

FACTORS AFFECTING PRICES OF
FEEDER CATTLE AND CALVES IN KANSAS

by

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A handwritten signature in cursive script, reading "Larry Coral", is written over a horizontal line.

Major Professor

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CHAPTER 1

INTRODUCTION

Kansas consistently is ranked among the top four states in the U.S. for the production of cattle and calves, fed cattle, and cattle slaughtered.¹ In 1981, Kansas cattlemen marketed 4,154,000 head of feeder cattle and calves, and 2,985,000 head of fed cattle.² Because of the volume of cattle sold annually, management practices or traits which affect the value of individual cattle have a large impact. Small influences on the price received per hundred weight have large significance when multiplied over the production of the individual producer or the beef industry of Kansas.

Problem:

Producers often sell cattle without realizing why their animals bring more or less money than those of their neighbors.

Many factors such as grain and hay prices, weather, prices of competing meats and the general economic situation of the consumer affect cattle prices. The individual producer or feeder cattle or calves has very little control over these factors.

There are many traits that the producer can control when selling his cattle. More work needs to be done in identifying cattle traits that buyers consider when bidding for a pen of cattle. This study was undertaken to determine if certain management or marketing practices which the individual livestock producer can control affect the price he receives for his calves or feeders.

Figure I shows the traits evaluated for their effect on price. An effort was made to put a dollar value on those traits identified as being significant factors. This was a joint effort by the departments of Animal Science and Industry and Agricultural Economics at Kansas State University.

¹United States Department of Agriculture, "Livestock and Meat Statistics Supplement for 1980," September 1981. Statistical Bulletin No. 522, pp. 5, 8, 9, 29, 31, 32, 51, 53.

²State of Kansas, Crop and Livestock reporting service, "Kansas Livestock Statistics 1980-1981," April 1982. Kansas State Board of Agriculture, M. E. Johnson, State Statistician, p.2.

Date	Evaluator	Location	Time: Sale Started	Sale Ended	Group Sold	Lot												
						No. of head												
						Breed												
						Sex— B - S - H - B/S												
						Auctioneer Guarantee												
						Horns— D - H - M - T												
						Preconditioned W - S - WO - PO												
						Frame— 1 - 2 - 3 - V												
						Muscle— 1 - 2 - 3 - V												
						Condition— 1 - 2 - 3 - 4 - 5												
						Health— 1 - 2 - 3 - 4 - 5												
						Fill— 1 - 2 - 3 - 4 - 5												
						Wt. Spread— 1 - 2 - 3 - 4												
						Weight												
						Price												
						Buyer												

Figure I. Sample Evaluation Card.

Methodology:

Kansas had 77 licensed livestock markets doing business during the period from July 1, 1980 to June 30, 1981. A total of 3,058,467 cattle was sold through these markets during that time period. The auctions were divided into groups based on their east-west location and their size as indicated by the total number of cattle sold from July 1, 1980 to June 30, 1981. Auctions were selected at random by number of cattle sold to represent each size of auction. The auction managers were contacted and asked if they were willing to work with the study. In two cases alternate auctions had to be found because of concern that the buyers or sellers would not want the information collected or unwillingness to have outsiders go through company tickets and records.

The fifteen cooperating markets accounted for 1,118,898 or over one-third of the total cattle sold in that time period. Figure II shows the east-west location, using Highway US 81 as the dividing line, and the size of the fifteen cooperating auctions, and Table I lists their size and location.³

Table I. Size and Location of Cooperating Livestock Auctions

<u>East</u>		<u>West</u>	
Location	No. Sold July 1, 1980- June 30, 1981	Location	No. Sold July 1, 1980- June 30, 1981
Atchison	57,135	Belleville	49,412
El Dorado	63,066	Colby	20,760
Eureka	25,170	Dodge City	354,385
Fort Scott	96,120	La Crosse	95,472
Holton	17,859	Norton	69,835
Junction City	75,508	Russell	38,350
Manhattan	60,435	Wakeeney	51,286
Winfield	<u>44,105</u>		
Total	439,398	Total	<u>679,500</u>

Total sales July 1, 1980, through June 20, 1981 for fifteen cooperating auctions was 1,118,898.

The study was conducted in October and November of 1981. These months are normally the peak selling time for weaning calves and for feeders coming off native pasture. It should be noted that prices were below the area generally

³"Annual Report of Livestock Markets in Kansas, July 1, 1981 to June 30, 1982," undated publication of the Kansas Livestock Commissioner.

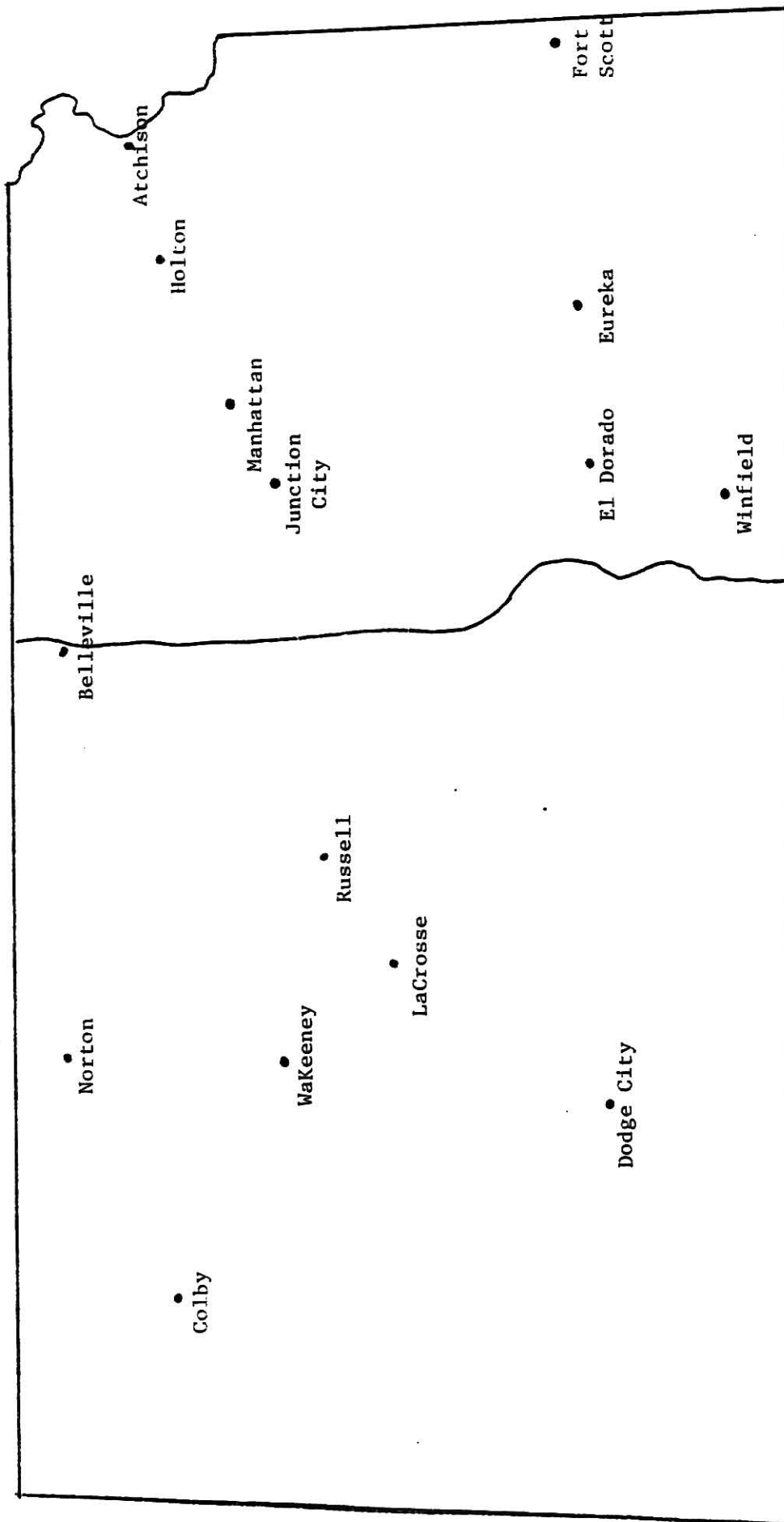


Figure II. Location of Cooperating Livestock Auctions.

considered profitable during this time period of 1981. The normal large runs never hit the market. Still 85,915 cattle were evaluated in the ten-week period of this study.

Evaluators were selected and then worked with an experienced cattle buyer prior to the study to minimize the differences in judging cattle traits between individual evaluators.

During this study an evaluator attended each cooperating auction weekly. Representative drafts of cattle were evaluated while the sale was in progress. Price, weight, time of sale, sex, breed, horns, frame, muscle, fleshing, health, fill, and lot size were recorded for each lot evaluated. Figure 1 shows the evaluation card used. Prices, weights and lot size were checked against auction company records following the sale. All information was then punched onto computer cards and was analyzed using statistical analysis system (SAS) KSU version 79.5.

CHAPTER 2

EVALUATION OF TRAITS

Section 1

The Effects of Health

Health of the cattle was the primary factor influencing the price received. Regardless of all other traits, the general healthiness and thriftiness of cattle was a price consideration.

Cattle were placed into one of five health classifications: thrifty, stale, few sick, obviously ill, and chronic. Thrifty cattle were those deemed to be of normal condition, having normal temperature, and showing bright eyes and bloom to their hair coat. They were alert and had normal ear set. Those in the stale category did not have any definite health problems, but appeared to be other than farm fresh cattle. Rough hair coats or a "drawn" or trader cattle appearance were the reasons cattle were put into this category.

Groups of cattle in the few sick category contained some calves (less than 25 percent) with nasal discharge, drooped ears, and signs of fever and stress. The obviously ill groups had most calves showing varying degrees of sickness, such as red or dry noses, excess nasal discharge, drooped ears, listlessness, and general signs of sickness. Cattle with pink eye, wet eyes, or lumps were also placed into this group.

Chronics were cattle in the 50-50 group. They had a 50 percent chance to live or die. These cattle were showing definite signs of high fever, dry noses, listlessness, and dehydration. Extreme cases of pink eye and blindness also were scored into this group.

Table II contains prices for steers and heifers in the five health categories. Each sex is broken into two weight breakdowns--less than 600 pounds and 600 pounds or more. The weight classifications were used because younger, lighter weight cattle, especially those just weaned, are more prone to sickness. Also the 600 pound weight is a general weight where stocker calves and feeder cattle are separated. Cattle above and below that weight range usually go into different types of programs and would generally be purchased by different kinds of buyers.

Table II. Effects of Health on Price for all Beef Breeds, Grades, and Fleshing.

<u>Steers</u>						
<u>Health Score</u>	<u>600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
Thrifty	63.76	5.72	22,153	60.98	3.99	22,856
Stale	60.90	6.88	1,048	56.41	5.74	44
Few Sick	59.14	9.75	158	53.90	10.16	28
Obviously Ill	48.09	14.12	62	54.50	5.91	29
Chronic	38.98	12.50	14	53.53	2.79	8

<u>Heifers</u>						
Thrifty	55.14	4.58	21,742	54.02	4.13	8,227
Stale	52.45	6.50	823	51.31	5.18	129
Few Sick	51.14	7.50	190	54.87	4.57	127
Obviously Ill	45.95	6.98	34	44.89	10.57	9
Chronic	33.50	9.66	6	46.41	7.31	5

Total number of cattle evaluated for health 77,692.

<u>Health Score</u>	<u>Percent</u>
Thrifty	96.5
Stale	2.6
Few Sick	.65
Obviously Ill	.2
Chronic	.05

In the lighter weight division, there was nearly a three dollar discount for stale cattle and over a four dollar discount for lots with a few sick calves on them. The discounts became severe for obviously ill cattle, with steers being discounted over fifteen dollars and heifers over nine dollars. Chronics were docked twenty to twenty-five dollars per hundred weight.

The heavier weight cattle show the same general trend, but the discounts are not as severe. Older cattle usually are more hardy and have fewer health problems. This is shown by Table II where 5.1 percent of the cattle weighing less than 600 pounds are classified as less than thrifty while only 1.3 percent of cattle in the 600 to 900 pound range are so classified. Death losses are not as likely.

The two cases where the trend does not hold true can be explained by small numbers of cattle in the heavyweight steers. There were only 29 obviously ill and 8 chronics in that weight division. The 127 heifers weighing 600-900 pounds in the few sick category were only in four drafts of cattle. Lot size and other factors were more important considerations to the buyer than a few unhealthy cattle in the group.

Section 2

The Effect of Horns

Whether or not the cattle had horns was another trait measured for its effect on price. The bull category is added here to measure if price differences are a result of horns or a result of the bull calf not being castrated. The weight categories are less than 600 pounds and 600 pounds and greater levels. This was done to see if the presence of horns had a greater or lessor price effect on stocker calves versus feeder cattle.

Four horn categories were recorded: dehorned, horned, mixed, and tipped. Dehorned cattle were those with no horns or horns removed. Horned cattle were cattle with all or nearly all cattle in the group having horns. Mixed were groups of cattle having fifty percent or less with horns or tipped horns. The tipped group (the end or tip of the horn is removed) was primarily a feeder cattle classification. All or nearly all cattle in this group would have horns with the tip removed.

To remove some effects of breed differences, only breeds that are naturally horned were studied. Hereford, Hereford Cross, the Continental breeds, and combinations thereof were used. Angus cattle and Angus crossbred cattle are normally polled and so were not included. Only healthy cattle of the beef breeds were used. All grades, fleshing conditions, and locations were included in this study. Table III shows the effects of horns on price.

Table III. Effects of Horns on Price for all Horned Beef Breeds, Grades, and Fleshing with only Healthy Cattle Included.

<u>Bulls</u>						
<u>Horn Score</u>	<u>600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
Dehorned	60.39	5.61	705	53.06	5.80	215
Horned	59.32	6.00	180	51.98	4.43	54
Mixed	62.68	4.54	263	57.13	4.23	82
Tipped	61.81	5.06	22	48.50	4.94	2

<u>Steers</u>						
Dehorned	64.15	5.46	9,398	61.21	3.89	11,113
Horned	63.57	5.82	1,737	58.59	4.67	461
Mixed	64.98	4.04	2,565	61.65	2.90	2,456
Tipped	64.39	4.46	102	59.34	6.09	137

<u>Heifers</u>						
Dehorned	55.31	4.37	9,490	54.42	3.85	3,938
Horned	55.07	4.42	1,173	52.70	4.04	218
Mixed	56.01	3.53	2,597	54.11	3.08	1,003
Tipped	54.02	4.00	90	52.76	2.08	21

Total cattle evaluated for horns 48,022.						
<u>Horn Score</u>	<u>Percent</u>					
Dehorned	72.6					
Horned	8.0					
Mixed	18.6					
Tipped	.8					

When only the horned and dehorned groups are viewed the effect of horns is a discount of \$1.07 and \$.58 per hundred weight for bulls and steers weighing less than 600 pounds. Heifers in that weight range are discounted \$.24.

The mixed lots with horns and no horns were sold at a premium to cattle with no horns. The price effect of horns is masked by other traits such as frame, muscling or breed. Table III-2 shows the percent of breeds making up the mixed horn category.

Table III-2. Percentage of Breeds Within the Mixed Horn Category for all Horned Beef Breeds, Grades, and Fleshing with only Healthy Cattle Included.

<u>Breed</u>	<u>Percentage</u>
Hereford	22.3
Hereford Cross	9.5
Charolais and Cross	7.6
Simmental and Cross	8.4
Brahman and Cross	4.5
Black Baldie and Hereford Mixed	6.1
British Breeds	3.7
Continental Breeds	3.7
Others and Mixed	34.2

In Section 6 the relative value of the different breeds is discussed. The price premium for breed and type of cattle within the mixed group is more important than the effect of horns. In bull calves the buyer attitude could be that the calves with mixed and tipped horns have to be processed anyway. Quality and other traits then take precedence over the horned trait.

In the heavier cattle, the discount for horns ranges from \$1.08 to \$2.62 per hundred weight. This is consistent with the expectations since dehorning larger cattle results in more stress and weight loss. Heavier weight steers and heifers in the mixed horn category sell at prices equivalent to cattle with no horns. Cattle with tipped horns in the heavier weight cattle sell more nearly at horned cattle prices.

Section 3

The Effects of Sex and Weight

Cattle have traditionally been bought and sold on the basis of sex and weight. In the past the ability to closely estimate weights and pay accordingly was a characteristic of the successful cattle buyer. With the appearance of electronic scales on the scene and the practice of weighing cattle before selling, this ability is not as critical as it once was. Today cattle are normally auctioned at so many cents per pound and prices are quoted as dollars per hundred pounds or hundred weight. Sex and weight are the most visible of factors affecting price.

Steers normally sell at a premium to heifers for three reasons: faster feedlot growth rate, higher dressing percent at slaughter, and the possibility of pregnant feeder heifers. A higher dressing percent means the packer will have a greater percent of the animal's live weight to sell as carcass. Therefore, he is willing to pay a premium for steers over heifers at slaughter weight. A faster feedlot gain is associated with increased feed efficiencies and reduced costs of gain, and steers have the advantage for these traits. Only in the case where heifers are of good enough quality to be herd replacement females do heifer prices normally approach those paid for steers. However, pregnant feeder heifers can cause a number of management problems.

Bulls are not normally fed as intact males by the beef industry today. Therefore, they are discounted to allow for weight shrink and possible death loss due to castration.

Table IV shows the average prices for steers, heifers, bulls, and mixed lots of steers and bulls. The weight breakdown is in 100 pound increments since weight is one of the factors being evaluated in this portion of the study.

Table IV. Effects of Sex and Weight on Price for all Beef Breeds, Grades, and Flething with all Locations and only Healthy Cattle Included.

<u>Bulls</u>			
<u>Weight</u>	<u>Average Price</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
<400	63.52	6.39	394
400-499	60.30	5.42	988
500-599	57.44	5.01	741
600-699	53.94	4.62	300
700-799	53.17	6.85	136
800-899	50.34	5.48	33

<u>Steers</u>			
<400	66.26	6.42	3,645
400-499	64.10	5.55	8,913
500-599	62.02	4.77	9,065
600-699	61.02	4.21	8,008
700-799	61.20	3.81	9,532
800-899	60.39	3.65	4,814

<u>Heifers</u>			
<400	56.80	4.85	5,271
400-499	55.05	4.48	9,619
500-599	53.79	4.00	6,487
600-699	54.08	4.03	5,032
700-799	54.08	4.15	2,626
800-899	53.29	4.72	460

<u>Bulls and Steers Mixed</u>			
<400	66.56	5.51	91
400-499	63.68	3.74	123
500-599	60.33	2.64	36

Total cattle evaluated for sex and weight 76,314.

<u>Weight</u>	<u>Percent</u>	<u>Sex</u>	<u>Percent</u>
<400	12.4	Bulls	3.4
400-499	25.9	Steers	57.6
500-599	21.6	Heifers	38.7
600-699	17.6	Bulls and Steers	
700-799	16.2	Mixed	.3
800-899	6.3		

The discount for bulls compared to steers is \$2.74 in the less than 400 pound range and increases to \$10.05 in the 800 to 899 pound range. This is consistent with expectations since stress and weight loss due to castration increase as the bull increases in weight. Also, bulls castrated at the heavier weights may retain some of the secondary sex characteristics. This would cause them to be graded as stags and sell at a discount to steers at slaughter time.

The lots of mixed bulls and steers sold at equivalent to steer price in the less than 400 pound range. They were discounted progressively as weights increased. The discount for heifers over steers was \$9.46 for cattle weighing less than 400 pounds. The discount decreased to approximately \$7.00 for heifers in the group between 600 and 900 pounds. This is also as expected since as the heifer increases in weight, part of her decreased efficiency is absorbed by her previous owner. As cattle approached slaughter weight, the spread between steers and heifers became less.

Section 4

The Effects of Sale Barn Size

The number of cattle sold by an auction was another factor evaluated by this study. The cooperating auctions were divided into four categories based on the number of cattle sold annually. These categories--the number of auctions and the east-west location of each auction--are shown at the bottom of Table V.

Table V shows the effects of auction size on price.

Table V. Effects of Auction Size on Price for all Beef Breeds, Grades, and
Fleshing with only Healthy Cattle Included.

<u>Steers</u>						
<u>Auction Size</u>	<u>< 600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
<25,000	64.20	4.45	1,963	61.00	3.64	1,049
25-70,000	63.65	5.82	11,245	60.75	4.31	7,366
70-110,000	63.71	5.78	7,464	60.75	3.83	8,025
>110,000	65.03	6.12	951	62.61	3.25	5,926

<u>Heifers</u>						
<25,000	54.94	3.85	1,967	53.99	3.21	412
25-70,000	55.20	4.70	12,328	54.04	4.17	3,339
70-110,000	54.96	4.50	6,361	53.79	4.23	3,555
>110,000	56.70	5.11	991	55.44	4.10	813

Total cattle evaluated for auction size 73,755.

<u>Auction Size</u>	<u>No. of Auctions</u>	<u>Location</u>
<25,000	3 auctions	2 east-1 west
25-70,000	8 auctions	4 east-4 west
70-110,000	3 auctions	2 east-1 west
>110,000	1 auction	1 west

There were no appreciable differences in prices paid for steers or heifers in either weight category for auctions selling less than 25,000, 25,000 to 70,000, or 70,000 to 110,000 head. A premium was paid for cattle at the livestock auction that sold greater than 110,000 head. However, this auction was located in the western half of the state. As shown in Section 5a, (pp. 21-25) all cattle sold for a higher price in the western half of the state. The premiums paid for cattle at that auction were roughly equal to the differences between the western and eastern halves of Kansas. (See Tables IX and X pp. 23-24). The premium for the cattle at the auction in the largest size category is more an effect of location and the type of cattle sold in the western part of Kansas than of size.

Transportation costs, individual auction management, and the personal preference of the seller would be larger factors involved in choosing a place of business than would the actual size or volume of the individual auction.

Section 5

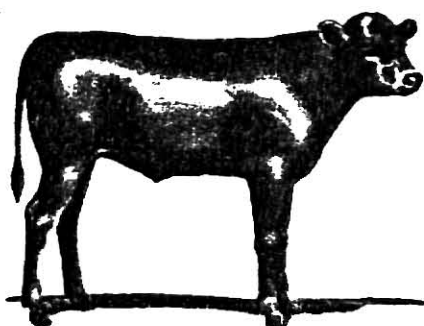
The Effects of Frame, Muscling, and Grade

All cattle evaluated were given a grade according to the USDA feeder cattle standards. The grade consists of a combined score for frame and muscling. The frame scores range from one to three based on height or tallness of the animal and its body length. Cattle receiving the frame score one are large framed with steers expected to reach the Choice grade at a live weight over 1,200 pounds. Heifers would need to weigh 1,000 pounds or more to be expected to grade Choice.

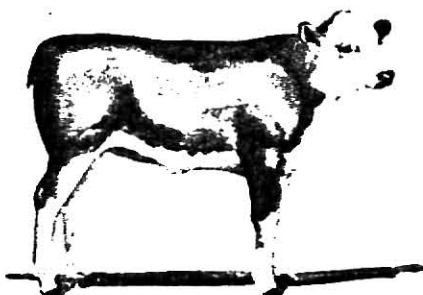
Cattle scoring a frame two were of average body height and length. Steers would be expected to grade Choice (.5 inch of fat) at 1,000 to 1,200 pounds and heifers at 850 to 1,000 pounds.

The frame three cattle are considered the earlier maturing type. Steers would have .5 inch of fat at less than 1,000 pounds and heifers less than 850 pounds. See Figure III for illustrations of frame size.

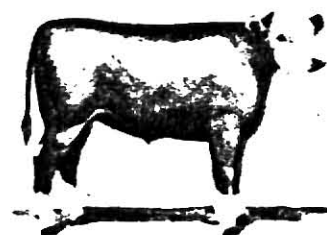
FRAME SIZE



LARGE



MEDIUM



SMALL

Figure III

The muscling scores also range from one to three. Cattle classified as having a muscling score of one would normally be of mainly beef breeding. They had thickness through the center of the hind quarter and rounded appearance over the back and loin. Approximately 80 percent of beef cattle sold today have this muscle pattern.

The muscling two cattle were narrower bodied and lighter muscled. They were flatter through the center of the hind quarter, narrower walking, and more angular appearing down their tops. Most of the beef cattle not scored muscle one and some of the Holstein or dairy type cattle would receive this score.

The muscling three cattle were thin and angular in appearance. They were flat in the rear quarter, narrow walking, and sharp and angular over their back and loin. Jersey cross cattle, thinly muscled Holstein cattle, and some extremely lightly muscled beef cattle fall into this muscle classification. See Figure IV for illustrations of muscling scores.

THICKNESS



No. 1



No. 2



No. 3

Figure IV

The frame and muscle scores were then combined as a grade score. There were a total of nine grades as follows: frame one with muscling one, two, or three were called grades one, two, and three; frame two with muscling one, two, or three were called grades four, five, and six; frame three with muscling one, two, or three were called grades seven, eight, and nine. The effects of frame

and muscle on price were evaluated separately then their combined effects were reviewed for a possible effect of grade on price.

Table VI shows the effect of frame on price. Only beef breeds that were healthy were used. Cattle of all grades and fleshing conditions were used.

Table VI. Effects of Frame on Price for all Beef Breeds, Grades, and Fleshing with only Healthy Cattle Included.

<u>Steers</u>						
<u>Frame</u>	<u>600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
1	65.13	5.20	2,185	60.91	4.52	2,234
2	64.21	5.07	18,684	61.23	3.71	19,569
3	57.69	8.18	754	56.97	5.05	563

<u>Heifers</u>						
1	56.03	4.56	1,741	54.66	3.64	622
2	55.35	4.37	18,813	54.19	3.93	7,392
3	51.78	5.50	823	48.96	5.71	105

Total cattle evaluated for frame 73,485.

<u>Frame</u>	<u>Percent</u>
1	9.2
2	87.7
3	3.1

Frame one cattle sold for \$.92 per hundred weight premium over frame two cattle in the less than 600 pound steer division and for a \$.68 premium in the lightweight heifer division. Prices for frame one heifers were \$.47 above those with frame score two in the heavyweight division. Discounts for frame three cattle ranged from \$3.94 to \$7.44 per hundred weight as compared to frame one cattle.

These prices are for beef cattle only and no dairy cross or Holstein cattle are included. The same cattle evaluated for frame were also given muscling scores. Table VII shows the effects of muscling on price.

Table VII. Effects of Muscle on Price for all Beef Breeds, Grades, and Fleshing with only Healthy Cattle Included.

<u>Steers</u>						
<u>Muscling</u>	<u>< 600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
1	63.90	5.58	20,658	61.16	3.79	21,744
2	62.50	6.03	945	58.93	5.02	578
3	52.45	12.28	20	49.18	7.09	44

<u>Heifers</u>						
1	55.21	4.52	20,368	54.14	4.04	7,813
2	54.68	4.82	952	52.34	4.91	304
3	47.60	7.25	57	44.00	2.82	2

Total cattle evaluated for muscling 73,485.

<u>Muscling</u>	<u>Percent</u>
1	96.0
2	3.8
3	.2

Muscling one cattle sold highest over all sex and weight divisions. Discounts for muscling two cattle ranged from \$.53 per hundred weight for heifers less than 600 pounds to \$2.23 for heavyweight steers. Muscling three cattle were discounted from \$7.61 for heifers less than 600 pounds to \$11.98 per hundred weight for steers weighing more than 600 pounds. Again no dairy cross or Holstein cattle are included.

Table VIII. Effects of Grade on Price for all Beef Breeds, Grades, and Flething with only Healthy Cattle Included.

<u>Steers</u>							
<u>< 600 lbs.</u>				<u>600-900 lbs.</u>			
<u>Grade</u>	<u>Frame/ Muscling</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
1	1-1	65.81	4.82	2,002	61.53	3.96	2,041
2	1-2	61.81	5.10	179	57.69	5.79	187
3	1-3	52.66	9.29	4	51.37	1.23	6
4	2-1	64.30	4.98	17,935	61.37	3.51	19,141
5	2-2	63.07	5.31	737	59.62	4.46	390
6	2-3	57.59	10.11	12	48.69	7.82	38
7	3-1	57.90	7.88	721	57.02	5.05	562
8	3-2	57.77	8.95	29			
9	3-3	40.75	12.71	4			

<u>Heifers</u>							
1	1-1	56.38	4.23	1,603	55.14	2.95	566
2	1-2	52.79	6.16	106	51.70	5.80	55
3							
4	2-1	55.41	4.31	17,978	54.27	3.89	7,143
5	2-2	55.09	4.55	816	52.87	4.11	248
6	2-3	46.43	7.73	19			
7	3-1	51.72	5.57	787	49.20	5.52	104
8	3-2	53.42	4.23	30			
9	3-3	49.06	4.56	6			

Total cattle evaluated for grade 73,449.

<u>Grade</u>	<u>Percent</u>
1	8.5
2	.7
3	.01
4	84.7
5	3.0
6	.09
7	2.91
8	.08
9	.01

Table VIII shows some interesting interactions between frame and muscling. If we refer to Table VII there is a premium for muscling one cattle over those with muscling two. This remains true for all cattle in the frame one and two

categories. However, when cattle weighing less than 600 pounds fall into the frame three category, a preference is shown for cattle in the muscling two division. In steers less than 600 pounds the price is nearly the same, but in heifers the difference is \$1.70 per hundred weight. (See grades seven and eight.) It appears that buyers of smaller frame cattle do not want the cattle too thick or tight muscled, although the number of cattle involved is admittedly small.

Another interesting contrast is the frame category. Table VI shows a premium of less than \$1.00 for frame one steers and heifers weighing less than 600 pounds.

When the effects of muscling are included with frame, the margin widens. There is a \$1.51 premium for frame one muscle one (grade one) steers over frame two muscle one (grade four) steers weighing less than 600 pounds. The spread narrows to \$.16 for steers weighing over 600 pounds. In heifers the frame one cattle show a small premium over the frame two cattle as long as the muscling remains in category one.

In all cases when frame one cattle show number two muscling (see grade two) they sell at a discount to frame two cattle with either muscling one or two (see grades four and five). This disadvantage ranges from \$3.68 for steers weighing 600 to 900 pounds (in the grade two versus grade four) to \$1.17 (heifers weighing 600 to 900 pounds, grade two versus grade five). This points out that when breeding large frame cattle they need to be well muscled for acceptance in today's feeder calf markets.

Section 5a

The Effects of Grade on Price by East and West Areas of Kansas

Kansas has extremely different types of agriculture in the eastern part of the state as compared to the western part. The eastern half is in a higher rainfall area. Corn and soybeans and other fall crops are the predominant kind of farming. The Flint Hills pasture land is also located in the eastern part of the state. Cattle in the east would be going to winter growing programs on silage in mainly farmer feeder type operations. The summer program would mainly involve growing cattle on the native Flint Hills Bluestem.

The western half of Kansas is the home of most commercial feedlots in the state. Farming operations consist mainly of either dryland wheat and milo or

irrigated corn. Cattle in the west would either be placed on finishing rations in commercial feedlots or grown on wheat pasture.

Because of these vastly different types of agriculture, the effects of grade on price were measured for cattle sold in the eastern half versus those sold in the west. This was done to evaluate if there was a preference for different grades of cattle going into different types of farming programs. Because of the small number of cattle in some of the grades, only grades one, two, four, five, and seven were compared. Tables IX and X show the effects of grade on price for the east and west halves of Kansas.

Table IX. Effects of Grade on Price in the East Half of Kansas for all Beef Breeds, Grades, and Fleshing with only Healthy Cattle Included.

<u>Steers</u>						
<u>Grade</u>	<u><600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
1	64.13	4.93	884	60.56	4.65	522
2	61.45	4.99	51	55.41	7.66	33
4	64.11	4.77	10,125	61.07	3.64	7,750
5	62.76	5.95	650	59.47	4.55	383
7	58.21	8.00	531	57.28	4.82	150

<u>Heifers</u>						
1	54.79	4.30	900	54.23	3.08	202
2	53.18	3.97	21	50.27	6.12	21
4	54.95	4.15	10,421	54.07	4.04	3,871
5	54.98	4.65	733	52.51	4.09	171
7	51.16	5.54	570	50.01	3.48	54

Total cattle evaluated for grade east half of Kansas 38,043.

<u>Grade</u>	<u>Percent</u>
1	6.6
2	.4
4	84.5
5	5.1
7	3.4

Table X. Effects of Grade on Price in the West Half of Kansas for all Beef Breeds, Grades, and Flething with only Healthy Cattle Included.

<u>Steers</u>						
<u>Grade</u>	<u><600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
1	66.88	4.43	1,118	62.20	3.24	1,519
2	62.09	5.25	128	58.73	4.49	154
4	64.55	5.24	7,810	61.73	3.32	11,391
5	66.52	1.53	87	61.75	1.99	47
7	56.95	7.46	190	56.47	5.52	412

<u>Heifers</u>						
1	58.27	3.26	703	56.08	2.51	364
2	52.65	6.83	85	55.62	2.02	34
4	56.10	4.43	7,557	54.59	3.61	3,272
5	56.75	2.23	83	56.68	1.98	77
7	53.09	5.45	217	47.97	7.62	50

Total cattle evaluated for grade of west half of Kansas 35,298.

<u>Grade</u>	<u>Percent</u>
1	10.5
2	1.2
4	85.2
5	.6
7	2.5

When the prices in Table IX (the eastern half of Kansas) are compared to the prices in Table VIII (p. 20, the average prices for all of Kansas) it is apparent that most cattle in the east sold for less than the state average. The exceptions were in the grades five and seven where the smaller frame cattle were discounted slightly less in the east than for the state as a whole. The reverse is true when Table X (prices in the western half of Kansas) are compared to the state averages.

When Tables IX and X (the east and west) are compared, other striking differences appear. The grade one (frame one, muscle one) cattle are the highest selling cattle in all sex and weight divisions in the western half of Kansas. The grade four (frame two, muscle one) and grade one cattle sell at

nearly the same price in the eastern half of Kansas. Even in the grade four, cattle sold for more dollars per hundred weight in the western part of Kansas. There was a greater percentage of cattle grading one and four (muscle one, frame one and two) in the western part and more cattle grading five and seven (frame two, muscle two and frame three, muscle one) in the east.

Because of the differences in available feed supplies and other reasons there appears to be a preference for smaller, earlier maturing cattle in the east. There also appears to be less willingness to own any kind of cattle in the east, especially at prices paid in the west.

Section 6

The Effects of Breed

An effort was made to determine the effect of breed on price independent of frame or muscling scores. The cattle evaluated were divided into sixteen breeds or breed groupings. They are as follows:

- (1) Hereford--primarily straightbred Hereford cattle.
- (2) Hereford Cross--definitely crossbred cattle with some breed and Hereford. Most of these lots would be crossed with a Continental breed or a British breed other than Angus.
- (3) Angus--primarily straightbred Angus cattle.
- (4) Angus Cross--definitely crossbred with some breed and Angus. Most of these lots would be crossed with an undetermined Continental breed or some British breed other than Hereford.
- (5) Black Baldies--the typical red or black bald-faced or brockle-faced calves resulting from the crossbreeding of Hereford and Angus cattle.
- (6) Charolais and Charolais Cross--mostly crossbred cattle showing a strong influence of Charolais breeding.
- (7) Simmental and Simmental Cross--mostly crossbred cattle showing a strong influence of Simmental breeding.
- (8) Brahman or Brahman Cross--any cattle showing some indication of "hump" or "ear". These ranged from imported southern cattle to native cattle crossed with Brangus, Beefmaster, Santa Gertrudis, or other Brahman blood.
- (9) Holstein--more of a by-product of the dairy industry than a beef industry product. They still are a factor in many stocker or feeder

programs. Holstein prices are quoted in this section for comparison with the beef breeds. They are not used in the other evaluations.

- (10) Longhorn and Longhorn Cross--with the increasing use of Longhorn bulls for breeding first-calf heifers, it was felt the prices for these cattle should be evaluated when possible.

Since it is a practice of many auctions to not sort cattle on the basis of breed alone, lots are often mixed by breed. The effect of mixing breeds or crosses versus selling all cattle of one breed or cross, is shown by three breed combinations.

- (11) Straightbred Hereford cattle mixed with Black Baldies
- (12) Straightbred Hereford cattle mixed with Simmental crossbred cattle
- (13) Straightbred Angus cattle mixed with Black Baldies. Appendix Table 1 shows the effect of mixing these breeds. For the evaluation of breeds in this portion of the study, breeds 11 and 13 were combined with the Black Baldie category and breed 12 was combined with breed 7, or the Simmental or Simmental crossbred category.

Some lots of cattle were mixed but still were identified as being mostly British breeding or mostly Continental breeding.

- (14) British Cross or mixed groups--straightbred or crossbred cattle containing several of the British breeds. They would include Hereford, Angus, and Shorthorn cattle plus crossbreds or combinations thereof.
- (15) Continental Crosses or mixed groups--mixed lots containing some combinations or crosses of the Continental breeds. They would include Charolais, Simmental, Limousin, Maine-Anjou, Chianina, and others.
- (16) The final breed category was a catch-all group for cattle unable to be identified as to breed or origin. They were listed simply as mixed.

Table XI shows the effects of breed on price for all locations in Kansas. Healthy cattle of all breeds, grades, and fleshing were used. Some breeds have more frame three cattle and other breeds have horns. For this reason, all grades and horned cattle were used in this comparison.

Appendix Table 1 is broken into 100 pound increments. For ease of comparison in Table XI, the weights are broken into categories of 600 pounds and less and 600 to 900 pounds.

Table XI. Effects of Breed on Prices for all Breeds, Grades and Flething
with only Healthy Cattle Included at all Locations.

Steers								
Breed	<600 lbs.				600-900 lbs.			
	Average Weight	Number of Head	Average Price/Cwt.	Standard Deviation	Average Weight	Number of Head	Average Price/Cwt.	Standard Deviation
Total Averages		22,192	63.40	5.95		24,058	60.26	4.67
1) Hereford	457	4,734	64.06	5.64	705	4,580	60.33	4.52
2) Hereford Cross	477	1,364	64.18	4.56	691	1,031	61.83	3.44
3) Angus	455	2,025	60.37	6.44	693	1,548	59.77	4.54
4) Angus Cross	473	805	63.31	6.42	699	1,025	61.76	3.28
5) Black Baldies	472	5,469	64.73	5.23	709	6,037	61.48	3.64
6) Charolais and Cross	466	946	65.20	5.33	710	526	61.11	3.90
7) Simmental and Cross	476	1,053	65.47	4.68	701	664	62.30	3.08
8) Brahman and Cross	468	532	62.35	5.91	736	363	59.57	4.00
9) Holstein	465	569	55.26	5.64	732	1,692	52.73	4.52
10) Longhorn Cross	419	49	63.81	5.38	744	51	55.93	6.62
14) British Breeds and Crosses	461	530	62.50	4.70	703	1,097	60.61	4.35
15) Continental Breeds and Crosses	462	807	65.56	4.86	712	597	61.84	3.56
16) Others and Mixed	475	3,295	63.89	5.31	727	4,654	61.21	3.46

Table XI. Effects of Breeds on Prices (continued).

Breed	Heifers				600-900 lbs.			
	< 600 lbs.							
	Average Weight	Number of Head	Average Price/Cwt.	Standard Deviation	Average Weight	Number of Head	Average Price/Cwt.	Standard Deviation
Total Averages		21,471	55.11	4.60		8,199	53.87	4.30
1) Hereford	444	4,025	55.18	4.72	680	1,729	53.76	3.71
2) Hereford Cross	456	1,212	54.80	4.17	685	601	54.98	4.87
3) Angus	445	2,129	52.42	5.13	688	334	52.54	4.93
4) Angus Cross	453	822	54.42	4.11	683	536	53.92	3.93
5) Black Baldies	451	5,438	56.30	4.44	695	2,177	54.19	4.57
6) Charolais and Cross	444	855	56.25	4.30	691	232	54.67	3.22
7) Simmental and Cross	467	947	56.06	3.91	679	147	53.94	4.26
8) Brahman and Cross	445	450	55.24	4.34	693	158	52.96	3.45
9) Holstein	460	94	52.56	5.12	696	80	47.43	6.34
10) Longhorn	398	64	53.60	4.23				
14) British Breeds and Crosses	457	459	54.44	3.60	695	154	53.36	3.10
15) Continental Breeds and Crosses	444	824	55.75	4.41	692	252	54.71	2.61
16) Others and Mixed	461	4,125	55.47	3.75	690	1,751	54.57	3.84

Total cattle evaluated for breed 60,220.

Breed	Percent of Total Steers and Heifers in Each Breed
1)	20.0
2)	5.6
3)	7.8
4)	4.2
5)	25.3
6)	3.4
7)	3.7
8)	2.1
9)	3.2
10)	.2
14)	3.0
15)	3.3
16)	18.2

Table XI, the effects of breed of cattle on price, lists cattle of all breeds. Because they are specialty type breeds, the Holstein which is a dairy breed, the Longhorn which is a calving-ease breed used on heifers, and the Brahman which is a heat-tolerant breed used more for summer feedlot programs were excluded from the analysis and discussion of this portion of the study.

In steers less than 600 pounds the average weight for the breeds spread from 455 pounds for the Angus to 477 pounds for the Hereford crossbreds. Breed average price did not appear to be influenced by the weight of cattle within that particular breed.

Table XI shows the average price for all steers less than 600 pounds to be \$63.40 per hundred weight. The range of prices for the different beef breeds was from \$2.16 premium for the Continental breeds to \$3.03 discount for the Angus cattle. For the heavy weight steers, the average price was \$60.26 per hundred weight. The range was from a plus \$2.04 for Simmental cattle to a minus \$.49 for Angus cattle. The average weight for the breed did not relate to the price.

In heifers weighing less than 600 pounds, the total average price was \$55.11 per hundred weight. The spread was from a premium of \$1.19 for Black Baldies to a discount of \$1.33 for Angus. The heavyweight heifers showed an average price of \$53.87. High for the division was Hereford Cross cattle at a \$1.11 premium and low was Angus at a \$1.33 discount.

In all cases, Black Baldies sold at a premium to their straightbred parent breeds. This may represent some premium for the hybrid vigor of the Hereford-Angus Cross or just general buyer preference based on the reputation of the Black Baldie cattle. The Black Baldies, Continental breeds, Charolais and Charolais Cross, Simmental and Simmental crossbred cattle, were consistently priced above the average of all cattle within the sex and weight ranges.

Different breeds have different growth curves and different mature weights. Because of those differences, some breeds would be expected to have different percentages of frames one, two, and three cattle. The price differences for the various frame scores are discussed in Section 5, The Effects of Frame, Muscling, and Grades on Prices. Tables XI-1 through XI-6 show the different percentages of frame and muscling scores within the Hereford, Angus, Black Baldie, Charolais, Simmental, British breeds, and Continental breeds. Tables for most of the other breeds can be found in the appendix.

Table XI-1. Frame by Muscle--Hereford Cattle (1) for Steers, Heifers, and Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	1.07	.42	.15	1.65
Frame 2	Percent	85.64	4.83	.38	90.85
Frame 3	Percent	7.16	.27	.08	7.51
Total Percent		93.87	5.52	.61	100.00
Total Head					15,068

Table XI-2. Frame by Muscle--Angus Cattle (3) for Steers, Heifers, and Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	.58	.86	.07	1.51
Frame 2	Percent	75.27	3.81	.58	79.65
Frame 3	Percent	17.97	.79	.07	18.84
Total Percent		93.82	5.46	.72	100.00
Total Head					6,036

Table XI-3. Frame by Muscle--Black Baldie Cattle (5) for Steers, Heifers, and Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	2.46	.11	0.00	2.57
Frame 2	Percent	92.50	.43	0.00	92.93
Frame 3	Percent	4.24	.25	0.00	4.49
Total Percent		99.2	.8	0.00	100.00
Total Head					24,590

Table XI-4. Frame by Muscle--Charolais Cattle (6) for Steers, Heifers, and Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	41.26	3.32	0.00	44.58
Frame 2	Percent	47.38	4.55	0.00	51.92
Frame 3	Percent	2.8	.7	0.00	3.5
Total Percent		91.43	8.57	0.00	100.00
Total Head					2,559

Table XI-5. Frame by Muscle--Simmental Cattle (7) for Steers, Heifers, and Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	40.59	.78	0.00	41.37
Frame 2	Percent	56.47	.59	0.00	57.06
Frame 3	Percent	1.57	0.00	0.00	1.57
Total Percent		98.63	1.37	0.00	100.00
Total Head					2,811

Table XI-6. Frame by Muscle--British Breeds (14) for Steers, Heifers, and Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	4.52	0.00	0.00	4.52
Frame 2	Percent	74.19	4.19	0.00	78.39
Frame 3	Percent	17.10	0.00	0.00	17.10
Total Percent		95.81	4.19	0.00	100.00
Total Head					2,770

Table XI-7. Frame by Muscle--Continental Breeds (15) for Steers, Heifers, and Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	18.75	1.79	0.00	20.54
Frame 2	Percent	77.08	1.79	0.00	78.87
Frame 3	Percent	.6	0.00	0.00	.6
Total Percent		96.43	3.57	0.00	100.00
Total Head					2,120

Partial reason for the discount of Angus cattle can be shown in Table XI-2. 18.84 percent of the Angus evaluated were scored frame three. Table VI, page 18, showed that frame three cattle were discounted \$4.00 to \$6.50. However, the British breeds and crosses had 17.1 percent frame three cattle, but consistently sold at a premium to Angus cattle. Section 5 also showed a premium for frame score one cattle over frame score two cattle. The Charolais cattle had a 44.58 percent frame one, Simmental had 41.37 percent ones, and Continental breeds had 20.54 percent frame one cattle. These breeds consistently sold above the average price for all cattle within the same sex and weight division. The Black Baldies only had 2.57 percent frame one cattle, but consistently sold at prices near those paid for the larger breeds.

To remove the effects of frame and muscling, the same program was run using the same cattle as in Table XI. However, the cattle were listed by breed within grade one (frame one, muscle one) and grade four (frame two, muscle one). Tables XII and XIII show the comparisons of the breeds with some of the effect of frame and muscling removed.

Table XII. Effects of Breed on Price for Grade 1 (frame 1, muscle 1) and Grade 4 (frame 2, muscle 1) for only Healthy Cattle with no Horns at all Locations.

<u><600 lbs.</u> <u>Steers</u>						
<u>Breeds</u>	<u>Grade 1</u>			<u>Grade 4</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
Hereford				64.56	5.29	3,153
Hereford Cross	66.37	3.52	12	64.46	4.12	884
Angus				61.78	5.41	1,688
Angus Cross	62.02	4.17	65	64.06	5.87	507
Black Baldies	65.54	4.96	75	65.13	5.00	4,437
Charolais and Cross	66.17	5.35	274	63.68	4.60	190
Simmental and Cross	66.42	3.95	226	65.36	4.79	400
Brahman Cross	63.96	4.87	56	63.14	5.00	248
British Breeds	63.72	1.18	19	62.61	4.07	267
Continental Breeds	65.78	4.66	45	66.34	4.66	513
Others	65.73	4.19	189	64.76	4.16	1,894
<u>Heifers</u>						
Hereford	55.66	2.80	15	55.51	4.81	2,673
Hereford Cross	55.70	1.73	14	54.82	4.22	815
Angus	54.50	3.53	17	53.35	4.17	1,710
Angus Cross	54.89	3.96	99	54.75	4.12	553
Black Baldies	60.03	5.45	51	56.45	4.33	4,635
Charolais and Cross	56.02	3.87	321	55.76	4.71	182
Simmental and Cross	56.28	3.22	156	56.16	4.28	518
Brahman Cross	55.59	5.01	85	55.47	4.07	184
British Breeds	55.84	4.58	26	54.07	3.79	262
Continental Breeds	57.02	6.79	74	55.69	3.51	601
Others	55.29	4.80	174	55.42	3.55	2,337

Table XIII. Effects of Breed on Price for Grade 1 and 4 Cattle and only Healthy Cattle with no Horns at all Locations.

<u>600-900 lbs.</u>						
<u>Steers</u>						
<u>Grade 1</u>				<u>Grade 4</u>		
<u>Breeds</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
Hereford	61.00	3.63	48	61.37	3.39	3,771
Hereford Cross	63.16	3.49	30	62.23	2.86	785
Angus				60.42	4.46	1,338
Angus Cross	62.96	2.53	32	62.45	2.72	820
Black Baldies	61.82	5.06	153	61.67	3.49	5,100
Charolais and Cross	62.23	2.12	221	60.33	4.18	186
Simmental and Cross	62.35	3.02	183	62.95	2.02	271
Brahman Cross	60.50	4.43	72	59.96	2.80	59
British Breeds	62.53	1.42	46	61.26	3.96	894
Continental Breeds	62.32	2.85	131	62.14	2.92	281
Others	61.67	3.18	658	61.85	2.79	2,594
<u>Heifers</u>						
Hereford				54.19	3.43	1,370
Hereford Cross				56.19	3.82	450
Angus				53.05	4.61	294
Angus Cross	52.68	3.09	15	55.59	3.11	458
Black Baldies	56.87	1.57	70	54.22	4.38	1,827
Charolais and Cross	55.66	2.31	66	55.50	2.41	126
Simmental and Cross	55.13	4.03	54	54.83	3.11	61
Brahman and Cross	53.75	2.21	13	52.55	3.79	43
British Breeds				55.40	2.23	118
Continental Breeds	56.05	.75	14	54.51	2.50	192
Others	56.21	2.27	79	55.09	3.86	1,013

Within the cattle weighing less than 600 pounds, grade one steers had a price spread of \$4.31 and grade four steers had a \$4.56 spread. Heifers spread \$5.53 in the grade one category and \$3.10 in the grade four category.

In the heavyweight cattle, 600 to 900 pounds, the spreads were much narrower. Steers in the grade one range had a spread of \$2.16, while steers in the grade four had a spread of \$1.62. Heifers in the same weight range had larger price differences, \$4.19 spread for grade one and \$3.14 for grade four. Again, Brahman were reported but not figured in the analysis.

These differences are among cattle of the same frame, muscle, health, and horned conditions. The price differences can only be explained by buyer preference for different breeds or combinations of breeds.

Section 6a

The Effects of Location on Prices Paid for the Different Breeds

The variation of Kansas agriculture from east to west was discussed in Section 5a. This variation had an influence on the grade of cattle in demand in each area. Because of the relationship of breed to frame size, the east-west study was conducted on the breeds as well. Tables XIV and XV show the prices by breed in the eastern and western halves of Kansas.

Table XIV. Effects of Breed on Price in the Eastern Half of Kansas for all Breeds, Grades, and Fleshing with only Healthy Cattle Included.

<u>Steers</u>						
<u>Breeds</u>	<u><600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
Total Averages	62.80	6.06	12,696	59.68	4.96	9,739
1) Hereford	64.16	5.63	2,633	60.02	4.62	1,817
2) Hereford Cross	63.97	4.38	546	62.02	3.77	552
3) Angus	59.72	6.18	1,228	59.34	4.79	788
4) Angus Cross	63.15	6.61	504	61.20	3.37	174
5) Black Baldies	64.53	5.05	2,941	61.30	3.54	2,070
6) Charolais and Cross	63.64	5.35	502	60.56	4.36	198
7) Simmental and Cross	64.76	4.70	359	62.21	3.00	195
8) Brahman and Cross	61.29	6.10	341	58.29	4.30	92
9) Holstein	54.64	5.34	426	51.99	4.44	929
10) Longhorn						
14) British Breeds	62.13	3.50	357	59.91	4.83	448
15) Continental Breeds	65.53	4.89	445	60.48	4.33	246
16) Others and Mixed	63.49	5.53	2,392	60.94	3.50	2,219

Table XIV. Effects of Breed on Price in the Eastern Half of Kansas
(continued).

<u>Heifers</u>						
<u>Breeds</u>	<u><600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
Total Averages	54.52	4.54	12,769	53.49	4.42	4,361
1) Hereford	54.86	4.63	2,511	53.48	3.86	934
2) Hereford Cross	54.76	4.35	589	55.89	3.48	320
3) Angus	52.07	5.07	1,465	52.23	4.99	234
4) Angus Cross	54.02	4.02	489	53.41	3.78	404
5) Black Baldies	55.79	4.38	3,124	53.97	4.53	897
6) Charolais and Cross	54.89	4.29	527	54.34	3.14	126
7) Simmental and Cross	54.38	3.94	300	52.68	5.07	63
8) Brahman and Cross	53.79	3.92	278	51.99	3.33	59
9) Holstein	51.49	4.88	61	46.18	6.03	39
10) Longhorn						
14) British Breeds	53.22	3.49	228	52.33	2.93	47
15) Continental Breeds	55.06	3.38	267	54.42	2.55	118
16) Others and Mixed	55.10	3.63	2,916	54.52	4.06	1,120

Total cattle evaluated for breeds in the eastern half of Kansas 39,565.

<u>Breed</u>	<u>Percent</u>	<u>Breed</u>	<u>Percent</u>
1	20.1	7	2.2
2	5.1	8	1.9
3	9.4	9	3.7
4	4.0	14	2.7
5	22.9	15	2.7
6	3.4	16	21.9

Table XV. Effects of Breed on Price in the Western Half of Kansas for all Breeds, Grades, and Fleshing with only Healthy Cattle Included.

<u>Steers</u>						
<u>Breeds</u>	<u><600 lbs.</u>			<u>600-900 lbs</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
Total Averages	64.28	5.67	9,496	60.99	4.16	14,319
1) Hereford	63.90	5.66	2,101	60.82	4.34	2,763
2) Hereford Cross	64.32	4.69	818	61.62	3.07	479
3) Angus	61.84	6.80	797	60.58	3.92	760
4) Angus Cross	63.56	6.16	301	62.27	3.15	851
5) Black Baldies	64.97	5.44	2,528	61.68	3.75	3,967
6) Charolais and Cross	67.11	4.68	444	61.63	3.34	328
7) Simmental and Cross	65.85	4.65	694	62.37	3.17	469
8) Brahman and Cross	64.27	5.09	191	60.74	3.37	271
9) Holstein	57.64	6.17	143	54.23	4.32	763
10) Longhorn	63.91	6.49	27	58.12	6.51	40
14) British Breeds	63.05	6.04	173	61.51	3.49	649
15) Continental Breeds	65.59	4.87	362	63.07	2.06	351
16) Others and Mixed	64.70	4.74	903	61.56	3.37	2,435

Table XV. Effects of Breed on Price in the Western Half of Kansas
(continued).

<u>Heifers</u>						
<u>Breeds</u>	<u>< 600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
Total Averages	56.05	4.55	8,702	54.50	4.01	3,838
1) Hereford	55.80	4.82	1,514	54.29	3.38	795
2) Hereford Cross	54.85	3.99	623	54.02	5.92	281
3) Angus	53.24	5.18	664	53.30	4.79	100
4) Angus Cross	55.06	4.21	333	54.97	4.13	132
5) Black Baldies	57.00	4.43	2,314	54.50	4.63	1,280
6) Charolais and Cross	58.18	3.53	328	55.24	3.36	106
7) Simmental and Cross	57.46	3.30	647	55.27	2.75	84
8) Brahman and Cross	57.48	4.05	172	55.14	2.78	99
9) Holstein	54.76	5.05	33	52.95	4.90	41
10) Longhorn	54.75	4.25	50	57.27	.03	38
14) British Breeds	56.20	3.01	231	55.19	2.62	107
15) Continental Breeds	56.29	5.02	557	54.96	2.70	134
16) Others and Mixed	56.21	3.86	1,209	54.64	3.46	631

Total cattle evaluated for breed in the western half of Kansas 36,355.

<u>Breed</u>	<u>Percent</u>	<u>Breed</u>	<u>Percent</u>
1	19.8	7	5.2
2	6.4	8	2.0
3	6.4	9	2.7
4	4.5	10	.5
5	27.8	14	3.3
6	3.3	15	3.9
		16	14.2

A premium was given for cattle of all sexes and weights in the western part of the state. For steers less than 600 pounds, the average prices were \$64.28 per cwt. in the west, and \$62.80 per cwt. in the east. For steers 600 to 900 pounds, the price in the west was \$60.99 and \$59.68 in the east. The heifers followed the same pattern. In the lighter weight category, heifers brought \$56.05 in the west versus \$54.52 in the east. Heavyweight heifers sold for \$54.50 in the western part of the state and \$53.49 in the eastern part.

The premiums paid in the western part of Kansas are consistent across nearly all breeds. The exceptions are in Hereford cattle. Hereford steers 600 pounds and less sold for \$64.16 in the east versus \$63.90 in the west. Hereford Cross cattle, both steers and heifers in the heavy weight division, also sold at a premium in the eastern half of Kansas. The price comparisons were \$61.62 for Hereford Cross steers in the west versus \$62.02 in the east. In the heifer category, 600 to 900 pounds, heifers in the west sold at \$54.02 per cwt. while they sold for \$55.89 per cwt. in the east.

Cattle in the east and west area were divided into different frame and muscling percentages. This was done to determine if the differences in prices paid for the different breeds in each part of the state was a function of the frame score or an effect of the breed. Tables XV-1 through XV-7 show the frame and muscling percentages within the breeds in the eastern and western halves of the state.

Table XV-1. Frame by Muscle--Hereford Cattle (1) for Steers, Heifers, and Both Weight Categories.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	.60	.54	.18	1.32
Frame 2	Percent	82.64	7.27	.60	90.51
Frame 3	Percent	7.93	.12	.12	8.17
Total Percent		91.17	7.93	.90	100.00
Total Head					7,895
<u>Western Half of Kansas</u>					
Frame 1	Percent	1.90	.21	.11	2.21
Frame 2	Percent	90.91	.53	.00	91.44
Frame 3	Percent	5.81	.53	.00	6.34
Total Percent		98.63	1.27	.11	100.00
Total Head					7,173

Table XV-2. Frame by Muscle--Angus Cattle (3) for Steers, Heifers, and Both Weight Categories.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	.42	.94	.10	1.46
Frame 2	Percent	70.49	5.32	.83	76.64
Frame 3	Percent	21.27	.52	.10	21.90
Total Percent		92.18	6.78	1.04	100.00
Total Head					3.715
<u>Western Half of Kansas</u>					
Frame 1	Percent	.93	.69	.00	1.62
Frame 2	Percent	85.88	.46	.00	86.34
Frame 3	Percent	10.65	1.39	.00	12.04
Total Percent		97.45	2.55	.00	100.00
Total Head					2,321

Table XV-3. Frame by Muscle--Black Baldies (5) for Steers, Heifers, and Both Weight Categories.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	.98	.07	.00	1.04
Frame 2	Percent	92.65	.46	.00	93.11
Frame 3	Percent	5.79	.07	.00	5.85
Total Percent		99.41	.59	.00	100.00
Total Head					9,029
<u>Western Half of Kansas</u>					
Frame 1	Percent	4.34	.16	.00	4.50
Frame 2	Percent	92.31	.41	.00	92.72
Frame 3	Percent	2.29	.49	.00	2.78
Total Percent		98.94	1.06	.00	100.00
Total Head					10,089

Table XV-4. Frame by Muscle--Charolais Cattle (6) for Steers, Heifers, and Both Weight Categories.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	34.48	2.51	.00	36.99
Frame 2	Percent	49.53	8.15	.00	57.68
Frame 3	Percent	4.08	1.25	.00	5.33
Total	Percent	88.09	11.91	.00	100.00
Total Head					1,353
<u>Western Half of Kansas</u>					
Frame 1	Percent	49.80	4.35	.00	54.15
Frame 2	Percent	44.66	.00	.00	44.66
Frame 3	Percent	1.19	.00	.00	1.19
Total	Percent	95.65	4.35	.00	100.00
Total Head					1,206

Table XV-5. Frame by Muscle--Simmental Cattle (7) for Steers, Heifers, and Both Weight Categories.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	48.85	.92	.00	49.77
Frame 2	Percent	48.85	.46	.00	49.31
Frame 3	Percent	.92	.00	.00	.92
Total Percent		98.62	1.38	.00	100.00
Total Head					917
<u>Western Half of Kansas</u>					
Frame 1	Percent	34.47	.68	.00	35.15
Frame 2	Percent	62.12	.68	.00	62.80
Frame 3	Percent	2.05	.00	.00	2.05
Total Percent		98.63	1.37	.00	100.00
Total Head					1,894

Table XV-6. Frame by Muscle--British Breeds (14) for Steers, Heifers, and Both Weight Categories.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	3.28	.00	.00	3.28
Frame 2	Percent	68.31	6.56	.00	74.86
Frame 3	Percent	21.86	.00	.00	21.86
Total Percent		93.60	6.56	.00	100.00
Total Head					1,080
<u>Western Half of Kansas</u>					
Frame 1	Percent	6.30	.00	.00	6.30
Frame 2	Percent	82.68	.79	.00	83.46
Frame 3	Percent	10.24	.00	.00	10.24
Total Percent		99.21	.79	.00	100.00
Total Head					1,160

Table XV-7. Frame by Muscle--Continental Breeds (15) for Steers, Heifers, and Both Weight Categories.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	14.38	1.88	.00	16.25
Frame 2	Percent	80.00	3.13	.00	83.13
Frame 3	Percent	.63	.00	.00	.63
Total Percent		95.00	5.00	.00	100.00
Total Head					1,076
<u>Western Half of Kansas</u>					
Frame 1	Percent	22.73	1.70	.00	24.43
Frame 2	Percent	74.43	.57	.00	75.00
Frame 3	Percent	.57	.00	.00	.57
Total Percent		97.73	2.27	.00	100.00
Total Head					1,404

Hereford and Black Baldie cattle appeared to be uniform in frame and muscling scores across the entire state. Angus cattle in the east showed 21.95 percent of frame three cattle while those in the west had only 12.04 percent. The British breeds and British breed crosses had 21.86 percent frame three cattle in the east, but only 10.24 percent frame three in the west. Therefore, the differences in prices paid for these cattle from east to west could be explained partly by the differences in frame score.

The increase in frame size was apparent in the west where Charolais and Continental breeds were concerned. Both breeds were showing more frame one cattle in the west. The Charolais had 36.99 percent frame one in the east and 54.15 percent in the west. The Continental breeds had 16.25 and 24.43 percent frame one in the east and west, respectively.

The Simmental Cross cattle did not follow the trend. 49.77 percent were scored as frame one in the east, while 35.15 percent were frame one in the west. Still the price premium was \$3.08 and \$2.59 for the heifer divisions in the west and \$1.09 and \$.16 in the steer weight divisions in the west.

The analysis in Section 5 showed different preferences by east-west area for frame size. It appears that producers are changing their cattle to meet this demand.

Section 7

The Effects of Fill

The amount of feed and water an animal receives prior to sale effects the amount of fill or middle they have. This has an effect on price because extra fill increases the weight of the cattle. Time of sale and feed and water availability at the different auctions affect the amount of fill that cattle carry.

Cattle were scored into one of five categories based on the amount of fill they were carrying. The scores were gaunt, shrunk, average, full, and tanked. Gaunt cattle were those showing an empty condition. Hollow flanks and sunken sides were indications. Shrunk cattle were less than full and showing some hollowness around the flank area.

Average fill cattle were full flanked and had slightly rounded sides. Full cattle showed some distension of the sides and were carrying excess middle. The tanked cattle had a tight-sided or almost bloated appearance. Distended sides and no visible hollow in front of the hook bones were also signs of tanked cattle.

Because sick cattle tend not to eat and drink, and therefore show a gaunt or shrunken condition, only healthy cattle were evaluated for this portion of the study. This is to remove the effects of price discounts for less than healthy cattle. All beef breeds, grades, and fleshing were included in this study.

Table XVI. Effects of Fill on Price for all Breeds, Grades, and Fleshing with only Healthy Cattle Included at all Locations.

<u>Steers</u>						
<u>Fill</u>	<u>< 600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
1) Gaunt	56.27	11.75	28	57.70	6.43	6
2) Shrunk	64.34	5.35	3,578	60.69	4.63	1,735
3) Average	64.26	5.40	13,025	61.32	3.69	11,954
4) Full	62.69	5.75	4,945	60.78	3.78	8,532
5) Tanked	51.36	8.21	37	54.46	7.89	129

<u>Heifers</u>						
1) Gaunt	51.45	6.24	42	54.80	1.72	7
2) Shrunk	55.40	4.18	4,358	54.40	3.68	603
3) Average	55.46	4.43	13,132	54.49	3.72	4,349
4) Full	54.32	4.76	3,753	53.58	4.34	3,123
5) Tanked	44.06	8.47	61	46.70	5.64	37

Total cattle evaluated for fill 73,434.

<u>Fill</u>	<u>Percent</u>
1	.1
2	14.0
3	57.8
4	27.7
5	.4

Steers weighing less than 600 pounds and all heifers sold at nearly the same price when scored gaunt as when having average fill. Heavy steers were discounted \$.63. Those figures show the seller should be aware that cattle sold with less than optimum fill are at a disadvantage since cattle are sold by weight. Cattle in the steer and lightweight heifer divisions were discounted from \$4.00 to \$8.00 when cattle reached the gaunt classification.

It can only be speculated whether the discount for cattle classified as full is only compensation for the increased weight of fill or if there is some additional discount because cattle are other than in a normal condition. A discount of \$1.57 to \$.54 was given for full cattle. When cattle weighing less

pounds reach the tanked category the discount is over \$12.00 per hundred weight. Heavy cattle were discounted \$7.00 to \$8.00.

The heavyweight heifers do not follow the trends of the steers and lightweight heifers. Gaunt, shrunk, and normal cattle all sell for about the same price (although numbers of cattle are very small in the gaunt category). This may be the result of buyers visually pregnancy testing heifers. These heifers are of the size and age to be fertile. If they are hollow or gaunt, the buyer is more sure that the heifers are open or not pregnant. Therefore, the buyer is more willing to pay as much for the shrunk or gaunt heifers as for those with normal fill.

Section 8

The Effects of Fleshing or Condition

The terms fleshing or condition, as they are used in this study are the amount of fat the animal is carrying. Animals were evaluated into one of five categories on the basis of their condition. These were very thin, thin, average, fleshy, and fat. Very thin cattle had rough hair coats, their ribs and pin bones were somewhat visible, and their shoulder blades could be seen when they walked. Thin cattle normally had enough condition so their ribs were slightly visible, but their pin bones and shoulder blades were not plainly seen.

Average condition cattle had some bloom or shine to their hair coat and the skeletal structure was not readily seen through the hide. Fleshy cattle were showing some indication of fat deposits along their loins and particularly around the pin bone and tail head region. Fat cattle probably had already been fed some grain. They were showing evidence of fat deposits over the ribs and pin bones and in the flank and brisket region. All breeds, grades, and locations of cattle were evaluated for flesh or condition. Only healthy cattle were used.

Table XVII. Effects of Flething or Condition on Price for all Breeds, Grades, and Flesh with only Healthy Cattle Included at all Locations.

<u>Steers</u>						
<u>Flething</u>	<u>< 600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
1) Very Thin	55.11	14.50	29	53.87	17.67	2
2) Thin	64.26	6.24	2,411	59.66	5.49	1,410
3) Average	64.07	5.55	15,142	61.14	3.93	12,314
4) Flethy	62.48	5.47	4,032	61.18	3.46	8,599
5) Fat	57.50	6.09	9	55.49	5.57	31

<u>Heifers</u>						
1) Very Thin	49.75	11.17	41			
2) Thin	55.51	5.46	2,959	53.29	3.75	368
3) Average	55.35	4.34	14,732	54.09	4.24	4,111
4) Flethy	54.23	4.53	3,625	54.22	3.87	3,570
5) Fat	47.20	7.30	17	50.74	5.73	53

Total cattle evaluated for flesh or condition 73,455.

<u>Flething</u>	<u>Percent</u>
1	.1
2	9.7
3	63.0
4	27.0
5	.2

In the less than 600 pound range, both steers and heifers received the highest price at the thin condition. The prices for cattle in average condition were within \$.20 of prices for thin cattle. Fleshy cattle in the lightweight divisions were discounted \$1.59 for steers and \$1.12 for heifers. When cattle were classified in either of the extremes of the very thin or fat classifications, they were discounted from \$5.00 to \$11.00 in the less than 600 pound weight range.

In the weight range of 600 to 900 pounds, the fleshy condition was the highest priced division in both the steer and heifer categories. The average condition received within \$.15 of the fleshy condition price. This was due to the market conditions in the time period of the study. Feeder cattle were selling below fed cattle prices. The fleshy cattle were more nearly ready to market and so sold more nearly at fed cattle price. They would require less time and feed to reach market weight than cattle with less condition. Thin conditioned cattle in the heavy weight cattle division were discounted \$.80 to \$1.48 while cattle in the very thin or fat divisions were discounted from \$4.00 to \$5.00.

Section 9

The Effects of Quartile of Sale

The time cattle sell in relation to the length of the auction was evaluated as an effect on price. Most auction managers have a sale schedule or routine. They may sell old cows, baby calves, and slaughter bulls first, then work up to the stocker calves, and progress on through the heavier feeder cattle. Because odd lots and misfits are normally sold at the beginning or end of the sale, an effort was made to evaluate lots in which quality of cattle was equal.

All beef breeds were evaluated, but only frames one and two and muscle one cattle were included. Cattle with fleshing scores of thin, average, or fleshy were used. Since the amount of time cattle stand in the yards prior to selling affects fill, only cattle with average fill were evaluated. Lot sizes of two or more were used. Many cattle sold as singles fit all of the above qualifications, but there is a discount for cattle sold in lots of one.

The evaluators noted the time the stocker calves began to sell and when the total sale ended. This time span was then divided into four time periods and the price of cattle sold in each quarter was analyzed.

Table XVIII. Effects of Quartile of Sale for all Beef Breeds, Only Frames One and Two with Muscling One and Two, and Fleshing Two, Three, and Four and only Healthy Cattle with no Horns, and Average Fill in Lot Size Greater than One were Included.

<u>Steers</u>						
<u>Quartile</u>	<u><600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
1	66.02	4.45	1,446	62.20	2.86	690
2	65.73	4.39	2,881	62.62	3.03	2,904
3	65.08	4.63	3,247	62.57	2.52	4,011
4	64.52	4.74	1,766	62.21	2.87	1,847

<u>Heifers</u>						
1	57.05	4.02	1,395	55.14	2.53	407
2	56.44	4.10	3,225	55.49	3.27	902
3	56.17	3.86	3,315	55.79	2.49	1,368
4	55.78	4.27	2,063	55.25	2.76	715

Total cattle evaluated for Quartile of Sale 32,199.

<u>Quartile</u>	<u>Percent</u>
1	12.2
2	30.8
3	37.1
4	19.9

Steers and heifers weighing less than 600 pounds selling in the last quarter of the sale were at a slight disadvantage. They were at a slight advantage if they sold in the first quarter. The second and third quarters seemed to be the best quarters for 600 to 900 pound cattle to sell. The larger drafts or packages of calves and feeders seemed to sell in the second or third quarters. Even though the time was divided equally, larger numbers were sold in these two time periods.

Sellers should work with their local livestock auction managers as to the best time to deliver to have their cattle sold in the optimum quarter of the sale.

Section 10

The Effects of Lot Size

Many buyers prefer to buy cattle which are bred alike or that have been managed the same if possible. This reduces sickness and other problems caused when strange cattle are bought and penned together. For these reasons, it would be expected that a premium would be paid for larger drafts of cattle over the smaller lots or singles.

To measure the effect of lot size on price, the number of head in each draft evaluated was recorded. The lots were then divided into seven categories based on the number of head in each lot. The divisions were as follows: singles, lots of two to five head, lots of five to ten, lots of ten to twenty, lots of twenty to thirty, lots of thirty to forty, and lots with greater than forty head in them.

Cattle sold as singles are sorted off larger groups for many reasons: poor health, small frame, light muscling, horns, uncastrated bulls, etc. For this reason, only frames one and two and muscle one cattle that were healthy and without horns were used for this analysis. Fleshing scores of thin, average, and fleshy were included and only average fill cattle were included. Table XIX shows the effects of lot size on price.

Table XIX. Effects of Lot Size on Price for all Beef Breeds, Only Frames One and Two, with Muscling One and Two and Fleshing Two, Three, and Four and Only Healthy Cattle with no Horns and Average Fill were Included.

<u>Steers</u>						
<u>Lot Size</u>	<u>< 600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
1	63.10	5.56	478	59.68	3.92	259
2-5	64.60	4.76	2,309	61.70	3.26	991
5-10	65.98	4.38	2,642	62.32	2.63	1,429
10-20	66.30	3.90	2,403	63.32	2.17	1,547
20-30	66.72	3.95	994	63.57	1.06	1,179
30-40	67.07	4.71	407	63.65	1.42	1,211
40	66.87	3.17	585	63.74	1.21	3,095

<u>Heifers</u>						
1	54.18	4.61	487	52.75	4.95	144
2-5	55.80	4.19	2,295	54.95	3.04	565
5-10	56.74	3.99	2,821	55.52	2.45	672
10-20	56.97	3.74	2,760	56.12	2.45	604
20-30	57.72	4.08	985	56.59	2.65	368
30-40	55.03	5.86	345	57.40	1.77	409
40	56.14	3.75	793	56.83	1.54	781

Total cattle evaluated for lot size 33,758.

<u>Lot Size</u>	<u>Percent</u>
1	4.1
2-5	18.2
5-10	22.4
10-20	22.3
20-30	10.4
30-40	7.0
40	15.6

The effects of lot size on price were consistent. The prices increased progressively as lot size increased to the 20 to 30 head range. In the case of heifers weighing less than 600 pounds in the two larger sized groups and in heavyweight heifers and lighter weight steers in the greater than forty head lots prices did not continue to increase. However, the price increase in steers weighing less than 600 pounds was \$3.77 from the singles to the greater

than forty head lots. In steers weighing 600 to 900 pounds, the price increased \$4.06 from singles to lots greater than forty. In heifers the same trend held true with heifers weighing less than 600 pounds having a \$4.08 price increase from singles to lots greater than forty head and a \$1.96 price increase from singles to lots greater than forty head in the 600 to 900 pound range. The tendency for prices to decline when lot size reaches the two larger groups may be an indication that the optimum lot size is between 20 and 40 head.

Section 11

The Effects of Weight Spread on Price

Selling cattle of uniform weights has been speculated to have a big influence on price. Uniformity, eye appeal, and other catch phrases were talking points by those doing the selling. To measure the spread of weights within lots of cattle, the evaluators scored the lots into one of four classifications based on the variation from the heaviest to the lightest weight animal in the group. Spreads were less than 25 pounds, 25 to 50 pounds, 50 to 100 pounds, and greater than 100 pounds. Table XX shows the price for steers and heifers for different price spreads. Beef cattle of all grades, fleshing, and fill were evaluated, but only healthy cattle were analyzed. Lot size greater than two were evaluated.

Table XX. Effects of Weight Spread on Price for all Beef Breeds, Grades, Flething and Fill and Only Healthy Cattle are Included.

		<u>Steers</u>			
		<u>< 600 lbs.</u>		<u>600-900 lbs.</u>	
<u>Weight Spread</u>		<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Head/Lot</u>
25 (1)		63.17	6.13	9,594	3.50
26-50 (2)		64.98	4.63	9,595	8.20
51-100 (3)		64.60	3.89	2,304	11.20
100 (4)		65.60	2.80	124	17.70
		<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Head/Lot</u>
25 (1)		59.91	4.42	5,227	4.1
26-50 (2)		62.24	3.02	10,673	13.9
51-100 (3)		62.15	2.88	5,255	18.3
100 (4)		62.24	3.81	1,195	28.5
		<u>Heifers</u>			
<u>Weight Spread</u>		<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Head/Lot</u>
25 (1)		54.67	4.80	9,221	3.70
26-50 (2)		55.95	4.10	9,881	8.60
51-100 (3)		56.30	3.73	2,137	11.40
100 (4)		56.93	3.92	126	15.80
		<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Head/Lot</u>
25 (1)		53.12	4.44	2,537	3.6
26-50 (2)		55.26	3.08	3,435	10.6
51-100 (3)		56.08	2.92	2,022	19.1
100 (4)		55.98	3.36	121	11.0
Total cattle evaluated for weight spread <u>73,947.</u>					
<u>Weight Spread</u>		<u>Percent</u>			
1		36.6			
2		45.4			
3		15.8			
4		2.2			

The table of weight spread seems to show that the more nonuniform a group becomes the more premium it receives. The price difference between the least and most variable lots is \$2.43 and \$2.33 for steers and \$2.26 and \$2.86 for heifers. In the steers less than 600 pounds and both weight categories of heifers, the price increase is almost progressive as the variability of the lot increases. At first this seems hard to explain until the average head per lot column is studied.

It stands to reason that smaller lots would tend to have less weight variability. The larger the lot is, the more animals there are and the chance of having a wider weight spread between the lightest and heaviest animal increases. The average number of head per lot increases steadily with the variability of the lot for both weight categories of the steers and in the less than 600 pound division of the heifers. Only in heifers weighing 600 to 900 pounds and in the most variable category did this not hold true. The increase seen in price as weight spread increases is a carry-over effect of the premium seen for lot size. This is shown in Table XIX in the previous section.

Another interesting sideline of the weight spread study is that as the weight variability increases and the lot size increases, the average weight also increases. See Table XX-2.

Table XX-2. Average Weight by Variability Classification for all Beef Breeds, Grades, Fleshing, and Fill and Only Healthy Cattle are Included.

	<u>Steers</u>		<u>Heifers</u>	
	<u>< 600 lbs.</u>	<u>600-900 lbs.</u>	<u><600 lbs.</u>	<u>600-900 lbs.</u>
<u>Weight Spread</u>	<u>Average Weight</u>	<u>Average Weight</u>	<u>Average Weight</u>	<u>Average Weight</u>
-25	459	702	446	689
26-50	477	711	456	680
51-100	498	728	479	694
100	487	755	451	738

Not only does the price per hundred weight increase as the variability increases, but the total dollars per head increases because weight is increasing at the same time.

Section 12

The Average Weekly Prices for all Locations

This study took place during the two month period of October and November. The evaluations are recorded as to the date they took place. Average prices had already been recorded, so it was only a matter of programming to have the computer print an average price per week.

Table XXI. Average Weekly Prices for Steers and Heifers, all Beef Breeds, all Health, Frame, Fleshing, and Fill at all Locations are Included.

<u>Steers</u>							
	<u><600 lbs.</u>			<u>600-900 lbs.</u>			
<u>Weeks</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Percent of Total</u>
9/20- 10/3	63.43	6.89	757	60.28	4.55	618	3.6
10/5 - 10/10	62.48	7.16	1,583	60.16	4.74	1,892	7.7
10/12- 10/17	64.54	6.52	1,866	61.14	4.41	2,090	8.7
10/19- 10/24	63.88	6.47	3,238	60.33	4.60	2,552	13.6
10/26- 10/31	63.06	5.77	3,135	60.39	3.85	2,587	13.2
11/2 - 11/7	62.28	5.97	3,402	60.10	3.95	2,558	13.5
11/9 - 11/14	63.66	5.33	3,229	61.72	4.08	3,551	15.2
11/16- 11/21	63.71	5.06	3,631	61.43	3.45	3,483	15.4
11/23- 11/28	63.57	6.54	1,166	61.22	3.35	1,909	6.5
11/30- 12/5	65.92	6.17	644	61.52	4.26	199	2.6

Table XXI. Average Week Prices (continued).

<u>Weeks</u>	<u>Heifers</u>					
	<u>< 600 lbs.</u>			<u>600-900 lbs.</u>		
	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>	<u>Average Price/Cwt.</u>	<u>Standard Deviation</u>	<u>Number of Head</u>
9/20- 10/3	55.14	5.12	930	53.12	4.48	387
10/5 - 10/10	55.24	5.04	1,638	54.13	4.65	590
10/12- 10/17	55.71	5.90	1,711	54.55	4.36	825
10/19- 10/24	55.17	4.54	3,084	53.66	3.88	1,235
10/26- 10/31	54.31	4.72	3,427	52.35	4.34	649
11/2 - 11/7	53.25	4.43	3,038	53.18	3.40	994
11/9 - 11/14	55.12	4.48	3,246	54.69	3.74	1,249
11/16- 11/21	55.51	4.06	2,935	54.55	4.25	1,375
11/23- 11/28	54.06	5.67	1,297	52.92	6.01	516
11/30- 12/5	57.20	3.36	730	55.53	2.81	329
Total	cattle	evaluated	for	price	by	week <u>74,246.</u>

Prices were surprisingly consistent over the ten week period. The difference between the high and low prices for the period ranged from \$1.62 for steers weighing 600 to 900 pound and a spread of \$3.95 for heifers weighing 600 pounds and less. The high average heifer price occurred in the last week of the study for both weight divisions. Steer prices also showed some strength in the latter part of the ten week period.

Nearly 71 percent of the cattle were sold in the five weeks from October 19 through November 21. The price spread over this five-week period was even narrower. The spreads for the steers weighing 600 pounds and less varied \$1.60. It changed \$1.62 among heavyweight steers. For heifers weighing 600 pounds and less, the price spread over the five week period was \$2.26, while in the heavyweight division it was \$2.34.

A producer who knows his annual cow carrying costs or the cost of producing a calf can relate to these prices to see what his profit or loss situation would be in the fall of 1981.

Chapter 3

Summarization of Findings

Based on the results of this study, the following recommendations will be made to the producer of calves or feeder cattle.

- (1) It is better to sell calves fresh off the cow or keep them long enough after weaning to have them straightened out before selling. It will pay to keep them until they are eating and have some bloom back on them. Calves in less than healthy categories were discounted \$2.75 to \$25.00 per hundred weight. Feeder cattle sold for \$2.75 to \$7.50 less. No one else wants to own your sick cattle any more than you do.
- (2) Horned calves sell for \$1.00 per hundred weight less than calves with no horns. Feeder cattle are discounted \$1.50 to \$2.50. Other traits such as grade or breed may be more important than horns because cattle with mixed horns and no horns sell for more than either horned or no horned cattle.
- (3) Castrate and dehorn calves before going to grass in the spring or before selling in the fall. Heifers were discounted \$9.50 to \$7.00 as weights increased from 400 to 900 pounds. Bulls sold for \$2.75 to \$10.00 per hundred weight less than steers, depending on what they weighed.
- (4) Producers are encouraged to study the steer-heifer price spread. It may pay to sell steers and grow or winter your heifers or vice versa. The prices received for steers was higher for all weights. Keeping the cattle for heavier weights will depend on the producers' cost of production.
- (5) In the calf weights medium frame cattle were discounted \$1.00 and small frame cattle sold for \$4.25 to \$7.50 less. Medium frame and large frame feeder cattle sold at the same price. Small frame feeders were docked \$4.00 to \$5.70 per hundred weight. Discounts for medium and light muscling range from \$1.50 to \$12.00.

Know what your potential buyers are looking for and try to produce what best suits their needs. Also study the relative efficiencies of each type and produce what best satisfies your program and personal tastes. Frame three and lighter muscled cattle should be avoided.

- (6) Even within the same grade (grade 4) there is a \$3.10 to \$4.56 spread in calf prices between major beef breeds. The spread in feeder prices is \$2.53 to \$3.14. No single breed or breed combination has a monopoly on all the good traits or best prices. Study the production efficiencies, your individual available feed supply and personal preference and choose accordingly. Generally crossbred cattle receive a price premium at the market and weight more because of heterosis or hybrid vigor. Black Baldies sell for \$1.00 to \$3.00 more than the parent breeds in the calf weights. The premium is \$1.00 or less in feeder cattle.
- (7) Buyers may say they like the thin kind, but the premium is still on bloom and shine. A little fat can cover a multitude of errors and the average fleshing cattle sell for the same price per hundred weight as thin cattle. Fleishy calves sell for \$1.00 to \$1.50 less than average condition. Fleishy and average feeders sell for the same price. If current feed costs and increased weights are considered, it may even pay to have them fleishy.
- (8) Besides having cattle healthy, show cattle to their best advantage. In this study shrunk and average fill cattle sell for the same price. Full calves sell for \$1.10 to \$2.00 less than average fill. Extremely gaunt or full cattle are discounted \$3.60 to \$12.90.
- (9) The premium is for larger lots of 20 to 40 head. Singles are discounted \$3.50 to \$4.00 and smaller lots sell for less than lots of 20 head or more. Within reason, do not sort too severely at home and instruct your auction manager not to either.
- (10) The premium for larger lots is more than the premium for uniformity. Uniform lots are popular as long as they are big uniform lots.
- (11) Calves sell for the most money in the first quarter of the auction. They sell for \$1.25 to \$1.50 less in the fourth. The price spread is less than \$1.00 for feeder cattle but those sold in the second quarters have a slight price advantage.

Time your cattle to sell early in the normal flow of the auction. Other factors are more important than the time within the sale day when the cattle are sold. Work with your auction manager in advance and have an orderly marketing program.

Cattle producers do have control over the type of cattle they sell in the markets. Planned marketing procedures, and cattle management, health, and breeding programs do affect the price a producer receives for his cattle. Long-term planning and top livestock management are important if the cattle producer is to receive top dollar in the marketplace.

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APPENDIX

List of Definitions
Tables of Price by Breed
Frequency Tables of Grade by Breed.

LIST OF DEFINITIONS
(as used in this report)

Feeder Cattle. Cattle in weight and frame categories that are normally placed on full feed or finishing rations in feedlots.

Calves or Stocker Cattle. Cattle in weight and frame categories that are normally grown on high roughage rations or pasture prior to being placed on a finishing ration. The term calves would indicate animals nine months of age or less and recently weaned from their mothers.

British Breeds. Those breeds of cattle imported from the British Isles. Normally considered to be Angus, Hereford, and Shorthorn.

Continental Breeds. Sometimes called the European breeds or "Exotics." Those breeds of cattle imported from Continental Europe, mainly Switzerland, Germany, Italy, or France. Normally considered to be Charolais, Chianina, Limousin, Maine-Anjou, Simmental, and others.

Brahman or Brahman Crossbreeds. Any of the strains of cattle imported from India or U.S. breeds which are developed from Brahman cattle. These include Santa Gertrudis, Brangus, Beefmaster, Simbrah, Braford, and others. In this study, any cattle considered to have some "ear" or "hump" to them.

Polled. A genetic trait in some breeds of cattle. Animals are born without horns.

Mean or Average Price. $\frac{\sum X}{N} = \frac{\text{the total sum of prices}}{\text{number of evaluations}}$

Standard Deviation. $\sqrt{\frac{\sum X^2 - \left(\frac{(\sum X)^2}{N}\right)}{n-1}}$

A measure of variability or spread of prices for each trait. A rule of thumb, the mean price + or - the standard deviation will encompass approximately two-thirds of all prices for that trait.

Appendix Table 1. Effects of Prices on Breed for all Grades and Fleshing with only Healthy Cattle with no Horns for All Auctions in the Study.

Breed	Steers					
	400		400-499		500-599	
	Average Price/Cwt.	Standard Deviation	Number of Head	Average Price/Cwt.	Standard Deviation	Number of Head
Hereford	66.98	6.53	794	64.00	5.47	1414
Hereford Cross	67.08	4.46	164	64.77	3.32	390
Angus	62.04	6.65	456	60.25	6.95	828
Angus Cross	66.10	6.17	89	62.47	7.95	258
Black Baldies	67.98	5.38	583	65.31	4.79	1504
Charolais and Cross	66.77	5.78	78	65.43	5.29	180
Simmental and Cross	68.22	5.02	48	66.81	5.05	206
Brahman and Cross	65.66	3.08	138	63.00	6.09	117
Holstein	60.90	6.08	57	56.46	6.21	110
Longhorn Cross	59.37	9.72	9	61.41	3.16	10
Hereford and Baldies	69.27	4.45	139	65.89	3.18	354
Hereford and Simmental	66.00	6.87	24	70.08	4.00	29
Angus and Baldies				65.36	3.39	65
British Breeds and Cross	64.16	7.20	68	62.20	3.96	108
Continental Breeds and Cross	69.05	5.47	91	65.56	4.72	239
Unidentified and Others	65.78	7.14	404	65.83	4.48	894
				61.53	2.88	151
				64.05	3.75	242
				62.57	4.25	1011

Appendix Table 1. Effects of Prices on Breed (continued).

Breed	400				400-499				500-599			
	Heifers											
	Average Price/Cwt.	Standard Deviation	Number of Head	Average Price/Cwt.	Standard Deviation	Number of Head	Average Price/Cwt.	Standard Deviation	Number of Head	Average Price/Cwt.	Standard Deviation	Number of Head
Hereford	57.38	5.20	938	54.74	4.46	1307	53.57	4.01	690			
Hereford Cross	56.64	4.35	153	64.61	3.54	423	53.12	4.46	282			
Angus	53.65	5.20	666	52.16	5.27	886	51.65	4.51	548			
Angus Cross	55.60	3.77	241	54.53	4.33	312	53.22	3.97	231			
Black Baldies	58.23	4.46	988	56.43	4.43	1711	54.27	3.95	860			
Charolais and Cross	57.24	4.24	144	55.67	3.61	257	54.41	4.60	118			
Simmental and Cross	58.78	2.38	87	56.96	3.01	254	54.02	4.33	245			
Brahman and Cross	57.41	4.86	128	54.43	3.72	112	53.75	3.95	57			
Holstein	52.75	5.59	28	53.03	6.76	20	53.09	2.67	36			
Longhorn Cross	53.58	5.37	11	48.25		9						
Hereford and Baldies	59.42	3.53	154	56.11	3.97	375	54.95	2.73	495			
Hereford and Simmental	58.75	5.72	58	57.12	.17	17	58.42	1.16	18			
Angus and Baldies	58.57	5.56	66	56.55	4.24	55	56.00	2.17	78			
British Breeds and Cross	55.31	4.29	79	54.97	3.30	168	53.05	3.25	121			
Continental Breeds and Cross	55.23	5.83	152	56.36	4.69	268	54.40	2.97	259			
Unidentified and Others	56.66	3.62	508	55.23	3.56	1444	54.69	3.85	945			

Appendix Table 1. Effects of Prices on Breed (continued).

Breed	Heifers				800-899			
	Average Price/Cwt.	Standard Deviation	Number of Head	Average Price/Cwt.	Standard Deviation	Number of Head	Average Price/Cwt.	Standard Deviation
Hereford	54.00	3.10	960	54.14	4.29	364	52.86	4.68
Hereford Cross	54.94	6.32	286	56.05	2.74	189	56.78	5.34
Angus	52.55	4.80	240	53.19	4.60	48	50.74	6.63
Angus Cross	54.30	3.36	234	58.35	4.99	270	50.00	
Black Baldies	54.04	4.56	745	52.76	5.27	240	53.89	5.37
Charolais and Cross	55.00	3.47	156	54.33	3.56	23	53.71	2.33
Simmental and Cross	54.60	4.75	64	53.26	4.59	27	56.25	1.41
Brahman and Cross	52.10	4.04	66	54.46	2.20	20	53.00	2.12
Holstein	49.42	5.65	51	48.64	6.63	18		
Longhorn Cross	57.27	.03	38					
Hereford and Baldies	56.23	2.56	402	55.74	2.52	432	55.62	1.94
Hereford and Simmental	57.42	1.45	24					
Angus and Baldies	52.06	6.36	29					
British Breeds and Cross	54.00	2.99	60	54.47	4.22	69	54.10	
Continental Breeds and Cross	54.14	2.67	96	55.95	1.61	103	52.50	
Unidentified and Others	54.94	4.08	654	55.42	3.57	395	53.69	4.78

Appendix Table 2. Frame by Muscle--Hereford Cross Cattle (2) for Steers,
Heifers, and Both Weight Categories Combined.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	5.41	.64	.00	6.05
Frame 2	Percent	83.12	4.14	.32	87.58
Frame 3	Percent	6.37	.00	.00	6.37
Total Percent		94.90	4.78	.32	100.00
Total Head					2,007
<u>Western Half of Kansas</u>					
Frame 1	Percent	5.90	.29	.00	6.19
Frame 2	Percent	88.50	.59	.00	89.09
Frame 3	Percent	4.72	.00	.00	4.72
Total Percent		99.12	.88	.00	100.00
Total Head					2,201

Appendix Table 3. Frame by Muscle--Angus Cross Cattle (4) for Steers, Heifers, and Both Weight Categories Combined.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	12.66	2.60	.32	15.58
Frame 2	Percent	44.81	32.47	1.62	78.90
Frame 3	Percent	3.90	.65	.97	5.52
Total Percent		61.36	35.71	2.92	100.00
Total Head					1,571
<u>Western Half of Kansas</u>					
Frame 1	Percent	5.71	.95	.00	6.67
Frame 2	Percent	85.71	.48	.00	86.19
Frame 3	Percent	7.14	.00	.00	7.14
Total Percent		98.57	1.43	.00	100.00
Total Head					1,617

Appendix Table 4. Frame by Muscle--Brahman Cross Cattle (8) for Steers, Heifers, and Both Weight Categories Combined.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	26.40	2.25	.00	28.65
Frame 2	Percent	60.67	5.06	.56	66.29
Frame 3	Percent	5.06	.00	.00	5.06
Total Percent		92.13	7.30	.56	100.00
Total Head					770
<u>Western Half of Kansas</u>					
Frame 1	Percent	44.07	16.95	.00	61.02
Frame 2	Percent	33.05	5.08	.00	38.14
Frame 3	Percent	.85	.00	.00	.85
Total Percent		77.97	22.03	.00	100.00
Total Head					733

Appendix Table 5. Frame by Muscle--Longhorn Cattle (10) for Steers,
Heifers, and Both Weight Categories Combined.

<u>Western Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	25.00	25.00	.00	50.00
Frame 2	Percent	25.00	20.83	4.17	50.00
Frame 3	Percent	.00	.00	.00	.00
Total Percent		50.00	45.83	4.17	100.00
Total Head					155

Appendix Table 6. Frame by Muscle--Other Breeds (16) for Steers,
Heifers, and Both Weight Categories Combined.

<u>Eastern Half of Kansas</u>					
		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	7.56	1.38	.00	8.94
Frame 2	Percent	73.97	14.83	.39	89.29
Frame 3	Percent	1.47	.20	.10	1.77
Total Percent		83.01	16.40	.49	100.00
Total Head					8,647
<u>Western Half of Kansas</u>					
Frame 1	Percent	20.10	6.41	.35	26.86
Frame 2	Percent	65.68	1.56	.35	67.59
Frame 3	Percent	4.58	.52	.17	5.55
Total Percent		90.64	8.49	.87	100.00
Total Head					5,178

Appendix Table 7. Frame by Muscle--Hereford Cross Cattle (2) for Steers, Heifers, and Both Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	5.67	.46	.00	6.13
Frame 2	Percent	85.91	2.30	.15	88.36
Frame 3	Percent	5.51	.00	.00	5.51
Total Percent		97.09	2.76	.15	100.00
Total Head					4,208

Appendix Table 8. Frame by Muscle--Angus Cross Cattle (4) for Steers, Heifers, and Both Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	9.85	1.93	.19	11.97
Frame 2	Percent	61.39	19.50	.97	81.85
Frame 3	Percent	5.21	.39	.58	6.18
Total Percent		76.45	21.81	1.74	100.00
Total Head					3,188

Appendix Table 9. Frame by Muscle--Brahman Cattle (8) for Steers,
Heifers, and Both Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	33.45	8.11	.00	41.55
Frame 2	Percent	49.66	5.07	.34	55.07
Frame 3	Percent	3.38	.00	.00	3.38
Total Percent		86.49	13.18	.34	100.00
Total Head					2,038

Appendix Table 10. Frame by Muscle--Longhorn Cattle (10) for Steers,
Heifers, and Both Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	21.62	16.22	.00	37.84
Frame 2	Percent	24.32	35.14	2.70	62.16
Frame 3	Percent	.00	.00	.00	.00
Total Percent		45.95	51.35	2.70	100.00
Total Head					164

Appendix Table 11. Frame by Muscle--Other Breeds (16) for Steers,
Heifers, and Both Weight Categories Combined.

		<u>Muscle</u>			<u>Total Percent</u>
		1	2	3	
Frame 1	Percent	12.10	3.20	.13	15.42
Frame 2	Percent	70.97	10.03	.38	81.44
Frame 3	Percent	2.70	.31	.13	3.13
Total Percent		85.77	13.54	.63	100.00
Total Head					13,825

FACTORS AFFECTING PRICES OF
FEEDER CATTLE AND CALVES IN KANSAS

by

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AN ABSTRACT OF A MASTER'S REPORT

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FACTORS AFFECTING PRICES OF FEEDER CATTLE AND CALVES IN KANSAS

This research was designed to determine management and marketing factors affecting the price of calves and feeder cattle. Emphasis was placed on factors the individual producer could control. An effort was made to place a dollar value on the differences in management and marketing.

The data were gathered by trained evaluators at fifteen cooperating auctions in Kansas. Cattle were evaluated as they sold through the auction. Traits evaluated and recorded were price, weight, time of sale, sex, breed, horns, frame, muscle, fleshing, health, fill, uniformity and lot size. A total of 85,915 cattle were evaluated during the study conducted in October and November of 1981.

A majority of the traits were determined to have some effect on price. The price effects ranged from fifty cents to \$25 per hundred weight for the various traits. Only auction size and uniformity had no price effect.

In general it is recommended cattle be healthy when sold. They should carry at least average fill and an average or fleshy amount of condition.

Bull calves should be castrated prior to selling. The steer-heifer price ratio and costs of carrying cattle to heavier weights should be studied before selling.

Producers should select against small frame and light muscled cattle. Crossbred cattle normally bring a premium over straightbreds. Personal preference, feed supplies, growth efficiencies and local demand determine the type and breed of cattle a producer raises.

Within reason, the premium for larger lots is greater than any price increase for uniformity of weight within the the lot. Producers should work with their local auction manager as to the best time to deliver cattle in relation to expected time of sale.

Cattle producers have control over the type of cattle they sell. Planned marketing procedures and cattle management, health, and breeding programs do affect the price a producer receives.