



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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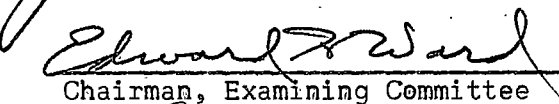
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All errors and omissions are the responsibility of the author.

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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. <sup>1/</sup> 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, <sup>2/</sup> or about 8 percent of the total agricultural and non-agricultural employment in Montana. <sup>3/</sup> 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. <sup>4/</sup>

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. <sup>5/</sup> The

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<sup>1/</sup> Montana Department of Agriculture, Montana Agricultural Statistics, United States Department of Agriculture, Agricultural Marketing Service, Cooperating, Helena, Montana, Volume VIII, 1960, p. 7.

<sup>2/</sup> 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

<sup>3/</sup> Agricultural Experiment Station and Extension Service, Montana Agriculture Basic Facts, Montana State College, Bulletin 293, Bozeman, Montana, October, 1956, p. 65.

<sup>4/</sup> Montana Department of Agriculture, op. cit., p. 7.

<sup>5/</sup> 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

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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.

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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.

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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. <sup>12/</sup> 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." <sup>13/</sup>

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." <sup>14/</sup>

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;

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<sup>12/</sup> 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.

<sup>13/</sup> Adopted as the definition by the Technical Committee on livestock marketing, Western Regional Research Project, WM-39, 1960.

<sup>14/</sup> 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.

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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/

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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

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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

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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

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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

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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.

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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. <sup>32/</sup> Supporting evidence was drawn from a Thesis by Purnell and a research report by Winn. <sup>33/</sup> The estimates of transportation costs were based

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<sup>32/</sup> 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.

<sup>33/</sup> 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. <sup>34/</sup> 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.

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<sup>34/</sup> 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. <sup>35/</sup> 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.

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<sup>35/</sup> 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. <sup>1/</sup> 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. <sup>2/</sup> An investigation with considerably more data did

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<sup>1/</sup> Glen R. Purnell, op. cit., p. 84.

<sup>2/</sup> 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).

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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 <sup>a/</sup> Calves	Heifer <sup>a/</sup> Calves	Yearling Steers	Yearling Heifers
		%	%	%	%
1. Direct	22 <sup>b/</sup>	3.25	3.20	1.80	1.75
2. Direct	30 <sup>c/</sup>	3.70	3.65	3.20	3.15
3. Billings	130 <sup>d/</sup>	5.20	5.10	3.76	3.70
4. Billings	230 <sup>e/</sup>	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





























































































































































































































