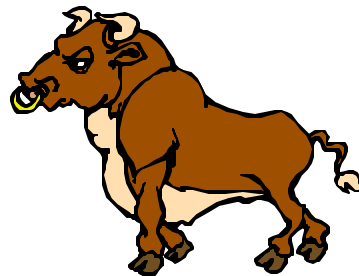


CLEMSON  
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extension economics report

## Beef Cattle Price Variability:



## Knowledge That Leads to Better Marketing Decisions

February 2000

EER 187

clemson university  
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## EXTENSION ECONOMICS REPORT

# Beef Cattle Price Variability Knowledge That Leads To Better Marketing Decisions

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FEBRUARY 2000

EER187

Clemson University  
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## TABLE OF CONTENTS

Introduction .....	1
Seasonal Price Patterns .....	1
Month to Month Price Changes .....	3
Conclusions .....	5
APPENDIX .....	6
Month to Month Price Changes, 1985-1998, Carolina Auctions .....	6
400-500 Wt. Steers .....	6
500-600 Wt. Steers .....	6
600-700 Wt. Steers .....	7
700-900 Wt. Steers .....	7
Heifers 200-300 wt .....	8
Heifers 300-400 wt .....	8
Heifers 400-500 wt .....	9
Heifers 500-600 wt .....	9
Slaughter Cows .....	10
Month to Month Price Changes 1992-98, Carolina Auctions	
Stocker Cows .....	10
Cow/Calf Pairs .....	11
Feeder Cows .....	11

## BEEF CATTLE PRICE VARIABILITY KNOWLEDGE THAT LEADS TO BETTER MARKETING DECISIONS

### **Introduction**

Carolina beef cattle producers must continue to plan their operations in order to minimize income risks. The cash production expenses of Carolina cow-calf producers during the past two decades have nearly tripled from a low of about \$114 (about \$.33 per lb produced) per exposed cow in 1972 to over \$300 (\$.54 per lbs). This is a 67 percent increase on a per pound basis in the cost of calf produced. In order to cover these increased costs producers have made the cow herd more productive with better genetics resulting in heavier calf weights. Hence producers faced with ever increasing costs of production have increased weaning weights and kept costs down.

Given the cow-calf producers' improvement in production efficiency they still must rely on favorable prices for their product to maintain their profit levels. When adjustments for weaning percent and allocations for depreciation, unpaid family labor and his management, and the use of equity capital are included the cow-calf man today would need to receive average calf-market prices in the range of \$55 to \$70 per cwt. depending on their management capabilities to break-even. When market prices fall below this price range it is very important that the producer know his costs of production and seek ways to control, manage and reduce them. When prices are above this range he must seek ways to capture the best possible price to help him offset revenue shortfalls when market prices fall.

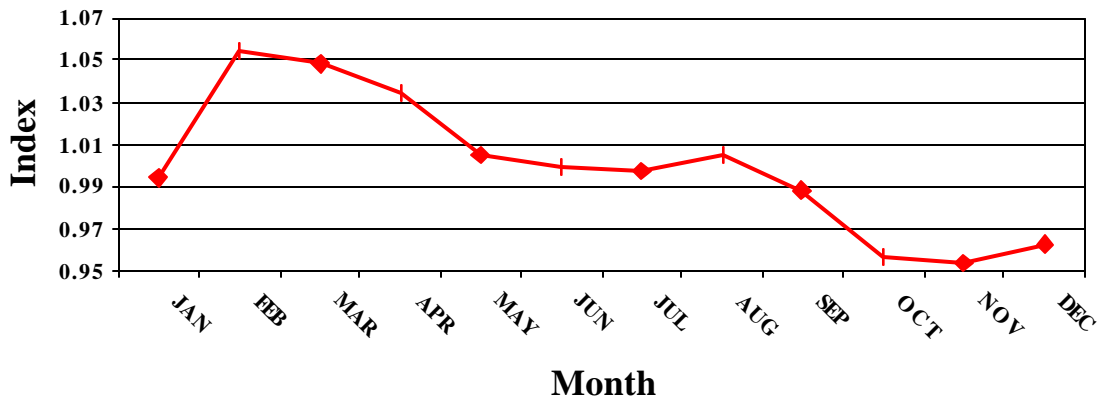
This price capturing ability comes only from knowledge of the historical prices received by Carolina beef producers. Following supply and demand trends and seasonal patterns can help the producer set pricing objectives and reach his marketing goals. The reality of the world is that most Carolina producers don't have this ability. Because of the small size of our producer's herds and the fact that most producers work off-farm their ability to attend weekly auctions and gain this price information is limited. Opportunities exist for the cow-calf operator to receive the optimal price in the short run only by knowing seasonal pricing patterns for given weights and sexes of animals, the average increase or decrease in price due to time of the year and the decline in price per hundredweight as calf weights increase. The producer must be able to take advantage of these pricing opportunities as they occur.

### **Seasonal Price Patterns**

Calf prices are influenced by numerous factors. Some factors play a role in affecting price levels every year while others influence prices occasionally. Factors that are consistently affecting price levels are referred to as seasonality factors. These include the calving and weaning season (calves in the spring-usually sell in the fall), the price of fat cattle and the type of calf being sold, i.e., sex, age, condition, frame, etc. The seasonal factors give rise to a periodic pattern that is typically seen each year in market prices. The greatest seasonal affect in Carolina calves is the annual high and low price patterns for cattle (Figure 1).

Other factors also influence prices. The level of supply, i.e., the cattle cycle, drought conditions and hay shortages are examples of some of the other factors that influence calf prices. These factors affect

### Seasonal Index for Carolina 300-400 Wt. Steers July 1985 - June 1998



the magnitude of the price received but not the basic seasonal patterns. The greatest seasonal factor affecting Carolina calf prices is that they are highest in the spring and lowest in the fall. This pattern is present just about every year. Exactly how high or low prices are during the spring and fall frequently depend upon these “other influencing factors.” An example might explain this point. In 1996 fall prices for 500 pounds calves were about \$60 per cwt. This was the lowest price for the year. In the fall of 1999 500 pound calves sold for \$80 this was also the lowest for the year but it is over \$20 per cwt. about fall 1996 prices. This is due to the fact that fat cattle prices were higher and the supply of 500-pound calves was considerably smaller in 1999 than in 1996.

Let’s look at the seasonal patterns for 300-400 pound Carolina steers. Figure 1 shows the “seasonal price index” for 300-400 pound steer calves in the Carolina’s. The index is constructed with the average annual price received for this weight of calf over the last 15 years set equal to 100. Months with prices higher than the year average would have an index number above 100, months with lower than average prices have index numbers below 100. Notice where the opportunities for obtaining the highest selling prices occur.

Specifically, January prices are slightly below the seasonal average. Prices typically rise sharply in February holding above average through April. There is a slight decline during the summer months with a sharp decline starting in August. Season’s lows are reached in the fall months as most of this weight of calf would come to market in the Carolina’s. If you were looking to purchase this weight of calf when would you expect the lowest annual prices to be?

## Month to Month Price Changes

Price variability is always a problem for cow-calf producers. Seasonal patterns provide us with an understanding of the basic yearly movement of prices. But the “other factors” mentioned earlier frequently determine the magnitude of the price. Table 1 shows the month-to-month changes in price recorded from Carolina auction facilities for 300-400 pound steers. A price change between the months of January and February is usually favorable and likely to be near \$5.43 per cwt. Between 1985 and 1998 price change between January and February were positive 93 percent of the time. In the years that had a positive move between these months the price rise was \$5.97 per cwt. Prices declined only 7 percent of the time with an average decline of \$1.53 per cwt.

Table 1. Month to Month Price Changes, Carolina Auctions

	300-400 Wt. Steers, 1985-1998				
	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$5.43	\$5.97	93	-\$1.53	7
FEB-MAR	\$0.50	\$3.80	57	-\$3.89	43
MAR-APR	-\$1.06	\$2.89	50	-\$5.00	50
APR-MAY	-\$2.77	\$2.91	14	-\$3.72	86
MAY-JUN	-\$1.17	\$2.84	50	-\$5.19	50
JUN-JUL	-\$1.22	\$3.50	57	-\$7.50	43
JUL-AUG	\$1.63	\$4.50	64	-\$3.53	36
AUG-SEP	-\$2.16	\$1.89	21	-\$3.26	79
SEP-OCT	-\$3.22	\$2.38	7	-\$3.66	93
OCT-NOV	-\$0.21	\$2.78	43	-\$2.46	57
NOV-DEC	\$1.26	\$2.81	64	-\$1.53	36
DEC-JAN*	\$2.98	\$5.28	77	-\$4.67	23

The price movements follow closely the seasonal price pattern. Typically, spring prices remain positive and fall prices tend to decline. There is a 57 percent chance of prices between February and March increasing. The average increase was \$.50 per cwt. But, in the years when prices did increase the average price increase was \$3.80 per cwt.

In August the chance of a positive price change between August and September is 21 percent. The average price change is a negative \$2.16 per cwt. The chance of a price decline is 79 percent with the producer loosing \$3.26 per cwt. on average. Price movements throughout the fall time period continue

this negative seasonal pattern. A producer waiting from September to October to sell his 300-400 weight calves would only have a seven percent chance of obtaining a positive price change. His chances improve successively from October to November (43%) into December (64%) and January (77%), respectively.

The patterns are present for other classes of calves as well (the appendix shows these price changes and the related price increases and decreases for steers, heifers, and cow classes). They all generally follow the same seasonal patterns, i.e., higher prices in the spring and lower prices in the fall. But, the magnitude of the price changes and frequency of a change are often different.

Table 2 shows the month to month changes in 600-700 pound heifers in Carolina from 1995-1998. The price from January to February is on average a positive \$1.71 per cwt. price rose 86% of the time at an average price increase of \$2.17 per cwt. However, unlike the 3-4 weight steer calves the price of these heavier heifers typically declines during the months of February, March, April and May. Price increased between February and March only 36% of the time for an average increase of \$1.10 per cwt. this means that there was a price decrease of 64% of the time for an average decrease of \$1.47 per cwt.

Table 2. Month to Month Price Changes, Carolina Auctions

	Heifers 600-700 wt, 1985-1998				
	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$1.71	\$2.17	86	-\$1.00	14
FEB-MAR	-\$0.55	\$1.10	36	-\$1.47	64
MAR-APR	-\$0.46	\$1.62	50	-\$2.54	50
APR-MAY	-\$0.06	\$1.85	43	-\$1.49	57
MAY-JUN	\$0.37	\$1.71	64	-\$2.03	36
JUN-JUL	\$0.02	\$2.17	57	-\$2.84	43
JUL-AUG	\$0.01	\$2.25	43	-\$1.67	57
AUG-SEP	-\$1.56	\$0.73	21	-\$2.19	79
SEP-OCT	-\$1.88	\$1.64	14	\$2.47	86
OCT-NOV	-\$0.23	\$1.05	57	-\$1.95	43
NOV-DEC	\$0.99	\$1.54	79	-\$1.03	21
DEC-JAN*	\$2.07	\$4.43	62	-\$1.70	38

## Conclusions

The following figures and charts list seasonal price patterns and month-to-month price changes for a

wide range of Carolina calves and cow classes. This data allows producers to see historical market pricing patterns that can be favorable or unfavorable to his operation. The historical month-to-month price change tables show the magnitude of price changes from one month to the next.

The most important aspect of this data is its ability to be incorporated together to more completely understand price movement in the Carolina cattle industry. Understanding this information allows the cow-calf producer to create marketing opportunities and increase profits. To survive in the cattle business the producer needs production and marketing accurate informative data to make rational business decisions.



# **APPENDIX**

**Month to Month Price Changes, Carolina Auctions  
400-500 Wt. Steers, 1985-1998**

	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$3.79	\$4.19	93	-\$1.34	7
FEB-MAR	\$1.71	\$2.71	79	-\$1.94	21
MAR-APR	-\$0.92	\$2.04	57	-\$4.86	43
APR-MAY	-\$2.49	\$1.45	14	-\$3.15	86
MAY-JUN	-\$2.17	\$1.26	43	-\$4.74	57
JUN-JUL	-\$1.34	\$2.18	57	-\$6.03	43
JUL-AUG	\$1.28	\$4.66	57	-\$3.22	43
AUG-SEP	-\$1.68	\$1.21	21	-\$2.47	79
SEP-OCT	-\$2.49	\$0.95	21	-\$3.42	79
OCT-NOV	\$0.29	\$2.53	50	-\$1.95	50
NOV-DEC	\$0.14	\$2.45	50	-\$2.18	50
DEC-JAN*	\$3.64	\$4.86	85	-\$3.05	15

\* Based on only 13 years.

**Month to Month Price Changes, Carolina Auctions  
500-600 Wt. Steers, 1985-1998**

	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$2.62	\$3.36	86	-\$1.82	14
FEB-MAR	\$1.81	\$2.45	86	-\$2.08	14
MAR-APR	-\$0.59	\$1.90	50	-\$3.08	50
APR-MAY	-\$1.62	\$1.04	21	-\$2.35	79
MAY-JUN	-\$1.68	\$1.92	36	-\$3.67	64
JUN-JUL	-\$1.40	\$1.67	57	-\$5.49	43
JUL-AUG	\$0.92	\$3.73	57	-\$2.84	43
AUG-SEP	-\$1.54	\$0.82	29	-\$2.48	71
SEP-OCT	-\$2.48	\$3.94	7	-\$2.98	93
OCT-NOV	\$0.10	\$1.74	57	-\$2.07	43
NOV-DEC	\$0.60	\$1.97	64	-\$1.85	36

DEC-JAN*	\$2.70	\$4.14	77	-\$2.09	23
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\* Based on only 13 years.

**Month to Month Price Changes, Carolina Auctions  
600-700 Wt. Steers, 1985-1998**

	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$1.35	\$1.93	79	-\$0.75	21
FEB-MAR	\$0.84	\$1.96	71	-\$1.99	29
MAR-APR	-\$0.64	\$1.52	50	-\$2.80	50
APR-MAY	-\$0.15	\$1.39	43	-\$1.31	57
MAY-JUN	-\$0.34	\$1.92	50	-\$2.60	50
JUN-JUL	-\$2.07	\$1.78	50	-\$5.92	50
JUL-AUG	\$2.18	\$6.25	50	-\$1.89	50
AUG-SEP	-\$1.42	\$0.98	36	-\$2.76	64
SEP-OCT	-\$2.99	\$2.56	7	-\$3.42	93
OCT-NOV	-\$0.40	\$1.93	43	-\$2.14	57
NOV-DEC	\$0.95	\$1.67	71	-\$0.87	29
DEC-JAN*	\$1.82	\$3.14	77	-\$2.56	23

\* Based on only 13 years.

**Month to Month Price Changes, Carolina Auctions  
700-900 Wt. Steers, 1985-1998**

	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$1.19	\$1.94	79	-\$1.56	21
FEB-MAR	-\$0.85	\$0.63	29	-\$1.44	71
MAR-APR	-\$0.73	\$1.30	43	\$2.25	57
APR-MAY	\$0.34	\$1.64	64	-\$2.01	36
MAY-JUN	\$0.50	\$1.95	57	-\$1.44	43
JUN-JUL	-\$1.16	\$1.85	50	-\$4.16	50
JUL-AUG	\$1.38	\$3.41	57	-\$1.32	43
AUG-SEP	-\$2.13	\$0.90	29	-\$3.82	71
SEP-OCT	-\$1.42	\$4.81	21	-\$3.12	79
OCT-NOV	-\$0.33	\$1.60	50	-\$2.26	50

NOV-DEC	\$0.43	\$1.70	50	-\$0.84	50
DEC-JAN*	\$1.70	\$3.53	69	-\$2.41	31

\* Based on only 13 years.

**Month to Month Price Changes, Carolina Auctions  
Heifers 200-300 wt, 1985-1998**

	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$4.32	\$5.06	93	-\$5.19	7
FEB-MAR	\$2.13	\$3.78	79	-\$3.91	21
MAR-APR	-\$0.05	\$3.19	57	-\$4.37	43
APR-MAY	-\$1.22	\$2.49	36	-\$3.28	64
MAY-JUN	-\$1.59	\$2.99	50	-\$6.16	50
JUN-JUL	-\$0.42	\$5.23	36	-\$3.57	64
JUL-AUG	\$0.80	\$3.73	67	-\$3.10	43
AUG-SEP	-\$3.66	\$1.32	21	-\$5.02	79
SEP-OCT	-\$3.16	\$4.03	14	-\$4.35	86
OCT-NOV	-\$0.40	\$2.77	43	-\$2.77	57
NOV-DEC	\$1.66	\$3.33	79	-\$4.48	21
DEC-JAN*	\$3.33	\$5.32	77	-\$3.28	23

\* Based on only 13 years.

**Month to Month Price Changes, Carolina Auctions  
Heifers 300-400 wt, 1985-1998**

	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$3.71	\$4.20	93	-\$2.59	7
FEB-MAR	\$0.74	\$2.94	79	-\$7.32	21
MAR-APR	\$0.61	\$4.32	57	-\$4.33	43
APR-MAY	-\$1.69	\$2.69	29	-\$3.44	71
MAY-JUN	-\$1.24	\$2.11	43	-\$3.75	57
JUN-JUL	-\$0.41	\$2.04	57	-\$3.66	43
JUL-AUG	-\$0.07	\$2.29	57	-\$3.20	43
AUG-SEP	-\$2.23	\$1.91	14	-\$2.93	86
SEP-OCT	-\$1.85	\$1.00	29	-\$3.00	71

OCT-NOV	-\$0.44	\$2.17	36	-\$1.88	64
NOV-DEC	\$0.92	\$2.67	64	-\$2.22	36
DEC-JAN*	\$3.34	\$5.23	77	-\$2.95	23

\* Based on only 13 years.

**Month to Month Price Changes, Carolina Auctions  
Heifers 400-500 wt, 1985-1998**

	Overall Average Price Change	Average Price Increase	% of Time Price Increased	Average Price Decrease	% of Time Price Decreased
JAN-FEB	\$2.76	\$3.48	86	-\$1.57	14
FEB-MAR	\$1.71	\$2.43	86	-\$2.59	14
MAR-APR	-\$0.35	\$2.03	57	-\$3.51	43
APR-MAY	-\$1.32	\$1.39	36	-\$2.83	64
MAY-JUN	-\$1.27	\$1.59	36	-\$2.86	64
JUN-JUL	-\$0.01	\$1.76	57	-\$2.37	43
JUL-AUG	-\$0.88	\$1.96	43	-\$3.00	57
AUG-SEP	-\$1.78	\$1.16	29	-\$2.96	71
SEP-OCT	-\$1.83	\$0.77	21	-\$2.54	79
OCT-NOV	-\$0.02	\$1.65	43	-\$1.26	57
NOV-DEC	\$1.14	\$2.75	57	-\$1.00	43
DEC-JAN*	\$2.84	\$4.35	77	-\$2.17	23

\* Based on only 13 years.

**Month to Month Price Changes, Carolina Auctions  
Heifers 500-600 wt, 1985-1998**

	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$2.21	\$2.82	86	-\$1.44	14
FEB-MAR	\$1.02	\$2.25	64	-\$1.19	36
MAR-APR	-\$0.08	\$1.98	64	-\$3.78	36
APR-MAY	-\$0.71	\$1.43	50	-\$2.85	50
MAY-JUN	-\$0.70	\$2.89	29	-\$2.14	71
JUN-JUL	-\$0.39	\$2.44	43	-\$2.51	57
JUL-AUG	\$0.01	\$2.50	43	-\$1.85	57
AUG-SEP	-\$2.07	\$0.96	29	-\$3.28	71

SEP-OCT	-\$1.89	\$0.64	21	-\$2.59	79
OCT-NOV	\$0.18	\$1.58	50	-\$1.22	50
NOV-DEC	\$1.03	\$1.85	71	-\$1.00	29
DEC-JAN*	\$2.00	\$4.57	62	-\$2.12	38

\* Based on only 13 years.

**Month to Month Price Changes, Carolina Auctions  
Slaughter Cows, 1985-1998**

	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$1.69	\$2.03	86	-\$0.38	14
FEB-MAR	\$0.40	\$1.45	57	-\$0.99	43
MAR-APR	-\$0.52	\$1.71	29	-\$1.41	71
APR-MAY	\$0.69	\$1.12	71	-\$0.38	29
MAY-JUN	-\$1.06	\$0.84	36	-\$2.12	64
JUN-JUL	-\$1.02	\$1.06	29	-\$1.85	71
JUL-AUG	\$0.47	\$1.74	43	-\$0.48	57
AUG-SEP	-\$1.41	\$0.41	7	-\$1.55	93
SEP-OCT	-\$1.35	\$0.66	14	-\$1.68	86
OCT-NOV	-\$1.05	\$0.69	21	-\$1.53	79
NOV-DEC	\$1.43	\$1.91	86	-\$1.42	14
DEC-JAN*	\$1.10	\$1.60	77	-\$0.55	23

\* Based on only 13 years.

**Month to Month Price Changes, Carolina Auctions  
Stocker Cows, 1992-1998**

	Overall Average Price Change	Average Price Increase (per hd.)	% of Time Price Increased	Average Price Decrease (per hd.)	% of Time Price Decreased
JAN-FEB	\$18.63	\$29.56	86	-\$46.92	14
FEB-MAR	\$21.01	\$45.67	71	-\$40.67	29
MAR-APR	-\$40.49	-	0	-\$40.49	100
APR-MAY	\$10.83	\$28.30	71	-\$32.85	29
MAY-JUN	-\$33.22	-	0	-\$33.22	100
JUN-JUL	-\$10.54	\$23.38	43	-\$35.99	57

JUL-AUG	\$19.45	\$54.09	57	-\$26.73	43
AUG-SEP	-\$34.73	\$37.50	14	-\$46.76	86
SEP-OCT	\$4.44	\$24.76	86	-\$46.35	14
OCT-NOV	\$12.17	\$33.74	71	-\$41.76	29
NOV-DEC	-\$9.38	\$15.94	29	-\$19.51	71
DEC-JAN*	\$6.06	\$29.75	50	-\$17.63	50

\* Based on only 6 years.

**Month to Month Price Changes, Carolina Auctions  
Cow/Calf Pairs, 1992-1998**

	Overall Average Price Change	Average Price Increase (per hd.)	% of Time Price Increased	Average Price Decrease (per hd.)	% of Time Price Decreased
JAN-FEB	\$64.44	\$64.44	100	-	0
FEB-MAR	-\$12.29	\$41.41	29	-\$33.76	71
MAR-APR	\$10.81	\$31.63	71	-\$41.22	29
APR-MAY	-\$14.30	\$16.10	29	-\$26.46	71
MAY-JUN	-\$12.78	\$14.65	29	-\$23.75	71
JUN-JUL	-\$6.54	\$7.43	43	-\$19.52	57
JUL-AUG	-\$9.40	\$29.06	43	-\$38.25	57
AUG-SEP	-\$50.19	\$4.38	14	-\$59.28	86
SEP-OCT	\$17.44	\$45.10	86	-\$19.42	14
OCT-NOV	-\$33.48	\$30.35	29	-\$59.01	71
NOV-DEC	\$28.50	\$49.39	71	-\$23.72	29
DEC-JAN*	\$4.96	\$22.28	33	-\$33.58	67

\* Based on only 6 years.

**Month to Month Price Changes, Carolina Auctions  
Feeder Cows, 1992-1998**

	Overall Average Price Change	Average Price Increase (per cwt.)	% of Time Price Increased	Average Price Decrease (per cwt.)	% of Time Price Decreased
JAN-FEB	\$2.18	\$3.55	71	-\$1.24	29
FEB-MAR	\$1.09	\$2.45	79	-\$0.72	21
MAR-APR	-\$1.58	\$1.41	14	-\$2.08	86
APR-MAY	\$1.33	\$1.78	86	-\$1.36	14
MAY-JUN	-\$1.92	\$0.01	14	-\$2.25	86

JUN-JUL	-\$0.89	\$1.84	43	-\$2.94	57
JUL-AUG	\$1.08	\$1.84	71	-\$0.81	29
AUG-SEP	-\$2.93	-	0	-\$2.93	100
SEP-OCT	-\$1.36	-	0	-\$1.36	100
OCT-NOV	-\$1.86	-	0	-\$1.86	100
NOV-DEC	\$1.71	\$2.20	86	-\$1.27	14
DEC-JAN*	\$0.63	\$2.86	50	-\$1.59	50

\* Based on only 6 years.

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