

Beef Cattle Outlook: A Southern Perspective

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*The optimist proclaims that we live in the
best of all possible worlds; and the
pessimist fears this is true.*
— James Branch Cabell

Optimists and pessimists hardly ever agree. The optimist has the tendency to hold to the belief that is the most hopeful or cheerful view of matters, while the pessimist holds to the belief that misfortune and the worst possible outcome will arise under any circumstance. The beef cattle outlook, as viewed by Southern beef cattle producers, is no exception.

If the attendees at the 1998 Florida Beef Cattle Short Course were surveyed about the current beef cattle outlook, one would find both optimistic and pessimistic beliefs. Differing goals and objectives, resources, knowledge bases, management skills, and personalities of beef cattle producers contribute to forming these beliefs. The communication and interaction of these beliefs will, no doubt, make better beef cattle producers of us all.

Currently, beef cattle producers on the ranch (cow-calf and stocker operators) are facing market prices that are approaching the high prices received during the early 1990s. Hence, they are faced with some “tough” decisions. Should they sell their feeder calves and take the profits? Or should they keep them to sell as feeder cattle (600 to 800 lb)? Or should they keep them to finish in the feedlot? Should stocker operators buy feeder calves to add weight gain on grass? In addition, should feedlot operators buy feeder cattle and at what weight and price? Associated with each of these alternatives are potential profits and the risk of lower returns.

The big question asked by most ranch and feedlot operators is *When will the bottom of the cattle and calves inventory occur in this cattle cycle?*

The short answer is that it is too early to tell. However, evidence from the latest USDA reports suggests a smaller cattle and calves inventory and potentially higher prices are in store for at least 1999 and 2000. A review of the current supply situation will help make economic sense of the past, present, and future beef market prices.

Supply Situation

The balance sheet of United States cattle and calves for 1996 documents the beginning of the decline in the U.S. cattle and calves inventory during the current cattle cycle (Figure 1). The January 1, 1996 inventory of cattle and calves was 103.5 million head. Calf crop and imports during 1996 totaled 41.7 million head. Together, the total supply of cattle and calves was 145.2 million head. Total disappearance during 1996, which includes 38.6 million head for slaughter and 4.8 million head for deaths and exports, was 43.3 million. The resulting December 31, 1996 ending inventory of cattle and calves was 101.5 million head.

Comparing 1997 estimates with 1996 reveals a 2% decrease in beginning inventory, calf crops and imports, and thus total supply (Figure 2). Slaughter was 1% lower in 1997, while deaths and exports were 4% higher. Total disappearance in 1997 was down 1% due to a lower level of slaughter. A 4% decrease was realized in cattle and calves inventory between the beginning inventory of 1996 and ending inventory of 1997.

On January 1, 1998, the U.S. cattle inventory was estimated at 99.5 million head of cattle and calves, down 2% from a year ago (Figure 3). Beef cow inventory was 33.7 million head, down 2% from a year ago and 4% above 1990. Beef replacement cows were estimated at 5.7 million head, down 5% from a year ago. In addition, steers 500

lb and over were down 1%, and bulls 500 lb and over and calves under 500 lb were both down 3% from a year ago.

Comparing the beginning inventory of cattle and calves in 1998 to 1990 (the beginning of this cattle cycle) reveals that the beginning inventory of cattle and calves in 1998 was 4% larger than in 1990 (Figure 4). Likewise, beef cows that have calved were 4% larger. Heifers for beef cow replacement were 9% higher. Steers and bulls 500 lb and over were 11 and 5% higher. However, calves under 500 lb were 5% lower due to severe weather conditions in the southern and northern Plains states which either adversely affected cow reproductive rates or caused producers to liquidate cows.

The U.S. cattle and calves inventory during the last 50 years has ranged from a low of approximately 77 million head in 1949 to the peak of 132 million head in 1975 (Figure 5). An upward trend in cattle and calves inventory occurred between 1949 and 1975. Since 1975, cattle and calves inventory appears to be trending downward. The mound shapes observed in the cattle and calves inventory denote various cattle cycles. A cattle cycle is defined by the elapsed time between the lowest point in one trough to the lowest point in the next trough.

There is a causal relationship between the U.S. cattle and calves inventory and average calf prices (Figure 6). The inventory of cattle and calves and average calf prices move in opposite directions. As inventory builds, average calf price declines and vice versa. The last two January 1 cattle and calves inventory reports document the decline in cattle and calves inventory, beef cows, and calf crops. Contraction of the cattle and calves inventory is expected to continue over the next couple of years, but at a slower pace. Thus, while inventory contraction is underway in the cattle industry, beef cattle prices will likely improve.

The length of a cattle cycle makes for popular discussion among beef cattle producers today. The length of the last 4 cattle cycles has ranged from 10 to 13 years (Figure 7). The most recent cattle cycle, 1979 to 1990, was 12 years in length as measured by the January 1 inventory reports. Cattle inventory during this cycle increased the first 4 years and decreased the remaining 8 years. The present cattle cycle has shown inventory increases for 6 years and decreases for 2 years. The largest increase was 1.8 million head (+2% in 1993 to 1994), while the largest decrease was 2 million head (-2% in 1996 to 1997).

Cycle-low calf prices and the cycle peak for cow slaughter are inversely related. In 1975, both the peak in cow slaughter and cycle-low calf prices occurred (Figure 8). In the 1980s, cow slaughter peaked in 1984 and cycle-low calf prices occurred 2 years later. Cycle-low calf prices probably would have been realized in 1985 had it not been for the 1986 dairy cow buy-out program. In 1996, both cycle-low calf prices and the cycle peak in cow slaughter occurred at the same time. Given the present lower inventory supplies, cow slaughter is expected to be lower during 1998 due to higher beef prices and profits.

The transition in U.S. cattle industry has been widely debated and discussed by cattlemen and educators alike. Farms of differing size (small-, medium-, and large-sized) and differing goals and objectives (hobby- and lifestyle-, versus business-oriented) often get the most press coverage (Figure 9). However, some attention should be given to the number of cattle operations, the inventory held by various-sized cattle operations, and those who are entering and exiting the industry.

The number of cattle operations has steadily declined over the last 25 years (Figure 10). Since 1975, the number of U.S. cattle operations has declined by approximately 700,000 operations (-37%). The largest decline (353,000 operations,

–21%) was during the 1979 to 1990 cattle cycle. Significant declines were evident in both beef and dairy operations. Since 1990, the U.S. has lost 117,000 operations (–9%). The decline in the number of Southern cattle operations follows this same general trend. A continued modest decline is expected in the number of U.S. cattle operations as we approach the next millennium.

Cattle operations with herd sizes of 1 to 49 head have shown a slight decline, while operations with herd sizes of 50 to 99 head and 100+ head have experienced modest increases during the 1990s. However, the percentages of cattle inventory for herd sizes of 1 to 49 head and 50 to 99 head have been declining since the mid-1980s, while inventory levels of herd sizes of 100+ head have been gradually increasing since 1982 (Figure 11, 12, and 13). These subtle changes raise some concern about whether a new structure is emerging in the cattle industry and whether these changes will affect the level of beef production and the cattle cycle.

Demand Situation

Per capita beef consumption (retail-weight basis) declined from 78.4 to 67.6 lb (–10.8 lb or –14%) between 1984 and 1996 (Figure 14). Per capita pork consumption remained relatively level during this period at about 50 lb. However, per capita chicken consumption increased from 52.4 to 71.5 lb (+19.1 lb or +36%). Beginning in 1992 per capita chicken consumption exceeded beef consumption. Per capita poultry consumption, which includes chicken and turkey, increased from 63.4 to 92.6 lb (+29.2 lb or +46%) during this same time period. In addition, total per capita meat consumption showed a gradual increase during the last 10 years, while beef's share of total per capita meat consumption has gradually declined.

The level of consumer expenditures on beef gradually increased during the last 2 decades. How-

ever, the percentage of consumer disposal income spent on beef showed a decline from about 2.5 to 1% (Figure 15). Little change in either is expected during 1998.

United States beef imports, which have consistently exceeded exports on a poundage basis, have been nearly level at 2.1 to 2.4 billion lb per year for the last 8 years (Figure 16). However, beef imports are sensitive to U.S. cow slaughter levels and usually decline when U.S. cow slaughter is higher (reflecting lower U.S. beef prices) and vice versa. Due to expected higher cow–calf prices and profits during 1998, U.S. cow slaughter will likely decline, suggesting that U.S. beef imports will increase.

United States beef exports have enjoyed phenomenal growth from a meager 40 million lb in 1970 to greater than 1.8 billion lb in 1996 (Figure 17). For the 10-year period between 1986 and 1996, U.S. beef exports increased 1.3 billion lb (+260%). Larger beef exports during the 1990s have provided much price support to beef during the recent period of increased beef production. However, further expansion of beef exports during 1998 is not likely, due to the changing monetary exchange rates in Asian countries, food safety, and trade issues.

Cost of Production

Lower fed cattle prices and higher production costs are creating a major cost–price squeeze for many ranch and feedlot operators. Monthly feeding cost of gain for 700- to 800-lb steers in Kansas, as reported in *Kansas State University, Cattle AgUpdate*, have ranged between \$50 to \$74 during the last 4 years (Figure 18). Feeding cost of gain in the feedlot during 1998 is expected to range in the upper \$50 to low \$60 range. However, feeding cost of gain is very sensitive to numerous factors such as feedstuff prices, average daily gain, length of time on feed, feed conversions, sickness and death losses, interest rates, and weather. Cattle

feeders should pay careful attention to these key factors during 1998 until beef production declines.

Since published data do not exist for the cost of production for stocker operations in the South, the stocker gross margin received by Alabama producers for winter stockering (October through April, 200 days, 350 lb gain) during 1979 to 1998 is offered as a proxy (Figure 19). Stocker gross margin is simply the difference between the value, per head, of feeder cattle at the end of the stockering program less the initial cost of the stocker animal. Stocker gross margin during this 19-year period ranged between \$83 and \$261 per head with an average gross margin of \$172 per head. Average cost of production for this program in Alabama is about \$140 per head (\$40/cwt cost of gain). Average cost of production may be less if by-product feedstuffs and fertilizers are available.

Southern cow-calf cash expenses have generally increased from 1972 to 1996. They ranged from \$191 per bred cow in 1972 to \$349 in 1993. The USDA pegged the 1996 Southern cow-calf expenses at \$348 per bred cow (Figure 20). Winter feed costs and grazing costs are the largest cash expense categories. Even with today's higher prices for a 500-lb calf, the average producer would have to be capable of attaining a high calf crop percentage in order to cover average cash expenses of \$349 per bred cow. Average producers should focus on lowering their unit cost of production.

A significant input used by most cow-calf and stocker operators is fertilizer for grazing (permanent and annual pastures) and harvested feeds (hay, silage, etc.). Unfortunately, fertilizer prices do not mirror cycle lows in beef prices. Southeast ammonium nitrate prices have increased from about \$61 in 1970 to \$233 per ton in 1996 (\$172 per ton increase, +282%; Figure 21). Most ranch operators need to focus on improving forage production and animal management, forage utilization, adjusting stocking rates, seeking out alternative low-cost

feedstuffs, or leasing additional pasture (i.e., reduce fertilizer costs) in order to reduce their unit cost of production and improve profitability. The simple fact remains that the only way to overcome the years of a significant calf market price decline is with low feedstuff costs (grazing, harvested, and purchased feeds).

Market Prices

Slaughter cattle, feeder cattle, and feeder calf prices have been on a roller-coaster ride during the last 5 years. Slaughter cattle, and feeder cattle and calf prices declined during the mid-1990s and reached the bottom during April 1996 (Figure 22). The large levels of beef production, along with a large supply of competing meats and high feedstuff prices (\$5/bushel corn), were largely responsible for the significant decline. Presently, slaughter cattle prices have not yet recovered, due to the current large levels of beef production, increased alternative meat production, and the sluggish export market. Slaughter cattle price improvement is expected during the last quarter of 1998.

During 1996, Alabama feeder cattle prices (700 to 800 lb, medium and large, #1) and feeder calf prices (400 to 450 lb, steers, medium and large, #1) declined to about 50% of the cycle-high prices (Figures 23 and 24). However, a dramatic recovery in feeder market prices was witnessed following April 1996. Feeder cattle and calf prices during 1998 should show modest improvement over 1997, but will be very sensitive a corn crop of less than 9.5 billion bushels.

Southern beef producers are continually faced with a major price difference between their market price and the Plains and Midwest market prices. The feeder steer price difference for Alabama and Oklahoma during 1997 ranged between \$6 to \$11 per cwt for 500- to 550-lb feeder calves (Figure 25). These price differences are difficult to manage, but Southern beef producers selling in truckload

lots may want to investigate ways to reduce transportation and transaction costs (selling, handling, etc).

United States beef producers are beginning to experience market value differentiation for their cattle (Figures 26 and 27). Market value differentiation is simply the buyers' way of saying that some cattle are better than others. As more definition is given to value based marketing, a wider range of market prices will be paid for beef cattle. Thus, beef producers should begin to determine what factors add market value to their cattle and whether it pays to make these adjustments in their operations.

Profit Potential

Monthly returns during the last 4 years for finishing 700- to 800-lb steers in Kansas, as reported in *Kansas State University, Cattle AgUpdate*, have shown wide fluctuations, ranging from profits of \$119 per head to losses of \$121 per head (Figure 28). Potentially higher feeding cost of gain and higher feeder cattle prices will likely reduce profit margins and add risk of lower returns during the first half of 1998. Higher feeder cattle prices and an uncertain corn crop outlook will force ranch and feedlot operators to make some tough decisions regarding what is an acceptable level of risk and return from feeding cattle during the remainder of 1998.

Many light-weight feeder calves (400 to 500 lb) will continue to be grazed to heavier weights before entering the feedlot (Figure 29). Negative price margins will be significantly higher in 1998 if feeder calf prices move higher. Astute stocker operators will be closely monitoring gross margins and value of gain. Those operators with cost of gain estimates below \$35 to \$40 per cwt will likely have greater chances of achieving profits.

Southern cow-calf returns over cash expenses, as estimated in the *USDA Livestock Cost of Production*, have ranged from a profit of \$41 per bred cow in 1979 to a loss of \$133 per bred cow in 1996 (Figure 30). Eight years of positive returns over cash expenses were realized during 1986 to 1993 followed by 3 years of negative returns over cash expenses (1994 to 1996). And 1997 is also expected to show negative returns over cash expenses for the average cow-calf operation. Higher feeder calf prices during 1998 should result in a positive return over cash expenses for the average cow-calf operation. Improving feeder calf prices during 1999 and 2000 are expected to fetch returns over cash expenses in the neighborhood of \$50 per bred cow, for the average producer.

Summary Remarks

A declining U.S. cattle supply, steady beef demand, nearly level costs of production, and slightly higher feeder cattle and calf market prices should result in positive returns for the majority of beef cattle operators during 1998. These factors, excluding the cost of production, are largely beyond the control of the individual cattle operator.

When we will reach the next low of the U.S. cattle inventory will become more clear only when cow slaughter declines and increases in beef replacement heifer retention are realized. The stimulus to initiate these two events is profitability. However, false expectations of higher beef prices and higher profits will shorten the present cattle cycle and dampen the prospects of an extended period of positive returns as realized in the late 80s and early 90s.

Many people believe that the word "opportunity" means a chance to get money without earning it. While such a belief is optimistic, it is rarely true in the beef cattle industry. Profits in the beef cattle industry are attained by skillful managers who know the difference between the value of an input

and its cost. The value of an input is determined by beef market prices. Therefore, a watchful eye on beef market prices will alert cattle producers to potential profits.

Remember what James Branch Cabell said: "The optimist proclaims that we live in the best of all possible worlds; and the pessimist fears this is

true." Regardless of your belief regarding the present beef cattle outlook for Southern beef cattle producers, you should remember that you cannot individually change the U.S. cattle supply, beef demand, and cattle prices; but you can change how and what you produce. Therein lies your challenge to be a profitable beef cattle producer.

**Figure 1. U.S. Cattle and Calves, Balance Sheet
January 1, 1996 - December 31, 1996.**

<u>Item</u>	<u>1996</u>
	Million Head
Jan. 1 Beg. Inventory	103.5
Calf Crop and Imports	41.7
Total Supply	145.2
Slaughter	38.6
Deaths and Exports	4.8
Total Disappearance	43.3
Residual	- 0.4
Dec. 31 End. Inventory	101.5

**Figure 2. U.S. Cattle and Calves, Balance Sheet
January 1, 1996 - December 31, 1997.**

<u>Item</u>	<u>1996</u>	<u>1997</u>	<u>Percent Change From 1996</u>
	Million Head		
Jan. 1 Beg. Inventory	103.5	101.5	-2%
Calf Crop and Imports	41.7	40.7	-2%
Total Supply	145.2	142.2	-2%
Slaughter	38.6	38.1	-1%
Deaths and Exports	4.8	5.0	+4%
Total Disappearance	43.3	43.1	-1%
Residual	-0.4	0.4	NA
Dec. 31 End Inventory	102.5	102.5	0%

Figure 3. U.S. Cattle and Calves, Jan. 1, 1997 and 1998.

<u>Class</u>	<u>1997</u>	<u>1998</u>	<u>Percent Change From 1997</u>
	Million Head		
Cattle and Calves	101.5	99.5	-2%
Cows and Heifers That Have Calved	43.6	42.9	-2%
Beef Cows	34.3	33.7	-2%
Milk Cows	9.3	9.2	-1%
Heifers 500 Pounds and Over	20.3	19.8	-3%
For Beef Cow Replacement	6.1	5.7	-5%
For Milk Cow Replacement	4.1	4.0	-2%
Other Heifers	10.2	10.0	-2%
Steers 500 Pounds and Over	17.3	17.2	-1%
Bulls 500 Pounds and Over	2.3	2.3	-3%
Calves Under 500 Pounds	17.9	17.4	-3%

Figure 4. U.S. Cattle and Calves, Jan. 1, 1990 and 1998.

Class	1990 Million Head	1998 Million Head	1998 as a % of 1990
Cattle and Calves	95.8	99.5	104%
Cows and Heifers That Have Calved	42.5	42.9	101%
Beef Cows	32.5	33.7	104%
Milk Cows	10.0	9.2	92%
Heifers 500 Pounds and Over	17.3	19.8	114%
For Beef Cow Replacement	5.3	5.7	109%
For Milk Cow Replacement	4.2	4.0	95%
Other Heifers	7.8	10.0	128%
Steers 500 Pounds and Over	15.5	17.2	111%
Bulls 500 Pounds and Over	2.2	2.3	105%
Calves Under 500 Pounds	18.4	17.4	95%

Figure 5. U.S. Cattle Inventory, 1950-98.

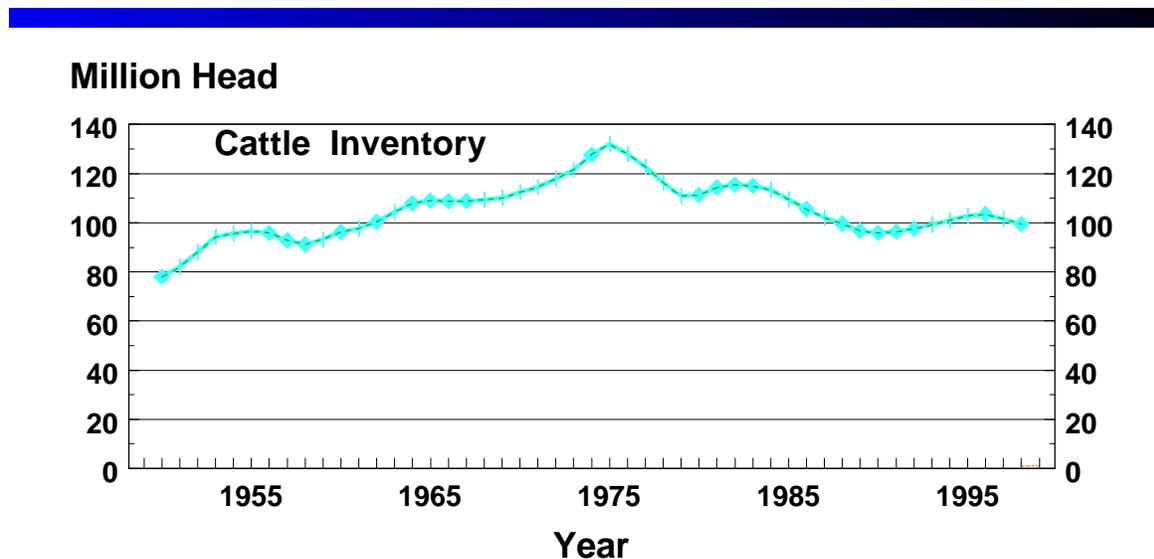


Figure 6. U.S. Cattle Inventory & Average Calf Price

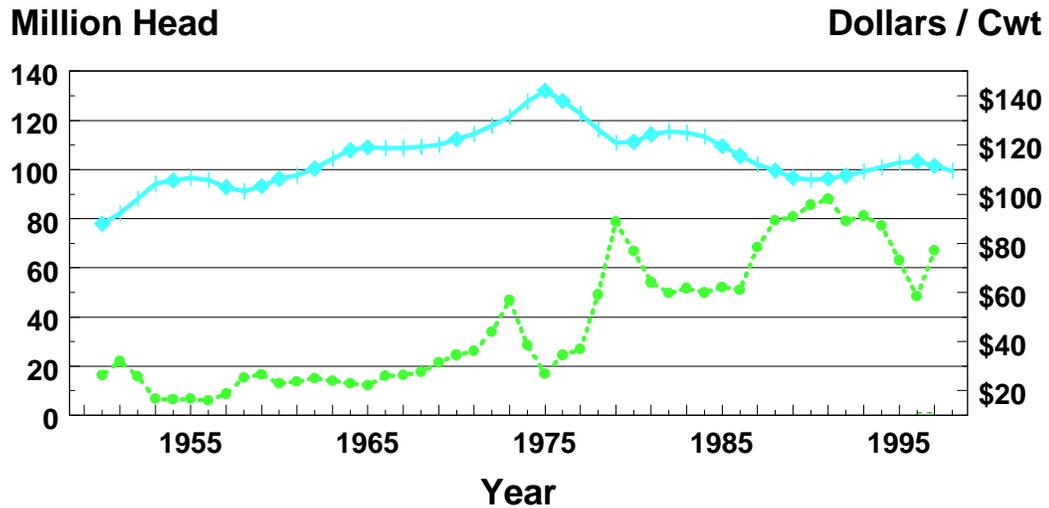


Figure 7. LENGTH OF U.S. CATTLE CYCLES

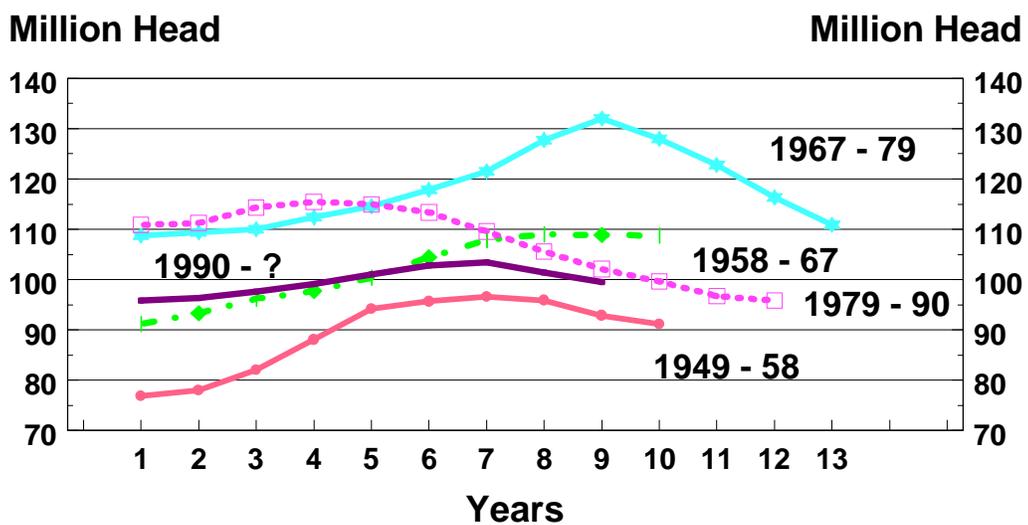


Figure 8. U.S. Commercial Cow Slaughter and Oklahoma Feeder Calf Price, 1970-97.

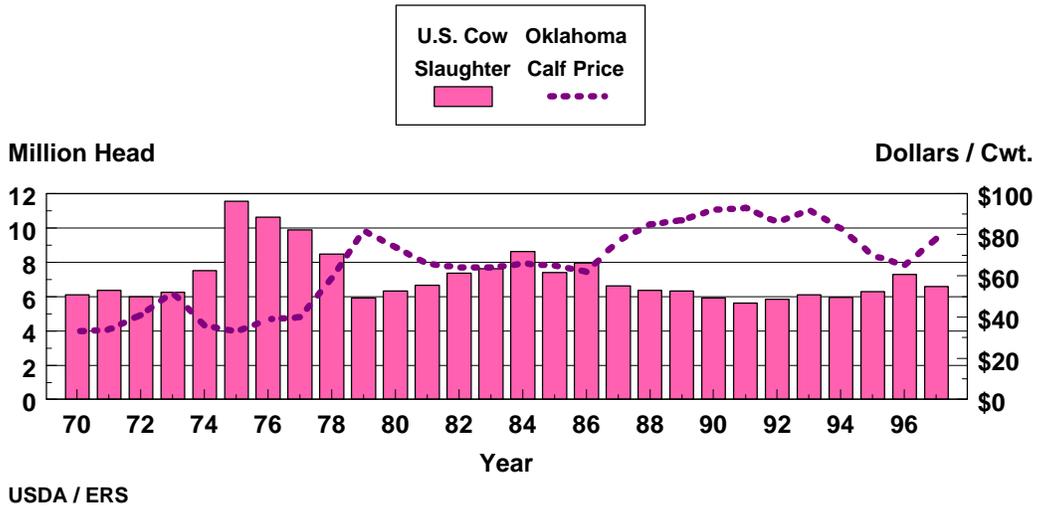
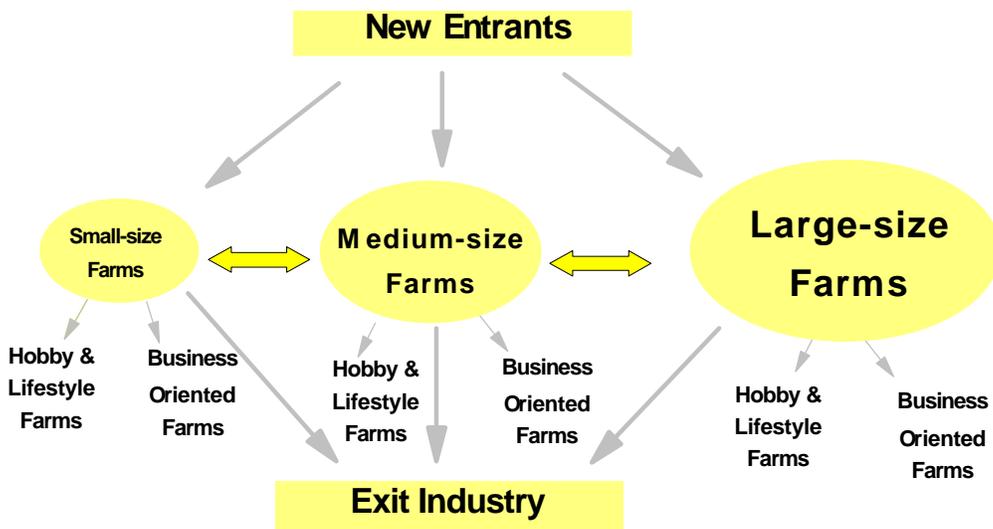
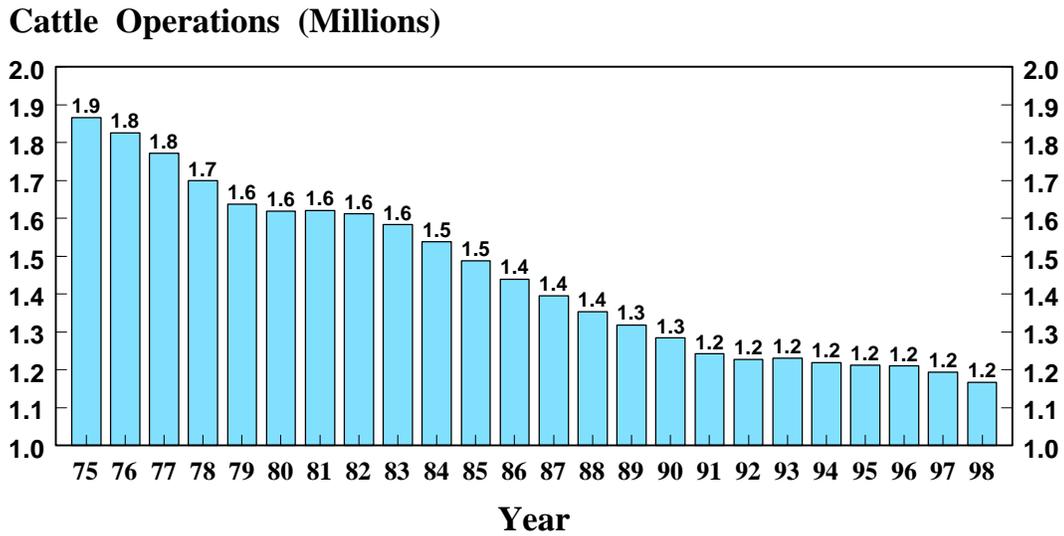


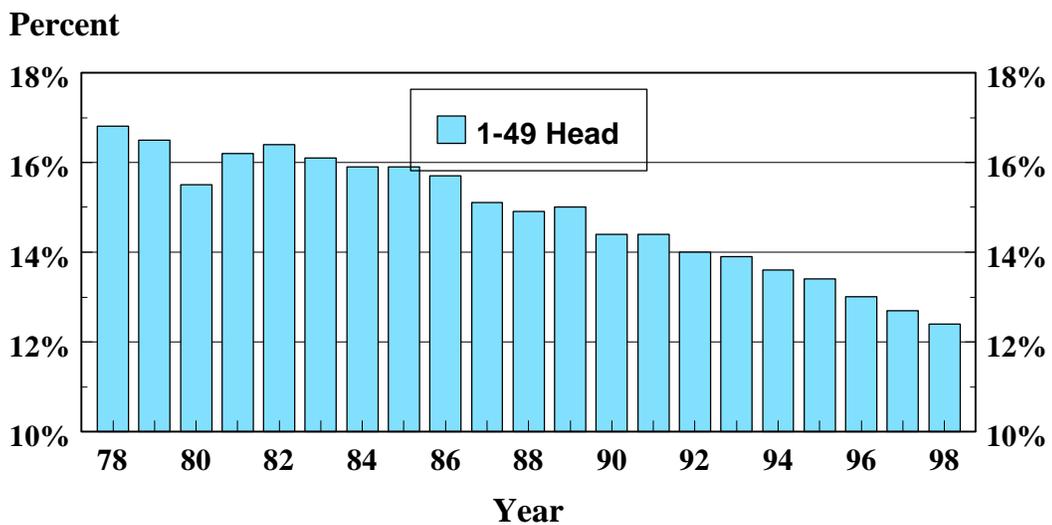
Figure 9. The Beef Cattle Industry In Transition



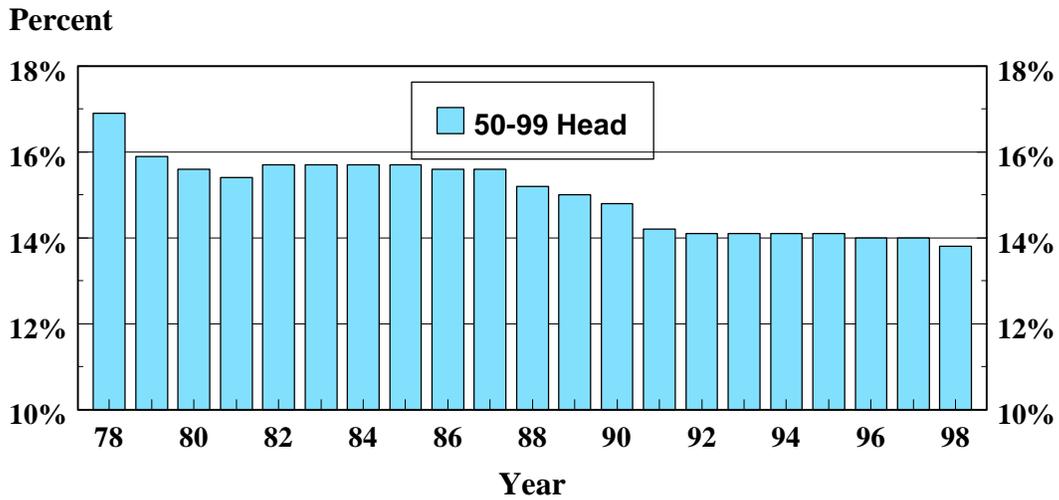
**Figure 10. U. S. CATTLE OPERATIONS
Number by Year, 1975-98.**



**Figure 11. U.S. CATTLE INVENTORY,
Percent By Herd Size, 1978-98.**



**Figure 12. U.S. CATTLE INVENTORY,
Percent By Herd Size, 1978-98.**



**Figure 13. U.S. CATTLE INVENTORY,
Percent By Herd Size, 1978-98.**

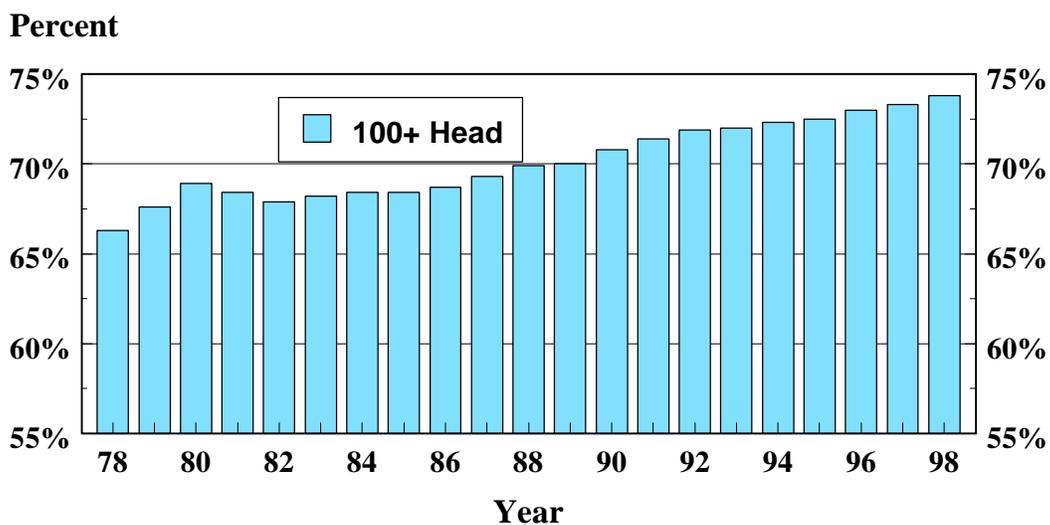


Figure 14. U.S. Per Capita Meat Consumption Retail Weight Basis, 1984-96.

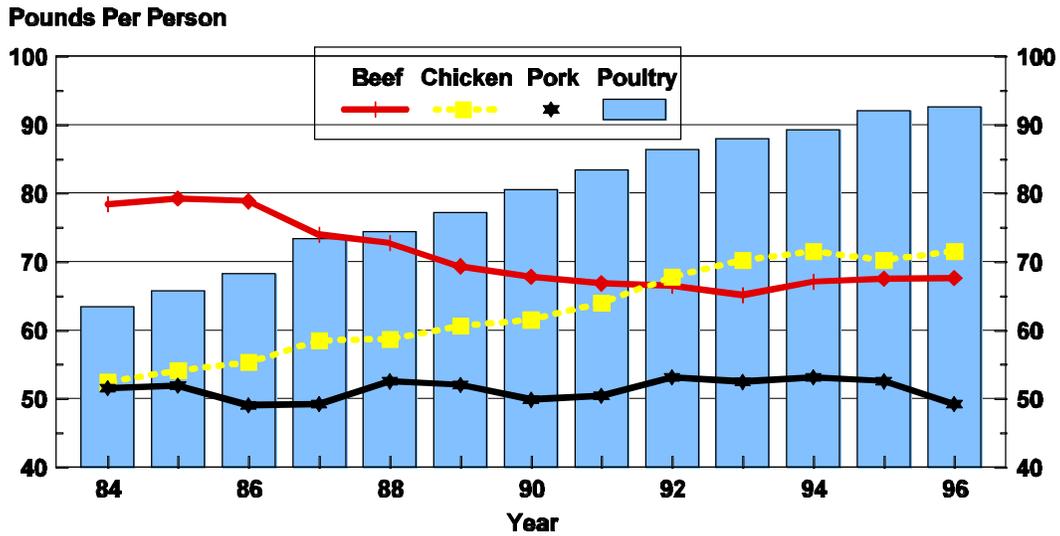


Figure 15. Percent of Disposable Income Spent on Beef, 1975-96.

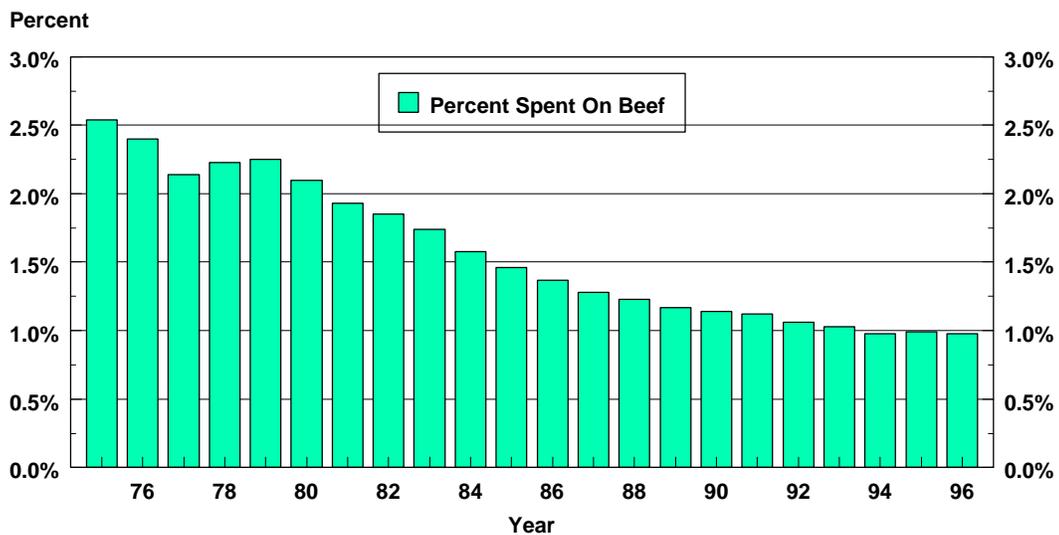


Figure 16. Pounds of U.S. Beef Imports, 1970-96.

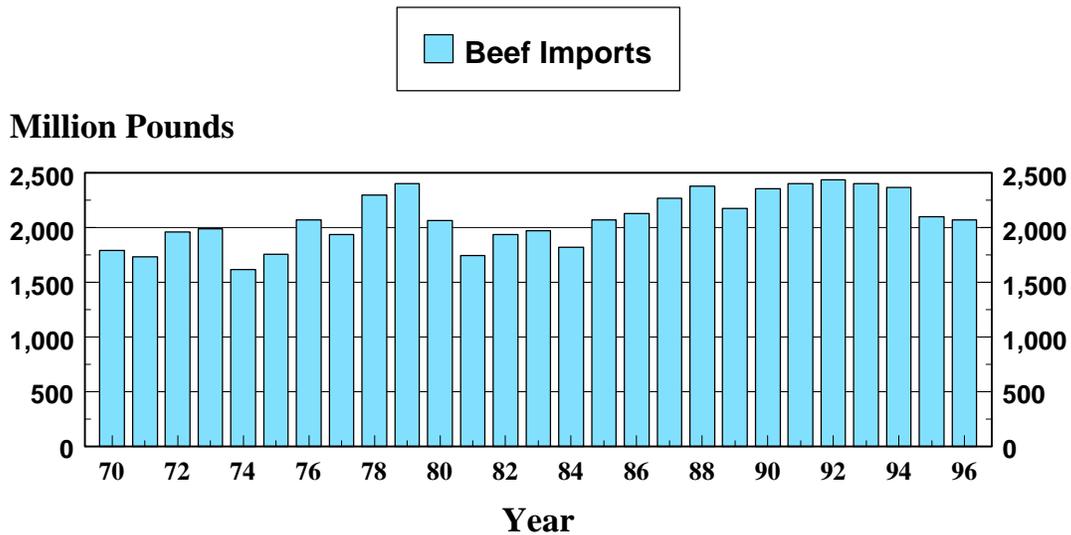
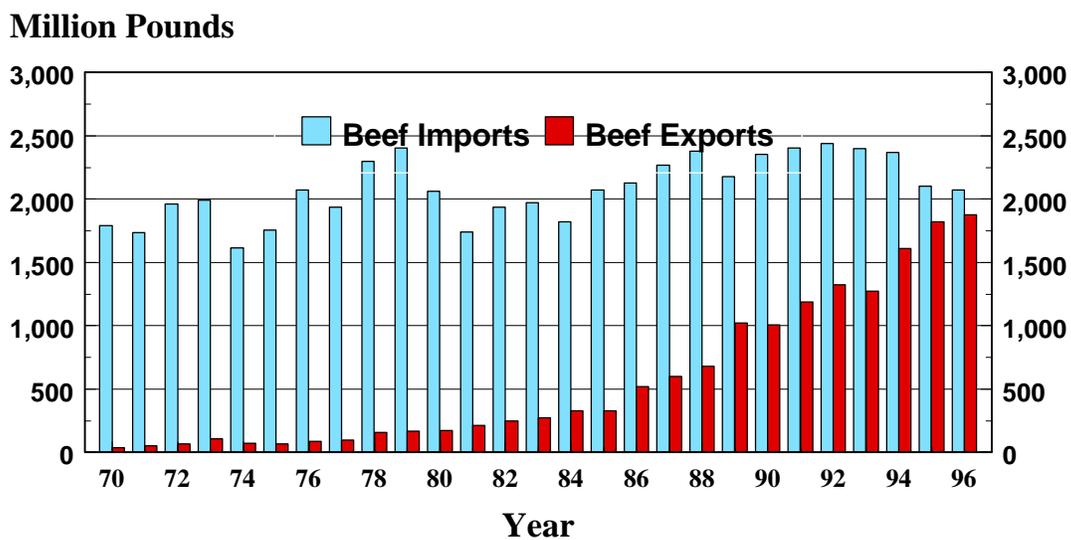
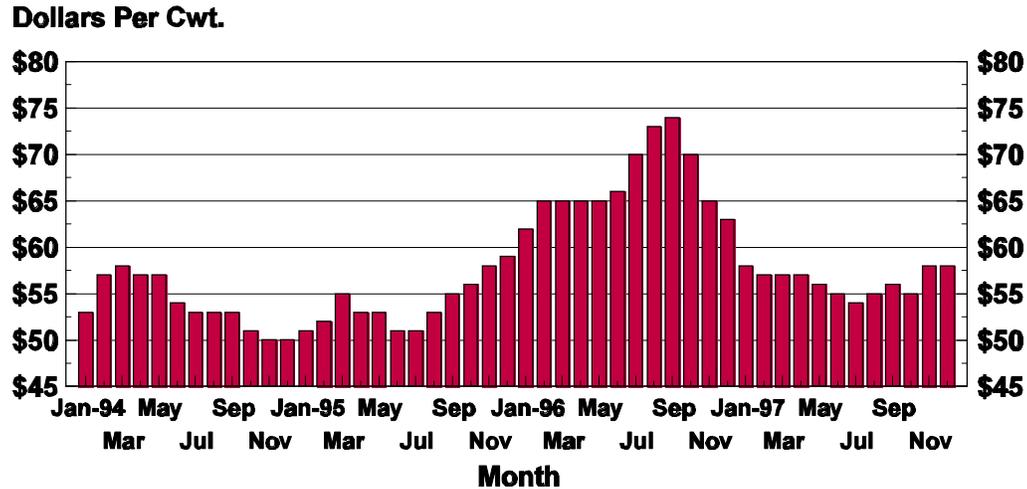


Figure 17. Pounds of U.S. Beef Imports and Exports, 1970-96.

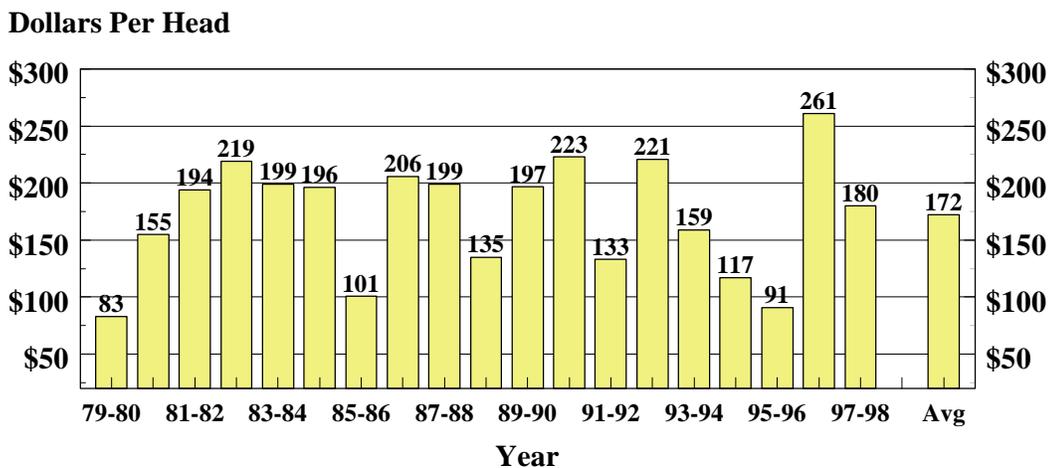


**Figure 18. Monthly Feeding Cost of Gain
700 to 800 Lb. Steers in Kansas**



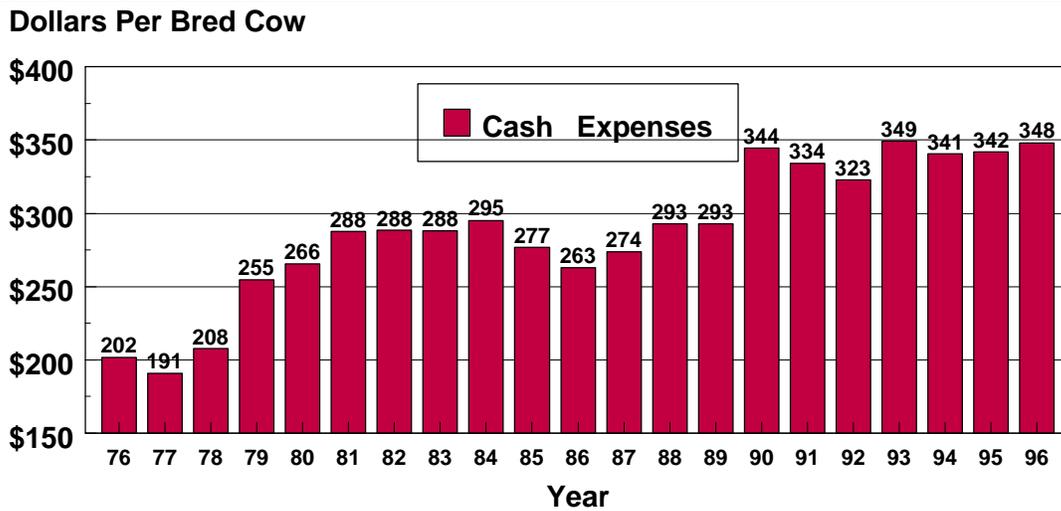
Source: KSU Cattle Return Series

**Figure 19. Stocker Gross Margin, Alabama,
October - April, 1979-98.**



Gross margin equals feeder sale value minus stocker purchase value.
Assumes October purchase of 400# stocker calf and April sale of 750# feeder.

Figure 20. Southern Cow-Calf Cash Expenses, 1972 - 96.



1990-96 estimates were based on a revised methodology.

Figure 21. Southeast Ammonium Nitrate Prices, 1970 - 96.

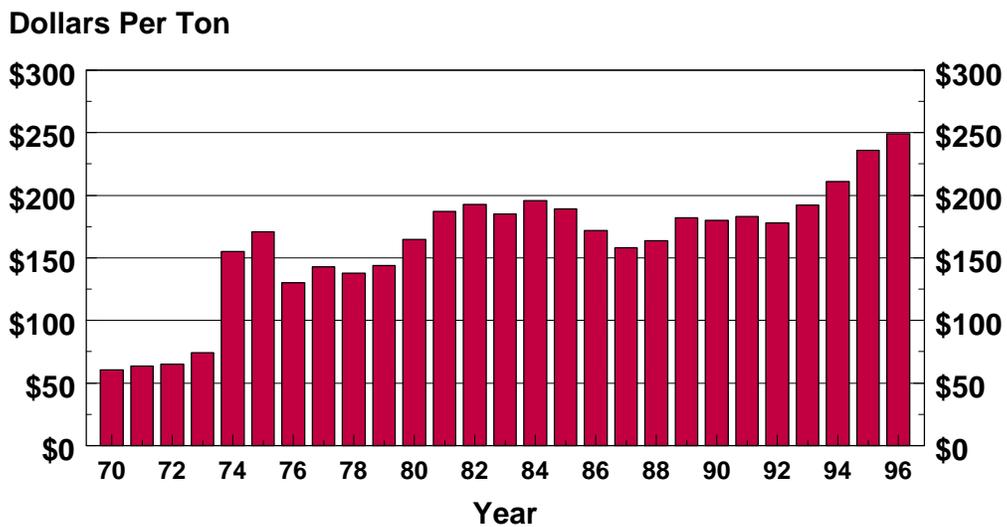


Figure 22. U. S. Steer Prices, 1992 - Present.

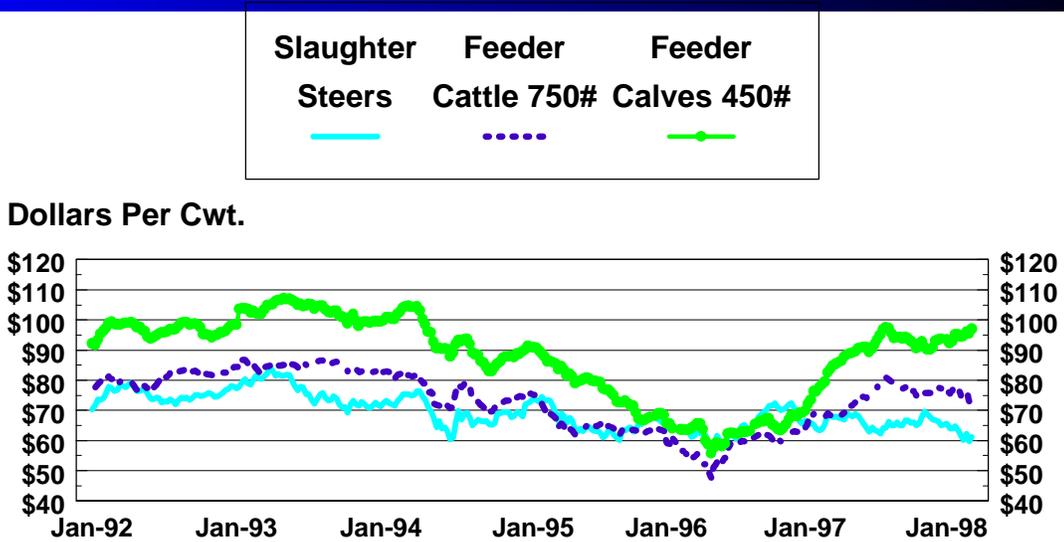


Figure 23. Alabama Feeder Calf Prices, Steer Calves, 400- 450 #.

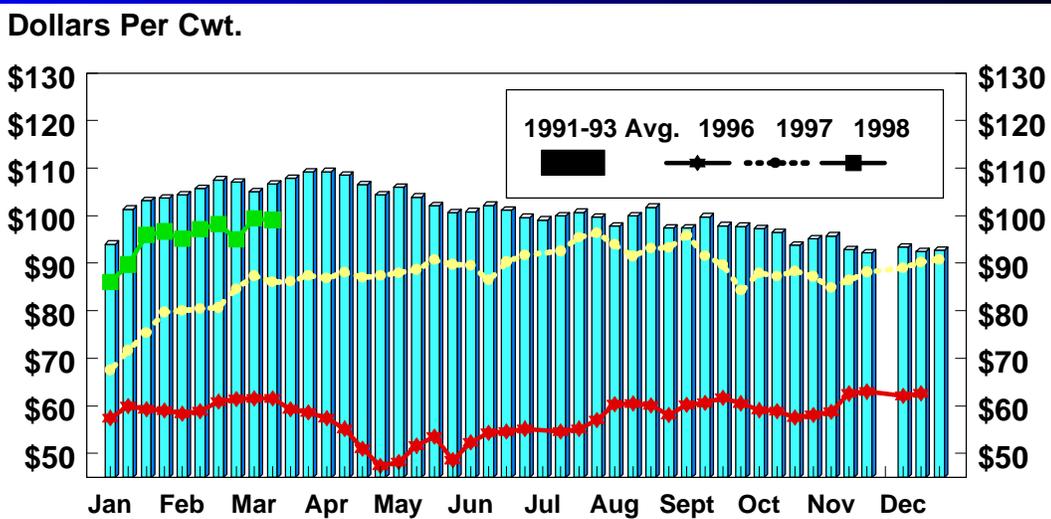


Figure 24. Alabama Feeder Cattle Prices, Feeder Steers, 700-800 #.

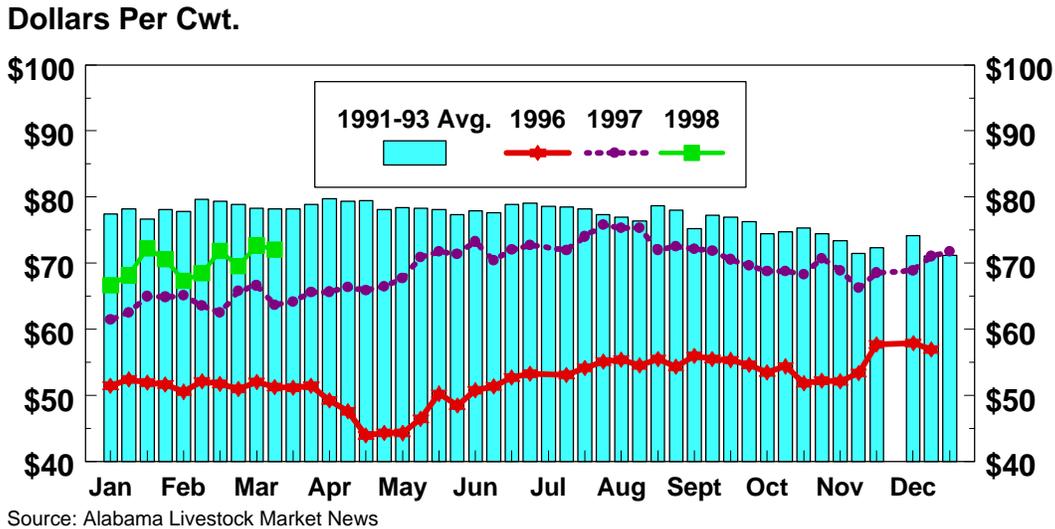


Figure 25. Feeder Steer Price Difference, Alabama minus Oklahoma, 500-550#, 1997.

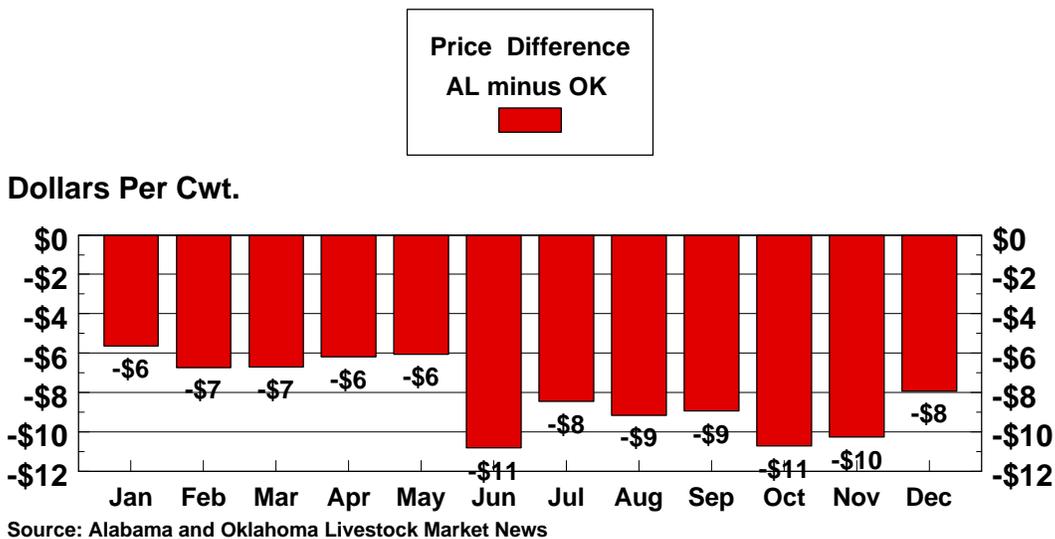
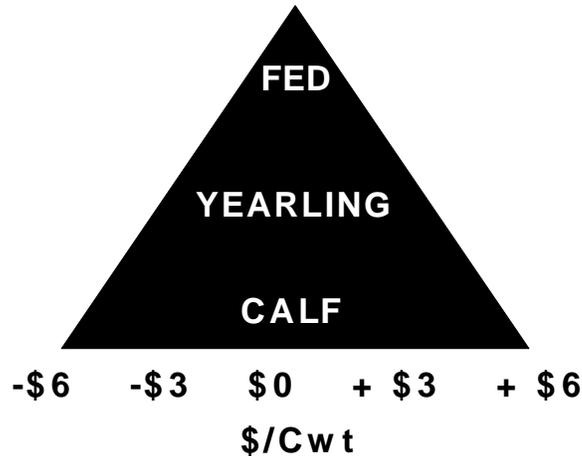


Figure 26. TODAY'S CATTLE MARKET

Market Value Differentiation Limited By "Average" Pricing



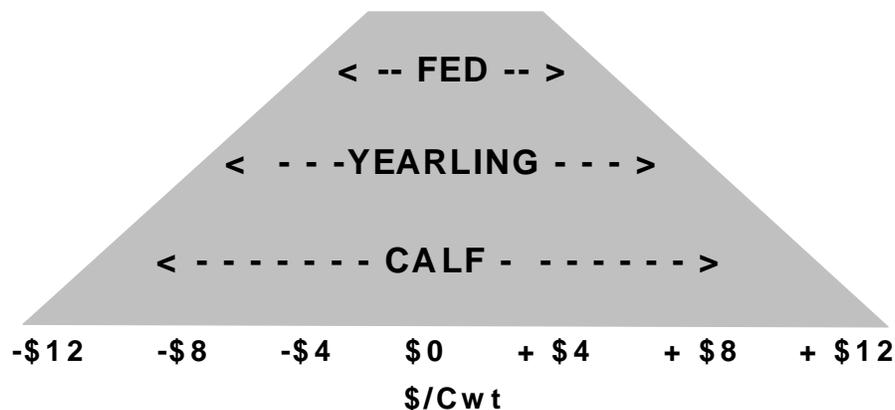
Message: "All Cattle are About Equal"

Results: Produce Cattle of any Kind and Type

Source: Adapted from Cattle-Fax

Figure 27. FUTURE CATTLE MARKET

Increased "Market Value Differentiation" At All Levels

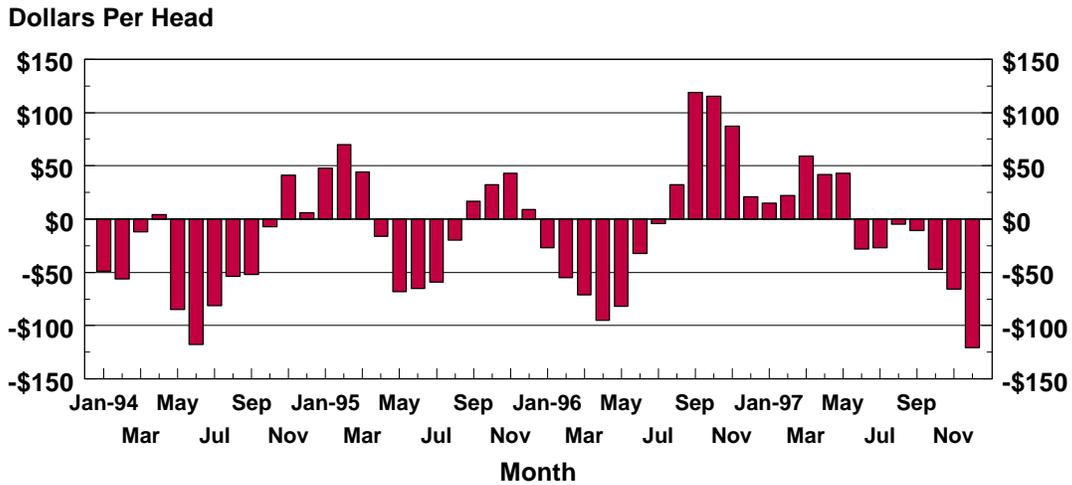


Message: "Some Cattle are Better than Others"

Results: Produce More of the Better Cattle

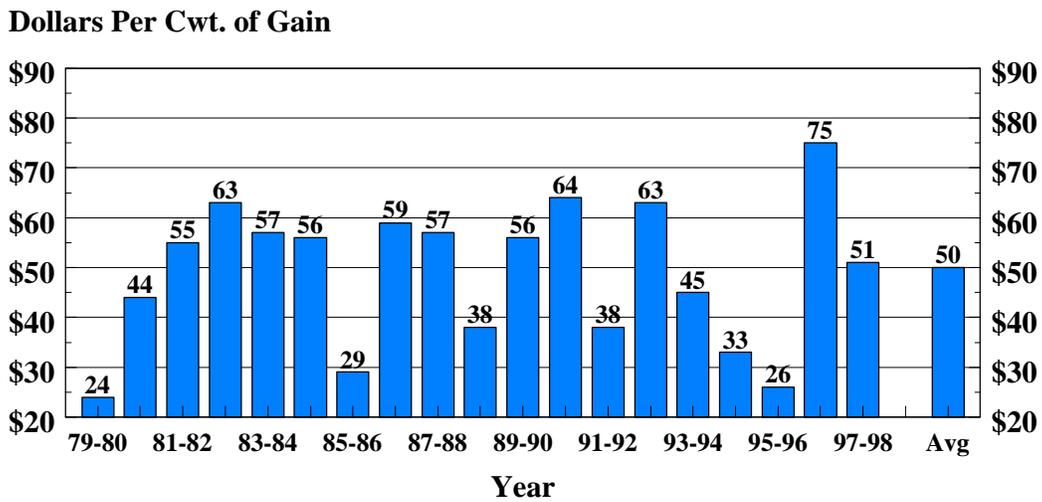
Source: Adapted from Cattle-Fax

Figure 28. Monthly Returns for Finishing 700 to 800 Lb. Steers in Kansas



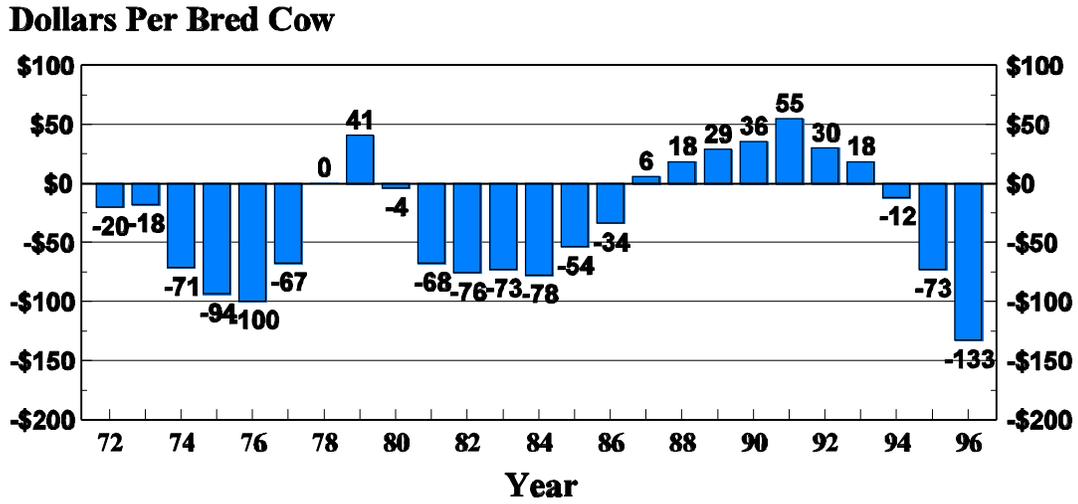
Source: KSU Cattle Return Series

Figure 29. Stocker Value of Gain, Alabama, October - April, 1979-98.



Assumes October purchase of 400# stoker calf and April sale of 750# feeder.

Figure 30. Southern Cow - Calf Returns Over Cash Expenses, 1972-96.



NOTES: