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# Historical Prices, Trends, Seasonal Indexes, and Future Basis of Cattle and Calves at Sioux Falls, South Dakota 1970-1989

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**HISTORICAL PRICES, TRENDS, SEASONAL INDEXES,  
AND FUTURES BASIS OF CATTLE AND CALVES  
AT SIOUX FALLS, SOUTH DAKOTA  
1970 - 1989**

by  
Dillon M. Feuz\*

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**ACKNOWLEDGEMENTS**

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\*Dr. Dillon M. Feuz is an Assistant Professor of Economics, South Dakota State University, Brookings, South Dakota.

## PREFACE

This publication is intended to provide historical cattle price information often needed by researchers, students, agri-business personnel, and cattle producers. The price information was obtained from the USDA, Agricultural Marketing Service, Livestock and Seed Division for the Sioux Falls, South Dakota Market. The work of the USDA recorder stationed at Sioux Falls is gratefully acknowledged.

Even though many producers in the state may not sell cattle through the Sioux Falls auction, the price information contained in this publication still is very valuable. Most producers probably know how prices at their local auction compare to those reported at Sioux Falls and so they can make the necessary adjustments to these prices.

It is the opinion of this researcher that the price trends, seasonal indexes, and futures basis information on the slaughter cattle probably are more representative of South Dakota markets than are the corresponding numbers for feeder cattle. The Sioux Falls market may not have a sufficient volume of feeder cattle, particularly in some months of the year, to be as representative of the state as a whole as was the case for slaughter cattle.

Dillon M. Feuz

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## SUMMARY

Prices for slaughter steers and heifers, slaughter cows and bulls, and feeder steers and heifers are reported and analyzed. Discounts and premiums for various weights and grades, as well as gender, are reported. Each price series is analyzed to determine long term price trends and seasonal patterns. The Sioux Falls basis is also calculated for slaughter steers and heifers and for feeder steers and heifers.

The 1985-1989 average price for 400-500 pound feeder steers was \$85.06 per cwt. The average price for feeder steers declined with increasing weight to \$68.83 per cwt. for 800-1000 pound feeder steers. Feeder heifers were discounted, relative to steers, by over \$8.00 per cwt. at the lighter weights and near \$5.50 per cwt. at heavier weights.

The heavier weight slaughter steers, 1100-1300, generally received a price premium of \$1.00 per cwt. over the 900-1100 pound slaughter steers. The 1985-1989 average annual price for 900-1100 pound slaughter steers was \$63.87 per cwt. and 900-1100 pound slaughter heifers were discounted about \$0.50 per cwt. during this time period.

Commercial grade slaughter cows generally brought a premium price over utility grade cows, and the cutter and canner grades were discounted about \$2.00 and \$5.50 per cwt. respectively from the utility grade. The heavier weight yield grade 1 bulls received the highest prices for slaughter bulls and prices for lighter bulls and yield grade 2 bulls were at lower levels.

All of the prices had fairly strong upward trends, particularly in the 1970's. From 1972 to 1989, 500-600 pound steer calf prices increased about \$2.75 per cwt. per year. Slaughter steer prices increased just over \$2.00 per cwt. per year and slaughter cow prices increased about \$1.35 per cwt. per year from 1970 to 1989.



Slaughter cow and slaughter bull prices exhibited the strongest seasonal patterns. Prices were seasonally low in the fourth quarter of the year and were seasonally high in the months of February through May, with the peak price generally occurring in March. The prices for slaughter steers and heifers generally had the following seasonal pattern: (1) prices generally above the annual average price during the first two quarters of the year, with the peak prices occurring in May; (2) third quarter prices were seasonally low; and (3) fourth quarter prices near the annual average price.

Seasonal patterns for feeder cattle prices were not as pronounced as the seasonal patterns for the slaughter cattle prices. Some of the heavier weight feeder prices did show a tendency to be seasonally low during the second quarter of the year. Due to lack of data in some months for the lightweight feeder cattle prices, it was difficult to draw many conclusions about the existence of a seasonal pattern.

The Sioux Falls basis was calculated for both slaughter steers and heifers and for feeder cattle. The prices for slaughter steers at Sioux Falls generally were lower than the near-by live cattle futures prices, i.e., there was a negative basis. The slaughter steer and heifer basis did show some seasonal variation. The months of May through July, had the smallest negative basis; the basis was even positive for the heavier weight slaughter steers during this time period. February-March and September-October were months with the largest negative basis.

The prices for feeder cattle were compared against the U.S. Feeder Steer Price (USFSP) to determine the Sioux Falls basis. Generally prices for feeder steers at Sioux Falls exceeded the USFSP, so there was a positive basis. The basis narrowed with weight and was negative for the heaviest feeder steers and for most of the feeder heifers.

**HISTORICAL PRICES, TRENDS, SEASONAL INDEXES, AND FUTURES BASIS  
OF CATTLE AND CALVES AT SIOUX FALLS, SOUTH DAKOTA  
1970 - 1989**

By Dillon M. Feuz

Many South Dakota farmers and ranchers have received relatively high prices from the sale of cattle and calves in the past few years. However, costs also have increased, so wise marketing decisions will make the difference between a profit and a loss year. Frequently individuals only look at current prices, and try to remember last year's prices, when making marketing decisions. By only analyzing the most recent prices and current prices, many trends and seasonal price movements are not readily apparent.

This publication provides longer term price relationships so that researchers, students, ranchers, farm managers, and agricultural lenders will be able to analyze current prices in relation to historical prices and trends. By using both current price and outlook information, as provided by the South Dakota Extension Service and other media sources, and this historical price information wise marketing/management strategies can be developed and implemented.

**SLAUGHTER CATTLE PRICES**

The annual average prices for slaughter steers, slaughter heifers and various weights and grades of slaughter cows and bulls from 1970 to 1989 are contained in Table 1. The prices are for choice grade slaughter steers and heifers. Slaughter bull prices were reported for different weights and grades prior to 1980, so only prices from 1980 to 1989 are reported. All of the prices are from the Sioux Falls, South Dakota terminal auction market.

TABLE 1. AVERAGE ANNUAL PRICES OF CHOICE SLAUGHTER STEERS AND HEIFERS, SLAUGHTER COWS, AND SLAUGHTER BULLS AT SIOUX FALLS, SOUTH DAKOTA, 1970-1989 (DOLLARS PER CWT.).

Year	900 to 1100 lbs. <sup>a/</sup> Slaughter			1100-1300 Slaughter Steers	Slaughter Cows				Slaughter Bulls			
	Steers	Heifers	Diff.		Commer. 2-4	Utility 2-3	Cutter 1-2	Canner 1-2	1000 to 1500		1500 to 2100	
									Yld 1	Yld 2	Yld 1	Yld 2
1970	29.03	28.07	0.96	29.06	20.60	20.88	20.40	18.77				
1971	31.71	31.03	0.68	31.99	20.18	20.76	20.20	18.47				
1972	35.27	34.33	0.94	35.52	24.37	24.96	24.12	21.97				
1973	43.85	42.40	1.45	43.72	31.73	32.90	31.80	29.41				
1974	40.88	39.99	0.89	41.09	24.66	25.93	24.54	22.38				
1975	44.13	42.50	1.63	44.78	21.47	21.76	20.05	17.36				
1976	38.54	36.98	1.56	38.31	26.05	26.41	24.67	22.10				
1977	39.76	38.30	1.46	39.95	26.12	26.85	25.68	23.09				
1978	51.36	49.82	1.54	51.94	37.51	38.94	37.37	35.09				
1979	66.89	65.19	1.70	67.23	49.58	52.10	51.02	47.53	b/	b/	b/	b/
1980	66.09	64.08	2.01	66.56	45.06	47.65	46.85	43.34	55.28	54.80	57.82	56.42
1981	62.88	61.35	1.53	63.32	41.32	42.82	41.46	38.40	49.69	48.86	53.10	50.06
1982	63.47	61.97	1.50	64.57	40.10	40.34	38.25	35.36	48.16	47.56	51.47	49.37
1983	61.58	60.42	1.16	62.86	39.45	39.40	37.42	34.29	47.65	47.06	49.96	48.30
1984	64.68	63.49	1.19	65.96	40.27	38.74	36.70	33.02	45.85	45.54	48.82	47.47
1985	57.78	56.96	0.82	58.52	38.86	36.98	35.05	31.81	44.23	43.86	47.35	45.92
1986	57.10	57.00	0.10	58.15	37.71	36.99	35.44	32.04	44.44	43.74	47.34	45.38
1987	63.43	63.70	-0.27	64.97	45.39	44.16	42.30	38.80	51.62	51.37	55.79	53.93
1988	69.17	67.97	1.20	70.25	49.69	47.76	45.96	42.34	59.04	57.34	61.76	58.62
1989	71.88	71.26	0.62	72.90	52.14	51.02	47.56	43.51	61.78	60.37	63.98	61.37
Averages												
70-89	52.97	51.84	1.13	53.58	35.61	35.87	34.34	31.45				
80-89	63.81	62.82	0.99	64.81	43.00	42.59	40.70	37.29	50.77	50.05	53.74	51.68
85-89	63.87	63.38	0.49	64.96	44.76	43.38	41.26	37.70	52.22	51.34	55.24	53.04

<sup>a/</sup> Slaughter steer and heifer weights are 1000-1100 for 1988 and 1989.

<sup>b/</sup> Bull weights and grades were not consistent prior to 1980.

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

### Weight and Heifer Price Discount

With feeder cattle prices there almost always is an inverse price-weight relationship, i.e., as weight increases, price decreases. This is not generally the case for slaughter cattle. From Table 1, it is apparent that the average price increases when going from 900-1100 to 1100-1300 pound slaughter steers. The 1980-1989 average increase was \$1.00 per cwt. and the 1985-1989 average increase was \$1.09 per cwt. This same price-weight relationship exists for slaughter bulls. The heavier yield grade 1 bulls brought about \$3.00 per cwt. more than the lighter bulls, and the heavier yield grade 2 bulls sold for just over \$1.50 more per cwt. than the smaller yield grade 2 bulls.

Slaughter heifers also are sold at a price discount to slaughter steers. This discount has been narrowing over time, particularly in the last five years. The average discount for heifers was \$1.13 per cwt. from 1970-1989 but only \$0.49 per cwt. over the last five years. This may be due to generally tighter supplies of cattle the last few years.

### Slaughter Cow Grade Differentials

The same price-weight relationship that exists for slaughter steers and bulls probably exists for slaughter cows, as evidenced by the grade differentials. Normally, one would expect the commercial and utility grade cows to be heavier than the cutter and canner cows. The largest price differential, \$3.56 for 1985-1989, occurs between the canner and the cutter grades. There also is a fairly significant increase between the cutter and utility grades, \$2.12 per cwt. for the 1985-1989 period. Over the long term, 1970-1989, there was little price differential between the commercial and utility grades. However, from 1985-1989, commercial grade cows received a \$1.38 per cwt. premium over utility grade cows.

## Long Term Trends

It is difficult to identify a trend in the slaughter cattle prices by just looking at the prices in Table 1. It is evident that the slaughter steer and slaughter heifer prices generally change in the same proportions from year to year. The slaughter cow and slaughter bull price series also tend to exhibit the same patterns, with the slaughter cow prices being slightly more variable than the slaughter bull prices. There is a little more variation between the slaughter steer and heifer prices and the slaughter cow and bull prices. This can be more clearly demonstrated by plotting these prices over time. Figure 1 contains a plot of the 900-1100 pound slaughter steer prices, representative of all the slaughter steer and heifer prices, and a plot of the utility grade slaughter cow prices, representative of all the slaughter cow and bull prices, from 1970 to 1989.

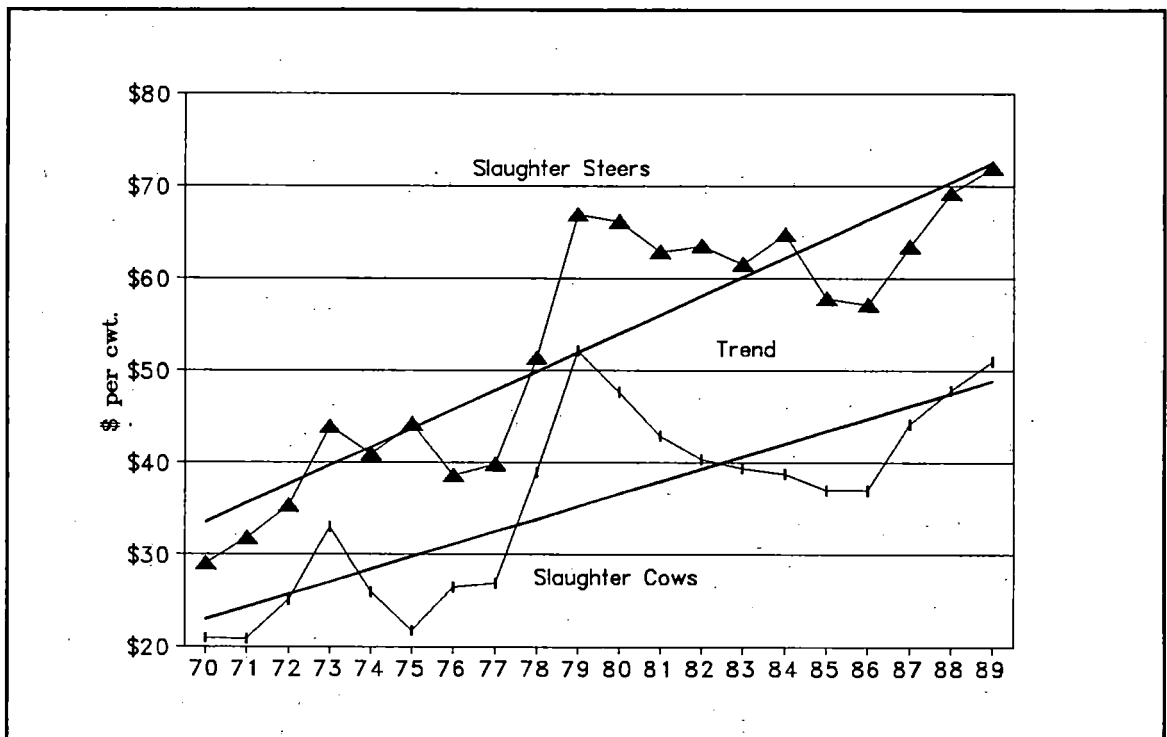


FIGURE 1. HISTORICAL PRICES OF 900-1100 LB SLAUGHTER STEERS AND UTILITY GRADE SLAUGHTER COWS AT SIOUX FALLS, SOUTH DAKOTA, 1970-1989.

Several observations can be made from the plots in Figure 1:

- \* There has been a fairly strong upward trend in both price series, \$2.05 and a \$1.36 per cwt. per year for slaughter steers and slaughter cows respectively;
- \* Both price series have similar patterns with the exception of slaughter cow prices declining much more rapidly following the peak prices of 1979;
- \* Both slaughter steer prices and slaughter cow prices for 1989 were very near the long term trend price;
- \* The slaughter steer price has been quite stable and fairly flat through the 1980's, trading in the \$60 to \$70 per cwt. range 7 out of 10 years.

#### Monthly Prices and Indexes

Monthly and seasonal price variations can be very important considerations in marketing slaughter cattle. The monthly average prices for the various weights and grades of slaughter steers, heifers, cows, and bulls, as reported at Sioux Falls, are contained in Tables 2 through 12.

Monthly price indexes were calculated for each price series using a 12 month moving average technique. This method of calculating monthly indexes removes the influence of cyclical and long term trends.<sup>1</sup> The 10 year average and last five year average monthly indexes are also presented in Tables 2 through 12. Associated with each monthly index number is a standard deviation. By adding one standard deviation and subtracting one standard deviation from the average, a range is

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<sup>1</sup> For more detail on the 12 month moving average technique of computing seasonal indexes the reader should consult: Purcell, William D. *Agricultural Marketing Systems: Coordination, Cash and Futures Prices*. Reston, Virginia: Reston Publishing Company, Inc., 1979.

established in which a monthly index number would be expected two out of three years.

An index number greater than 100 implies that prices are typically higher in that month, than the average annual price. For example, the five year average index number of 97.33 in July in Table 2 means that the price in July is typically 2.67 percent below the average annual price. By adding and subtracting the standard deviation of 4.09 to the average index number, a range of 93.24 to 101.42 is obtained, and the July index number should be within that range two out of three years.

These monthly index numbers can be converted to prices and compared against current prices in a rather simple manner. By multiplying the 1989 average annual price by each average monthly index number, one can arrive at what the average, or expected, monthly prices would be, based on the 1989 general price level. Trapp (1989) used this technique to look at seasonal price patterns of many Oklahoma agricultural commodities. The five year average monthly indexes are multiplied by the 1989 annual average price and are plotted in Figures 2 through 12 for each of the slaughter cattle price series. In addition to the five year average monthly prices, the actual 1989 monthly prices are plotted, as well as the range of expected prices, i.e., plus or minus one standard deviation.

Slaughter steer and heifer prices generally rise through the first quarter and early part of the second quarter reaching a peak level in May (Figures 2-4). Prices generally fall 5 to 6 percent after May and remain seasonally low through the third quarter of the year. Slaughter steer and heifer prices then typically strengthen in the fourth quarter, but usually are not quite as high as the spring prices.

Slaughter cow prices have the most pronounced seasonal price

variation (Figures 5-8). Prices generally rise rather sharply in the first quarter of the year, reaching a peak price in March that is generally 6 to 7 percent above the annual average price. The price then gradually declines during the second quarter and remains near the annual average throughout the third quarter. The traditionally heavy marketings of cull cows in the fourth quarter of the year puts downward pressure on prices and the fourth quarter price is often 6 to 7 percent below the annual average. Slaughter bull prices generally follow the same pattern as cow prices, although the seasonal high and low prices are generally not as pronounced (Figures 9-12).

The strong seasonal price movement for slaughter cows and the price differences between grades provides the possibility to greatly enhance revenue and profits from prudent marketing of cull cows. For example, a producer who normally sells his cull cows in November at a seasonally low price, may be able to feed those cows into February or March and sell them at a seasonally high price. The cull cows fed into February may also move up one or two slaughter grades and so the sale price may be several dollars per cwt. more than in the fall months. There are of course, additional costs involved but several researchers have found it profitable to feed cull cows for two or three months (Kearl, 1987a; Shane & Ellingson, 1988).

#### Slaughter Steer and Heifer Basis

With many types of forward contracts, futures hedges, options, and even cash marketing strategies knowledge of the basis is very critical. The basis for slaughter steers and heifers is calculated as the:

**SIoux FALLS CASH PRICE - NEAR-BY LIVE CATTLE FUTURES PRICE**



where: **SIoux FALLS CASH PRICE** is the monthly average price for a particular weight and sex; and, **NEAR-BY LIVE CATTLE FUTURE PRICE** is the monthly average price for that contract.

The live cattle contract is with the Chicago Mercantile Exchange and a par delivery is for 40,000 pounds of USDA estimated Choice grade, live steers weighing between 1,050 and 1,200 pounds at an approved delivery point. The nearest delivery point for South Dakota producers is Sioux City, Iowa.<sup>2</sup> The contract months for live cattle futures are February, April, June, August, October, and December with trading terminating on the 20th day of each contract month.

The Sioux Falls monthly basis for slaughter steers and heifers is reported in Table 13. The average monthly basis from 1985 to 1989 is plotted in Figure 13. There are several factors that effect the slaughter cattle basis: the distance to Sioux City, Iowa, the nearest delivery point; timing, e.g., the January versus February basis, the latter being a contract month; the weight of the steers and/or heifers compared to the contract specifications; quality, or perceived quality differences; and gender, in the case of slaughter heifers. All of these factors interact with the expectations of the market participants, and the result is a live cattle futures price and a cash price at Sioux Falls; the difference is the basis.

From the data in Table 13 and the bar chart in the corresponding figure it is apparent that Sioux Falls generally has a negative

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<sup>2</sup> More detail on contract specifications and par deliveries can be obtained from "Futures Trading in Live Cattle: Contract Specifications" Chicago Mercantile Exchange, Chicago, Illinois.

slaughter cattle basis, i.e., the monthly average price in Sioux Falls is less than the monthly average live cattle futures price. Lighter weight slaughter steers have a more negative basis than the heavier steers, and slaughter heifers have the most negative basis. There also appears to be a seasonal trend to the basis numbers, with the negative basis narrowing during May, June, and July and actually being positive for the heavier slaughter steers.

Knowing these historical basis patterns can be very useful for many alternative marketing and risk management strategies. For many futures and options marketing alternatives, the basis may be more critical than the actual cash price.

TABLE 2. AVERAGE MONTHLY PRICES OF SLAUGHTER STEERS, 900-1100 LB., CHOICE 2-4, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	64.92	66.45	65.58	62.14	63.55	65.61	69.82	71.38	68.64	66.62	64.62	63.79	66.09
1981	62.14	60.58	60.32	63.93	65.54	67.32	66.75	65.07	64.43	60.78	59.41	58.29	62.88
1982	59.74	62.80	65.67	68.18	71.59	69.69	64.85	64.23	60.64	58.08	58.22	57.97	63.47
1983	58.51	60.12	62.78	67.29	66.75	64.88	61.88	60.59	57.83	57.90	57.98	62.48	61.58
1984	66.36	65.98	67.16	67.53	64.92	63.75	65.31	63.89	61.96	60.58	63.92	64.75	64.68
1985	63.40	62.20	58.51	57.00	56.40	55.67	53.09	51.86	51.15	58.14	63.24	62.72	57.78
1986	59.03	55.82	54.65	53.05	54.96	53.78	58.30	59.40	58.97	58.47	60.27	58.55	57.10
1987	57.66	59.45	60.29	65.45	67.76	67.82	64.80	63.70	64.17	63.78	62.79	63.46	63.43
1988	64.64	66.32	70.15	72.60	74.78	69.46	65.62	66.96	68.43	69.03	70.30	71.78	69.17
1989	71.96	73.13	76.66	76.63	74.90	70.22	69.02	69.59	68.04	68.69	70.29	73.41	71.88

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	98.62 (4.85)	99.05 (3.43)	100.63 (4.41)	103.30 (5.45)	104.34 (5.58)	101.76 (5.36)	100.06 (4.38)	99.83 (4.97)	97.80 (4.72)	97.28 (3.85)	98.51 (6.16)	98.83 (5.97)
85-89	100.22 (4.11)	100.02 (2.45)	100.63 (4.24)	101.79 (6.01)	102.92 (5.85)	99.25 (4.87)	97.33 (4.09)	97.43 (5.08)	97.30 (4.75)	99.65 (2.35)	102.12 (6.47)	101.34 (6.28)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

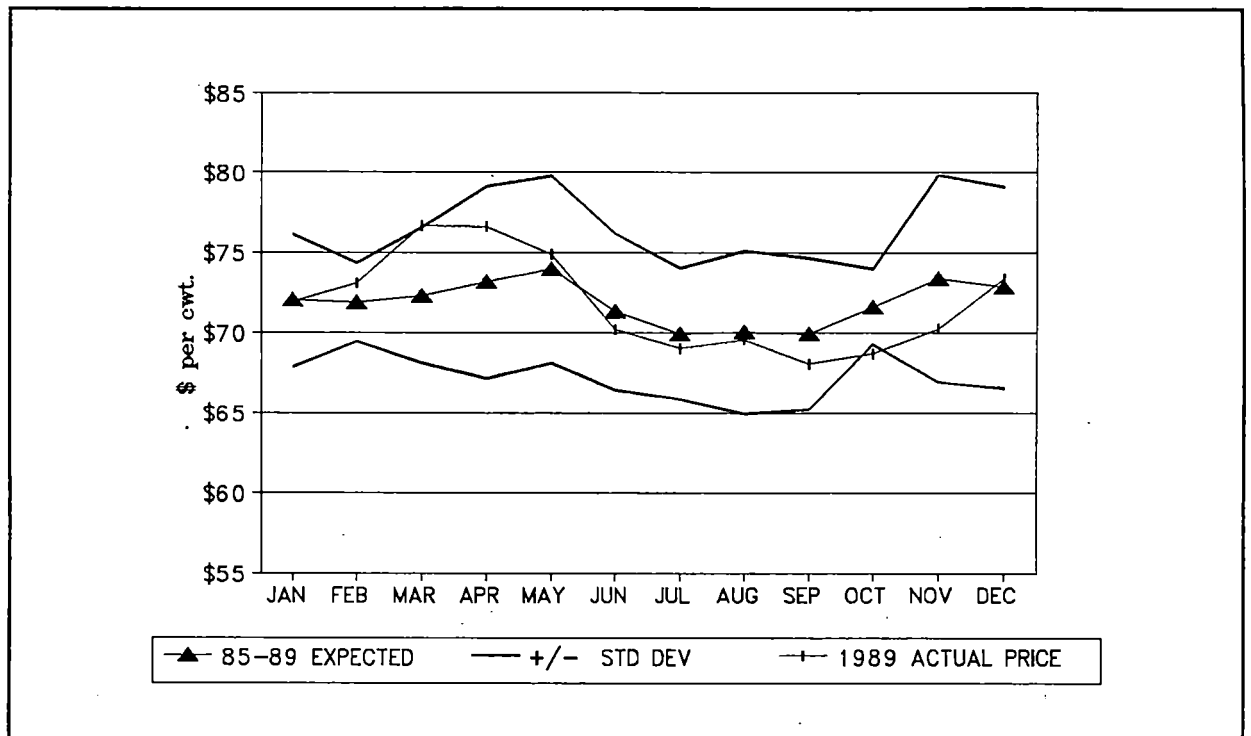


FIGURE 2. CHOICE SLAUGHTER STEERS, 900-1100 LBS., SIOUX FALLS, SOUTH DAKOTA.

TABLE 3. AVERAGE MONTHLY PRICES OF SLAUGHTER HEIFERSS, 900-1100 LB., CHOICE 2-4, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	63.86	65.36	64.24	61.06	61.75	63.64	66.58	68.14	65.79	65.03	62.26	61.26	64.08
1981	60.46	59.51	59.39	62.39	64.51	65.58	64.99	63.68	62.35	58.87	57.75	56.70	61.35
1982	58.10	61.74	64.05	66.52	70.06	68.38	63.58	62.90	58.31	56.58	56.74	56.69	61.97
1983	58.01	59.64	62.02	65.40	64.92	62.76	60.33	58.90	57.12	57.45	57.04	61.50	60.42
1984	65.14	64.56	65.79	65.84	64.06	62.42	63.88	62.74	60.89	59.24	63.20	64.17	63.49
1985	62.79	61.33	57.57	55.85	56.21	54.78	51.55	50.90	50.48	57.42	62.41	62.24	56.96
1986	58.89	55.19	53.86	53.31	54.89	53.90	58.24	59.08	58.58	58.32	61.17	58.52	57.00
1987	57.44	59.80	60.40	65.98	68.84	68.78	64.80	63.38	63.94	63.81	63.33	63.92	63.70
1988	63.49	65.22	69.13	71.35	73.28	68.19	64.27	65.54	66.90	67.72	69.68	70.86	67.97
1989	71.27	72.38	76.03	75.19	74.03	69.33	68.44	69.04	67.58	68.13	70.18	73.54	71.26

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	98.82 (5.08)	99.36 (3.13)	100.76 (4.42)	103.13 (5.07)	104.71 (5.32)	101.75 (5.49)	99.62 (4.48)	99.40 (4.90)	97.32 (4.37)	97.29 (3.91)	98.82 (6.21)	99.01 (6.14)
85-89	100.27 (4.78)	99.95 (2.59)	100.46 (4.54)	101.72 (5.60)	103.31 (5.64)	99.43 (5.19)	96.93 (4.43)	96.93 (5.08)	96.88 (4.52)	99.53 (2.40)	102.87 (6.03)	101.73 (6.20)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

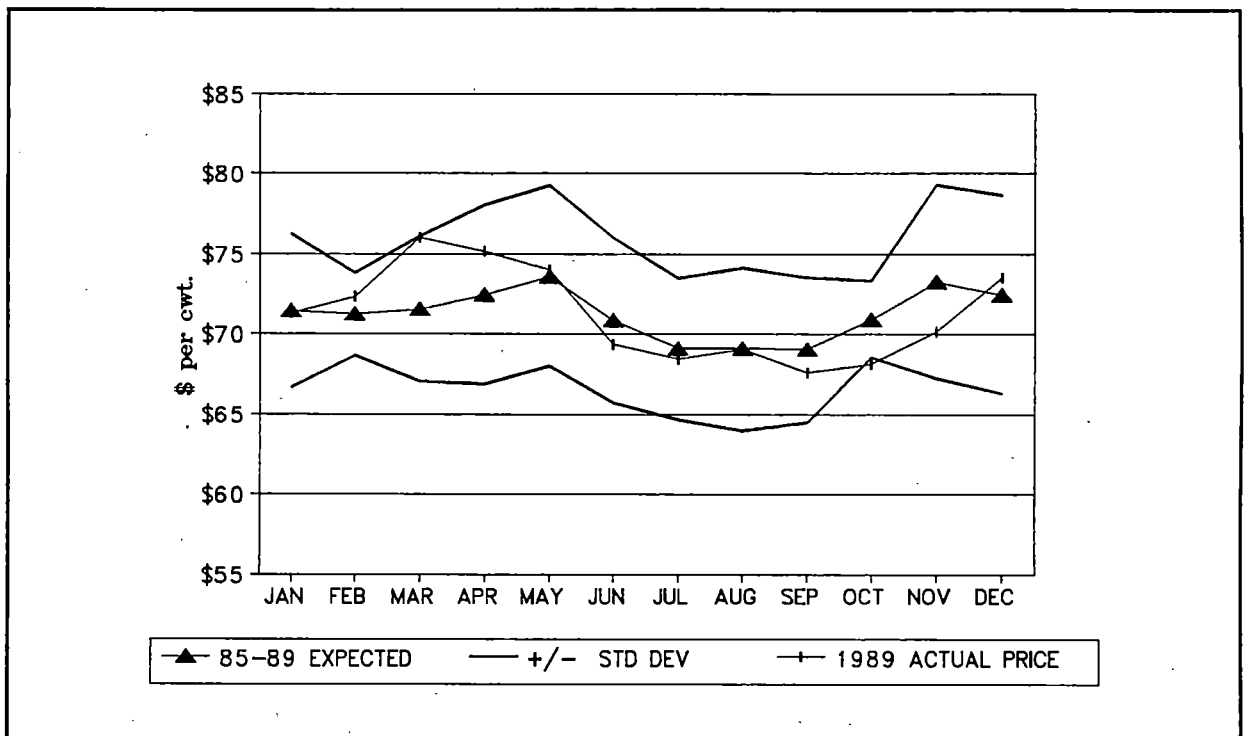


FIGURE 3. CHOICE SLAUGHTER HEIFERS, 900-1100 LBS., SIOUX FALLS, SOUTH DAKOTA

TABLE 4. AVERAGE MONTHLY PRICES OF SLAUGHTER STEERS, 1100-1300 LB., CHOICE 2-4, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	65.52	66.45	65.62	62.39	63.82	65.91	70.72	72.80	69.77	66.98	64.83	63.88	66.56
1981	62.22	60.48	60.22	64.02	65.85	68.53	68.03	66.05	65.36	60.87	59.72	58.55	63.32
1982	60.21	64.26	66.63	69.42	73.33	71.04	66.29	65.60	61.45	58.74	58.97	58.84	64.57
1983	59.50	61.39	64.36	68.58	67.68	65.80	63.08	61.75	59.26	59.44	59.26	64.26	62.86
1984	68.04	67.22	68.96	69.01	66.23	64.99	66.88	65.22	62.80	61.36	64.94	65.92	65.96
1985	64.41	63.01	59.52	57.50	57.76	56.76	53.35	52.50	51.66	58.84	63.69	63.30	58.52
1986	59.81	56.45	55.29	54.02	56.22	55.15	59.24	60.26	59.73	59.53	62.26	59.86	58.15
1987	58.78	61.01	61.60	67.20	70.26	69.89	66.35	64.58	65.06	65.30	64.47	65.08	64.97
1988	65.99	68.41	71.85	73.88	75.90	70.71	66.48	68.21	69.03	69.50	70.80	72.18	70.25
1989	72.63	73.54	77.11	77.10	75.67	71.32	70.53	71.22	68.70	69.74	72.13	75.10	72.90

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	98.45 (5.05)	99.07 (3.43)	100.62 (4.66)	103.21 (5.48)	104.62 (5.50)	102.10 (5.36)	100.27 (4.76)	99.97 (5.30)	97.64 (4.90)	97.01 (3.91)	98.38 (6.20)	98.67 (6.04)
85-89	100.16 (4.21)	100.12 (2.26)	100.60 (4.25)	101.69 (5.88)	103.45 (5.61)	99.76 (4.85)	97.27 (4.23)	97.19 (4.83)	96.74 (4.52)	99.49 (2.43)	102.28 (6.24)	101.24 (6.08)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

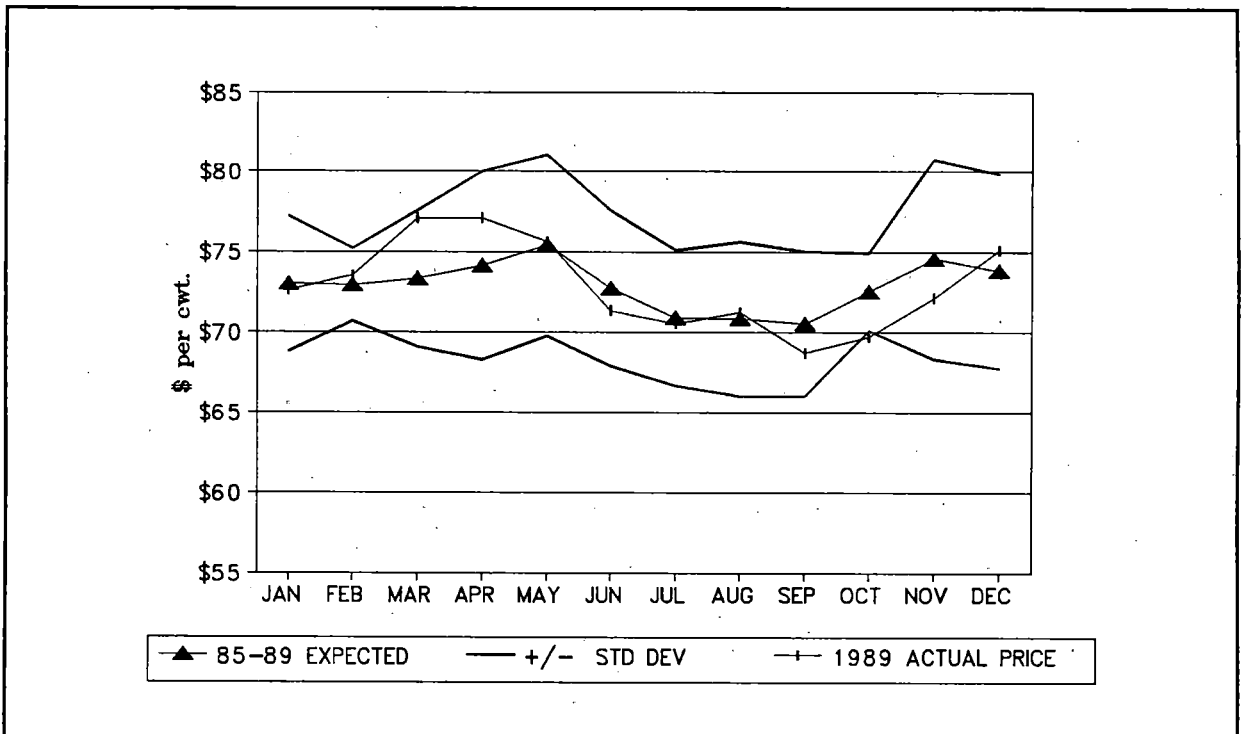


FIGURE 4. CHOICE SLAUGHTER STEERS, 1100-1300 LBS., SIOUX FALLS, SOUTH DAKOTA

TABLE 5. AVERAGE MONTHLY PRICES OF SLAUGHTER COWS, COMMERCIAL 2-4, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	45.33	49.61	46.80	43.79	41.05	43.01	43.68	46.54	47.42	46.00	44.35	43.08	45.06
1981	40.00	42.69	41.52	43.19	41.98	41.94	43.07	44.71	43.53	39.45	37.99	35.76	41.32
1982	36.84	37.90	40.77	41.55	44.68	42.81	42.96	41.42	39.85	39.01	36.98	36.44	40.10
1983	36.12	39.80	43.18	42.28	42.75	41.02	40.50	40.80	39.70	38.18	34.33	34.70	39.45
1984	34.15	39.89	44.29	45.10	42.69	41.56	42.06	39.84	36.89	40.74	38.54	37.50	40.27
1985	39.89	43.90	43.50	42.35	42.01	39.95	37.14	37.26	37.08	35.16	33.79	34.25	38.86
1986	35.19	36.90	37.76	35.02	38.49	39.16	39.25	38.72	39.74	37.68	37.69	36.96	37.71
1987	41.25	43.58	46.69	47.10	44.86	44.08	46.23	47.75	46.12	45.86	44.56	46.65	45.39
1988	48.38	48.63	50.65	53.50	51.88	44.04	46.50	49.86	50.50	50.16	48.90	50.47	49.46
1989	50.70	53.60	53.33	50.66	49.21	49.28	50.97	52.15	57.00	55.53	51.38	51.87	52.14

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	94.96 (5.16)	101.35 (4.37)	105.26 (4.61)	104.73 (5.77)	104.25 (4.72)	100.45 (5.10)	100.87 (4.21)	102.30 (3.47)	100.59 (4.99)	98.08 (3.13)	93.90 (3.97)	93.26 (4.64)
85-89	99.25 (1.68)	104.22 (3.06)	106.20 (2.41)	103.69 (6.03)	102.62 (4.18)	97.95 (5.29)	98.65 (3.77)	100.61 (2.50)	100.15 (1.71)	96.80 (2.26)	94.20 (2.20)	95.65 (4.19)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

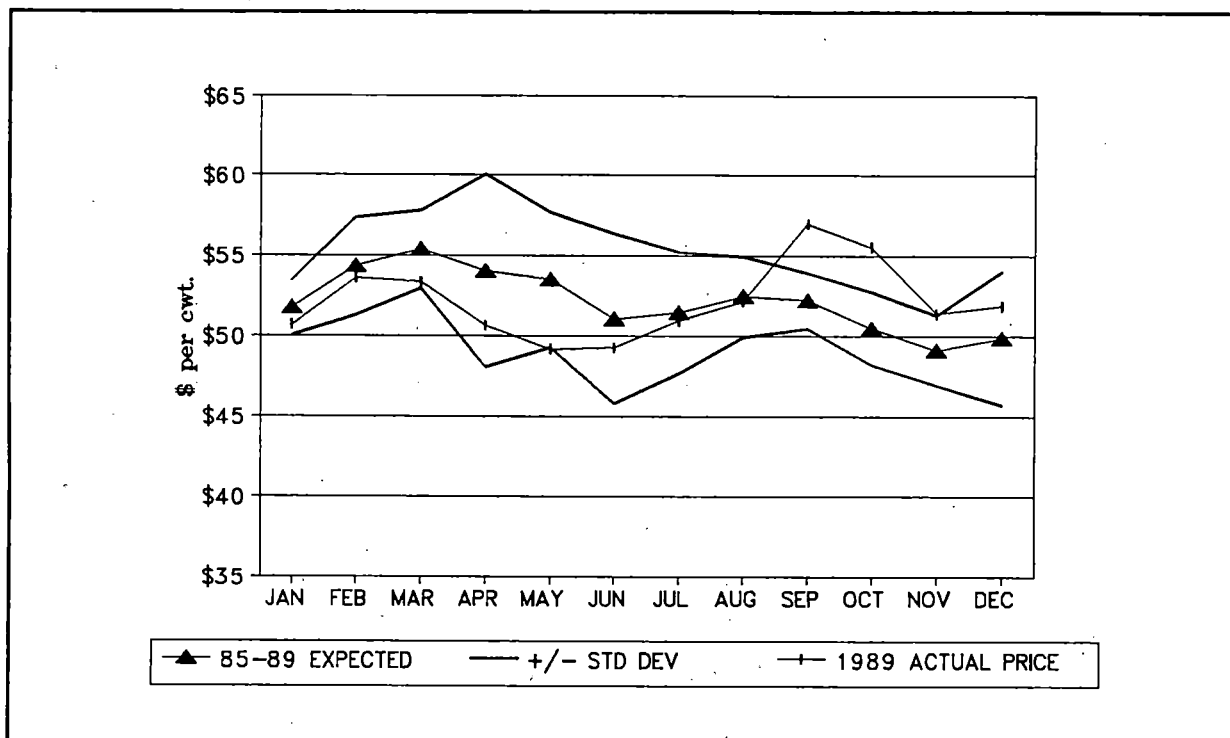


FIGURE 5. SLAUGHTER COWS, COMMERCIAL 2-4, SIOUX FALLS, SOUTH DAKOTA.

TABLE 6. AVERAGE MONTHLY PRICES OF SLAUGHTER COWS, UTILITY 2-3, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	48.76	52.52	50.19	47.87	44.92	46.19	45.32	47.80	49.76	48.16	46.02	44.26	47.65
1981	42.08	44.72	44.21	45.52	43.52	42.95	44.33	46.00	44.40	41.15	38.73	36.27	42.82
1982	37.09	38.44	41.68	41.35	43.92	43.04	43.84	42.30	40.60	39.80	36.29	35.70	40.34
1983	36.89	40.15	42.99	42.10	42.88	41.66	40.79	40.05	39.42	37.69	33.98	34.26	39.40
1984	33.69	39.75	43.76	43.92	41.14	40.41	40.35	38.64	35.21	38.32	35.16	34.50	38.74
1985	36.95	40.40	39.81	40.15	39.77	37.44	36.59	36.74	36.22	34.66	33.00	32.05	36.98
1986	34.07	36.52	37.84	34.13	37.41	38.19	38.50	38.19	39.24	37.18	37.19	35.42	36.99
1987	39.28	42.49	45.50	46.60	43.86	43.64	44.55	46.25	44.62	44.50	43.46	45.13	44.16
1988	46.53	47.47	49.48	49.85	49.13	42.43	45.81	48.34	48.75	48.41	47.74	49.16	47.76
1989	48.54	51.94	52.43	49.99	48.48	49.10	50.97	51.70	54.81	53.10	49.83	51.30	51.02

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	94.42 (4.46)	101.59 (3.80)	105.83 (3.90)	104.55 (5.53)	103.76 (4.03)	100.80 (5.03)	101.54 (3.93)	102.57 (2.67)	100.85 (4.65)	98.55 (2.59)	93.51 (4.07)	92.02 (4.95)
85-89	97.77 (1.85)	103.92 (1.78)	106.34 (1.33)	103.39 (5.76)	102.25 (3.62)	98.19 (5.00)	99.84 (2.65)	101.45 (1.25)	100.55 (1.81)	97.28 (1.56)	94.77 (2.20)	94.25 (5.36)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

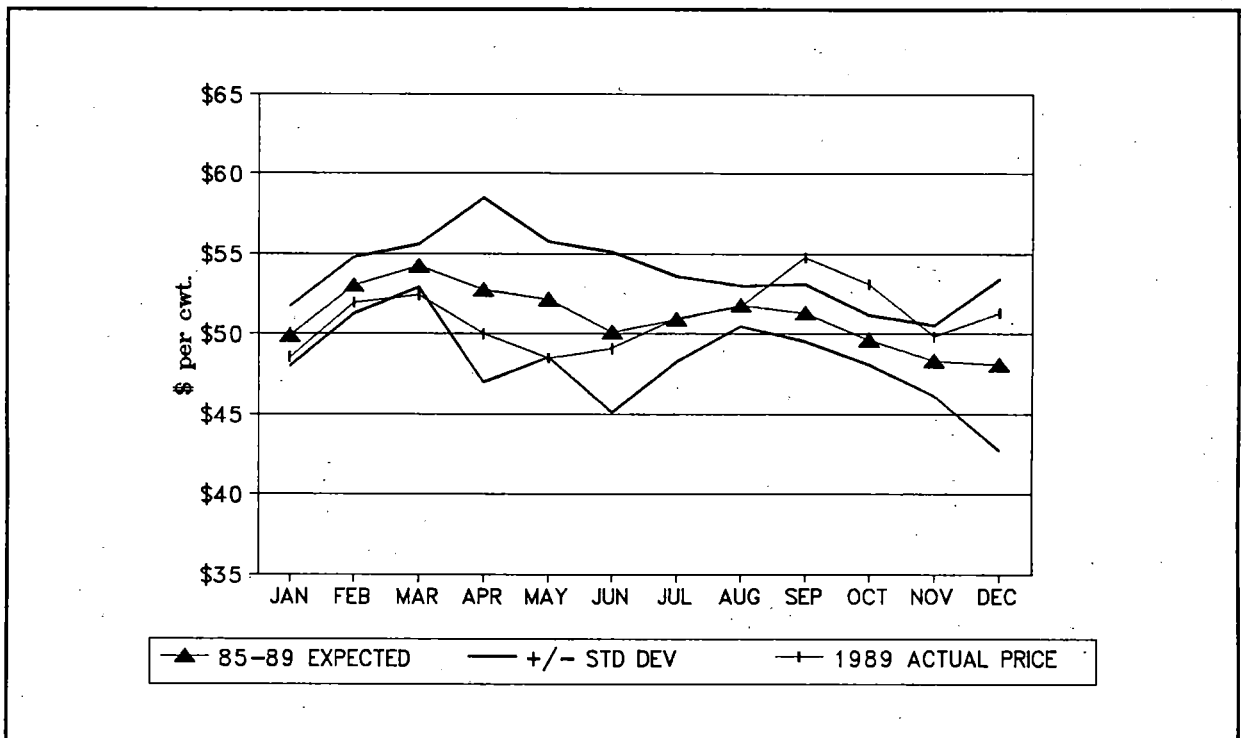


FIGURE 6. SLAUGHTER COWS, UTILITY 2-3, SIOUX FALLS, SOUTH DAKOTA.

TABLE 7. AVERAGE MONTHLY PRICES OF SLAUGHTER COWS, CUTTER 1-2, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	48.75	52.52	50.19	46.67	43.24	44.62	44.98	47.00	48.45	46.62	45.01	44.19	46.85
1981	41.09	42.95	42.40	44.12	42.12	42.05	43.37	44.94	42.77	39.91	37.38	34.48	41.46
1982	35.74	36.94	39.51	40.55	42.59	41.21	41.75	40.12	37.82	36.38	32.79	33.63	38.25
1983	34.40	38.22	42.08	40.30	40.14	38.71	39.69	38.81	36.88	35.18	31.69	32.90	37.42
1984	31.83	37.70	41.32	41.86	39.91	38.61	38.16	36.43	33.65	36.42	32.54	31.97	36.70
1985	34.91	38.82	38.62	38.10	37.65	35.36	33.66	33.18	34.22	32.92	31.91	31.22	35.05
1986	32.40	34.64	36.02	33.12	36.48	36.75	37.25	37.14	37.44	35.85	35.00	33.25	35.44
1987	37.02	40.64	43.92	44.43	42.23	41.72	42.65	44.75	43.12	42.72	41.31	43.05	42.30
1988	46.14	47.49	49.38	50.50	48.56	41.34	42.19	45.33	46.05	45.60	43.74	45.22	45.96
1989	45.33	48.13	48.15	46.38	44.79	45.41	49.10	51.05	50.54	49.66	45.25	46.94	47.56

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	94.32 (4.92)	101.90 (4.39)	106.39 (5.13)	105.62 (5.85)	104.47 (4.75)	100.85 (4.92)	101.77 (5.15)	102.42 (4.03)	100.37 (4.37)	97.97 (2.78)	92.23 (4.79)	91.69 (5.15)
85-89	97.88 (2.65)	104.62 (2.46)	107.20 (2.81)	104.50 (6.40)	103.05 (4.45)	98.24 (4.82)	99.33 (4.86)	100.33 (3.62)	100.26 (1.65)	97.27 (1.28)	93.76 (1.52)	93.57 (4.90)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

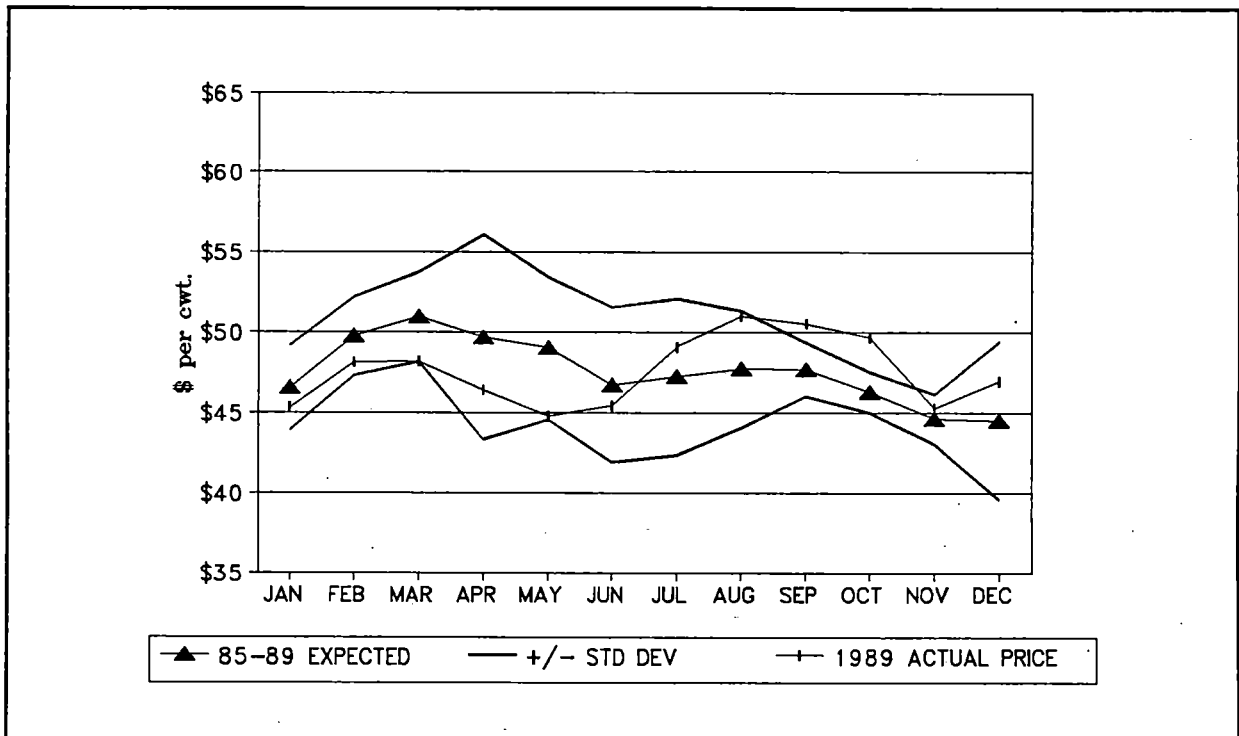


FIGURE 7. SLAUGHTER COWS, CUTTER 1-2, SIOUX FALLS, SOUTH DAKOTA.



TABLE 8. AVERAGE MONTHLY PRICES OF SLAUGHTER COWS, CANNER 1-2, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	44.21	48.30	46.12	43.34	40.28	42.54	42.49	44.42	45.39	43.25	40.35	39.33	43.34
1981	36.56	39.02	38.95	41.00	39.60	39.08	40.52	42.29	40.12	37.14	34.42	32.05	38.40
1982	33.01	34.08	36.60	36.92	39.32	38.35	38.56	37.30	35.54	33.29	30.35	30.97	35.36
1983	31.98	35.18	38.54	36.88	37.35	36.39	36.04	34.88	34.08	32.30	29.15	28.68	34.29
1984	28.69	34.21	37.82	38.23	36.19	34.76	33.37	32.52	30.90	31.96	29.27	28.26	33.02
1985	30.47	34.40	34.88	34.65	34.68	32.38	30.34	30.02	31.72	30.68	29.68	27.85	31.81
1986	28.76	31.62	33.26	30.43	33.30	33.38	33.77	33.56	33.52	32.36	30.91	29.57	32.04
1987	33.38	36.25	40.22	40.53	39.48	38.74	39.99	41.75	39.97	39.06	37.27	38.96	38.80
1988	42.14	43.42	45.05	46.00	44.06	37.72	39.53	42.43	43.00	42.66	40.50	41.53	42.34
1989	40.92	44.16	44.30	42.66	41.13	40.81	43.61	46.36	47.02	45.92	41.91	43.36	43.51

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	93.03 (4.75)	101.32 (4.35)	106.73 (5.26)	105.81 (5.80)	105.36 (4.59)	101.34 (5.61)	101.75 (4.70)	102.98 (4.45)	101.58 (4.04)	98.13 (3.07)	91.81 (4.26)	90.15 (4.98)
85-89	96.30 (3.22)	103.90 (2.28)	107.66 (2.53)	104.83 (5.98)	103.84 (4.65)	98.33 (5.64)	99.44 (4.53)	101.04 (4.08)	101.03 (0.97)	98.03 (1.79)	93.37 (2.81)	92.24 (5.29)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

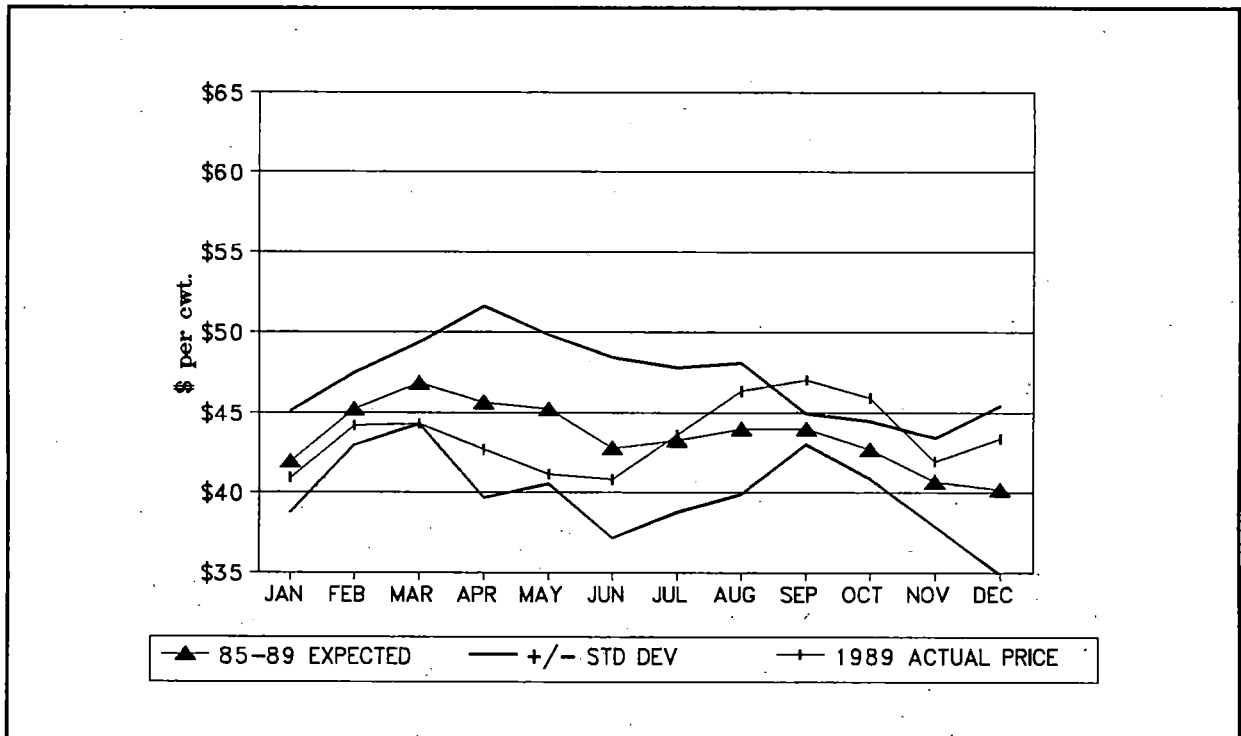


FIGURE 8. SLAUGHTER COWS, CANNER 1-2, SIOUX FALLS, SOUTH DAKOTA.

TABLE 9. AVERAGE MONTHLY PRICES OF SLAUGHTER BULLS, YIELD GRADE 1, 1000-1500 LBS., SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	58.54	60.80	60.55	55.58	53.20	54.50	53.96	54.85	55.10	52.86	50.80	52.60	55.28
1981	52.40	52.65	50.98	51.31	50.70	50.25	49.88	50.58	50.98	46.92	45.00	44.66	49.69
1982	46.00	45.15	47.00	47.25	50.75	51.31	51.75	51.48	48.72	47.22	45.40	45.90	48.16
1983	45.50	48.40	51.18	50.85	50.33	50.08	49.78	48.80	48.25	46.25	42.38	40.02	47.65
1984	40.60	44.22	50.98	51.48	48.79	47.28	47.31	46.61	43.63	44.05	43.69	41.60	45.85
1985	44.46	47.02	46.22	46.25	45.70	44.80	44.29	44.10	43.56	41.90	40.85	41.58	44.23
1986	44.12	45.78	45.65	43.48	44.69	43.75	43.23	44.12	45.69	45.13	44.60	43.02	44.44
1987	46.25	48.56	51.88	52.18	50.00	50.60	52.75	53.75	54.10	53.81	51.75	53.75	51.62
1988	56.38	60.31	62.00	61.00	60.81	56.31	56.25	57.90	59.50	59.50	57.96	60.50	59.04
1989	61.00	61.63	62.10	61.38	59.63	60.56	62.00	62.85	64.75	64.72	60.15	60.53	61.78

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	97.40 (4.42)	101.14 (4.05)	104.29 (4.02)	103.50 (4.18)	102.54 (3.10)	100.97 (3.11)	100.91 (3.45)	101.50 (2.68)	100.78 (2.90)	98.01 (1.64)	94.52 (2.12)	94.45 (4.44)
85-89	99.84 (1.44)	103.86 (1.88)	105.05 (2.26)	102.91 (2.71)	101.05 (2.75)	98.71 (1.67)	98.94 (2.46)	99.53 (1.83)	100.35 (1.19)	98.31 (1.92)	95.23 (1.73)	96.23 (3.38)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

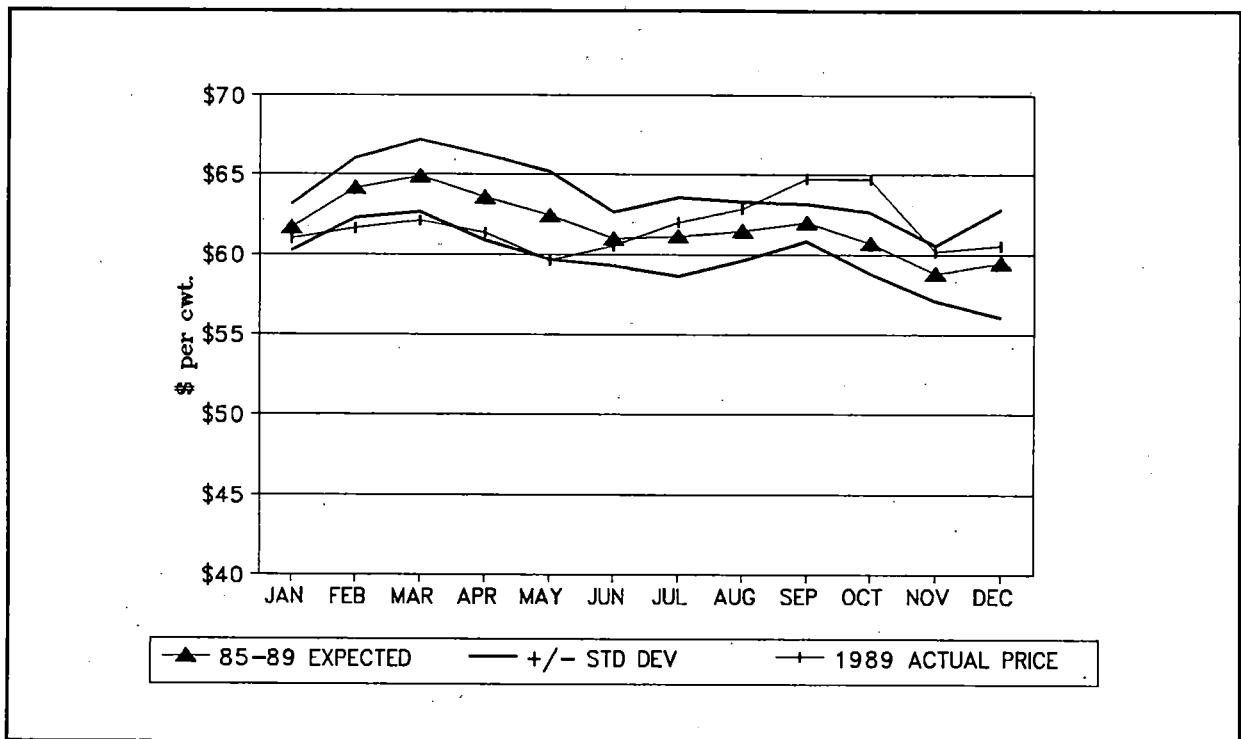


FIGURE 9. SLAUGHTER BULLS, YIELD GRADE 1, 1000-1500 LBS., SIOUX FALLS, SD.

TABLE 10. AVERAGE MONTHLY PRICES OF SLAUGHTER BULLS, YIELD GRADE 1, 1500-2100 LBS., SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	60.96	62.80	62.24	57.75	54.92	56.62	56.74	58.70	59.34	56.46	53.00	54.32	57.82
1981	54.52	55.28	54.70	55.53	53.68	53.58	52.62	54.45	54.53	50.18	49.75	48.32	53.10
1982	48.86	49.60	51.64	51.60	53.38	53.89	54.50	54.40	51.84	50.50	48.72	48.75	51.47
1983	48.45	50.38	52.88	52.70	53.58	52.37	51.52	50.46	50.75	49.12	44.93	42.41	49.96
1984	42.31	47.28	52.50	53.48	51.89	50.84	50.38	49.16	46.86	48.55	47.00	45.61	48.82
1985	47.70	50.55	49.90	49.00	48.78	47.74	47.14	47.44	46.28	45.16	44.25	44.22	47.35
1986	46.38	47.78	48.52	46.64	49.09	47.94	47.27	47.38	48.06	46.45	46.41	46.18	47.34
1987	49.56	52.90	55.22	54.98	53.00	54.84	57.84	58.75	59.42	58.25	56.00	58.73	55.79
1988	61.75	64.31	65.20	64.50	65.31	59.12	58.06	60.85	61.25	60.50	58.96	61.25	61.76
1989	61.38	62.88	64.45	63.94	61.13	63.66	64.38	66.26	67.75	66.91	62.08	62.88	63.98

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	96.84 (4.31)	101.04 (3.33)	103.93 (2.63)	103.23 (3.10)	102.67 (3.64)	101.30 (2.65)	100.76 (3.22)	101.77 (2.19)	100.99 (3.09)	98.19 (1.63)	94.71 (1.44)	94.56 (3.61)
85-89	99.55 (1.11)	103.55 (1.66)	104.76 (1.49)	102.45 (2.07)	101.51 (3.85)	99.61 (1.89)	99.52 (3.13)	100.47 (1.81)	100.18 (1.65)	97.38 (1.53)	94.76 (0.67)	96.26 (2.69)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

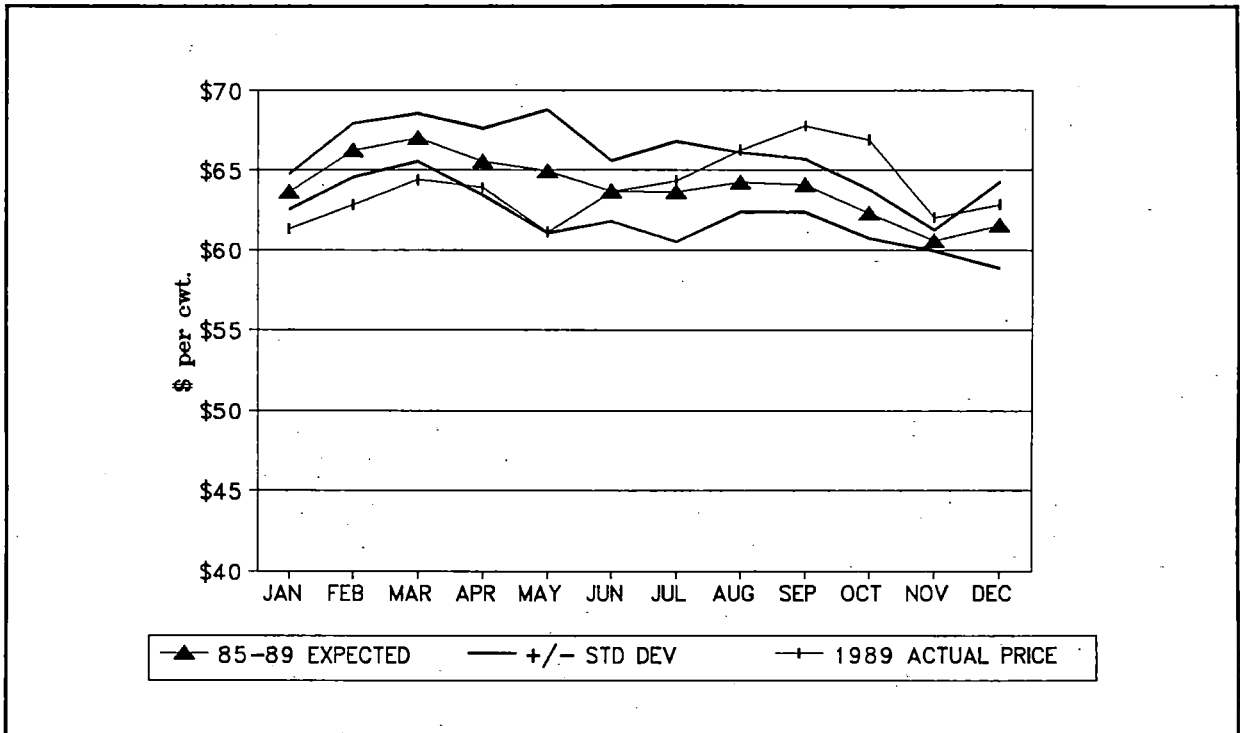


FIGURE 10. SLAUGHTER BULLS, YIELD GRADE 1, 1500-2100 LBS., SIOUX FALLS, SD.

TABLE 11. AVERAGE MONTHLY PRICES OF SLAUGHTER BULLS, YIELD GRADE 2, 1000-1500 LBS., SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	58.50	60.30	60.20	55.58	53.12	53.38	53.36	54.35	54.31	52.16	50.30	52.10	54.80
1981	51.85	50.92	50.02	50.80	50.20	49.75	49.38	50.08	50.38	45.70	43.50	43.72	48.86
1982	45.00	44.28	46.20	46.75	50.25	50.81	51.25	50.98	48.22	46.72	44.90	45.40	47.56
1983	45.00	47.92	50.68	50.10	49.70	49.54	49.28	48.32	47.75	45.75	41.60	39.02	47.06
1984	40.08	44.22	50.98	51.48	48.91	47.72	47.38	45.81	42.38	43.80	43.00	40.72	45.54
1985	43.90	46.52	45.50	45.25	45.40	44.30	43.79	44.10	43.56	41.90	40.85	41.30	43.86
1986	42.90	44.20	45.15	42.80	44.19	43.25	42.95	43.69	45.19	44.45	43.85	42.28	43.74
1987	45.55	48.06	51.75	53.18	50.75	50.91	52.15	53.25	53.55	53.06	51.00	53.25	51.37
1988	56.10	59.56	60.10	59.00	58.81	54.51	54.75	56.80	57.00	57.00	55.93	58.50	57.34
1989	59.00	60.38	61.60	60.88	59.13	59.50	60.88	62.28	63.69	62.63	56.93	57.53	60.37

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	97.07 (4.48)	100.79 (4.04)	104.36 (4.10)	103.80 (4.42)	103.08 (2.87)	101.41 (3.35)	101.15 (3.49)	101.76 (2.56)	100.56 (3.50)	97.79 (1.24)	94.14 (2.17)	94.10 (4.86)
85-89	99.38 (1.55)	103.53 (2.24)	105.12 (1.67)	103.15 (3.11)	101.63 (2.10)	98.92 (1.93)	99.04 (2.16)	100.03 (1.25)	100.24 (1.15)	97.97 (1.13)	94.99 (1.16)	96.01 (3.39)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

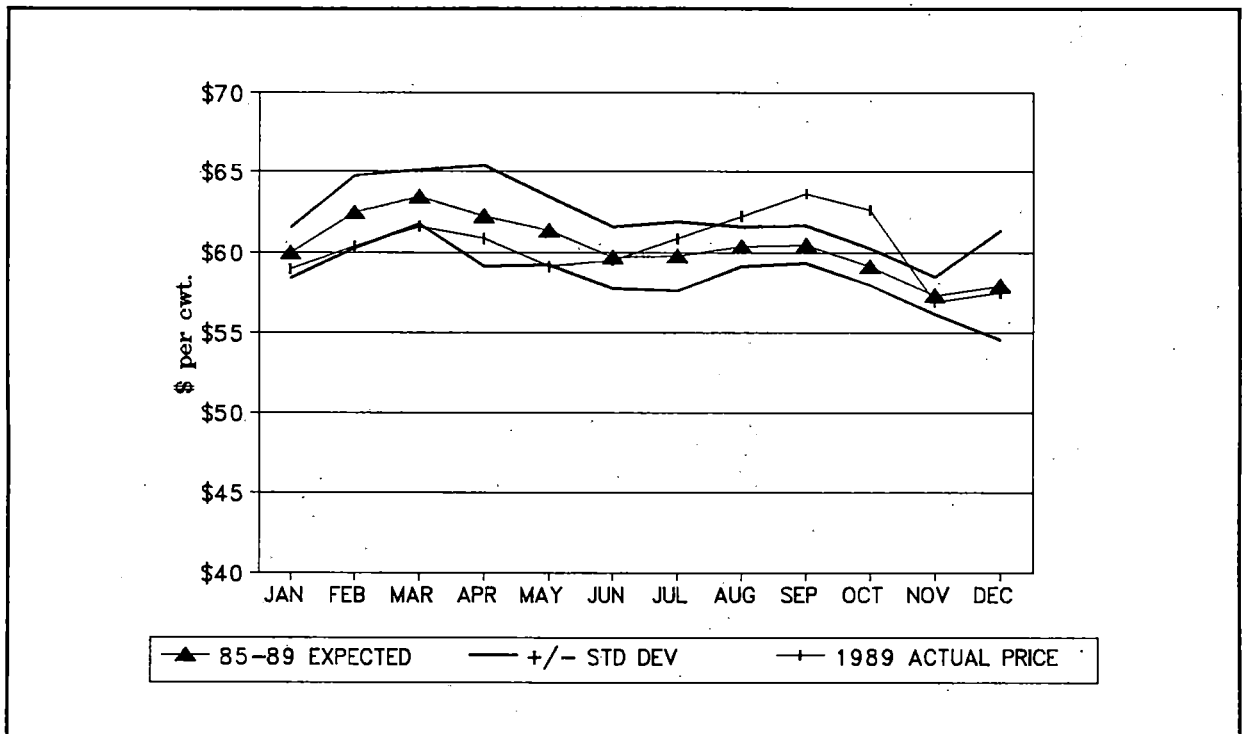


FIGURE 11. SLAUGHTER BULLS, YIELD GRADE 2, 1000-1500 LBS., SIOUX FALLS, SD.

TABLE 12. AVERAGE MONTHLY PRICES OF SLAUGHTER BULLS, YIELD GRADE 2, 1500-2100 LBS., SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	60.76	61.80	61.70	56.54	54.05	54.55	55.19	56.20	56.75	54.70	52.00	52.80	56.42
1981	52.75	53.76	53.36	53.77	51.95	51.02	50.98	51.82	52.17	47.56	45.50	36.05	50.06
1982	45.72	46.20	49.16	49.25	52.25	51.81	52.44	52.72	50.23	49.04	46.72	46.90	49.37
1983	46.50	48.90	51.68	51.35	52.08	51.34	50.28	49.10	48.62	46.75	42.20	40.80	48.30
1984	40.60	45.22	52.10	52.95	51.84	49.61	49.30	47.38	44.89	47.30	45.32	43.10	47.47
1985	46.34	49.00	48.00	48.25	47.40	47.18	46.29	46.10	45.25	43.00	42.18	42.05	45.92
1986	43.62	45.33	46.38	45.10	46.12	44.62	45.55	46.28	46.66	45.63	45.71	43.61	45.38
1987	47.70	50.41	53.94	54.18	51.75	52.53	55.15	57.25	57.55	56.58	53.25	56.85	53.93
1988	59.60	62.63	63.00	62.00	61.81	56.21	55.25	56.50	56.50	56.50	55.43	58.00	58.62
1989	58.50	60.38	62.60	62.88	60.63	61.72	62.38	64.28	65.69	63.47	56.43	57.53	61.37

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	96.43 (4.56)	100.85 (3.69)	104.84 (2.88)	104.58 (3.32)	103.73 (3.84)	101.53 (3.41)	101.37 (3.21)	101.90 (2.94)	100.82 (3.73)	98.20 (1.52)	94.00 (2.20)	91.74 (7.17)
85-89	99.09 (1.52)	103.37 (2.18)	105.16 (1.87)	103.86 (1.93)	101.72 (2.60)	99.35 (2.14)	99.79 (2.88)	100.64 (2.75)	100.06 (2.21)	97.24 (1.71)	94.36 (1.24)	95.37 (3.39)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota.

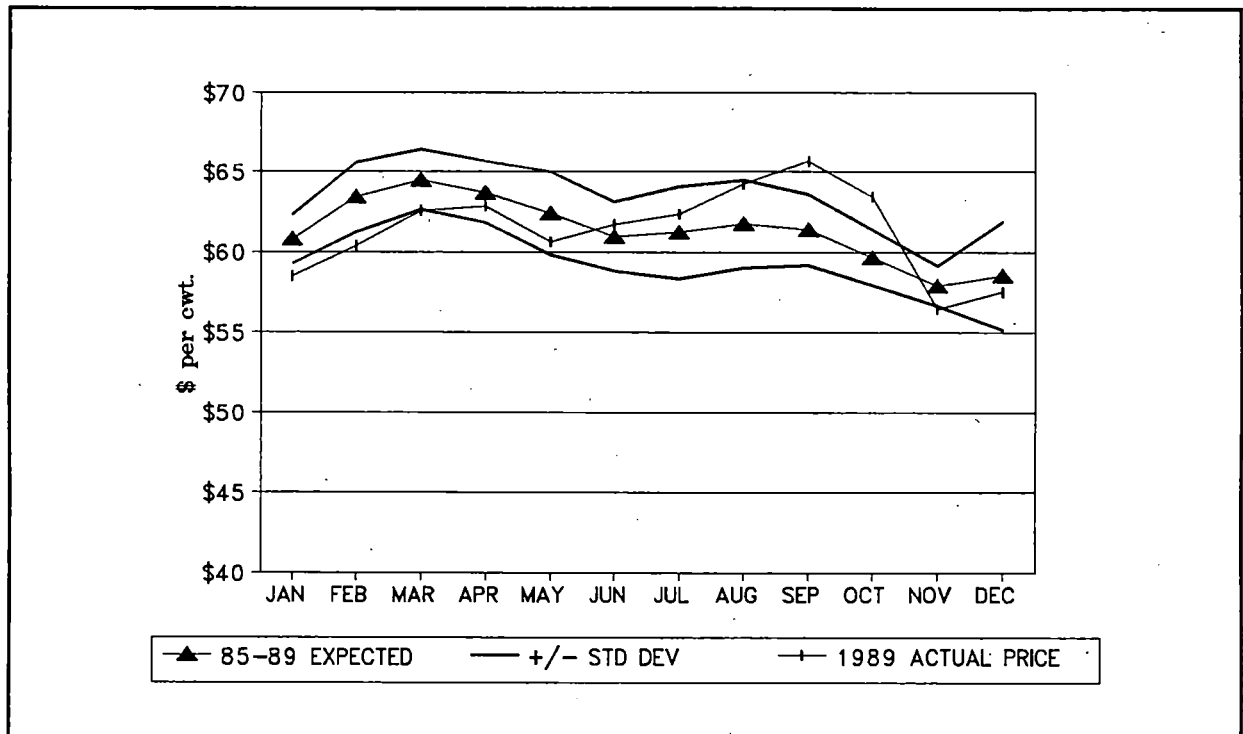


FIGURE 12. SLAUGHTER BULLS, YIELD GRADE 2, 1500-2100 LBS., SIOUX FALLS, SD.

TABLE 13. CHICAGO MERCANTILE EXCHANGE, LIVE CATTLE FUTURES AND THE SIOUX FALLS BASIS FOR SLAUGHTER STEERS AND HEIFERS (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
1985	65.36	65.22	63.61	62.74	62.31	59.20	55.61	54.99	55.74	62.59	66.72	64.79	61.57
1986	58.77	58.55	58.85	55.22	56.53	54.95	57.31	60.06	61.30	60.23	60.93	59.66	58.53
1987	59.01	63.92	65.38	68.13	67.74	66.93	62.09	65.04	67.88	66.41	64.50	63.52	65.05
1988	66.95	71.36	73.48	73.06	72.59	68.93	65.33	69.79	70.49	73.06	73.05	72.87	70.91
1989	73.57	75.91	77.94	75.32	71.38	70.34	71.70	74.34	71.68	73.34	74.95	76.89	73.95
900-1100 LB SLAUGHTER STEERS													
1985	-1.96	-3.02	-5.10	-5.74	-5.91	-3.53	-2.52	-3.13	-4.59	-4.45	-3.48	-2.07	-3.79
1986	0.26	-2.73	-4.20	-2.17	-1.57	-1.17	0.99	-0.66	-2.33	-1.76	-0.66	-1.11	-1.43
1987	-1.35	-4.47	-5.09	-2.68	0.02	0.89	2.71	-1.34	-3.71	-2.63	-1.71	-0.06	-1.62
1988	-2.31	-5.04	-3.33	-0.46	2.19	0.53	0.29	-2.83	-2.06	-4.03	-2.75	-1.09	-1.74
1989	-1.61	-2.78	-1.28	1.31	3.52	-0.12	-2.68	-4.75	-3.64	-4.65	-4.66	-3.48	-2.07
AVG	-1.39	-3.61	-3.80	-1.95	-0.35	-0.68	-0.24	-2.54	-3.27	-3.50	-2.65	-1.56	-2.13
1100-1300 LB SLAUGHTER STEERS													
1985	-0.95	-2.21	-4.09	-5.24	-4.55	-2.44	-2.26	-2.49	-4.08	-3.75	-3.03	-1.49	-3.05
1986	1.04	-2.10	-3.56	-1.20	-0.31	0.20	1.93	0.20	-1.57	-0.70	1.33	0.20	-0.38
1987	-0.23	-2.91	-3.78	-0.93	2.52	2.96	4.26	-0.46	-2.82	-1.11	-0.03	1.56	-0.08
1988	-0.96	-2.95	-1.63	0.82	3.31	1.78	1.15	-1.58	-1.46	-3.56	-2.25	-0.69	-0.67
1989	-0.94	-2.37	-0.83	1.78	4.29	0.98	-1.17	-3.12	-2.98	-3.60	-2.82	-1.79	-1.05
AVG	-0.41	-2.51	-2.78	-0.95	1.05	0.70	0.78	-1.49	-2.58	-2.54	-1.36	-0.44	-1.04
900-1100 LB SLAUGHTER HEIFERS													
1985	-2.57	-3.89	-6.04	-6.89	-6.10	-4.42	-4.06	-4.09	-5.26	-5.17	-4.31	-2.55	-4.61
1986	0.12	-3.36	-4.99	-1.91	-1.64	-1.05	0.93	-0.98	-2.72	-1.91	0.24	-1.14	-1.53
1987	-1.57	-4.12	-4.98	-2.15	1.10	1.85	2.71	-1.66	-3.94	-2.60	-1.17	0.40	-1.34
1988	-3.46	-6.14	-4.35	-1.71	0.69	-0.74	-1.06	-4.25	-3.59	-5.34	-3.37	-2.01	-2.94
1989	-2.30	-3.53	-1.91	-0.13	2.65	-1.01	-3.26	-5.30	-4.10	-5.21	-4.77	-3.35	-2.69
AVG	-1.96	-4.21	-4.45	-2.56	-0.66	-1.07	-0.95	-3.26	-3.92	-4.05	-2.68	-1.73	-2.62

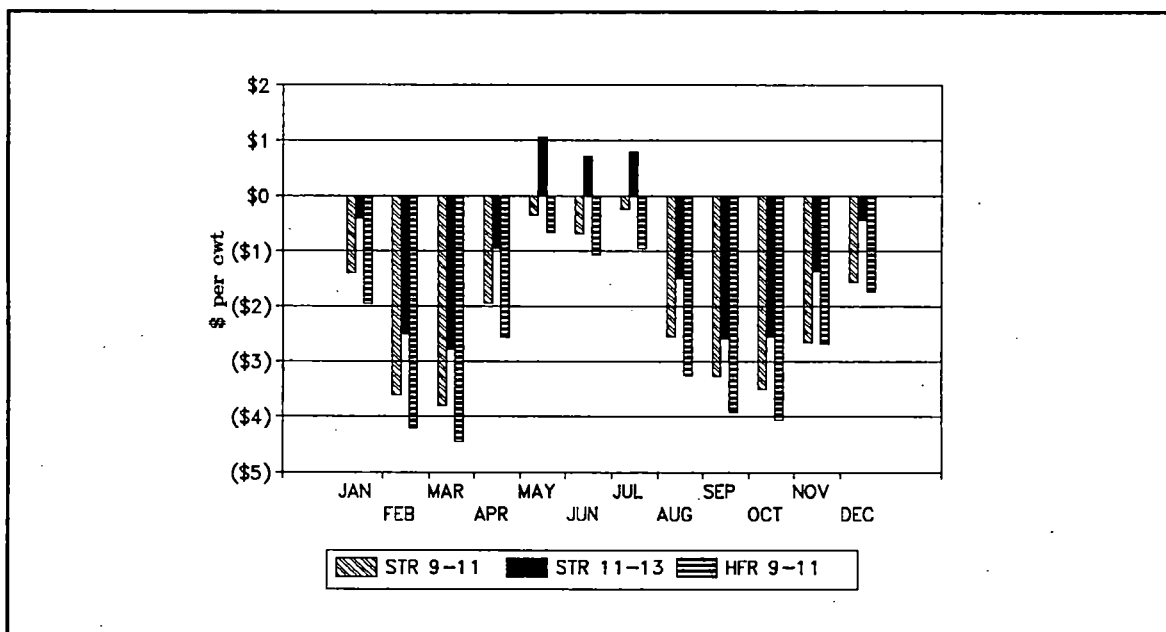


FIGURE 13. SIOUX FALLS BASIS FOR SLAUGHTER CATTLE, 1985-1989 AVERAGE.

## FEEDER CALF PRICES

Annual average prices for feeder steers and feeder heifers from 1972 to 1989 are presented in Table 14. The prices for 1980 to 1989 are for medium frame, number 1 muscle thickness calves at Sioux Falls, South Dakota. Prices for the period 1972 to 1979 are for choice grade feeders. Kearn (1987b) suggests that the medium frame number 1 muscle thickness grade used today is quite similar to the choice grade of cattle used prior to 1980. Therefore, this price series should be fairly uniform. Prices were not reported for the period prior to 1972 because prices were reported on different weight categories, making comparisons more difficult.

### Heifer Discount

The difference between steer and heifer prices are calculated and displayed in Table 14. It is quite apparent that the discount for heifers narrows as weight increases. However, the discount for feeder heifers is still considerably larger than that reported for slaughter heifers. The 1972-1989 average discount for 400-500 pound heifers was \$7.77 compared to a discount of \$5.41 for 700-800 pound heifers. In percentage terms, the price of 400-500 pound heifers was 88.6 percent of the steer price and for 700-800 pound heifers the price was 90.9 percent of the steer price. Not so obvious is the fact that this discount has been narrowing over time, particularly in the last five years. In actual dollars, the average discount for the 1985-1989 period was less than that for the longer 1980-1989 average. It follows that the 1980-1984 average is higher than the 1985-1989 average. In addition the percentage discount for the 1985-1989 period is less than the discount over the entire 1972-1989 time period.

TABLE 14. AVERAGE ANNUAL PRICES OF FEEDER CATTLE, MEDIUM FRAME NUMBER 1 MUSCLE THICKNESS, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1972-1989 (DOLLARS PER CWT.).<sup>a/</sup>

Year	400 to 500 pound			500 to 600 pound			600 to 700 pound			700 to 800 pound			800-1000 lb
	Steer	Heifer	Diff.	Steer	Heifer	Diff.	Steer	Heifer	Diff.	Steer	Heifer	Diff.	Steer
1972	44.57	40.18	4.39	41.72	38.30	3.42	39.65	36.67	2.98	38.07	34.50	3.57	35.44
1973	59.84	52.54	7.30	56.36	50.44	5.92	53.70	47.82	5.88	50.79	44.78	6.01	46.74
1974	42.09	37.25	4.84	40.16	35.67	4.49	38.82	34.90	3.92	37.76	34.37	3.39	36.87
1975	33.95	28.73	5.22	34.45	29.86	4.59	35.06	31.25	3.81	35.91	32.89	3.02	36.97
1976	42.36	36.48	5.88	41.55	35.94	5.61	40.59	35.49	5.10	39.57	35.25	4.32	38.38
1977	44.75	39.16	5.59	42.91	37.76	5.15	41.34	36.71	4.63	39.89	35.99	3.90	38.66
1978	66.52	59.78	6.74	63.36	56.62	6.74	60.41	54.06	6.35	57.74	51.22	6.52	53.49
1979	98.11	87.74	10.37	91.46	80.62	10.84	83.95	74.96	8.99	79.38	69.87	9.51	72.81
1980	86.22	76.43	9.79	81.75	71.84	9.92	76.91	68.38	8.53	73.48	65.74	7.74	69.61
1981	72.37	63.87	8.50	69.28	61.68	7.60	66.93	60.66	6.28	65.22	59.71	5.51	63.46
1982	69.53	60.57	8.96	67.63	59.16	8.46	65.73	58.66	7.07	64.48	58.38	6.09	62.91
1983	71.19	61.72	9.48	68.27	58.66	9.61	64.91	57.88	7.03	62.91	57.26	5.65	61.04
1984	69.92	60.86	9.06	67.60	59.47	8.13	65.74	59.04	6.70	64.33	58.79	5.53	63.36
1985	72.06	61.80	10.25	68.45	60.09	8.37	65.04	58.54	6.50	63.12	57.68	5.44	60.55
1986	68.91	61.15	7.76	67.30	59.94	7.36	63.93	57.92	6.01	60.98	56.35	4.63	58.67
1987	85.25	78.00	7.25	81.84	74.03	7.80	77.66	70.54	7.12	73.67	68.17	5.50	69.92
1988	99.78	89.92	9.86	93.02	83.59	9.43	86.01	78.06	7.95	81.07	75.49	5.58	76.17
1989	99.30	90.62	8.68	91.46	83.70	7.76	86.99	81.27	5.72	83.31	77.87	5.44	78.83
Averages													
72-89	68.15	60.38	7.77	64.92	57.63	7.29	61.85	55.71	6.14	59.54	54.13	5.41	56.88
80-89	79.45	70.49	8.96	75.66	67.22	8.44	71.99	65.10	6.89	69.26	63.54	5.71	66.45
85-89	85.06	76.30	8.76	80.42	72.27	8.14	75.93	69.27	6.66	72.43	67.11	5.32	68.83

<sup>a/</sup> The prices are for choice grade feeders prior to 1980.

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota Market.



## Long Term Trends

It is difficult to identify a trend in the feeder calf prices by just looking at the numbers in Table 14. It is evident that prices for each different weight class generally move in the same direction by the same proportion. Therefore, a graph of one price series would be fairly representative of all of the feeder calf price series. Figure 14 contains a graph of the 500-600 pound feeder steer prices. In addition to the actual price, the long term 1972-1989 trend and the shorter 1972-1979 and 1980-1989 trends are plotted. Several implications can be drawn from the graph in Figure 14:

- \* There has been a fairly strong upward trend in prices, \$2.74 per cwt. per year;
- \* The higher inflation years of the 1970's had a steeper trend than was the case for the 1980's;

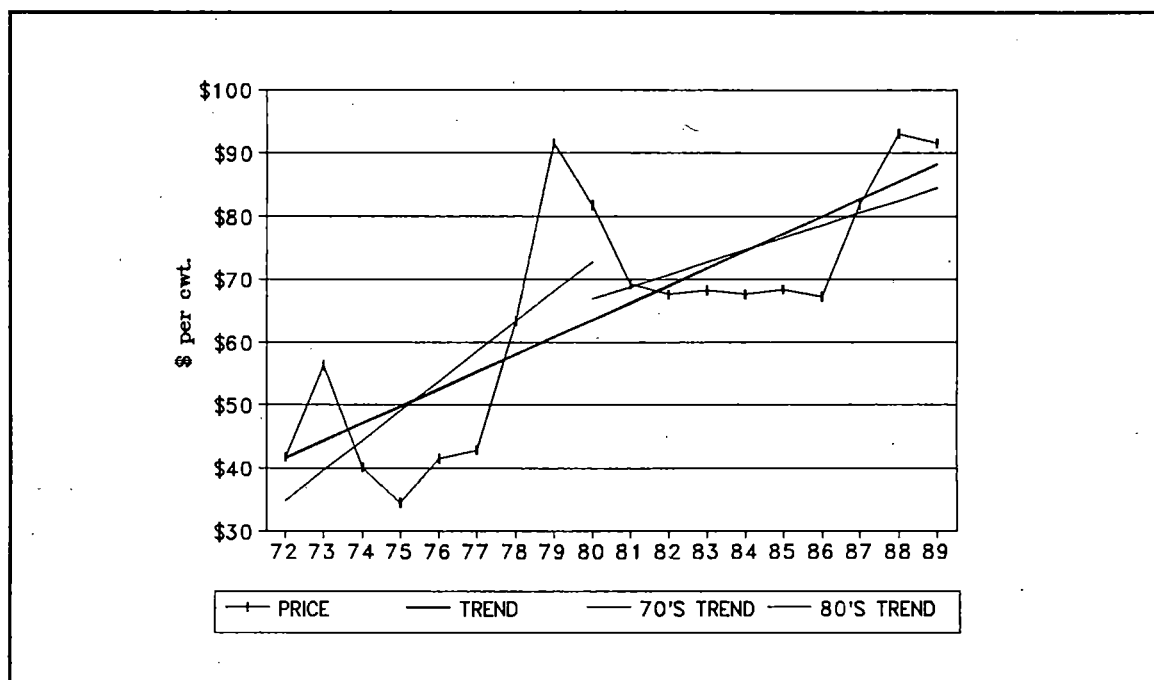


FIGURE 14. HISTORICAL PRICES OF 500-600 POUND FEEDER STEERS AT SIOUX FALLS, SOUTH DAKOTA, 1972-1989.

- \* It would appear that there was greater price variation in the 1970's than in the 1980's, and that the peak price in 1979 was considerably higher than the trend;
- \* Current prices are only slightly above the long term trend, and are not as "high" as the prices in 1979;
- \* Feeder cattle prices fell much more rapidly following the high price years of 1973 and 1979 than did the slaughter steer prices (Figure 1).

#### Monthly Prices and Indexes

As with slaughter cattle, monthly and seasonal price variations can be very important when marketing some weights and grades of feeder calves. For example, Kearl (1987b) found that spring prices for lighter weight feeders, "grass cattle", were seasonally higher at Torrington, Wyoming, Greeley, Colorado, and Billings, Montana. The Sioux Falls average monthly prices for the various weights of feeder steers and heifers for the period 1980 to 1989 are presented in Tables 15 - 23.

Monthly indexes were created for each feeder cattle price series using the same 12 month moving average technique that was used with the slaughter cattle prices. The 1980-1989 average and the 1985-1989 average monthly indexes are also presented in Tables 15 - 23. The 1985-1989 average monthly indexes were converted to 1989 price level by multiplying each average monthly index by the 1989 annual average price. These five year average, or expected, monthly prices are plotted in Figures 15 - 23. The actual 1989 monthly prices are also plotted, as well as the expected range around the average price, i.e., plus and minus one standard deviation. For more detail the reader can refer back to the monthly price index section on slaughter cattle.

There appears to be a fairly strong spring price for 400-500

pound steers and heifers and lower prices in the fall, particularly in November (Figures 15 & 20). However, one needs to be careful when interpreting these results due to the lack of data for this weight category. The 500-600 pound and 600-700 pound feeder steer prices exhibit very little if any seasonal price pattern on average. However, the actual 1989 prices for the heavier feeders, 600 pounds and up, show a fairly distinct pattern of prices declining in the spring with low prices occurring in April and May, and then prices strengthening rather sharply into August and maintaining relatively high seasonal levels through the fall (Figures 16-19). In general feeder heifers followed the same pattern as feeder steers. However, there would appear to be a slightly more pronounced seasonal pattern over the five year period than is exhibited by steers (Figures 21-23).

#### Feeder Steer and Heifer Basis

Knowledge of the basis is quite important for many marketing decisions and alternatives. The basis is usually defined as the difference between the local cash price and the underlying futures contract for that commodity. However, since the Chicago Mercantile Exchange went to a cash settlement for the feeder cattle contracts in September of 1986, the basis has been defined as:

**LOCAL CASH PRICE - U.S. FEEDER STEER PRICE.**

Where: **LOCAL CASH PRICE** is the Sioux Falls cash price for a particular class of feeder cattle; and,

**U.S. FEEDER STEER PRICE (USFSP)**<sup>3</sup> is a national average price for 600-800 pound feeder steers of which 60 to 80% are expected to grade choice at slaughter.

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<sup>3</sup> The USFSP is proprietary to and licensed from Cattle Marketing Information Services Inc., "Cattle-Fax", Denver, Colorado.

The price is a seven day moving average price obtained from direct sales and over 140 auctions in 27 states. The direct sales and auction prices are averaged for each state and then the state prices are averaged into four regional prices. The four regional prices are then averaged to obtain one national price.<sup>4</sup>

With most of the grain commodities the basis normally represents locational differences, i.e., the cost of transportation from the local market to the terminal market. The commodity itself is very homogenous. However, with livestock, and particularly feeder cattle, the basis may be more dependent upon weight, quality, and gender (steer or heifer) than it is on a particular location from a terminal market. For example, the USFSP contains prices of southern cattle, some of which are typically "long ear" cattle that have a lower carcass cutout ratio and thus receive a lower price. Therefore, one would expect most markets in the Northern Plains to have a positive feeder cattle basis for quality reasons.

The monthly average USFSP from September 1986 through 1989 is contained in Tables 24 and 25. These tables also contain the Sioux Falls feeder steer basis and the feeder heifer basis respectively. Figure 24 contains a plot of the monthly average USFSP for 1989 and of the average USFSP for the last three years. This graph can be compared to Figures 15-23 to get a picture of how Sioux Falls feeder prices move compared to the USFSP.

Even though the USFSP is for a 600-800 pound steer, a basis can be calculated for each weight and sex of feeder cattle. From the basis information in Tables 24 and 25 it is apparent that lighter weight

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<sup>4</sup> The detailed calculation can be found in "Cash Settlement For Feeder Cattle Futures." Chicago Mercantile Exchange, Chicago, Illinois

feeder cattle have a larger basis than heavier weight feeders, i.e., the Sioux Falls cash price is considerably higher than the USFSP. It would also appear that the Sioux Falls basis is higher in the early summer months and late fall than in the spring of the year for all weights of steers and heifers. This can be seen more clearly if one looks at the bar chart in Figure 25. The chart is for 600-700 pound feeder steers and heifers. While the absolute numbers are different for the different weights, all show a similar pattern to that presented in the chart. On average the Sioux Falls basis ranges from over \$13 for 400-500 pound steers to a negative \$3.50 for 800-1000 pound steers. The heifer basis has a range of \$3 to negative \$5.23 for 400-500 pound and 700-800 pound heifers respectively.

TABLE 15. AVERAGE MONTHLY PRICES OF FEEDER STEERS, 400-500 LB., MEDIUM FRAME NUMBER 1 MUSCLE THICKNESS, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	99.47	97.06	87.78	81.05	79.53	82.25				82.75	84.38	81.75	86.22
1981	80.72	78.47	76.34	77.78	70.47	69.00				67.28	67.08	64.20	72.37
1982	63.10	64.19	67.70	69.90	74.41	76.69	69.83	73.62	73.05	67.75	66.00	68.10	69.53
1983	70.28	72.38	72.97	73.88	75.19	72.68				66.67	67.25	69.44	71.19
1984	70.16	69.02	69.19	70.69	69.25						68.75	72.38	69.92
1985	73.13	73.12	71.78	76.50	75.55					70.75	68.78	66.84	72.06
1986	68.70	65.06	68.25	67.85							70.38	73.20	68.91
1987	75.78	79.12	81.10	83.78		85.00				94.81	90.16	92.27	85.25
1988	93.06	97.31	101.30	105.00	104.50	97.56				99.56	100.20	99.50	99.78
1989	101.25	101.50									97.35	97.10	99.30

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	98.81 (3.28)	99.21 (2.54)	100.61 (2.23)	103.31 (2.81)	102.81 (5.48)	101.56 (6.39)				98.97 (2.95)	96.97 (4.07)	97.76 (2.61)
85-89	98.31 (2.24)	99.01 (2.02)	100.99 (2.37)	104.25 (3.15)	104.74 (1.47)	100.01 (2.00)				100.19 (1.79)	95.84 (3.57)	96.66 (1.84)

Note: If there was insufficient cattle numbers to establish a price, then no price is reported.  
 Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota Market.

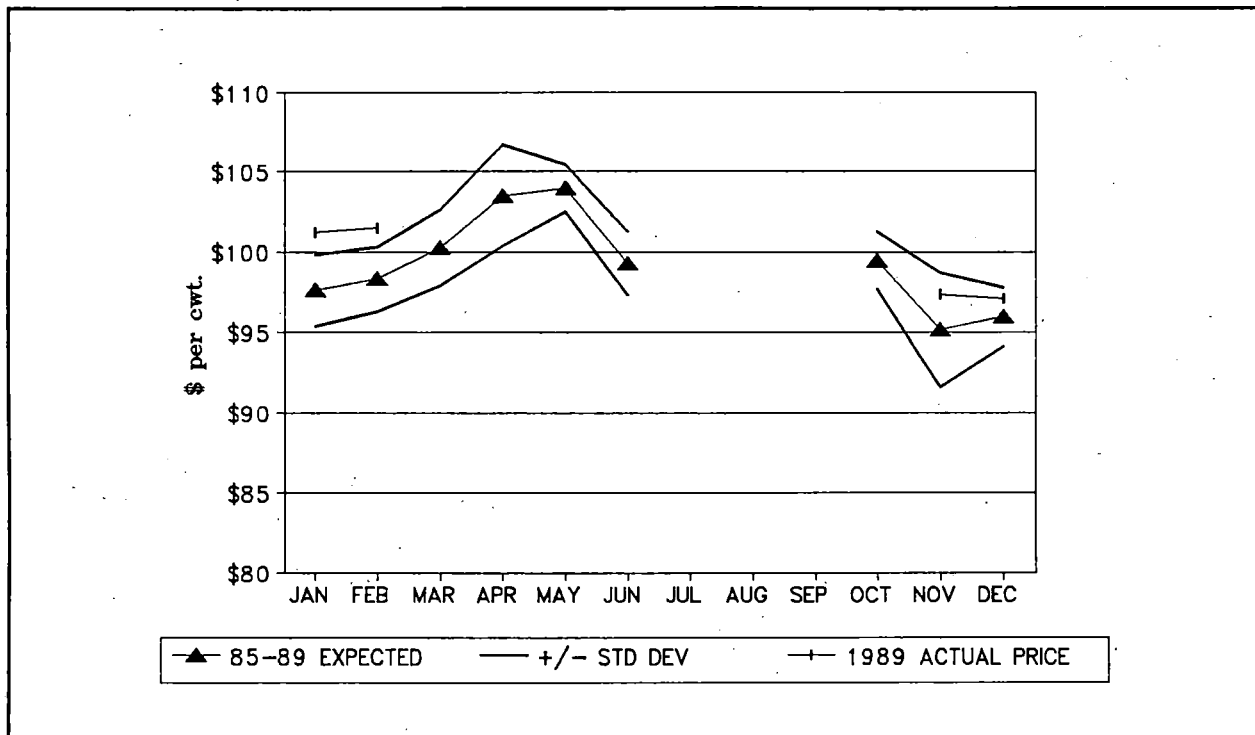


FIGURE 15. FEEDER STEERS, 400-500 LBS., SIOUX FALLS, SOUTH DAKOTA.

TABLE 16. AVERAGE MONTHLY PRICES OF FEEDER STEERS, 500-600 LB., MEDIUM FRAME NUMBER 1 MUSCLE THICKNESS, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	91.60	89.88	81.66	77.20	76.22	79.25	80.00	82.16	82.81	81.35	79.62	79.30	81.75
1981	78.28	75.88	71.31	71.63	66.90	68.84	66.80	67.00	70.07	66.53	65.17	62.92	69.28
1982	62.47	63.06	66.36	67.53	70.75	71.90	68.88	71.44	70.72	66.56	65.25	66.60	67.63
1983	69.72	70.56	69.18	70.44	70.50	69.75	67.00			62.62	64.95	67.97	68.27
1984	69.25	68.05	67.81	68.48	67.08	66.61	66.84	66.50		65.58	66.75	70.66	67.60
1985	71.40	70.88	69.94	71.00	70.87	69.44	64.81		65.00	67.00	67.19	65.47	68.45
1986	66.38	61.90	64.13	64.88	65.50	65.44	68.85	69.72	71.00	70.20	69.94	69.67	67.30
1987	72.81	74.68	75.84	79.23	80.31	83.19			88.50	88.81	86.75	88.25	81.84
1988	89.63	90.63	93.10	92.31	94.88	89.00				95.88	97.50	94.25	93.02
1989	93.88	93.63	90.63	89.38	87.45	91.04					92.68	93.02	91.46

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	100.38 (2.86)	99.66 (3.03)	99.62 (2.22)	100.59 (2.55)	100.31 (4.02)	100.28 (3.22)	98.45 (2.54)	101.07 (2.52)	102.43 (2.69)	99.20 (3.46)	98.87 (3.03)	99.15 (2.85)
85-89	100.56 (1.69)	99.54 (2.90)	99.86 (2.29)	100.29 (2.98)	100.16 (3.48)	99.31 (2.64)	98.15 (3.81)	100.87 (3.51)	100.91 (3.21)	101.09 (0.95)	100.42 (2.57)	98.82 (2.05)

Note: If there was insufficient cattle numbers to establish a price, then no price is reported.  
 Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota Market.

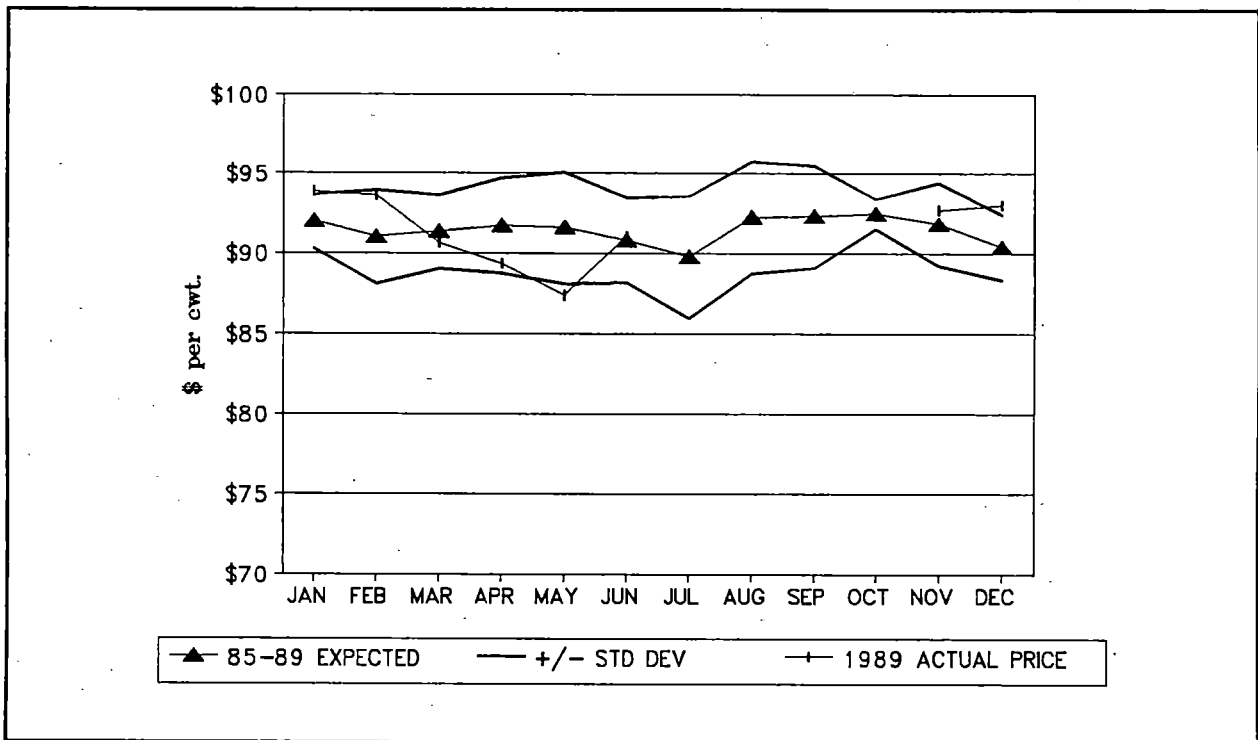


FIGURE 16. FEEDER STEERS, 500-600 LBS., SIOUX FALLS, SOUTH DAKOTA.

TABLE 17. AVERAGE MONTHLY PRICES OF FEEDER STEERS, 600-700 LB., MEDIUM FRAME NUMBER 1 MUSCLE THICKNESS, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	83.05	84.72	77.44	73.07	70.66	75.44	75.43	76.31	77.38	78.20	76.52	74.70	76.91
1981	73.81	71.56	68.47	69.43	65.03	66.06	64.22	66.47	67.80	65.19	64.25	60.92	66.93
1982	61.16	62.03	65.23	66.31	68.38	67.55	67.38	69.60	68.30	65.97	63.31	63.55	65.73
1983	66.96	68.78	67.75	67.97	66.22	66.50	64.03	61.80	60.62	60.56	61.68	66.09	64.91
1984	67.22	66.53	66.16	65.33	64.06	64.08	66.08	65.87	65.25	64.65	66.34	67.34	65.74
1985	69.65	69.25	66.56	66.25	66.90	66.94	62.10	63.90	61.56	62.28	62.94	62.16	65.04
1986	64.20	60.66	61.19	60.40	60.62	62.19	65.70	67.25	67.28	65.65	65.25	66.80	63.93
1987	69.19	71.84	71.19	74.68	77.31	79.62	78.20	80.56	83.60	80.88	81.88	82.95	77.66
1988	84.63	85.06	85.69	84.75	86.44	83.38	84.94				89.70	89.50	86.01
1989	87.50	86.85	83.35	80.89	81.40	85.25	90.31	91.63	89.69	88.36	89.43	89.24	86.99

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	101.23 (3.14)	100.71 (2.84)	99.55 (2.38)	99.56 (3.11)	99.43 (3.91)	100.05 (2.77)	99.69 (2.69)	100.81 (2.96)	100.68 (3.76)	99.38 (2.98)	99.34 (3.13)	99.58 (3.43)
85-89	101.81 (1.96)	100.69 (2.21)	98.67 (2.03)	98.00 (3.30)	99.00 (3.93)	99.73 (2.74)	99.99 (2.97)	101.52 (2.28)	100.98 (3.52)	99.45 (1.39)	99.99 (2.70)	100.17 (2.80)

Note: If there was insufficient cattle numbers to establish a price, then no price is reported.  
 Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota Market.

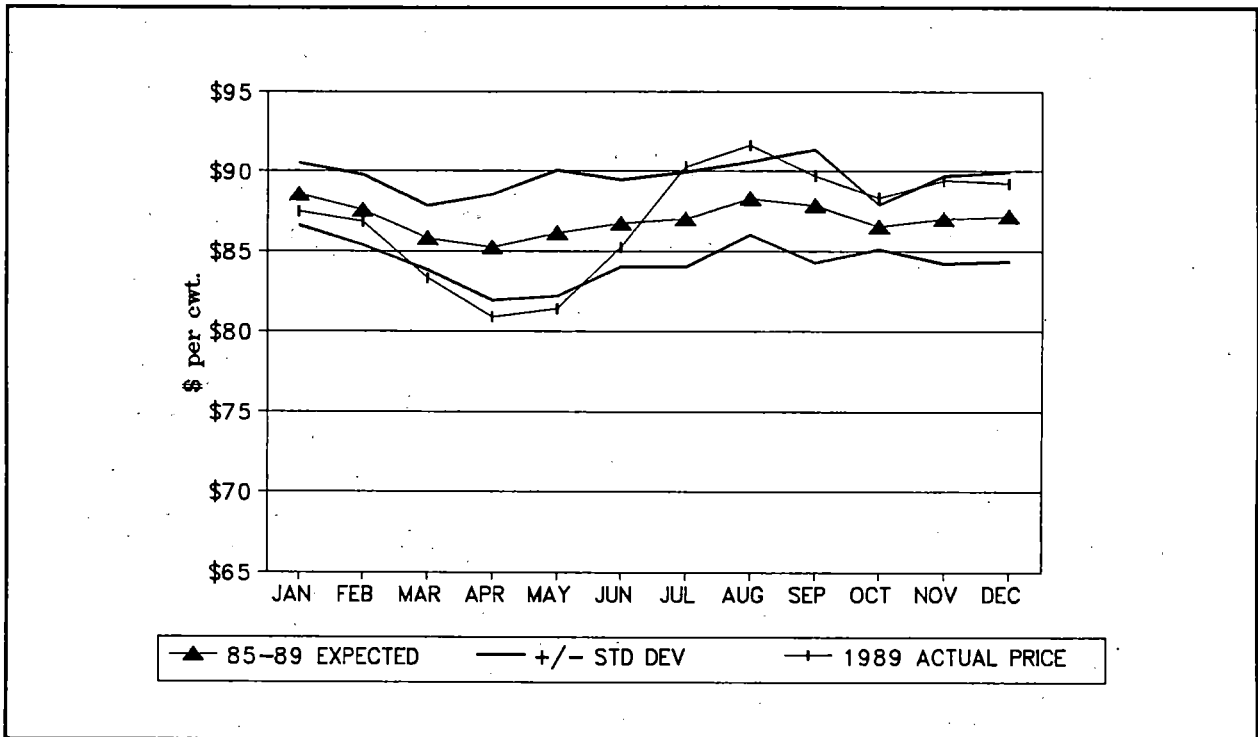


FIGURE 17. FEEDER STEERS, 600-700 LBS., SIOUX FALLS, SOUTH DAKOTA.



TABLE 18. AVERAGE MONTHLY PRICES OF FEEDER STEERS, 700-800 LB., MEDIUM FRAME NUMBER 1 MUSCLE THICKNESS, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	77.25	79.59	74.31	69.95	67.84	72.09	71.60	73.44	75.94	74.85	73.75	71.10	73.48
1981	70.66	70.00	66.50	67.07	63.31	64.28	62.78	65.38	66.85	63.34	63.46	59.02	65.22
1982	59.91	61.56	64.65	65.81	66.88	65.48	65.12	68.08	66.50	65.06	62.53	62.13	64.48
1983	63.69	65.28	67.03	66.96	64.22	63.00	61.56	59.33	59.19	59.22	60.65	64.75	62.91
1984	66.25	65.52	65.64	64.10	61.69	61.54	63.38	63.90	64.00	63.90	65.62	66.40	64.33
1985	69.12	67.88	65.75	64.75	64.35	63.40	59.25	61.91	58.66	60.95	61.44	59.94	63.12
1986	61.70	59.38	59.06	56.70	56.81	58.00	61.43	64.19	64.81	63.00	63.38	63.32	60.98
1987	66.56	68.60	68.88	71.67	71.78	73.67	73.50	76.88	79.50	78.88	75.62	78.50	73.67
1988	80.94	81.85	81.08	80.16	81.44	75.90	75.83	84.10	82.31	83.17		85.00	81.07
1989	84.25	83.19	79.58	75.66	76.83	81.16	84.66	86.85	86.44	86.69	87.75	86.60	83.31

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	101.70 (3.76)	101.53 (2.53)	100.68 (2.72)	99.74 (4.12)	98.57 (3.90)	98.28 (2.65)	98.10 (2.71)	101.15 (3.25)	101.14 (4.14)	100.15 (2.82)	99.36 (2.55)	99.61 (3.82)
85-89	103.16 (2.06)	102.07 (1.84)	99.78 (1.87)	97.77 (4.19)	97.80 (3.76)	97.66 (2.69)	97.81 (3.48)	102.32 (2.05)	101.12 (3.89)	100.97 (1.29)	99.06 (1.72)	100.47 (3.17)

Note: If there was insufficient cattle numbers to establish a price, then no price is reported.  
 Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota Market.

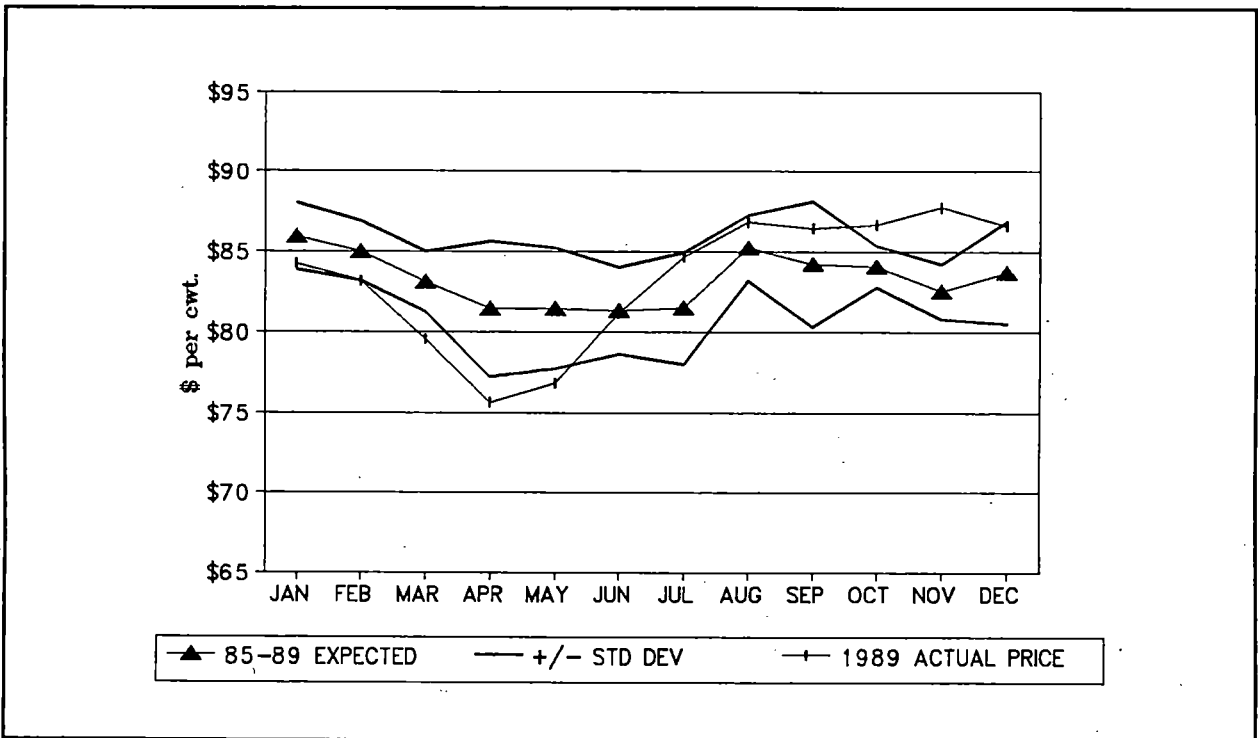


FIGURE 18. FEEDER STEERS, 700-800 LBS., SIOUX FALLS, SOUTH DAKOTA.

TABLE 19. AVERAGE MONTHLY PRICES OF FEEDER STEERS, 800-1000 LB., MEDIUM FRAME NUMBER 1 MUSCLE THICKNESS, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	72.35	74.18	70.75	66.10	65.60	67.75	69.57	70.56	71.16	70.53	69.10	67.70	69.61
1981	66.50	66.28	63.88	65.93	63.22	63.62	61.69	63.84	64.82	62.00	62.00	57.73	63.46
1982	58.22	61.16	64.25	65.81	67.22	64.60	63.40	66.19	63.18	61.88	59.88	59.15	62.91
1983	61.47	63.25	65.40	66.34	63.87	61.79	59.87	57.72	56.56	56.25	57.82	62.10	61.04
1984	65.06	65.12	65.87	63.81	61.02	60.02	62.20	62.70	63.17	62.83	64.19	64.38	63.36
1985	66.30	66.16	63.16	61.50	61.82	60.06	55.93	57.75	55.28	58.97	60.84	58.84	60.55
1986	59.75	57.54	57.44	54.05	53.75	54.19	59.07	62.62	61.90	60.40	62.22	61.08	58.67
1987	63.40	66.41	66.62	68.95	69.16	69.62	69.72	72.50	74.32	72.97	71.25	74.15	69.92
1988	74.53	75.94	76.99	75.22	76.06	72.10	71.31	76.40	77.10	78.88	80.10	79.44	76.17
1989	80.10	80.53	77.60	72.91	73.06	77.03	79.19	81.46	79.81	80.56	81.25	82.42	78.83

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	100.99 (4.24)	102.00 (2.78)	101.74 (3.05)	100.56 (4.69)	99.47 (4.65)	98.20 (3.21)	98.08 (2.81)	100.63 (3.65)	99.95 (4.33)	99.37 (3.31)	99.82 (3.59)	99.18 (3.85)
85-89	102.52 (2.46)	102.72 (1.71)	100.87 (1.56)	97.78 (4.17)	97.69 (4.28)	96.98 (2.91)	97.25 (3.61)	100.99 (3.64)	100.07 (4.27)	100.66 (0.94)	101.66 (2.84)	100.79 (2.51)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota Market.

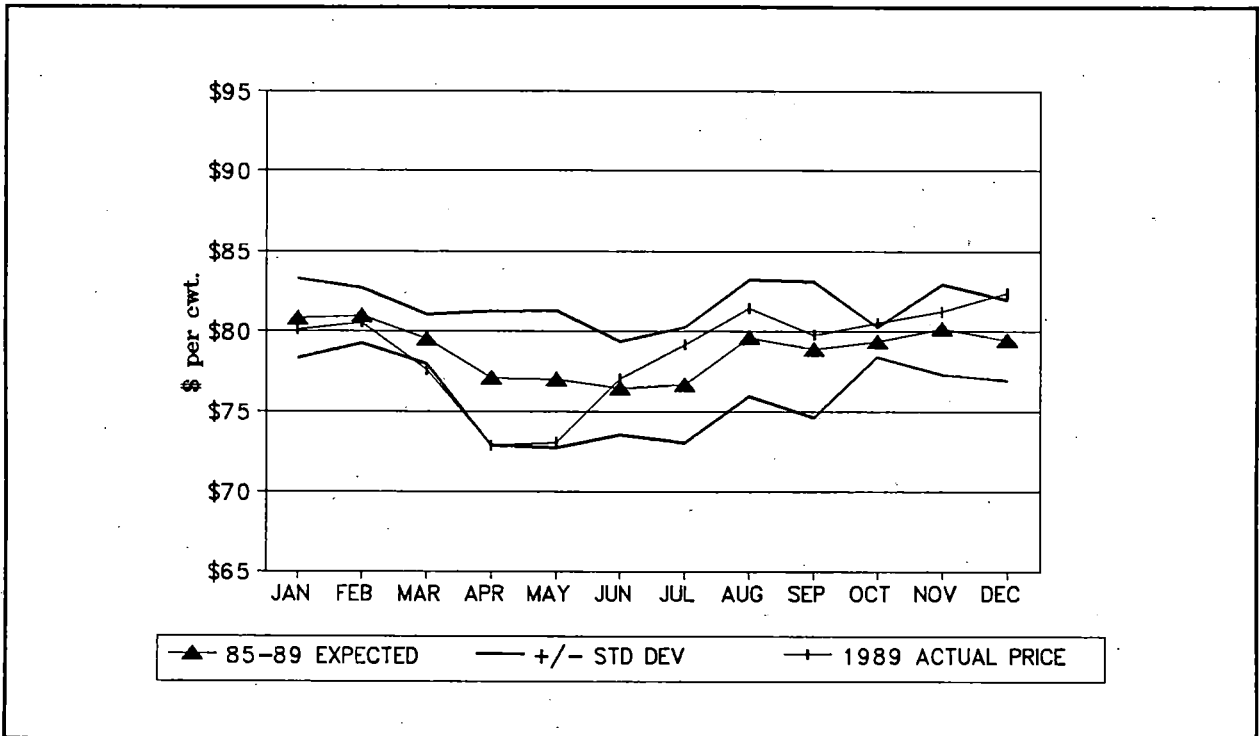


FIGURE 19. FEEDER STEERS, 800-1000 LBS., SIOUX FALLS, SOUTH DAKOTA.

TABLE 20. AVERAGE MONTHLY PRICES OF FEEDER HEIFERS, 400-500 LB., MEDIUM FRAME NUMBER 1 MUSCLE THICKNESS, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NPV	DEC	Annual Average
1980	87.30	87.28	77.75	72.65	69.00	72.81				73.88	76.00	71.20	76.43
1981	71.06	70.22	66.00	67.60	62.88	61.25				60.75	60.00	55.05	63.87
1982	53.38	53.90	58.40	59.81	63.63	64.69	62.96	66.50	65.90	61.66	56.88	59.12	60.57
1983	60.88	63.56	64.17	65.06	64.50	64.83				55.96	56.80	59.69	61.72
1984	61.66	60.27	60.62	61.22	59.72						60.54	62.00	60.86
1985	63.78	63.94	62.56	64.00	63.98					60.17	58.62	57.38	61.80
1986	58.92	59.10	60.19	60.87	59.50						63.50	65.95	61.15
1987	68.06	72.39	72.53	75.31		80.00				86.04	84.56	85.10	78.00
1988	85.25	88.03	89.06							93.25	91.60	92.31	89.92
1989	91.71										90.63	89.52	90.62

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	98.60 (3.73)	99.96 (3.34)	100.47 (2.32)	102.19 (2.28)	101.06 (4.56)	102.68 (7.16)				99.87 (3.66)	97.70 (4.67)	97.47 (2.51)
85-89	98.59 (1.81)	100.91 (0.95)	101.17 (1.38)	103.06 (1.84)	101.01 (0.85)					100.74 (0.99)	97.03 (2.48)	97.48 (2.19)

Note: If there was insufficient cattle numbers to establish a price, then no price is reported.  
Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota Market.

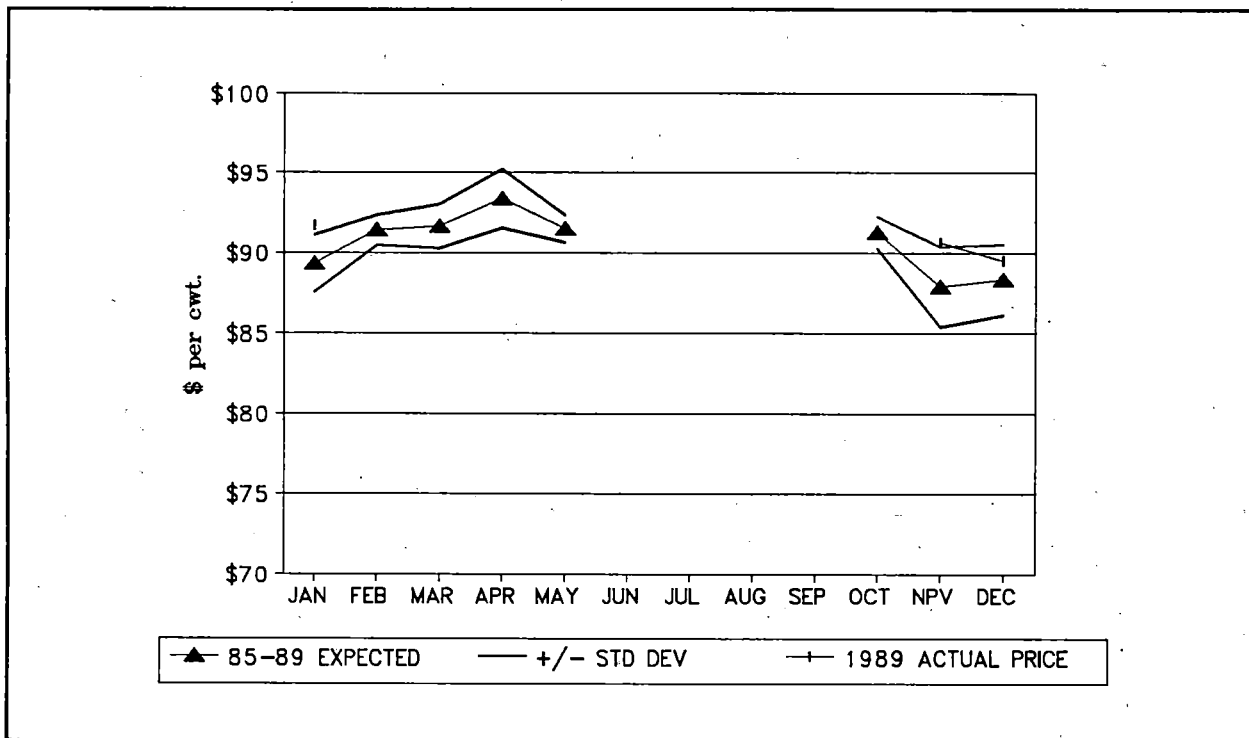


FIGURE 20. FEEDER HEIFERS, 400-500 LBS., SIOUX FALLS, SOUTH DAKOTA.

TABLE 21. AVERAGE MONTHLY PRICES OF FEEDER HEIFERS, 500-600 LB., MEDIUM FRAME NUMBER 1 MUSCLE THICKNESS, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	79.65	80.66	74.06	68.07	66.06	70.38	70.50	70.94	70.88	71.25	70.91	68.70	71.84
1981	68.88	68.10	63.69	64.35	60.40	60.69	58.97	60.84	63.07	59.40	57.54	54.20	61.68
1982	53.03	54.06	57.78	59.06	62.10	62.70	61.38	64.06	62.65	59.56	55.62	57.95	59.16
1983	60.00	62.84	62.78	62.31	61.53	61.67		52.88	53.44	53.97	54.60	59.25	58.66
1984	61.69	59.98	60.25	59.11	57.38	57.97	58.62	59.35	59.17	58.61	60.31	61.22	59.47
1985	63.03	63.19	61.47	61.62	61.60	61.40	58.75		56.50	58.38	58.00	57.00	60.09
1986	58.13	57.69	56.60	56.67	56.22	57.55	61.70	63.38	64.09	61.55	61.69	64.05	59.94
1987	66.28	69.11	69.16	71.45	72.75	73.62				80.67	80.00	83.25	74.03
1988	83.25	82.31	82.31	82.06	83.50	80.50					86.50	88.31	83.59
1989	86.22	84.69	82.17	77.08	78.00	80.63	88.25				88.53	87.75	83.70

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	100.90	101.13	100.29	100.09	99.71	99.98	100.26	100.29	100.13	99.02	98.48	99.73	
	(4.47)	(3.55)	(2.73)	(3.88)	(4.45)	(3.78)	(3.41)	(5.40)	(4.96)	(3.14)	(3.85)	(3.95)	
85-89	101.40	101.17	99.33	98.57	98.59	98.26	101.45	102.39	99.22	99.43	99.31	100.87	
	(1.63)	(1.52)	(1.88)	(4.50)	(4.14)	(2.58)	(3.19)	(4.00)	(4.27)	(1.69)	(2.42)	(3.34)	

Note: If there was insufficient cattle numbers to establish a price, then no price is reported.  
 Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota Market.

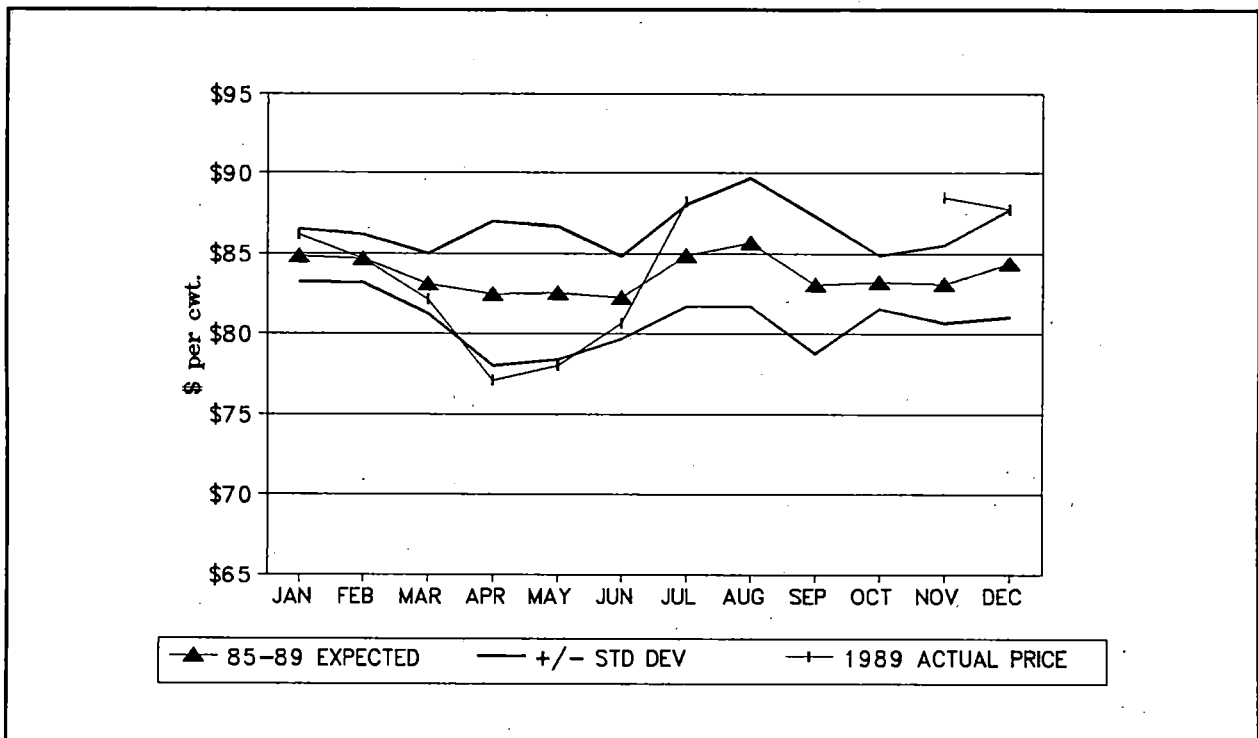


FIGURE 21. FEEDER HEIFERS, 500-600 LBS., SIOUX FALLS, SOUTH DAKOTA.

TABLE 22. AVERAGE MONTHLY PRICES OF FEEDER HEIFERS, 600-700 LB., MEDIUM FRAME NUMBER 1 MUSCLE THICKNESS, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	73.08	76.60	70.56	64.90	63.56	67.52	67.93	68.40	68.31	68.75	65.89	65.07	68.38
1981	65.47	66.31	63.06	63.30	59.40	59.75	58.55	60.88	62.33	57.75	56.95	54.15	60.66
1982	53.44	54.81	59.00	59.75	61.78	60.45	60.31	63.31	60.65	58.78	55.10	56.55	58.66
1983	58.91	61.97	62.00	62.03	60.72	59.83	57.25	54.62	52.91	52.84	53.93	57.56	57.88
1984	60.19	59.82	60.40	57.96	56.02	56.31	58.17	59.35	59.38	58.99	60.88	61.06	59.04
1985	62.85	63.16	61.10	59.88	60.15	59.50	56.58	57.38	54.97	56.50	55.53	54.88	58.54
1986	56.83	56.75	55.47	52.65	53.41	55.32	59.48	62.56	61.88	59.53	60.75	60.45	57.92
1987	63.82	66.94	66.62	68.57	68.94	70.50	70.00	73.38	75.95	72.94	72.62	76.15	70.54
1988	77.94	79.69	77.71	76.72	77.47	73.63	73.42	78.08	80.50	80.50		83.00	78.06
1989	82.28	80.44	77.70	73.72	76.25	80.16	82.56	85.85	84.25	83.63	84.95	83.41	81.27

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	101.16 (4.16)	102.44 (3.39)	101.20 (2.74)	99.56 (4.38)	99.17 (4.19)	99.17 (3.12)	99.04 (2.67)	101.35 (3.77)	100.88 (4.39)	98.96 (3.17)	98.10 (3.33)	98.96 (3.92)
85-89	102.58 (1.81)	103.00 (1.67)	99.90 (2.04)	97.23 (4.41)	97.93 (3.41)	98.34 (2.56)	98.66 (3.17)	101.72 (3.18)	101.49 (3.59)	99.64 (1.56)	99.22 (2.10)	100.30 (3.81)

Note: If there was insufficient cattle numbers to establish a price, then no price is reported.  
 Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota Market.

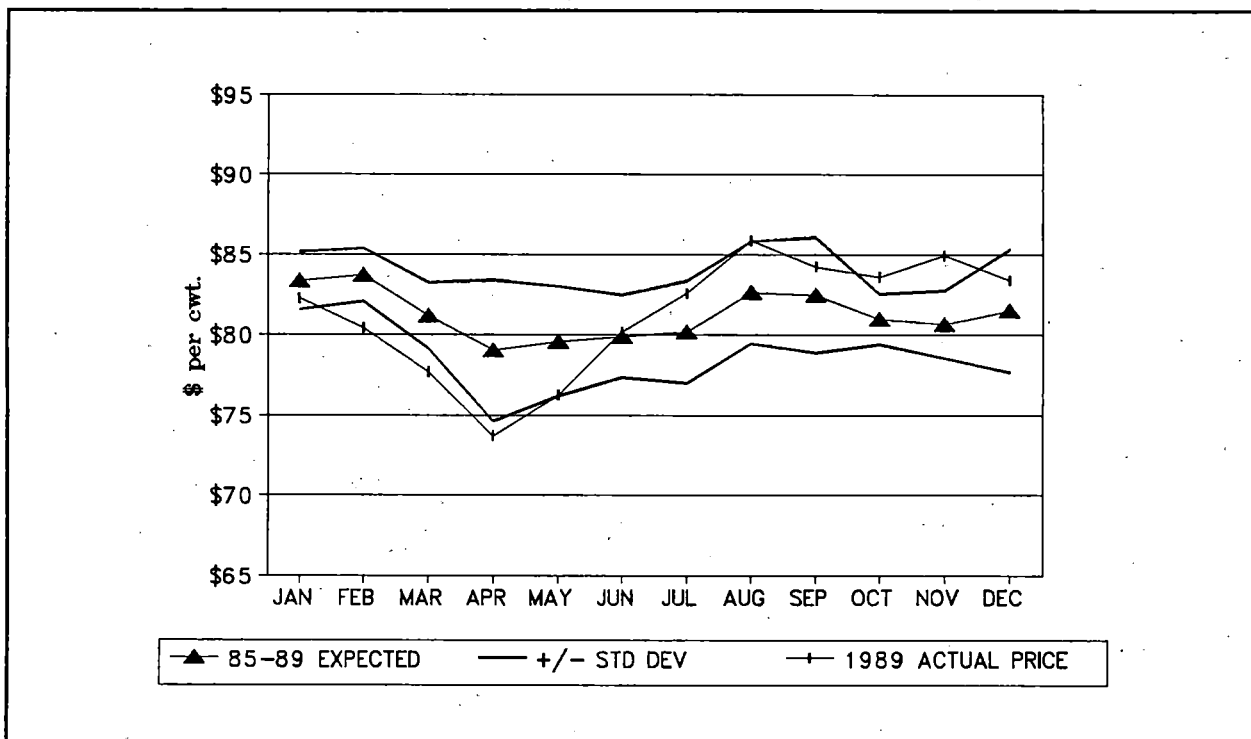


FIGURE 22. FEEDER HEIFERS, 600-700 LBS., SIOUX FALLS, SOUTH DAKOTA.

TABLE 23. AVERAGE MONTHLY PRICES OF FEEDER HEIFERS, 700-800 LB., MEDIUM FRAME NUMBER 1 MUSCLE THICKNESS, SIOUX FALLS, SOUTH DAKOTA LIVESTOCK AUCTION, 1980-1989 (DOLLARS PER CWT.).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
1980	68.70	70.62	66.53	62.55	62.13	65.10	64.93	66.03	66.56	66.95	64.97	63.75	65.74
1981	63.00	63.31	60.81	62.32	59.25	59.56	58.45	60.69	61.08	57.35	57.00	53.75	59.71
1982	53.34	55.97	59.20	59.94	62.31	59.78	59.25	62.06	60.05	57.82	55.44	55.43	58.38
1983	58.47	61.25	61.93	61.75	60.44	57.00	56.41	53.55	52.88	53.03	53.30	57.06	57.26
1984	59.66	59.68	60.84	58.97	56.05	55.72	57.86	59.02	58.36	58.06	60.25	61.06	58.79
1985	62.43	62.62	60.56	59.25	59.47	58.34	53.80	55.75	53.53	56.18	55.78	54.47	57.68
1986	55.28	55.28	54.44	51.32	51.66	52.40	57.90	60.38	60.18	59.00	59.66	58.70	56.35
1987	61.19	64.03	65.10	67.13	67.38	67.53	68.25	72.47	73.60	70.97	68.94	71.47	68.17
1988	74.28	77.38	75.53	73.56	74.75	70.30	70.44	76.65	77.83	78.38	78.33	78.44	75.49
1989	80.06	79.31	76.05	71.85	72.33	76.38	78.47	80.98	79.13	79.69	79.30	80.88	77.87

THE AVERAGE MONTHLY PRICE INDEX AND THE CORRESPONDING STANDARD DEVIATION IN BRACKETS.

80-89	100.78 (4.17)	102.58 (3.02)	101.78 (3.09)	100.19 (4.47)	99.52 (4.68)	98.07 (2.99)	98.52 (2.99)	101.38 (3.86)	100.66 (4.25)	99.41 (3.17)	98.61 (3.42)	98.50 (3.67)
85-89	102.18 (2.39)	103.29 (2.03)	100.72 (1.87)	97.62 (4.28)	97.81 (4.07)	97.15 (3.04)	97.87 (3.98)	102.17 (3.33)	101.35 (4.01)	100.78 (1.21)	99.76 (2.53)	99.31 (2.64)

Source: USDA Agricultural Marketing Service, Livestock and Seed Division, Sioux Falls, South Dakota Market.

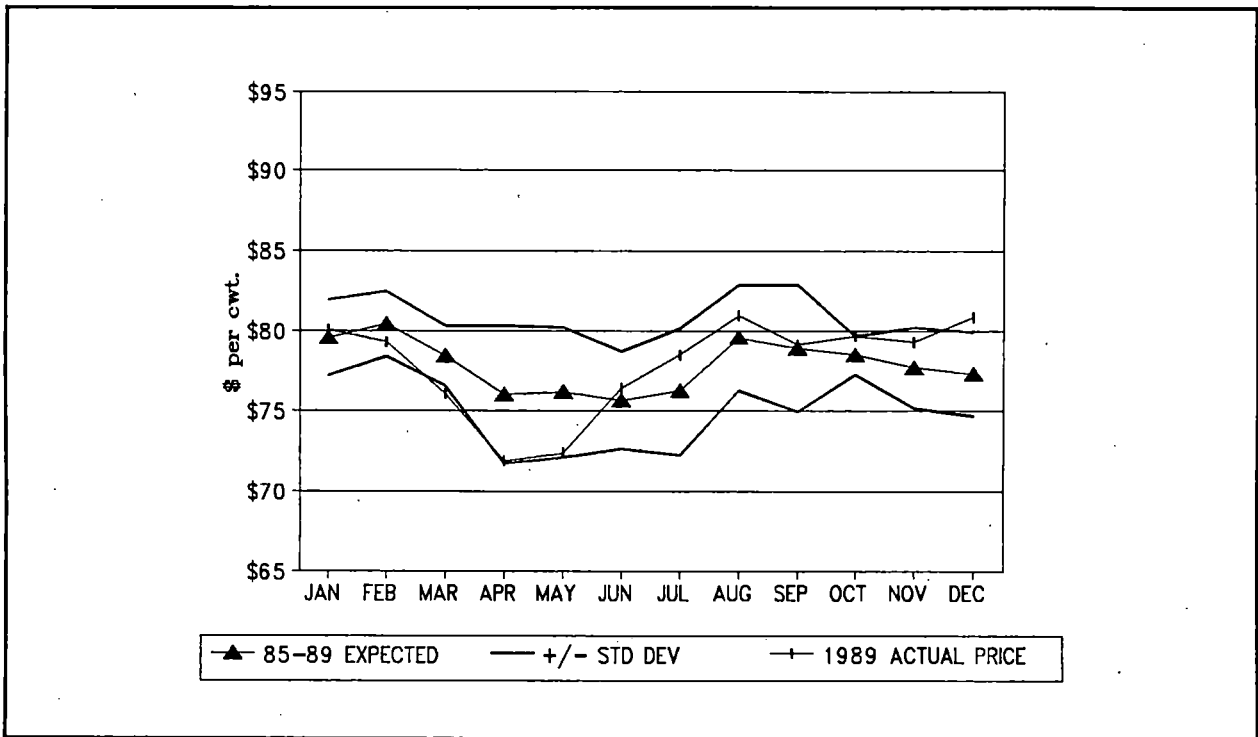


FIGURE 23. FEEDER HEIFERS, 700-800 LBS., SIOUX FALLS, SOUTH DAKOTA.

TABLE 24. U.S. FEEDER STEER PRICE AND THE SIOUX FALLS BASIS FOR FEEDER STEERS AND HEIFERS, SEPTEMBER 1986 THROUGH 1989 (DOLLARS PER CWT).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Average
U.S. FEEDER STEER PRICE													
1986									62.79	61.24	62.54	61.85	62.10
1987	64.35	68.27	67.84	69.61	69.11	69.87	71.46	75.54	78.79	76.32	74.42	74.69	71.69
1988	80.33	81.86	81.75	79.74	79.97	73.38	76.11	80.90	80.16	81.96	81.78	83.55	80.12
1989	84.34	83.45	81.20	76.76	76.93	80.36	82.61	84.22	82.86	82.94	83.26	83.83	81.90
400-500 LB FEEDER STEER BASIS													
1986											7.84	11.35	9.59
1987	11.43	10.85	13.26	14.17		15.13				18.49	15.74	17.58	14.58
1988	12.73	15.45	19.55	25.26	24.53	24.18				17.60	18.42	15.95	19.30
1989	16.91	18.05									14.09	13.27	15.58
AVG	13.69	14.78	16.40	19.72		19.66				18.05	14.02	14.54	16.36
500-600 LB FEEDER STEER BASIS													
1986									8.21	8.96	7.40	7.82	8.10
1987	8.46	6.41	8.00	9.62	11.20	13.32			9.71	12.49	12.33	13.56	10.51
1988	9.30	8.77	11.35	12.57	14.91	15.62				13.92	15.72	10.70	12.54
1989	9.54	10.18	9.43	12.62	10.52	10.68					9.42	9.19	10.20
AVG	9.10	8.45	9.59	11.60	12.21	13.21			8.96	11.79	11.22	10.32	10.65
600-700 LB FEEDER STEER BASIS													
1986									4.49	4.41	2.71	4.95	4.14
1987	4.84	3.57	3.35	5.07	8.20	9.75	6.74	5.02	4.81	4.56	7.46	8.26	5.97
1988	4.30	3.20	3.94	5.01	6.47	10.00	8.83				7.92	5.95	6.18
1989	3.16	3.40	2.15	4.13	4.47	4.89	7.70	7.41	6.83	5.42	6.17	5.41	5.09
AVG	4.10	3.39	3.15	4.74	6.38	8.21	7.76	6.21	5.38	4.80	6.06	6.14	5.53
700-800 LB FEEDER STEER BASIS													
1986									2.02	1.76	0.84	1.47	1.52
1987	2.21	0.33	1.04	2.06	2.67	3.80	2.04	1.34	0.71	2.56	1.20	3.81	1.98
1988	0.61	-0.01	-0.67	0.42	1.47	2.52	-0.28	3.20	2.15	1.21		1.45	1.10
1989	-0.09	-0.26	-1.62	-1.10	-0.10	0.80	2.05	2.63	3.58	3.75	4.49	2.77	1.41
AVG	0.91	0.02	-0.42	0.46	1.35	2.37	1.27	2.39	2.12	2.32	2.18	2.38	1.45
800-1000 LB FEEDER STEER BASIS													
1986									-0.89	-0.84	-0.32	-0.77	-0.71
1987	-0.95	-1.86	-1.22	-0.66	0.05	-0.25	-1.74	-3.04	-4.47	-3.35	-3.17	-0.54	-1.77
1988	-5.80	-5.92	-4.76	-4.52	-3.91	-1.28	-4.80	-4.50	-3.06	-3.08	-1.68	-4.11	-3.95
1989	-4.24	-2.92	-3.60	-3.85	-3.87	-3.33	-3.42	-2.76	-3.05	-2.38	-2.01	-1.41	-3.07
AVG	-3.66	-3.57	-3.19	-3.01	-2.58	-1.62	-3.32	-3.43	-2.87	-2.41	-1.80	-1.71	-2.76
400-500 FEEDER HEIFER BASIS													
1986											0.96	4.10	2.53
1987	3.71	4.12	4.69	5.70		10.13				9.72	10.14	10.41	7.33
1988	4.92	6.17	7.31							11.29	9.82	8.76	8.05
1989	7.37										7.37	5.69	6.81
AVG	5.33	5.15	6.00							10.51	7.07	7.24	6.88
500-600 LB FEEDER HEIFER BASIS													
1986									1.30	0.31	-0.85	2.20	0.74
1987	1.93	0.84	1.32	1.84	3.64	3.75				4.35	5.58	8.56	3.53
1988	2.92	0.45	0.56	2.32	3.53	7.12					4.72	4.76	3.30
1989	1.88	1.24	0.97	0.32	1.07	0.27	5.64				5.27	3.92	2.29
AVG	2.24	0.84	0.95	1.49	2.75	3.71	5.64			2.33	3.68	4.86	2.85
600-700 LB FEEDER HEIFER BASIS													
1986									-0.91	-1.71	-1.79	-1.40	-1.45
1987	-0.53	-1.33	-1.22	-1.04	-0.17	0.63	-1.46	-2.16	-2.84	-3.38	-1.80	1.46	-1.15
1988	-2.39	-2.17	-4.04	-3.02	-2.50	0.25	-2.69	-2.82	0.34	-1.46		-0.55	-1.91
1989	-2.06	-3.01	-3.50	-3.04	-0.68	-0.20	-0.05	1.63	1.39	0.69	1.69	-0.42	-0.63
AVG	-1.66	-2.17	-2.92	-2.37	-1.12	0.23	-1.40	-1.12	-0.50	-1.46	-0.63	-0.23	-1.28
700-800 LB FEEDER HEIFER BASIS													
1986									-2.61	-2.24	-2.88	-3.15	-2.72
1987	-3.16	-4.24	-2.74	-2.48	-1.73	-2.34	-3.21	-3.07	-5.19	-5.35	-5.48	-3.22	-3.52
1988	-6.05	-4.48	-6.22	-6.18	-5.22	-3.08	-5.67	-4.25	-2.33	-3.58	-3.45	-5.11	-4.63
1989	-4.28	-4.14	-5.15	-4.91	-4.60	-3.98	-4.14	-3.24	-3.73	-3.25	-3.96	-2.95	-4.03
AVG	-4.50	-4.29	-4.70	-4.52	-3.85	-3.13	-4.34	-3.52	-3.47	-3.60	-3.94	-3.61	-3.96

Source: The USFSP was obtained from the Western Livestock Marketing Information Project, Denver, Colorado.

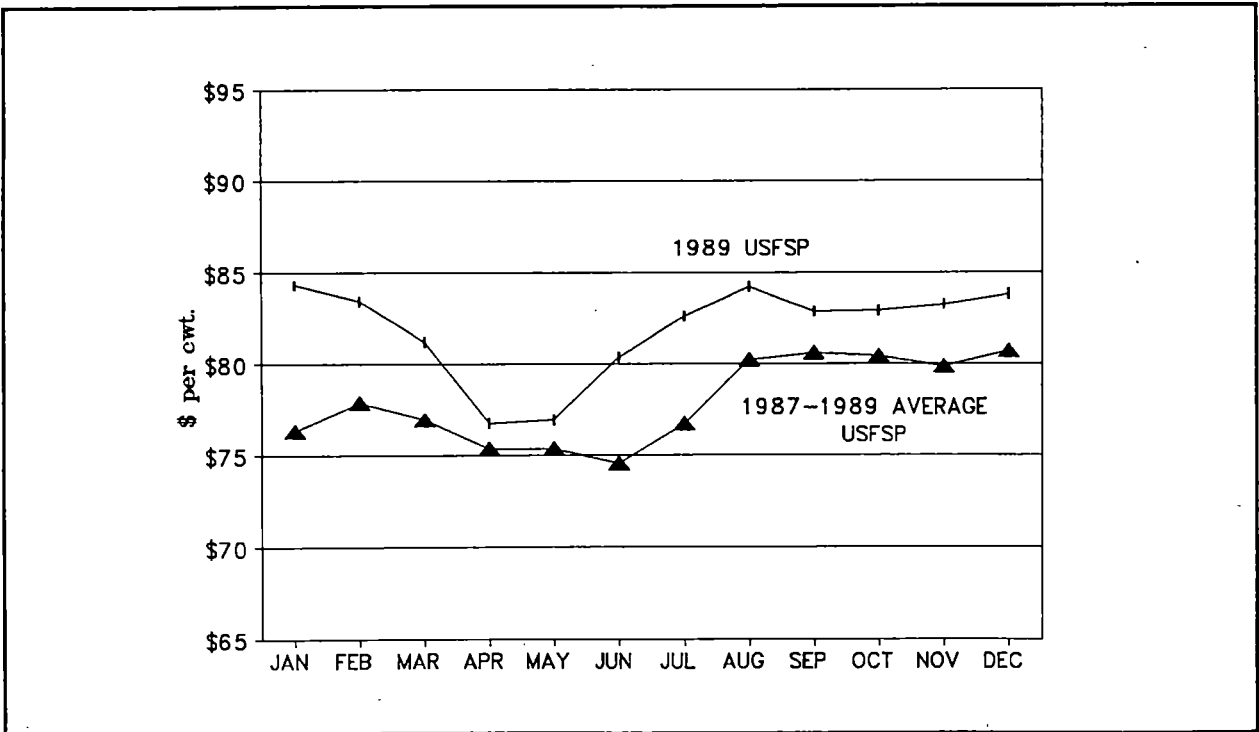


FIGURE 24. THE U.S. FEEDER STEER PRICE, 600-800 POUNDS, SEP 1986-1989.

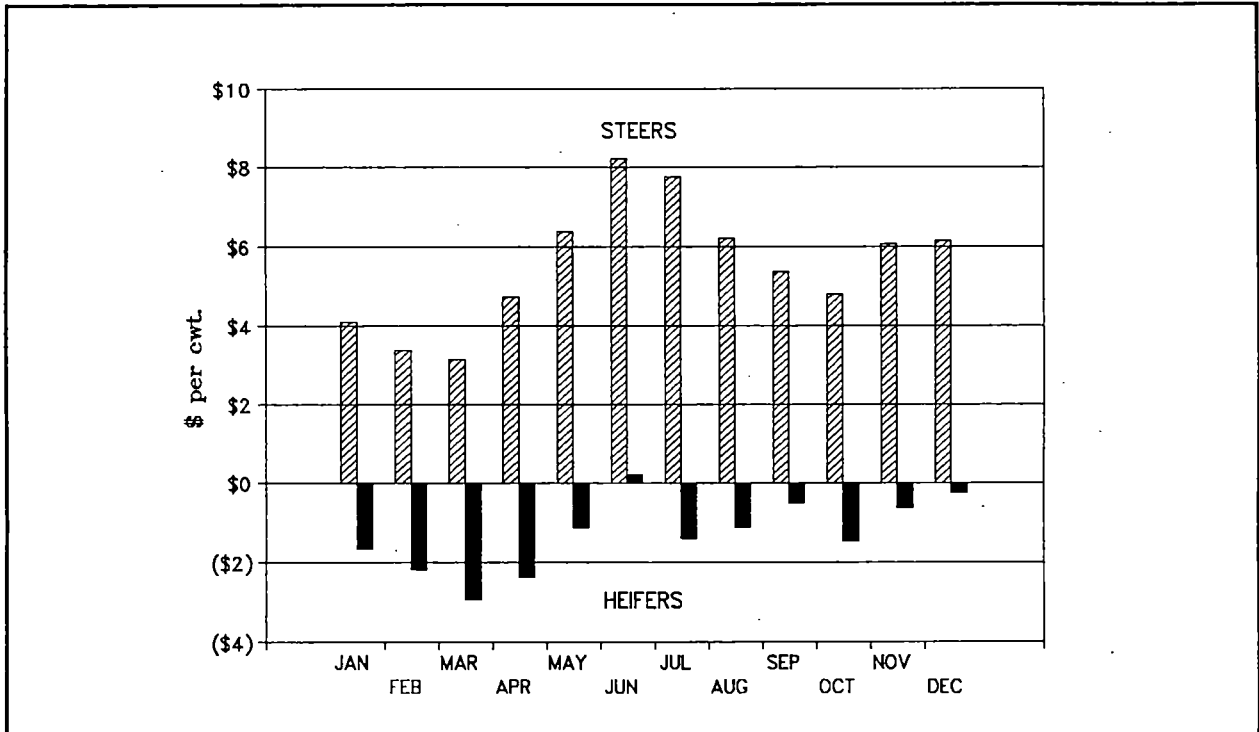


FIGURE 25. THE SIOUX FALLS BASIS FOR 600-700 LB. FEEDER STEERS AND HEIFERS, SEPTEMBER 1986-1989.



## REFERENCES

- Kearl, W. Gordon. 1987a. "Timing of Cull Cow Marketing." Department of Agricultural Economics, Cooperative Extension Service, University of Wyoming, Laramie, Wyoming. B-878. February.
- Kearl, W. Gordon. 1987b. "Marketing Wyoming Cattle Including Average, Price of Cattle and Calves, Eastern Wyoming and Western Nebraska 1968-1986." Agricultural Experiment Station, University of Wyoming. B-891. August.
- Shane Richard C. and Wayne Ellingson. 1988 "Profitability of Feeding Cull Cows." Proceedings of the 10th Range Beef Cow Symposium, Cheyenne, Wyoming. December.
- Trapp, James N. 1989. "Seasonal Price Index Update for Oklahoma Agricultural Commodities. *Current Farm Economics*. Department of Agricultural Economics and Agricultural Experiment Station, Oklahoma State University. Vol. 62 - No. 4. December.