25 | 1.29 |
| 31.00 | .99 | 24.50 | 1.25 |
| 28.00 | .90 | 23.85 | 1.22 |
| 27.50 | .88 | 21.90 | 1.12 |
| 27.00 | .86 | | |
| 25.00 | .80 | | |
| 24.00 | .77 | | |
| 23.75 | .76 | | |
| 23.50 | .75 | | |
| 23.00 | .74 | | |
| 22.00 | .70 | | |

TABLE K, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR PARK COUNTY PRODUCERS IN 1959. (YEARLING HEIFERS)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 1.75% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.7% (dols.) |
|------------------------------|--|------------------------------|---|
| 29.00 | .51 | 25.13 | .93 |
| 28.00 | .49 | 25.12 | .93 |
| 27.00 | .47 | 24.62 | .91 |
| 26.46 | .46 | 23.87 | .88 |
| 26.00 | .45 | 22.85 | .84 |
| 25.50 | .45 | 19.95 | .74 |
| 25.00 | .44 | | |
| 24.50 | .43 | | |
| 24.48 | .43 | | |
| 23.00 | .40 | | |
| 22.50 | .39 | | |

TABLE L, APPENDIX I. SHRINKAGE COST PER HUNDRED-WEIGHT AT VARIOUS SHRINKAGES AND PRICE OFFERS FOR PARK COUNTY PRODUCERS IN 1959. (YEARLING STEERS)

| Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 1.8% (dols.) | Price Offer /cwt. (dols.) | Shrinkage Cost /cwt. @ 3.76% (dols.) |
|------------------------------|---|------------------------------|--|
| 37.00 | .67 | 28.75 | 1.08 |
| 31.00 | .56 | 28.50 | 1.07 |
| 30.00 | .54 | 28.00 | 1.05 |
| 29.50 | .53 | 27.75 | 1.04 |
| 29.00 | .52 | 27.63 | 1.04 |
| 28.50 | .51 | 27.00 | 1.01 |
| 28.42 | .51 | 26.60 | 1.00 |
| 28.00 | .50 | 26.13 | .98 |
| 27.50 | .49 | 26.10 | .98 |
| 27.44 | .49 | 26.00 | .98 |
| 27.18 | .49 | 25.98 | .98 |
| 27.00 | .49 | 24.81 | .93 |
| 26.95 | .48 | 24.75 | .93 |
| 26.88 | .48 | 24.31 | .91 |
| 26.75 | .48 | 24.25 | .91 |
| 26.50 | .48 | 23.95 | .90 |
| 26.40 | .47 | 23.83 | .90 |
| 26.25 | .47 | 23.08 | .87 |
| 26.21 | .47 | | |
| 26.00 | .47 | | |
| 25.76 | .46 | | |
| 25.50 | .46 | | |
| 25.49 | .46 | | |
| 25.47 | .46 | | |
| 25.25 | .45 | | |
| 25.00 | .45 | | |
| 24.99 | .45 | | |
| 24.75 | .45 | | |
| 24.74 | .45 | | |
| 24.50 | .44 | | |
| 24.00 | .43 | | |
| 23.25 | .42 | | |
| 23.00 | .41 | | |
| 22.78 | .41 | | |

TABLE A, APPENDIX II. TRANSPORTATION COST PER HEAD FOR FEEDER CATTLE AND CALVES AT VARYING TRUCK SIZES AND DISTANCES IN-TRANSIT. (375 to 424 POUND CATTLE)

| Distance In-transit (Miles) | Number of Head | | | | | | | | | |
|-----------------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 18 | 21 | 36 | 39 | 42 | 45 | 48 | 51 | 53 | 55 |
| | Length of Truck Box (feet) | | | | | | | | | |
| | 16 | 18 | 28 | 30 | 32 | 34 | 36 | 38 | 39 | 40 |
| | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. |
| 20-25 | .64 | .64 | .61 | .60 | .60 | .60 | .59 | .59 | .59 | .59 |
| 30-35 | .80 | .79 | .75 | .74 | .74 | .73 | .73 | .72 | .72 | .72 |
| 130-135 | 2.43 | 2.35 | 2.13 | 2.11 | 2.09 | 2.07 | 2.05 | 2.04 | 2.02 | 1.99 |
| 230-235 | 3.89 | 3.76 | 3.41 | 3.36 | 3.33 | 3.31 | 3.29 | 3.26 | 3.22 | 3.19 |

* Source: See p. 96

TABLE B, APPENDIX II. TRANSPORTATION COST PER HEAD FOR FEEDER CATTLE AND CALVES AT VARYING TRUCK SIZES AND DISTANCES IN-TRANSIT. (425 TO 474 POUND CATTLE)

| Distance In-transit (Miles) | Number of Head | | | | | | | | | |
|-----------------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 17 | 20 | 34 | 37 | 40 | 43 | 45 | 48 | 50 | 52 |
| | Length of Truck Box (feet) | | | | | | | | | |
| | 16 | 18 | 28 | 30 | 32 | 34 | 36 | 38 | 39 | 40 |
| | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. |
| 20-25 | .68 | .67 | .64 | .64 | .63 | .63 | .63 | .63 | .62 | .62 |
| 30-35 | .85 | .82 | .79 | .78 | .77 | .77 | .77 | .77 | .77 | .76 |
| 130-135 | 2.58 | 2.46 | 2.26 | 2.22 | 2.19 | 2.16 | 2.16 | 2.16 | 2.14 | 2.11 |
| 230-235 | 4.12 | 3.94 | 3.61 | 3.54 | 3.50 | 3.46 | 3.46 | 3.46 | 3.42 | 3.37 |

* Source: See p. 96

TABLE C, APPENDIX II. TRANSPORTATION COST PER HEAD FOR FEEDER CATTLE AND CALVES AT VARYING TRUCK SIZES AND DISTANCES IN-TRANSIT. (475 to 549 POUND CATTLE)

| Distance In-transit (Miles) | Number of Head | | | | | | | | | |
|-----------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 17 | 20 | 34 | 37 | 39 | 41 | 44 | 46 | 48 | 50 |
| | Length of Truck Box (feet) | | | | | | | | | |
| | 16 | 18 | 28 | 30 | 32 | 34 | 36 | 38 | 39 | 40 |
| | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. |
| 20-25 | .68 | .67 | .64 | .64 | .64 | .64 | .63 | .63 | .63 | .63 |
| 30-35 | .85 | .82 | .79 | .78 | .78 | .78 | .77 | .77 | .77 | .77 |
| 130-135 | 2.58 | 2.46 | 2.26 | 2.25 | 2.25 | 2.24 | 2.24 | 2.22 | 2.22 | 2.19 |
| 230-235 | 4.12 | 3.94 | 3.63 | 3.62 | 3.62 | 3.61 | 3.59 | 3.58 | 3.56 | 3.51 |

* Source: See p. 96.

TABLE D, APPENDIX II. TRANSPORTATION COST PER HEAD FOR FEEDER CATTLE AND CALVES AT VARYING TRUCK SIZES AND DISTANCES IN-TRANSIT. (550 to 649 POUND CATTLE)

| Distance In-transit (Miles) | Number of Head | | | | | | | | | |
|-----------------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 16 | 19 | 29 | 31 | 33 | 35 | 37 | 39 | 40 | 42 |
| | Length of Truck Box (feet) | | | | | | | | | |
| | 16 | 18 | 28 | 30 | 32 | 34 | 36 | 38 | 39 | 40 |
| | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. |
| 20-25 | .80 | .79 | .78 | .78 | .78 | .77 | .77 | .77 | .77 | .76 |
| 30-35 | .98 | .98 | .96 | .96 | .96 | .95 | .95 | .94 | .94 | .93 |
| 130-135 | 2.74 | 2.72 | 2.68 | 2.68 | 2.67 | 2.66 | 2.66 | 2.65 | 2.64 | 2.64 |
| 230-235 | 4.38 | 4.30 | 4.24 | 4.24 | 4.23 | 4.23 | 4.20 | 4.20 | 4.18 | 4.17 |

*Source: See p. 96.

TABLE E, APPENDIX II. TRANSPORTATION COST PER HEAD FOR FEEDER CATTLE AND CALVES AT VARYING TRUCK SIZES AND DISTANCES IN-TRANSIT. (650 to 749 POUND CATTLE)

| Distance In-transit (Miles) | Number of Head | | | | | | | | | |
|-----------------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 14 | 16 | 25 | 27 | 28 | 30 | 32 | 33 | 34 | 36 |
| | Length of Truck Box (feet) | | | | | | | | | |
| | 16 | 18 | 28 | 30 | 32 | 34 | 36 | 38 | 39 | 40 |
| | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. |
| 20-25 | .92 | .91 | .89 | .89 | .89 | .88 | .88 | .87 | .87 | .87 |
| 30-35 | 1.13 | 1.12 | 1.10 | 1.10 | 1.10 | 1.09 | 1.09 | 1.08 | 1.08 | 1.07 |
| 130-135 | 3.13 | 3.12 | 3.10 | 3.09 | 3.09 | 3.08 | 3.07 | 3.06 | 3.06 | 3.04 |
| 230-235 | 5.01 | 4.93 | 4.90 | 4.89 | 4.89 | 4.87 | 4.87 | 4.86 | 4.86 | 4.85 |

*Source: See p. 96

TABLE F, APPENDIX II. TRANSPORTATION COST PER HEAD FOR FEEDER CATTLE AND CALVES AT VARYING TRUCK SIZES AND DISTANCES IN-TRANSIT. (750-849 POUND CATTLE)

| Distance In-transit (Miles) | Number of Head | | | | | | | | | |
|-----------------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 12 | 14 | 22 | 24 | 25 | 27 | 28 | 30 | 31 | 32 |
| | Length of Truck Box (feet) | | | | | | | | | |
| | 16 | 18 | 28 | 30 | 32 | 34 | 36 | 38 | 39 | 40 |
| | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. |
| 20-25 | 1.04 | 1.04 | 1.02 | 1.02 | 1.02 | 1.01 | 1.01 | 1.00 | 1.00 | 1.00 |
| 30-35 | 1.25 | 1.24 | 1.22 | 1.22 | 1.22 | 1.21 | 1.21 | 1.21 | 1.20 | 1.20 |
| 130-135 | 3.60 | 3.58 | 3.49 | 3.48 | 3.48 | 3.47 | 3.46 | 3.46 | 3.45 | 3.43 |
| 230-235 | 5.80 | 5.78 | 5.65 | 5.62 | 5.61 | 5.59 | 5.58 | 5.57 | 5.56 | 5.54 |

* Source: See p. 96.

TABLE G, APPENDIX II. TRANSPORTATION COST PER HEAD FOR FEEDER CATTLE AND CALVES AT VARYING TRUCK SIZES AND DISTANCES IN-TRANSIT. (850 to 1050 POUND CATTLE)

| Distance In-transit (Miles) | Number of Head | | | | | | | | | |
|-----------------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 10 | 12 | 19 | 20 | 22 | 23 | 24 | 26 | 27 | 28 |
| | Length of Truck Box (feet) | | | | | | | | | |
| | 16 | 18 | 28 | 30 | 32 | 34 | 36 | 38 | 39 | 40 |
| | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. | dols. |
| 20-25 | 1.20 | 1.19 | 1.17 | 1.16 | 1.16 | 1.15 | 1.15 | 1.14 | 1.14 | 1.14 |
| 30-35 | 1.48 | 1.47 | 1.44 | 1.43 | 1.43 | 1.42 | 1.42 | 1.41 | 1.41 | 1.40 |
| 130-135 | 4.30 | 4.27 | 4.16 | 4.14 | 4.13 | 4.10 | 4.08 | 4.07 | 4.06 | 4.04 |
| 230-235 | 7.01 | 6.95 | 6.68 | 6.62 | 6.59 | 6.53 | 6.47 | 6.44 | 6.41 | 6.35 |

* Source: Estimated from the data of: Elmer L. Menzie, Unpublished Data, Assistant Professor in Agricultural Economics, Department of- Agricultural Economics and Rural Sociology, Montana State College, Bozeman, Montana, 1961; Livestock Conservation, Inc., "Suggested Number of Animals to Haul Safely;" and interview with Mr. Todd, State Brand Inspector, Bozeman, Montana, Aug. 17, 1961.

TABLE A, APPENDIX III. SELLING COST IN DOLLARS PER HUNDRED-WEIGHT FOR FEEDER CATTLE AND CALVES SOLD VIA FOOTHILLS LIVESTOCK ASSOCIATION IN 1958. (\$1.60 PER HEAD SELLING CHARGE.)

| \$/cwt ^{a/} | Weight Range |
|----------------------|----------------|
| .48 | 330.0 -- 336.4 |
| .47 | 336.5 -- 343.6 |
| .46 | 343.7 -- 351.2 |
| .45 | 351.3 -- 359.1 |
| .44 | 359.2 -- 367.3 |
| .43 | 367.4 -- 375.9 |
| .42 | 376.0 -- 385.0 |
| .41 | 385.1 -- 394.5 |
| .40 | 394.6 -- 404.4 |
| .39 | 404.5 -- 414.9 |
| .38 | 415.0 -- 426.0 |
| .37 | 426.1 -- 437.6 |
| .36 | 437.7 -- 449.9 |
| .35 | 450.0 -- 463.0 |
| .34 | 463.1 -- 476.8 |
| .33 | 476.9 -- 491.4 |
| .32 | 491.5 -- 507.0 |
| .31 | 507.1 -- 523.5 |
| .30 | 523.6 -- 541.3 |
| .29 | 541.4 -- 560.3 |
| .28 | 560.4 -- 580.6 |
| .27 | 580.7 -- 602.5 |
| .26 | 602.6 -- 626.0 |
| .25 | 626.1 -- 651.5 |
| .24 | 651.6 -- 679.2 |
| .23 | 679.3 -- 709.3 |
| .22 | 709.4 -- 742.2 |
| .21 | 742.3 -- 778.3 |
| .20 | 778.4 -- 818.1 |
| .19 | 818.2 -- 862.2 |

^{a/} Selling cost in dollars per hundred-weight at various sizes of animals.

TABLE B, APPENIDX III. SELLING COST IN DOLLARS PER HUNDRED-WEIGHT FOR FEEDER CATTLE AND CALVES SOLD VIA FOOTHILLS LIVESTOCK ASSOCIATION IN 1960. (\$1.75 PER HEAD SELLING CHARGE).

| \$/cwt ^{a/} | Weight Range |
|----------------------|----------------|
| .53 | 330.0 -- 332.9 |
| .52 | 333.0 -- 339.4 |
| .51 | 339.5 -- 346.1 |
| .50 | 346.2 -- 353.1 |
| .49 | 353.2 -- 360.4 |
| .48 | 360.5 -- 367.9 |
| .47 | 368.0 -- 375.8 |
| .46 | 375.9 -- 384.1 |
| .45 | 384.2 -- 392.7 |
| .44 | 392.8 -- 401.7 |
| .43 | 401.8 -- 411.2 |
| .42 | 411.3 -- 421.1 |
| .41 | 421.2 -- 431.5 |
| .40 | 431.6 -- 442.4 |
| .39 | 442.5 -- 453.8 |
| .38 | 453.9 -- 465.9 |
| .37 | 466.0 -- 478.7 |
| .36 | 478.8 -- 492.1 |
| .35 | 492.2 -- 506.4 |
| .34 | 506.5 -- 521.5 |
| .33 | 521.6 -- 537.5 |
| .32 | 537.6 -- 554.5 |
| .31 | 554.6 -- 572.7 |
| .30 | 572.8 -- 592.1 |
| .29 | 592.2 -- 612.8 |
| .28 | 612.9 -- 635.0 |
| .27 | 635.1 -- 658.9 |
| .26 | 659.0 -- 684.7 |
| .25 | 684.8 -- 712.6 |
| .24 | 712.7 -- 742.9 |
| .23 | 743.0 -- 775.8 |
| .22 | 775.9 -- 811.8 |
| .21 | 811.9 -- 851.3 |

TABLE C, APPENDIX III. SELLING COST IN DOLLARS PER HUNDRED-WEIGHT FOR FEEDER CATTLE AND CALVES SOLD VIA THE BILLINGS AUCTION MARKET, 1958, 1959, and 1960. -(\$2.75 PER HEAD SELLING CHARGE FOR ANIMALS 400 POUNDS AND OVER.)

| \$/cwt. | Weight Range (pounds) | \$/cwt. | Weight Range (pounds) |
|---------|--------------------------|---------|--------------------------|
| .81 | 340.0 -- 341.3 | .51 | 533.5 -- 543.9 |
| .80 | 341.4 -- 345.6 | .50 | 544.0 -- 554.8 |
| .79 | 345.7 -- 350.0 | .49 | 554.9 -- 566.3 |
| .78 | 350.1 -- 354.5 | .48 | 566.4 -- 578.2 |
| .77 | 354.6 -- 359.2 | .47 | 578.3 -- 590.6 |
| .76 | 359.3 -- 363.9 | .46 | 590.7 -- 603.6 |
| .75 | 364.0 -- 368.8 | .45 | 603.7 -- 617.2 |
| .74 | 368.9 -- 373.8 | .44 | 617.3 -- 631.3 |
| .73 | 373.9 -- 379.0 | .43 | 631.4 -- 646.2 |
| .72 | 379.1 -- 384.3 | .42 | 646.3 -- 661.8 |
| .71 | 384.4 -- 389.7 | .41 | 661.9 -- 678.0 |
| .70 | 389.8 -- 395.3 | .40 | 678.1 -- 695.2 |
| .69 | 395.4 -- 401.1 | .39 | 695.3 -- 713.2 |
| .68 | 401.2 -- 407.0 | .38 | 713.3 -- 732.2 |
| .67 | 407.1 -- 413.1 | .37 | 732.3 -- 752.2 |
| .66 | 413.2 -- 419.4 | .36 | 752.3 -- 773.4 |
| .65 | 419.5 -- 425.9 | .35 | 773.5 -- 795.8 |
| .64 | 426.0 -- 432.6 | .34 | 795.9 -- 819.5 |
| .63 | 432.7 -- 439.6 | .33 | 819.6 -- 844.7 |
| .62 | 439.7 -- 446.7 | .32 | 844.8 -- 871.4 |
| .61 | 446.8 -- 454.1 | .31 | 871.5 -- 899.9 |
| .60 | 454.2 -- 461.7 | .30 | 900.0 -- 930.4 |
| .59 | 461.8 -- 469.6 | .29 | 930.5 -- 963.0 |
| .58 | 469.7 -- 477.7 | .28 | 963.1 -- 997.9 |
| .57 | 477.8 -- 486.2 | .27 | 998.0 -- 1035.5 |
| .56 | 486.3 -- 494.9 | .26 | 1035.6 -- 1076.0 |
| .55 | 495.0 -- 504.0 | .25 | 1076.1 -- 1119.9 |
| .54 | 504.1 -- 513.4 | | |
| .53 | 513.5 -- 523.2 | | |
| .52 | 523.3 -- 533.4 | | |

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TABLE D, APPENDIX III. SELLING COST IN DOLLARS PER HUNDRED-WEIGHT FOR FEEDER CATTLE AND CALVES SOLD VIA BILLINGS AUCTION MARKET 1958, 1959, and 1960. (\$2.30 PER HEAD SELLING CHARGE FOR ANIMALS UP TO 399 POUNDS.)

| \$/cwt. | Weight Range (pounds) |
|---------|--------------------------|
| .68 | 340.0 -- 340.4 |
| .67 | 340.5 -- 345.5 |
| .66 | 345.6 -- 350.8 |
| .65 | 350.9 -- 356.2 |
| .64 | 356.3 -- 361.8 |
| .63 | 361.9 -- 367.6 |
| .62 | 367.7 -- 373.6 |
| .61 | 373.7 -- 379.8 |
| .60 | 379.9 -- 386.1 |
| .59 | 386.2 -- 392.7 |
| .58 | 392.8 -- 399.9 |

TABLE E, APPENDIX III. SELLING COST IN DOLLARS PER HUNDRED-WEIGHT FOR FEEDER CATTLE AND CALVES SOLD VIA THE PARK COUNTY RANCHERS MARKETING ASSOCIATION IN 1959. (\$.15 PER HEAD SELLING CHARGE.)

| \$/cwt. | Weight Range (pounds) |
|---------|--------------------------|
| .05 | to 333.9 |
| .04 | 334.0 -- 428.9 |
| .03 | 429.0 -- 599.9 |
| .02 | 600.0 -- 999.9 |
| .01 | 1000.0 up |

TABLE A, APPENDIX IV. FOOTHILLS LIVESTOCK ASSOCIATION T-TEST COMPUTATIONS;
1958 NET MARKET PRICE SPREAD DATA.*

| Statistical Symbols | Steer Calves | Heifer Calves | Yearling & 2-year-old Steers | Yearling Heifers |
|---------------------|--------------|---------------|------------------------------|--------------------|
| N_a | 69 | 61 | 27 | 7 |
| ΣD | 81.93 | 80.42 | 67.33 | 8.42 |
| $(\Sigma D)^2$ | 6,712.5249 | 6,467.3764 | 4,533.3289 | 70.8964 |
| ΣD^2 | 186.4407 | 132.7207 | 375.6273 | 64.1324 |
| \bar{D}_b | 1.1874 | 1.3183 | 2.4937 | 1.2028 |
| s_c | 1.136 | .661 | 2.826 ^g | 3.000 ^g |
| S_m^d | .1367 | .0846 | .5438 | 1.1342 |
| t_e | 8.686 | 15.577 | 4.585 | 1.060 |
| $H_0: \bar{D} = 0$ | Reject | Reject | Reject | Reject |

* Source: Net price information from estimated Billings market prices and Foothills Livestock Association prices for 1958.

a/ Number of transactions.

b/ Average of the net price differentials.

$$c/ S = \sqrt{\frac{\Sigma D^2}{N} - \frac{(\Sigma D)^2}{N^2}}$$

$$d/ S_m = \frac{S}{\sqrt{N}}$$

$$e/ t = \frac{\bar{D} - 0}{S_m}$$

f/ The hypothesis is accepted when the computed t value is less than $t_{.05} 1.95996$.

$$g/ \text{With } N < 31, S' = \sqrt{\frac{\Sigma D^2}{N-1} - \frac{(\Sigma D)^2}{N(N-1)}} \text{ and } S_m = \frac{S'}{\sqrt{N}}$$

TABLE B, APPENDIX IV. FOOTHILLS LIVESTOCK ASSOCIATION T-TEST COMPUTATIONS;
1960 NET MARKET PRICE SPREAD DATA.*

| Statistical Symbols | Steer Calves | Heifer Calves | Yearling Steers | Yearling Heifers |
|-----------------------|--------------|---------------|-----------------|------------------|
| $N^a/$ | 39 | 31 | 10 | 12 |
| ΣD | 86.39 | 57.18 | 14.58 | 17.73 |
| $(\Sigma D)^2$ | 7,463.2321 | 3,269.5524 | 212.5764 | 314.3529 |
| ΣD^2 | 229.7081 | 156.5155 | 34.3742 | 27.5775 |
| $\bar{D}^b/$ | 2.2151 | 1.8445 | 1.458 | 1.4775 |
| $SS^c/$ | .9915 | 1.283 | 1.2079/ | .33929/ |
| $S_m^d/$ | .1587 | .2304 | .3817 | .0978 |
| $t^e/$ | 13.957 | 8.005 | 3.819 | 15.107 |
| $H_0: \bar{D} = 0^f/$ | Reject | Reject | Reject | Reject |

* Source: Net price information from estimated Billings market prices and Foothills Livestock Association prices for 1960.

a/ Number of transactions.

b/ Average of the net price differentials.

$$c/ S = \sqrt{\frac{\Sigma D^2}{N} - \frac{(\Sigma D)^2}{N^2}}$$

$$d/ S_m = \frac{S}{\sqrt{N}}$$

$$e/ t = \frac{\bar{D} - 0}{S_m}$$

f/ The hypothesis is accepted when the computed t value is less than t.05 1.95996.

$$g/ \text{With } N < 31, S' = \sqrt{\frac{\Sigma D^2}{N-1} - \frac{(\Sigma D)^2}{N(N-1)}} \text{ and } S_m = \frac{S'}{\sqrt{N}}$$

TABLE C, APPENDIX IV. PARK COUNTY RANCHERS MARKETING ASSOCIATION T-TEST COMPUTATIONS; 1959 NET MARKET PRICE SPREAD DATA.*

| Statistical Symbols | Steer Calves | Heifer Calves | Yearling & 2-year-old Steers | Yearling Heifers |
|----------------------|--------------|---------------|------------------------------|------------------|
| N_a | 67 | 66 | 68 | 15 |
| ΣD | 373.60 | 412.54 | 178.89 | 39.08 |
| $(\Sigma D)^2$ | 139,576.96 | 170,189.25 | 32,001.63 | 1,527.25 |
| ΣD^2 | 3,242.36 | 3,924.21 | 869.50 | 151.76 |
| \bar{D}_b | 5.58 | 6.25 | 2.63 | 2.60 |
| S_c | 4.16 | 4.51 | 2.42 | 1.899 |
| $S_{m d}$ | .5082 | .5551 | .2934 | .4881 |
| t_e | 10.979 | 11.259 | 8.963 | 5.326 |
| $H_0: \bar{D} = 0_f$ | Reject | Reject | Reject | Reject |

* Source: Net price information from estimated Billings market prices and Park County Ranchers Association prices for 1959.

a/ Number of transactions.

b/ Average of the net price differentials.

$$c/ S = \sqrt{\frac{\Sigma D^2}{N} - \frac{(\Sigma D)^2}{N^2}}$$

$$d/ S_m = \frac{S}{\sqrt{N}}$$

$$e/ t = \frac{\bar{D} - 0}{S_m}$$

f/ The hypothesis is accepted when the computed t value is less than $t_{.05} 1.95996$.

$$g/ \text{With } N < 31, S' = \sqrt{\frac{\Sigma D^2}{N-1} - \frac{(\Sigma D)^2}{N(N-1)}} \quad \text{and} \quad S_m = \frac{S'}{\sqrt{N}}$$

TABLE A, APPENDIX V. FOOTHILLS LIVESTOCK ASSOCIATION DATA ON FEEDER CATTLE AND CALVES SOLD IN 1958.*

| Statistical Symbols | Steer Calves | Heifer Calves | Yearling & 2-year-old Steers | Yearling Heifers |
|----------------------------------|--------------|---------------|------------------------------|------------------|
| $\overline{TH}^a/$ | 1,510. | 1,266 | 516. | 255 |
| $\overline{X}_H^b/$ | 21.9 | 19.5 | 19.1 | 36.4 |
| $\overline{X}_W^c/$ | 430.8 | 407.9 | 711.2 | 660.4 |
| $\overline{X}_D^d/$ | 10/17 | 10/17 | 10/2 | 9/15 |
| $\overline{X}_S^e/$ | 1.219 | 1.094 | .873 | .795 |
| $\overline{X}_T^f/$ | .207 | .196 | .230 | .156 |
| $\overline{X}_M^g/$ | .366 | .395 | .234 | .244 |
| $\overline{X}_P^h/$ | 31.19 | 28.85 | 26.92 | 24.09 |
| $\overline{X}_{P'}^i/$ | 29.75 | 27.19 | 24.50 | 23.05 |
| $\overline{X}_S,$ | 2.018 | 1.883 | 1.296 | 1.188 |
| $\overline{X}_T,$ | .960 | .956 | .867 | .711 |
| $\overline{X}_M,$ | .624 | .643 | .402 | .420 |
| Percent Contracted ^{j/} | 68% | 65% | 40% | 71% |

* Source: Net price information from estimated Billings market prices and Foothills Livestock Association prices for 1958.

See footnotes on page 106.

TABLE B, APPENDIX V. FOOTHILLS LIVESTOCK ASSOCIATION DATA ON FEEDER CATTLE AND CALVES SOLD IN 1960.

| Statistical Symbols | Steer Calves | Heifer Calves | Yearling & 2-year-old Steers | Yearling Heifers |
|-----------------------|--------------|---------------|------------------------------|------------------|
| TH a/ | 1,216 | 838 | 325 | 485 |
| \bar{X}_H b/ | 31.1 | 25.4 | 32.5 | 40.4 |
| \bar{X}_W c/ | 434.8 | 403.1 | 710.5 | 641.0 |
| \bar{X}_D d/ | 10/19 | 10/19 | 9/17 | 8/22 |
| \bar{X}_S e/ | .949 | .836 | .744 | .663 |
| \bar{X}_T f/ | .199 | .197 | .170 | .163 |
| \bar{X}_M g/ | .402 | .436 | .252 | .275 |
| \bar{X}_P h/ | 24.15 | 22.14 | 22.00 | 19.98 |
| \bar{X}_P i/ | 21.93 | 19.21 | 20.55 | 18.50 |
| \bar{X}_S | 1.498 | 1.300 | 1.100 | .967 |
| \bar{X}_T | .926 | .905 | .786 | .729 |
| \bar{X}_M | .619 | .634 | .396 | .432 |
| Percent Contracted j/ | 51% | 51% | 51% | 53% |

See footnotes on page 106.

TABLE C, APPENDIX V. PARK COUNTY RANCHERS MARKETING ASSOCIATION DATA ON FEEDER CATTLE AND CALVES SOLD IN 1959. *

| Statistical Symbols | Steer Calves | Heifer Calves | Yearling & 2-year-old Steers | Yearling Heifers |
|------------------------------|--------------|---------------|------------------------------|------------------|
| TH <u>a/</u> | 3,322 | 3,014 | 2,399 | 433 |
| \bar{X}_H <u>b/</u> | 49.6 | 45.7 | 35.3 | 28.9 |
| \bar{X}_W <u>c/</u> | 441.9 | 421.9 | 735.3 | 609.6 |
| \bar{X}_D <u>d/</u> | 10/27 | 10/27 | 10/8 | 9/30 |
| \bar{X}_S <u>e/</u> | 1.072 | .975 | .486 | .445 |
| \bar{X}_T <u>f/</u> | .160 | .155 | .144 | .135 |
| \bar{X}_M <u>g/</u> | .033 | .036 | .022 | .021 |
| \bar{X}_P <u>h/</u> | 31.73 | 29.30 | 26.30 | 24.89 |
| \bar{X}_{P_i} <u>i/</u> | 25.41 | 23.04 | 23.72 | 20.95 |
| \bar{X}_{S_i} | 1.495 | 1.302 | .976 | .889 |
| \bar{X}_{T_i} | .559 | .544 | .498 | .472 |
| \bar{X}_{M_i} | .609 | .630 | .386 | .428 |
| Percent Contracted <u>j/</u> | Approx. 50% | Approx. 50% | Approx. 50% | Approx. 50% |

* Source: Net price information from estimated Billings market prices and Park County Ranchers Marketing Association prices for 1959.

- a/ Total number of head sold.
- b/ Average number of head sold per transaction.
- c/ Average weight per head.
- d/ Average date sold.
- e/ Average shrinkage cost per cwt. when sold direct through an association.
- f/ Average transportation cost per cwt. when sold direct through an association.
- g/ Average selling cost per cwt. when sold direct through an association.
- h/ Average net price per cwt. when sold direct through an association.
- i/ Subscript, (i) indicates Billings market as the selling method employed.
- j/ Percent of the total transactions contracted to be sold at least two weeks before delivery date.

TABLE A, APPENDIX VI. A REGRESSION EQUATION ON THE ASSOCIATION BETWEEN THE NUMBER OF ANIMALS SOLD AND THE NET PRICE SPREAD, 1959 PARK COUNTY RANCHERS MARKETING ASSOCIATION DATA.

Steer Calves: Null Ho: $b = 0$

$Y = a + bX$ or price is associated with the number of animals sold.

X = the number of animals sold per transaction.

Y = the net price per hundred-weight spread.

$N = 67$ transactions.

$$\sum xy = \sum XY - \frac{(\sum X)(\sum Y)}{N} = 3,795.649$$

$$\sum x^2 = \sum X^2 - \frac{(\sum X)^2}{N} = 108,580.299$$

$$b = \frac{\sum xy}{\sum x^2} = .00286$$

$$\sum y^2 = \sum Y^2 - \frac{(\sum Y)^2}{N} = 1,147.952$$

$$s^2_{y.x} = \frac{\sum y^2 - b\sum xy}{N} = 15.5133$$

$$s_b = \sqrt{\frac{s^2_{y.x}}{\sum x^2}} = .00375$$

$$t = \frac{b - 0}{s_b} = .736$$

Ho: accept $b = 0$, $.736 < t_{.05} 1.959$

TABLE B, APPENDIX VI. A REGRESSION EQUATION ON THE ASSOCIATION BETWEEN THE NUMBER OF ANIMALS SOLD AND THE NET PRICE SPREAD, 1959 PARK COUNTY RANCHERS MARKETING ASSOCIATION DATA.

Yearling Steers: Null Ho: $b = 0$.

$Y = a + bX$ or price is associated with the number of animals sold.

X = the number of animals sold per transaction.

Y = the net price per hundred-weight spread.

$N = 68$ transactions.

$$\sum xy = \sum XY - \frac{(\sum X)(\sum Y)}{N} = 1,458.138$$

$$\sum x^2 = \sum X^2 - \frac{(\sum X)^2}{N} = 107,591.2353$$

$$b = \frac{\sum xy}{\sum x^2} = .00135$$

$$\sum y^2 = \sum Y^2 - \frac{(\sum Y)^2}{N} = 398.885$$

$$s^2_{y.x} = \frac{\sum y^2 - b\sum xy}{N} = 5.575$$

$$s_b = \frac{\sqrt{s^2_{y.x}}}{\sqrt{\sum x^2}} = .00719$$

$$t = \frac{b-0}{s_b} = .18$$

Ho: Accept $b = 0$; $.18 < t_{.05} 1.959$

TABLE A, APPENDIX VII. RANKING OF MARKETING METHODS FOR SELECTED CHARACTERISTICS BY PRODUCERS IN CENTRAL MONTANA.*

| Marketing Method Ranked | Sample of Producers | Selected Characteristics | | | | | | | Number of Times Ranked First |
|-------------------------|---|--|--------------|--------------------|---------------|-----------------|---------------------------|------------------------------|------------------------------|
| | | Lowest Selling and Transportation Cost | Least Shrink | Most Bids Received | Highest Price | Most Convenient | Best Way to Sell Outbacks | Greatest Premium for Quality | |
| Direct | Park Co. Members ^{a/} | 1 | 1 | 3 | 1 | 1 | 3 | 1 | 5 |
| | Park Co. Non-members ^{b/} | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 6 |
| | Gallatin Co. Members ^{c/} | 1 | 1 | 2 | 1 | 1 | 3 | 1 | 5 |
| | Gallatin Co. Non-members ^{d/} | 1 | 1 | 3 | 1 | 1 | 3 | 1 | 5 |
| | Foothills Livestock Association Members ^{e/} | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 6 |
| | Cascade Co. Non-members ^{f/} | 1 | 1 | 3 | 1 | 1 | 2 | 1 | 5 |
| | Lewis & Clark Non-members ^{g/} | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 6 |
| | Number of times ranked first | 7 | 7 | 2 | 7 | 7 | 2 | | |
| Auction | Park Co. Members ^{a/} | 2 | 2 | 1 | 2 | 3 | 1 | 2 | 2 |
| | Park Co. Non-members ^{b/} | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 |
| | Gallatin Co. Members ^{c/} | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 |
| | Gallatin Co. Non-members ^{d/} | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 |
| | Foothills Livestock Assn. ^{e/} | 2 | 2 | 3 | 3 | 2 | 1 | 3 | 1 |
| | Cascade Co. Non-members ^{f/} | 2 | 2 | 1 | 3 | 2 | 1 | 2 | 2 |
| | Lewis & Clark Co. Non-members ^{g/} | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| | Number of times ranked first | 0 | 0 | 5 | 0 | 0 | 5 | 1 | |

* Source: See following page.

See footnotes on following page.

TABLE A, APPENDIX VII. (Continued) RANKING OF MARKETING METHODS FOR SELECTED CHARACTERISTICS BY PRODUCERS IN CENTRAL MONTANA.*

| Marketing Method Ranked | Sample of Producers | Selected Characteristics | | | | | | | Number of Times Ranked First |
|-------------------------|---|--|--------------|--------------------|---------------|-----------------|---------------------------|------------------------------|------------------------------|
| | | Lowest selling and Transportation Cost | Least Shrink | Most Bids Received | Highest Price | Most Convenient | Best Way to Sell Cutbacks | Greatest Premium for Quality | |
| Terminal | Park Co. Members ^{a/} | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 0 |
| | Park Co. Non-members ^{b/} | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 0 |
| | Gallatin Co. Members ^{c/} | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 0 |
| | Gallatin Co. Non-members ^{d/} | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 0 |
| | Foothills Livestock Assn. ^{e/} | 3 | 3 | 2 | 2 | 3 | 3 | 2 | 0 |
| | Cascade Co. Non-members ^{f/} | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 0 |
| | Lewis & Clark Co. Non-members ^{h/} | | | | | | | | |
| | Number of times ranked first | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* Source: A survey questionnaire taken in June, 1960. Producers ranked 1 - First, 2 - Second, and 3 - Third, the markets for each of the 7 selected characteristics. The average ranking (the ranking used in this table) was obtained by selecting the marketing method which had the largest number of 1's, 2's, or 3's for each of the 7 characteristics.

- a/ Sample of 7 producers, all responded.
- b/ Sample of 12 producers, 9 responded.
- c/ Sample of 8 producers, all responded.
- d/ Sample of 5 producers, 3 responded.
- e/ Sample of 8 producers, 7 responded.
- f/ Sample of 10 producers, 4 responded.
- g/ Sample of 6 producers, 5 responded.
- h/ None of the producers in the sample would rank terminal marketing.

APPENDIX VIII

CONTRACT FOR PURCHASE OF LIVESTOCK

SPONSORED BY

THE FOOTHILLS LIVESTOCK ASSOCIATION OF CASCADE COUNTY*

Box 26--Stockett, Montana

This contract made in quadruplicate executed this _____ day of _____ 19____, by and between _____ of _____ hereinafter called "SELLER" and _____ of _____ called "BUYER," WITNESSETH:

For the sum of _____ DOLLARS (\$ _____), as part purchase price, in hand paid to Seller, the receipt of which is hereby acknowledged, and the balance to be paid at time of delivery, the Seller hereby sells and conveys and agrees to deliver to the Buyer or his order, the following described livestock:

| Approximate Number Head | Quality & Breed | Age & Kind | Brand | Price | Commission |
|----------------------------|-----------------|------------|-------|-------|------------|
|----------------------------|-----------------|------------|-------|-------|------------|

on _____, and are to be located on _____ at time of delivery. Cattle to be weighed at _____ with _____ shrink.

Conditions: _____

said cattle are to be delivered, scale count guaranteed F.O.B. cars at _____ between or on _____, 19____, at Buyer's option or as soon thereafter as cars can be furnished by carrier for final destination. ASSOCIATION REPRESENTATIVE SHALL order cars for the cattle.

All cattle are to be sound and in merchantable condition, and free of any contagious disease or exposure to same, all bulls, stags, locked, big jawed, bad-eyed, crippled bobtail, bob eared, dogie, swayback, off colored and otherwise diseased, deformed and unmerchantable cattle, are excluded from this contract and shall be separated from the herd as the first act in assembling the cattle for delivery.

Cattle shall pass both Federal and State inspection at loading point, where required. Brand certificates shall be furnished Buyer free of charge on delivery.

Seller agrees to deliver all of the above cattle free from incumbrances including taxes for the year of delivery and with a clear and guaranteed title.

It is understood and agreed between the parties hereto that the selection of the above cattle shall be made by the Party of the Second part or his order.

It is further agreed that in case Party of the First part fails to deliver the total number of cattle specified in this contract the Party of the second part has the right to deduct from the purchase settlement the difference between the price stipulated in this contract and the then prevailing market price on the number of cattle not delivered.

Party of the First part further agrees not to otherwise dispose of any cattle mentioned in the above sale; and the sale covers all of this particular class of cattle owned by the Party of the First part unless otherwise stated.

It is agreed by the Party of the First part, known as the "Seller" that he assume the assessment fee of _____ per head for services rendered by the Foothills Livestock Association of Cascade County, (a non-profit organization), in connection with the processing and sale of cattle described in this contract.

IN WITNESS WHEREOF, said parties have hereunto set their hands in triplicate the day and date aforesaid. In the presence of

Witness

Party of the First Part

Party of the Second Part

* Source: The Foothills Livestock Association of Cascade County,
Box 26, Stockett, Montana.

APPENDIX IX

CATTLE PURCHASE CONTRACT*

Contract No. _____

This contract, made this _____ day of _____ A.D., 19____, between
 (name) _____ of _____
 Address _____
 party of the first part, the seller and (name) _____
 of _____ party of the second part, the buyer.
 Address _____

Witnesseth: For and in consideration \$_____ representing approxi-
 mately 15 percent of the contract value as advance and part payment on this
 contract receipt is hereby acknowledged; the seller hereby sells and
 agrees to deliver to the buyer, and the buyer agrees to buy from the
 seller the following described cattle on the following terms and the
 seller does hereby guarantee the title thereto:

| <u>Description</u> | | | | Price Per cwt. | Place of Delivery | <u>Time of Delivery</u> | |
|--------------------|-----|-----|-------------------|----------------------|-------------------------|-------------------------|----------------|
| No. | Age | Sex | Maximum Weight | | | Brand | on or about |
| | | | | | | | |
| | | | | | | | |

(Seller may consent to hold cattle beyond delivery date at buyer's
 expense or on other mutually agreeable terms.)

- Cattle shall be weighed with one of the three shrink options:
1. After 12-hour stand with feed or water or
 2. After _____ mile drive without feed or water, or
 3. Shrink _____% or _____ lbs.
- (Cancel provisions that do not apply.)

Cattle described above are bought subject to State and Federal inspec-
 tion and seller guarantees that interstate shipment of same can be made
 from delivery point. Buyer shall have authority to reject sick, crippled,
 or diseased cattle, and all cattle under _____ lbs., except that buyer
 cannot reject more than 2 percent or _____ cattle on basis of weight.

APPENDIX X

MONTANA STATE COLLEGE

EXPERIMENT STATION

WESTERN STATE FEEDER CATTLE MARKETING PROJECT

Date _____

Enumerator _____

Note: the information given in this report
is strictly confidential.

A. Data to be obtained for entire unit for the year 1959:

A-I. Name _____ Address _____

Location of ranch or farm headquarters _____

County _____

A-II. Type and description of farm or ranch business (1959):

(a) Cattle only _____ cattle & sheep _____ cattle &
crops _____ Other (specify) _____

(b) Cow-calf _____ cow-yearling _____ feeder _____
Other _____

(c) Number and class of cattle:

| Cattle Numbers by Class | Number |
|---|--------|
| 1. Total head all cattle January 1, 1959 | _____ |
| 2. Breeding females - cows | _____ |
| 3. Breeding heifer replacements | _____ |
| 4. Bulls | _____ |
| 5. 1959 calves and yearlings (over 1 yr.) | _____ |
| 6. Others | _____ |

A-III. General marketing questions on feeder cattle:

(a) How many feeders did you sell in 1959? _____
How many stockers did you buy and sell later? _____
Did you possess ownership for more than one month? Yes _____
No _____

(b) Where were they sold? _____

(c) Information on feeders sold:

| Item | Date | Class of Cattle | | | | Total |
|---|------|-----------------|-----------|-------------|-------------|-------|
| | | H. Calves | S. Calves | Yearling S. | Yearling H. | |
| No. in shipment | | | | | | |
| Buyer * (name and code no.) | | | | | | |
| Grade | | | | | | |
| Gross Weight | | | | | | |
| Average Weight | | | | | | |
| Total Pay Weight | | | | | | |
| Price/cwt. or per head (cross one out) | | | | | | |
| Gross receipts | | | | | | |
| Total Marketing Costs | | | | | | |
| Net Receipts | | | | | | |

* If a direct sale check correct type: Immediate Delivery _____ Contract _____

(d) Did the buyer ask for a cutback? Yes _____ No _____
How many on what % _____

(e) Where do you sell your cutbacks? _____
What price did you receive? _____

(f) Breakdown of Marketing Costs incurred by this shipment:

Item

1. Transport

| | Paid by | |
|-------------------|---------|-------|
| | You | Buyer |
| Trailing | | |
| Own Truck | | |
| Hired Truck | | |
| Railroad | | |
| Feed (enroute) | | |
| Bedding (enroute) | | |
| Other (specify) | | |
| Total Trans. | \$ | |

2. Marketing Expenses:

| | Paid by | |
|--------------------------------------|---------|-------|
| | You | Buyer |
| Representatives fee or commission | | |
| Feed | | |
| Yardage | | |
| Health & Brand | | |
| NL & MB | | |
| Ass'n. Dues | | |
| Insurance | | |
| Other | | |
| Total mkt. | \$ | |

(f) Death loss enroute

(g) Crippling loss enroute

| | |
|-------|-------|
| _____ | _____ |
| buyer | you |
| _____ | _____ |
| buyer | you |

A-IV. Additional Information for Contract Sales:

Date Contracted _____
 Contract Delivery Date _____
 Deposit/animal _____
 Minimum and Maximum wt. _____
 Other Terms of Contract _____

A-V. Fill out if more than the one bid was received.

| | <u>Steers</u> | <u>Heifers</u> |
|--------------------------------|---------------|----------------|
| Calves: No. of price offers | 1. _____ | _____ |
| | 2. _____ | _____ |
| Amount of bid | 3. _____ | _____ |
| Yearlings: No. of price offers | 1. _____ | _____ |
| | 2. _____ | _____ |
| | 3. _____ | _____ |

For each bid received indicate on the following extra pages:
 1. Delivery point, 2. Shrinkage Conditions, 3. Total marketing costs.

A-VI. What were the shrinkage conditions? Estimate Total _____%

- (a) Was there an over-night stand without feed and water? _____
- (b) Pencil shrink granted _____
- (c) Distance traveled to weighing point _____
- (d) Time of day when weighed _____
- (e) Time elapsed between loading and weighing _____
- (f) Were calves weaned before shipment? Yes _____ No _____
- (g) If so, was there any preconditioning of calves? _____
- (h) If sold at a market, how long were they held on feed and water before the sale? _____
- (i) Explain any unusual weather, feed, water, or handling conditions _____

(a) Do you do any grading or sorting before you show your feeders?
 Yes _____ No _____
 If so, do you think it always pays? Explain _____

(b) Do you market at the same time each year regardless of feed conditions or weight of the animals? Yes _____ No _____

Do you try to sell at a uniform weight from year to year regardless of time? Yes _____ No _____

Do you try to sell for the top seasonal price regardless of weight, time or feed conditions? Yes _____ No _____

Comments: _____

- (c) Do you strive to sell your cattle to the same feeder each year? Yes _____ No _____
- (d) Do you believe in the past your cattle have brought a premium over other cattle in the area? Yes _____ No _____
If so, what do you believe are the reasons? _____

(e) Do you feel that you have enough information about prices, marketing costs and alternative markets to sell your own cattle as well as a person who makes this activity his profession? (i.e., commission man, auction or association representative.) _____

(f) Do you think a group of ranchers organized to sell feeder cattle can do a better job than each individual can alone?

(g) Rank the following methods of marketing for each of the seven selected characteristics:

| | Direct | Auction | Terminal |
|--|--------|---------|----------|
| Lower marketing & transportation costs | | | |
| Least Shrink | | | |
| Most bids are received | | | |
| Highest Price | | | |
| Most convenient | | | |
| Best way to sell cutbacks | | | |
| Greatest premium for quality | | | |

(h) Have you had experience with direct selling? Yes _____
No _____

If yes, would you rather deal with a feedlot operator directly or through a dealer or broker? Why? _____

(i) What are the major problems in marketing feeders in your area? _____

(j) What suggestions do you have for improving calf and yearling marketing from your community? _____

(k) Are you a member _____ or a former member of livestock marketing association? _____

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