



Numbers of animals in the market place affect seasonal price levels.

Month to Month Changes in

NORTH DAKOTA FARM PRICES

of Steers and Heifers, Hogs and Lambs

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Prices of livestock and livestock products change from month to month. For some products, eggs, for example, the seasonal pattern is very regular, varying only slightly among years. In

other cases the seasonal pattern is not uniform, with marked differences among years. The following tables are intended to show the average seasonal movement of North Dakota farm prices of steers and heifers, hogs, and lambs; the uniformity of month-to-month changes; and the direction and frequency of specified amounts of price changes from month to month.

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The average seasonal price pattern is denoted by a seasonal index which is a measurement of the general tendency for prices to follow a regular pattern each year. The average variation in price from the yearly average price for specific months is represented by a monthly index. A monthly price index above 100 means that the price during that particular month is above the average price for the year by a percentage value equal to the amount in excess of 100. The opposite is true for months in which the monthly indexes are less than 100. The number of years included in the study is not the same for all three classes of livestock, because data for some of the earlier years were not available.

Steers and Heifers

The significant feature of the seasonal index of steer and heifer prices was the very small differ-

ence between the monthly indexes, ranging only from a low of 97.7 in December to 101.9 in May (Table 1). This means that steer and heifer prices averaged 2.3 percent (100-97.7) below the average yearly price in December and averaged 1.9 percent (101.9-100) above the average yearly price in May. Additional analysis, not reported here, indicates that many of the differences among the monthly indexes are not statistically significant.

The prices presented in Table 2 and similar tables to follow are ratios to trend and indicate the direction of price movements from one month to the next. According to the data in Table 2, it would be difficult to estimate the months when steer and heifer prices are likely to be highest and the month's prices are likely to be lowest. Although prices were highest five times in May and eight times in either November or December, they were also highest and lowest in a majority of other

Table 1. Indexes of seasonal variations of North Dakota farm prices of steers and heifers, hogs, and lambs.

	Time Period	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Steers and Heifers	15 yrs.	99.7	99.6	100.4	101.3	101.9	101.5	100.1	100.0	101.0	99.2	97.5	97.7
Hogs	20 yrs.	96.7	98.9	98.7	99.0	102.1	103.5	103.8	106.4	104.1	98.9	93.2	93.6
Lambs	20 yrs.	99.1	101.7	103.9	98.1	101.9	103.3	102.9	100.0	100.0	96.1	96.8	95.2

Table 2. Steers and heifers: High and low months of ratios to trend of North Dakota farm prices.

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Number of Times Month Was High	2		2	2	5	2	1	2	1		1	2
Number of Times Month Was Low	2		3	1		1	2	2	1	1	4	4

Table 3. Steers and heifers: Directions and frequency of specified amounts of month-to-month price changes of North Dakota farm prices.

Amount of Price Change	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-June	June-July	July-Aug	Aug-Sept	Sept-Oct	Oct-Nov	Nov-Dec
(dollars)	(number of times)											
Declines												
1.50 - 1.99		1									1	
1.00 - 1.49	1		2	1		1	1			1	1	
.50 - .99		2	1	2	4	3	6	5	3	4	4	3
.10 - .49	1	4	3	1		2	4	1	1	6	4	2
Total Declines	2	7	6	4	4	6	11	6	4	11	10	5
No Change	2	2	1	1	1	2		2	2	2	1	2
Increases												
.10 - .49	1	2	4	4	5	4	3	3	6	2	2	3
.50 - .99	6	3	1	3	3	2		3	2			3
1.00 - 1.49	3	1	2	3	1		1	1			2	3
1.50 - 1.99			1		1	1			1			1
2.00 - 2.49	1											1
Total Increases	11	6	8	10	10	7	4	7	9	2	4	8
Average Change	+.53	-.04	+.27	+.17	+.23	-.05	-.24	+.03	+.16	-.31	-.31	+.17
Average Deviation	.55	.47	.61	.54	.49	.51	.40	.46	.43	.29	.54	.52

months. In a number of years, prices were highest or lowest in more than one month, which accounts for the number of highs and lows each exceeding the number of years included in the study.

The variability among years in the directions and size of the month-to-month changes in steer and heifer prices is illustrated in Table 3. For example, during a 15-year period, prices rose 11 times from December to January, declined twice during that period and showed no change in two years. One year the amount of rise exceeded \$2.00; in another year the decline exceeded \$1.00. The average price change was \$.53, with an average deviation of \$.55 from this figure. Examination of the corresponding data for many of the other month-to-month changes emphasizes the lack of uniformity from year to year in the direction and amount of price movement.

Hogs

The seasonal indexes for North Dakota farm prices of hogs usually follow a definite pattern,

ranging from a low of close to 93 during November and December to a high of 106.4 in August (Table 1). The seasonal movement of hog price varies inversely to that of marketing; however, evidence during the past few years suggests that a trend towards more uniform marketings has been developing. If this trend continues, it will likely result in decreasing the range between the low and high points in the index.

The prices of hogs, based on the ratios to trend, were highest 15 times out of 23 in one of the three months of July, August and September. Prices were lowest 21 times out of 29 in November, January or February (Table 4). The tendency for prices to be highest or lowest at certain seasons is much more in evidence with hogs than in the case of steer and heifer prices.

The greater regularity in the seasonal movement of hogs as compared to steers and heifers is also shown in Table 5, which gives the direction and the frequency of the month-to-month changes.

Table 4. Hogs: High and low months of ratios to trend of North Dakota farm prices.

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Number of Times Month Was High	1	1	3		3		8	4	3	1		
Number of Times Month Was Low	7			4	1	1	1		6	1	6	8

Table 5. Hogs: North Dakota farm prices, frequency of specified month-to-month changes.

Amount of Price Change	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-June	June-July	July-Aug	Aug-Sept	Sept-Oct	Oct-Nov	Nov-Dec
(dollars)	(number of times)											
Declines												
4.00 and more						1						
3.00 - 3.90				1	1							1
2.50 - 2.90			1								5	
2.00 - 2.40				1							1	1
1.50 - 1.90				1							3	1
1.00 - 1.40	1		1		2	1	3		2	7	3	1
.50 - .90	1	4	3	4	4	3	1	4	7	3	4	4
.10 - .40	2	3	5	5	4	3	2	1	2	2	6	5
Total Declines	4	7	10	11	11	8	7	5	12	16	19	11
No Change	2	3	3	2	1	1	1	1	1			
Increases												
.10 - .40	3		2	4	3	4	4	4	4	2	1	3
.50 - .90	6	3	2	1	1	3	2	2	3	2		2
1.00 - 1.40	2	6	1			3	4	7				2
1.50 - 1.90			1	2	1		1	1				
2.00 - 2.40	2	1	1		1	1	1					1
2.50 - 2.90	1				2							1
3.00 - 3.90												
4.00 and more												
Total Increases	14	10	7	7	8	11	12	14	7	4	1	9
Average Change	+.50	+.40		-.12	+.46	+.07	+.20	+.20	-.28	-.77	-1.00	-.19
Average Deviation	.70	.74	.66	.60	1.18	.76	.17	.64	.54	.70	.70	.79

Table 6. Lambs: High and low months of ratios to trend of North Dakota farm prices.

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Number of Times Month Was High	1	3	6	1	5	3	1	1				
Number of Times Month Was Low								2		6		12

For example, hog prices rose 14 times, declined 4 times, and showed no change twice from December to January over a 20-year period. Even though January was one of the lower months, prices during January generally were on the upward trend. Further, the declines that did occur from December to January were relatively small.

In contrast, the declines in prices from August to September, September to October, and October to November greatly exceeded the increases. The price decreases were also generally greater than the increases.

Lambs

The seasonal variations index of North Dakota farm lamb prices was found to be highest during the spring and early summer months, when receipts are light and usually consist of high-quality, grain-fed lambs that bring relatively high prices (Table 1). The low lamb prices occurred in the late fall and early winter. The range in the monthly price index extended from 95.2 in December to 103.3 in June.

The months when the ratios to trend were highest varied widely among years, but in no year

were the prices represented by the ratios highest during the last three months of the year. In 18 of the 20 years, prices were at a low point in October or December (Table 6).

The most consistent directional change in actual prices for lambs was from December to January, when prices increased 18 times and declined twice over a 20-year period (Table 7). The number of increases also exceeded the number of declines from January to February and February to March, and the amount of change accompanying the increases was much greater than that accompanying the declines. During the last nine month-to-month changes for the years analyzed, the declines in price equalled or exceeded the increases. From September to October, prices declined 16 times, remained unchanged twice, and increased twice. The average change from September to October was $-\$0.70$, with an average deviation of $\$.54$ from this figure. From April to May the declines were almost double the number of increases (12 declines compared to 7 increases), but a very high average deviation ($\$1.15$) accompanied the average change in price of $\$.40$.

Table 7. North Dakota farm price of lambs: Frequency of specified month-to-month changes, average change, and average deviation from average change, 1949-68.

Amount of Price Change	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-June	June-July	July-Aug	Aug-Sept	Sept-Oct	Oct-Nov	Nov-Dec
(dollars)	(number of times)											
Declines												
3.00 - 3.90										1		
2.50 - 2.99					1				1			
2.00 - 2.40												1
1.50 - 1.90					2		1	1		1		
1.00 - 1.40			1	2	3	2	3	3	2	2		1
.50 - .90	2	4	2	5	1	5	4	4	1	9	5	2
.10 - .40			3	2	2	1	2	3	6	3	7	6
Total Declines	2	4	6	10	12	8	9	11	10	16	12	10
No Change		3	3	5	1	5	4	3	4	2	2	5
Increases												
.10 - .40	2	6		2	3	3	3	2	2	1	3	1
.50 - .90	12	5	4	1	2	1	2	4	3	1	1	3
1.00 - 1.40	1	1	2		2	3	2		1		1	1
1.50 - 1.90			3								1	
2.00 - 2.40	2		3	1								
2.50 - 2.90	1		2	1								
3.00 - 3.90					1							
4.00 and more		1										
Total Increases	18	13	11	5	7	7	7	6	6	2	6	5
Average Change	+.33	+.63	+.55	-.05	-.40	-.03	-.13	-.28	-.17	-.70	-.04	-.04
Average Deviation	.54	.74	.87	.68	1.15	.57	.56	.52	.53	.54	.44	.33