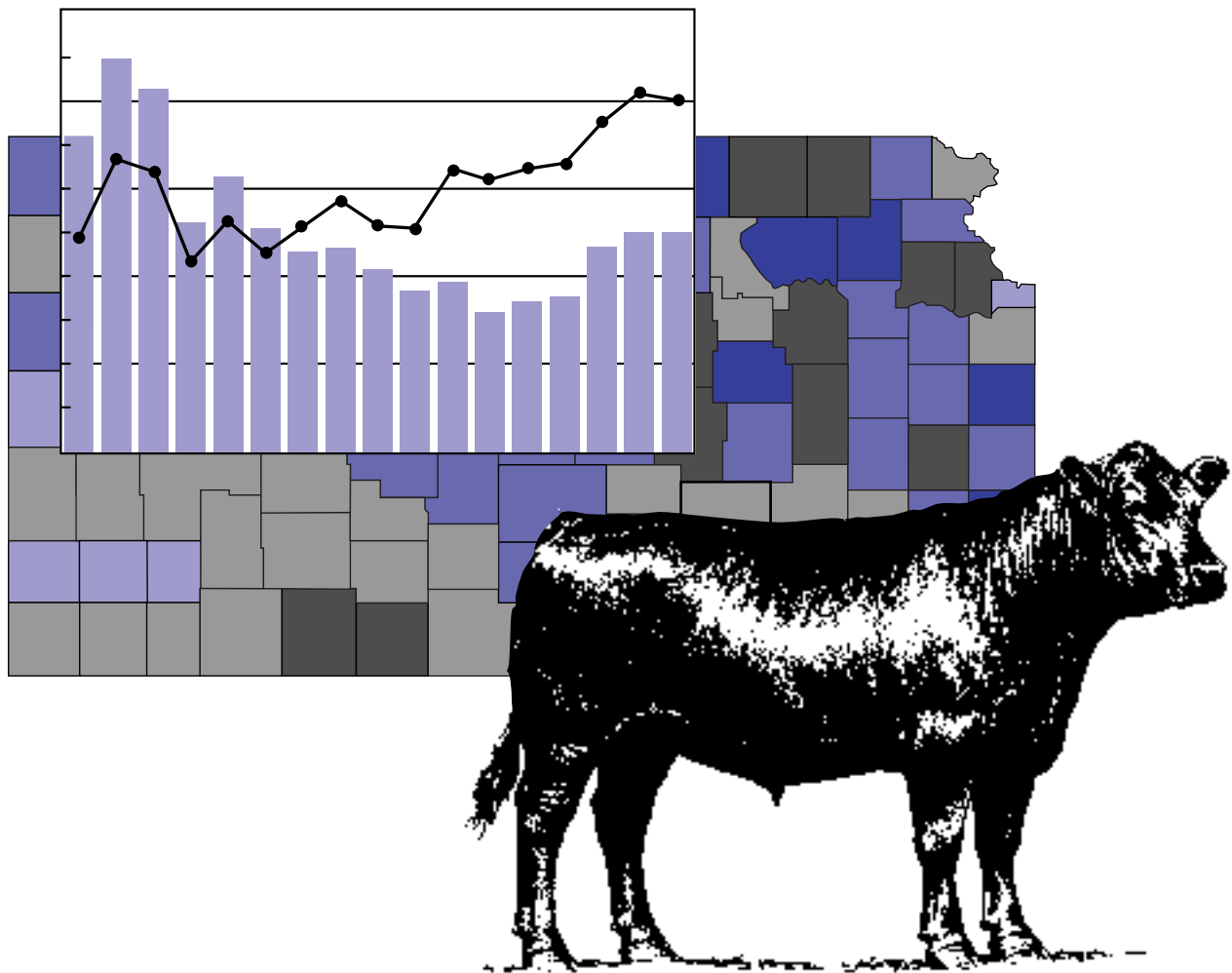


Kansas Beef Industry **Economic Trends**



Kansas Beef Industry Economic Trends

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The multibillion-dollar Kansas beef industry includes cow-calf producers; stocker and backgrounding operations where calves are grown on grass, wheat pasture, or in drylot; feedlots finishing cattle for slaughter; and packing plants that process fed cattle. All segments of this huge industry are vital to the state's economy; however, the cattle-feeding and meat-processing segments account for the vast majority of dollars generated. This publication summarizes trends in the state's beef industry since 1980.

Number of Farms

The number of farms and ranches in the United States has been decreasing over the last decade. This trend holds for beef cattle operations in Kansas as well. The total number of cattle farms and ranches in the state decreased from 52,000 in 1981 to a low of 35,000 in 1991 and then increased slightly to 39,000 cattle farms in 1996 (Table 1). The majority of cattle farms are classified as beef cow farms (77

percent). Thus, the reduction in total cattle farms from 1981 to 1996 (25 percent) is due primarily to the reduction in beef cow farms (26 percent). The number of feedlots having capacity greater than 1,000 head increased during the mid- to late '80s, but then decreased dramatically in 1996 (Figure 1). Prior to 1996, feedlots of all size categories were surveyed, however, beginning in 1996 only those feedlots having a capacity greater than 1,000 head were surveyed. Therefore, the large change in 1996 may be due to a revised surveying method rather than actually representing a significant reduction in the number of feedlots in the state. Other cattle farms, which represent backgrounding and grazing operations as well as feedlots with less than 1,000-head capacity, increased 30.7 percent during this time period. However, as with the number of feedlots, this increase may be due to the revised surveying method rather than indicating a large increase in the number of these types of operations.

Table 1. Number of Cattle Farms and Ranches in Kansas

Type of farm	1981	1986	1991	1995	1996	----- Percent change -----			
						96/95	96/91	96/86	96/81
Total cattle farms	52,000	44,000	35,000	38,000	39,000	2.6	11.4	-11.4	-25.0
Beef cow farms	40,560	34,000	29,000	30,000	30,000	0.0	3.4	-11.8	-26.0
Milk cow farms	5,400	3,500	2,300	1,400	1,200	-14.3	-47.8	-65.7	-77.8
Cattle feedlots ^a	239	264	293	300	220	-26.7	-24.9	-16.7	-7.9
Other cattle farms	5,801	6,236	3,407	6,300	7,580	20.3	122.5	21.6	30.7

^a Feedlots with 1,000 head or more only.

Source: Kansas Farm Facts, Kansas Agricultural Statistics.

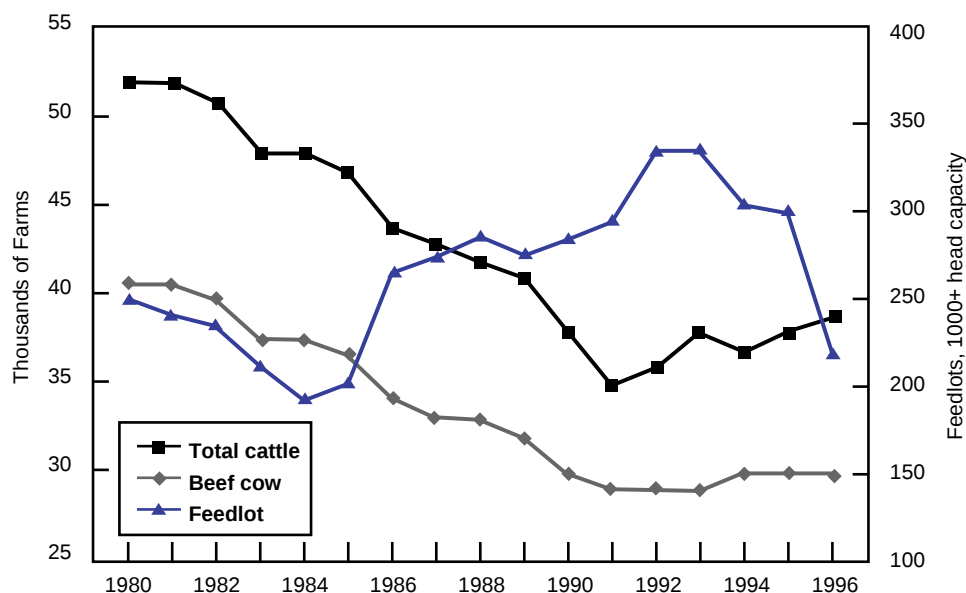


Figure 1. Cattle Farms and Feedlots in Kansas

Cattle Inventories

While the number of beef cattle farms and ranches has decreased by almost one-fourth since 1981, that has not been the case for cattle numbers. The size of the state's beef-cattle breeding cowherd was down 18.5 percent on January 1, 1997, compared to 15 years earlier (Table 2). However, there was a slight increase from 5 and 10 years earlier indicating some herd expansion and an end to the liquidation that occurred during much of the '80s (Figure 2). The size of the breeding herd has decreased for the past 2 years after peaking in 1995, indicating the expansion of the early '90s has slowed down and may be over.

No statistical inventory data are reported for stocker/background cattle. Thus, the total number of stockers in Kansas as of January 1 of each year was estimated as a residual using the total number of cattle less cattle on feed, breeding herd, and an estimate of fall calves. The number of stockers as of January 1 decreased slightly from 1980 through 1994 (Figure 2). Since 1994, the number of stockers on January 1 has been increasing slightly. Based on these January 1 estimates, there are approximately the same number of stockers in the state as beef breeding cattle, but the number is less

consistent from year to year. Also, it is important to realize that stocker numbers on January 1 may not adequately reflect the actual number of stockers handled in the state throughout the year. This is because of the short-term nature of backgrounding programs and the fact many stockers are shipped into Kansas after January 1 for spring and summer grazing. In addition, many backgrounding operations will "turn over" more than one set of stockers annually.

Although the number of feedlots in Kansas with a capacity greater than 1,000 head has decreased by almost 8 percent in the last 15 years, the number of cattle on feed has increased dramatically. The January 1 cattle on feed numbers have expanded from slightly more than 1.1 million head in 1982 to slightly more than 2.2 million head in 1997, a 100-percent increase. While the number of cattle on feed varies seasonally during the year, this same upward trend is seen during the entire year. Prior to 1991, January 1 inventories revealed there were less cattle on feed than there were breeding cattle or stockers. However, since 1991, the January 1 cattle on feed inventory has been larger than the breeding herd and stocker inventories.

Table 2. January 1 Kansas Cattle Inventory in Thousands of Head

Class of cattle	1982	1987	1992	1996	1997	----- Percent change -----			
						97/96	97/92	97/87	97/82
All cattle and calves	6,000	5,920	5,650	6,500	6,550	0.8	15.9	10.6	9.2
- Beef cows on farms	1,826	1,466	1,345	1,507	1,489	- 1.2	10.7	1.6	- 18.5
- Milk cows on farms	124	104	95	83	81	- 2.4	- 14.7	- 22.1	- 34.7
- Replacement heifers & bulls ^a	380	305	340	360	340	- 5.6	0.0	11.5	- 10.5
- Estimated fall calves ^b	671	540	495	547	540	- 1.3	9.0	0.0	- 19.5
- Cattle on feed ^c	1,110	1,395	1,820	2,160	2,220	2.8	22.0	59.1	100.0
- Stockers ^d	1,889	2,110	1,555	1,799	1,835	2.0	18.0	- 13.0	- 2.9

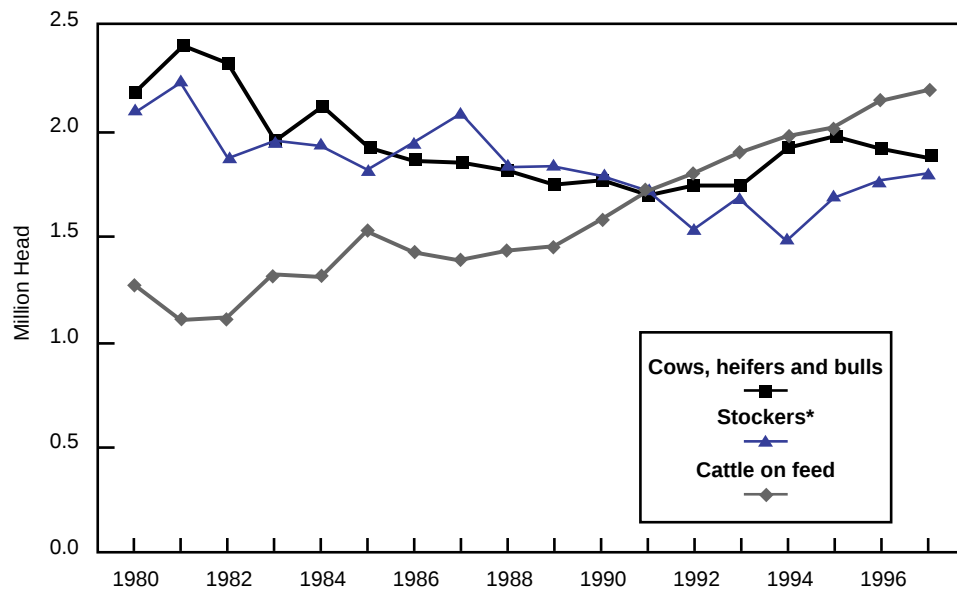
^a Beef cow replacements + milk cow replacements + bulls 500 lbs. or more.

^b Total cows x 40 percent fall calving x 86 percent calf crop.

^c Beginning in 1996, cattle on feed are only from feedlots with capacities of 1,000 head or more.

^d Stocker/background cattle on January 1 was estimated based on the total number of cattle and calves minus cattle on feed, breeding cattle, and assuming 40 percent of the calf crop was fall calves.

Source: Kansas Farm Facts, Kansas Agricultural Statistics.



**Figure 2. January 1
Kansas Cattle
Inventories**

* K-State estimate.

Cow-Calf

The Kansas beef cow inventory decreased throughout the '80s before increasing during the first half of the '90s (Figure 3). The size of the average cow herd decreased slightly during the early '80s, but since that time has been increasing at a relatively constant rate. This indicates that most of the reduction in the state's cow numbers has been due to a decrease in the number of producers. The size of the state's beef cow inventory decreased 20.6 percent from 1981 to 1996 (Table 3). During this same period, the number of beef cow farms decreased 26.0 percent (Table 1).

The size of the average cow herd topped 50 head in 1995 and 1996, representing a 17-percent increase from the size of the average cow herd 10 years earlier. The average cow herd in the United States in 1995 and 1996 was approximately 39 head. The big increase in beef cow inventory that occurred the last 3 years (1994 to 1996) in Kansas has been entirely due to increasing herd size as the number of beef cow farms has been constant.

Figure 4 shows the geographical distribution of beef cows across Kansas on January 1, 1997. Beef cows are fairly evenly distributed over the state, with several exceptions. The highest levels of concentration are in the north central, northeast, south central, and southeast areas of the state. The southwest corner of the state has the lowest number of beef cows.

Even though the size of the state's cow herd and the corresponding calf crop has been declining since 1980, the value of the calf crop has been relatively stable and even increasing in the late '80s due to strong calf prices (Figure 5). The size of the calf crop was at its lowest level in 1990; however, due to high calf prices, the value of the calf crop was at its highest level. In 1996, the size of the calf crop was 8.3 percent higher than in 1991, but annual average calf prices were almost 40 percent lower, resulting in a calf-crop value of \$387 million, which is almost 32 percent lower than the value 5 years earlier (Table 3). The size of the calf crop in 1996 was considerably lower than that of the early '80s, and the average annual calf price also was lower. Because of this, the estimated value of the calf crop in 1996 was the lowest it has been during the time period being considered (1980 to 1996).

Economic returns to the cow-calf sector are dependent on many factors and thus vary considerably from year to year. While returns are related to productivity (weaning weight, calving percent, etc.) and feed costs, they also are highly correlated with calf prices (Figure 6). The returns over variable costs for cow-calf operations in the K-State Farm Management Association have averaged \$46.66 per head, ranging from a low of -\$71.52 to a high of \$187.18 from 1980 through 1996. Average calf prices have averaged \$78.19 per hundredweight and ranged from \$58.90 to \$98.00 per hundredweight over this same time period.

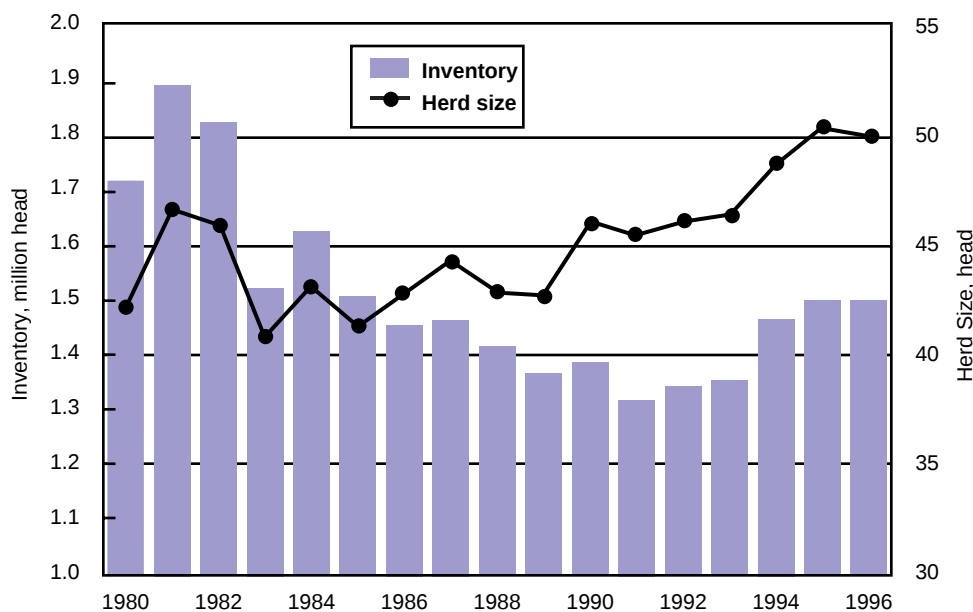


Figure 3. *Kansas Beef Cow Inventory and Average Herd Size*

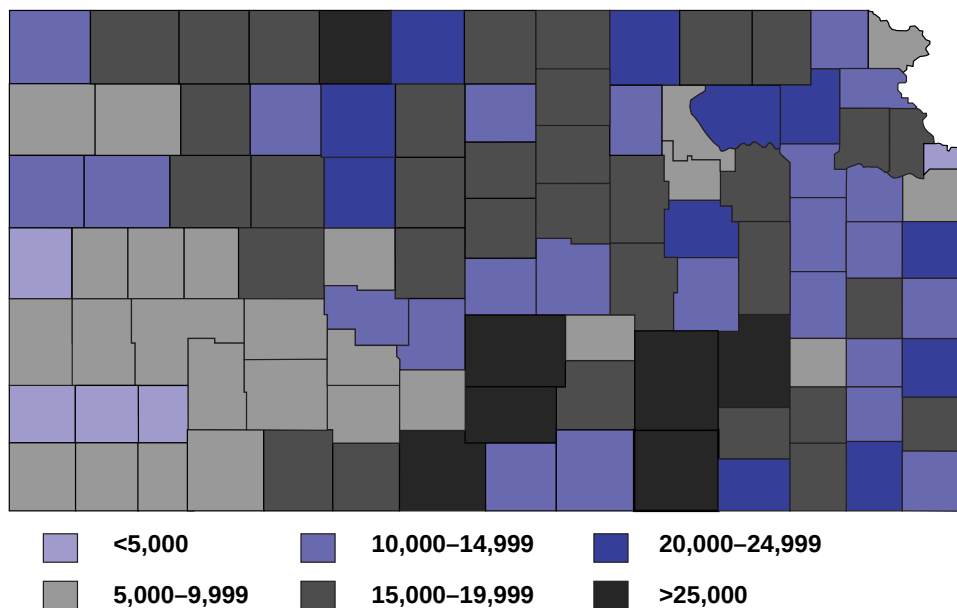


Figure 4. *Geographic Distribution of Beef Cows in Kansas, January 1, 1997 (1.5 million head)*

Table 3. *Kansas Beef Cow Numbers, Calf Crop, and Value of Calf Crop*

Item	1981	1986	1991	1995	1996	Percent change			
						96/95	96/91	96/86	96/81
Beef cows (1,000 head)	1,897	1,460	1,322	1,509	1,507	-0.1	14.0	3.2	-20.6
Calf crop (1,000 head)	1,770	1,505	1,330	1,460	1,440	-1.4	8.3	-4.3	-18.6
Average calf price (\$/cwt)	65.90	63.90	97.40	75.90	58.90	-22.4	-39.5	-7.8	-10.6
Value of calf crop (million \$) ^a	555	433	568	499	387	-22.5	-31.9	-10.5	-30.2
Beef cows per farm	47	43	46	50	50	-0.1	10.2	17.0	7.4

^a K-State estimate.

Source: Kansas Farm Facts, Kansas Agricultural Statistics.

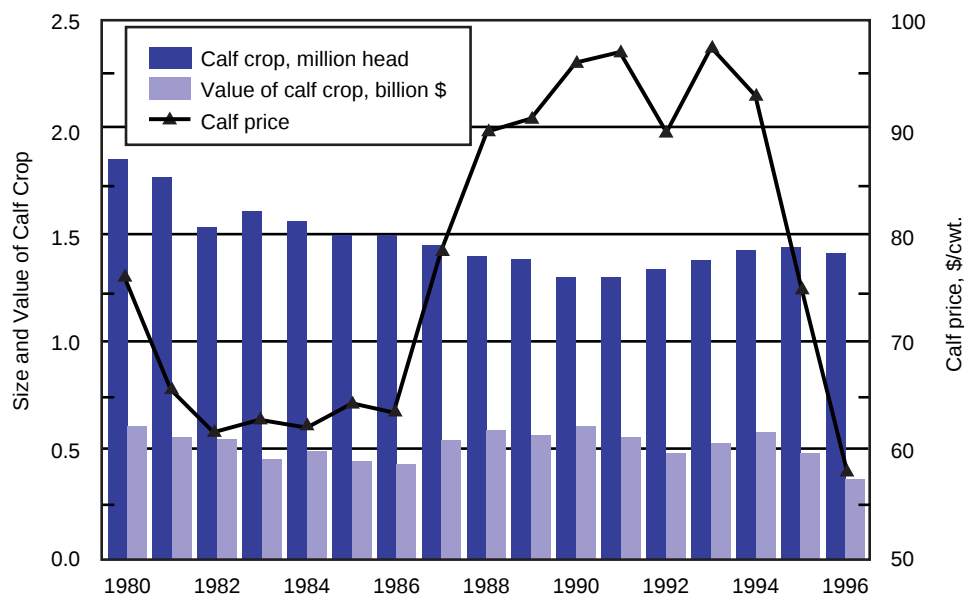


Figure 5. Size and Value of Kansas Calf Crop

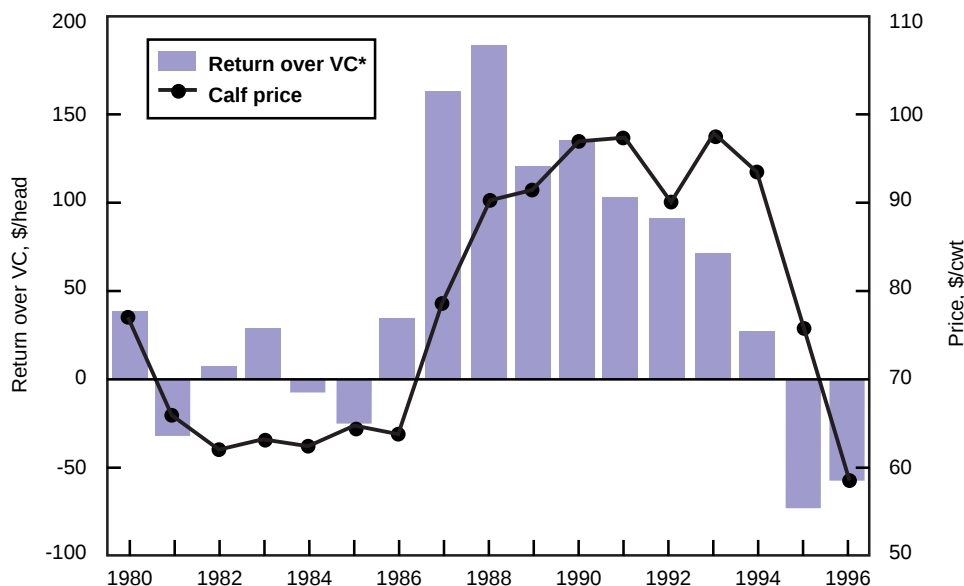


Figure 6. Return over Variable Cost for Cow-Calf Operations and Average Calf Price

* Source: K-State Farm Management Association Enterprise Analysis

Stockers

There are little statistical data available on stocker cattle in the state. Stockers are defined as young cattle that are grazed either on grass or wheat and those backgrounded in a drylot growing program prior to finishing in a feedlot. Based on January 1 inventories, it is estimated there are about the same number of stocker cattle in the state as breeding cattle (beef cows, replacement heifers, and bulls). While the size of the breeding herd is fairly constant through-

out the year, the number of stockers varies considerably. Figure 7 shows the geographic distribution of stocker cattle as of January 1, 1997. The areas of greatest concentration are in the southwest, south central, and central regions of the state. The extreme western and eastern tiers of counties along with northwest Kansas have the lowest stocker densities. The value of stockers has not been estimated because of a lack of data available and the variability in stocker weights and prices.

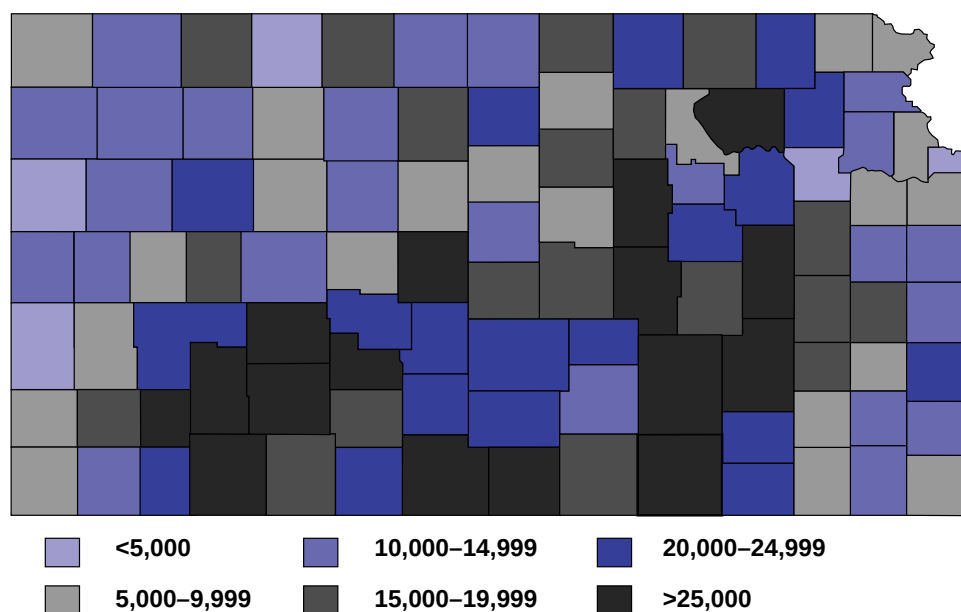


Figure 7. Geographic Distribution of Stocker/Background Cattle in Kansas, January 1, 1997 (1.8 million head)

Fed Cattle

The state's large, diverse feedlot industry has been going through a period of economic expansion since 1980. Fed-cattle marketings reached an all-time high in 1996 of 4.98 million head. Fed-cattle marketings in 1996 were up only 0.6 percent from 1995, but were up 11.7 percent, 18.7 percent, and 66.8 percent from the previous 5, 10, and 15 years, respectively, indicating a consistent upward trend in fed-cattle marketings (Table 4). Figure 8 compares the annual Kansas calf crop with fed-cattle marketings from 1980 through 1996. If the entire calf crop was fed in Kansas, the difference between fed-cattle marketings and the calf crop would equal the

number of feeder cattle imported into Kansas feedlots. The difference in fed-cattle marketings and calf crop increased from about 1 million head in 1980 to more than 3.5 million head in 1996. This indicates how heavily Kansas relies on feeder cattle from outside the state to maintain fed-cattle production.

The value of fed-cattle marketings was approximately \$2.1 billion in 1981 (Table 4). By 1996, the value of fed-cattle marketings increased 79.9 percent to almost \$3.8 billion. This economic growth was the result of fed-cattle marketings increasing 66.8 percent, average slaughter cattle weight increasing 7.4 percent, and the price of fed cattle remaining essentially

Table 4. Kansas Calf Crop, Fed-cattle Marketings, Fed-cattle Price, and Value of Marketings

Item	1981	1986	1991	1995	1996	----- Percent change -----			
						96/95	96/91	96/86	96/81
Calf crop (1,000 head)	1,770	1,505	1,330	1,460	1,440	- 1.4	8.3	- 4.3	- 18.6
Fed marketings (1,000 head)	2,985	4,195	4,460	4,950	4,980	0.6	11.7	18.7	66.8
Average live weight	1,092	1,118	1,151	1,187	1,173	- 1.2	1.9	4.9	7.4
Beef production (million lbs)	3,260	4,690	5,133	5,876	5,842	- 0.6	13.8	24.6	79.2
Fed cattle price (/cwt) ^a	64.51	58.95	74.83	66.56	64.77	- 2.7	- 13.4	9.9	0.4
Value of marketings (mil) ^a	2,103	2,765	3,841	3,911	3,784	- 3.3	- 1.5	36.9	79.9

^a K-State estimates based on average steer and heifer prices.

Source: Kansas Farm Facts, Kansas Agricultural Statistics.

constant (0.4 percent increase). The value of marketings in 1996 was down 3.3 percent from 1995 because of slightly lower slaughter weights and lower prices. The value of marketings in 1996 was down only 1.5 percent compared to the all-time high value in 1991 even though prices were lower by more than 13 percent. During the last half of the '80s, the value of fed-cattle marketings increased steadily as prices for fed cattle increased. Since 1990, the value of fed-cattle marketings has remained relatively constant even though fed-cattle prices fell significantly because the number of finished

cattle marketed in Kansas continued to increase (Figure 9). Remarkably, the value of fed-cattle marketings has basically increased or remained constant over the 1980 to 1996 period even though annual average fed-cattle prices have ranged from \$58.95 in 1986 to \$78.85 in 1990.

Beginning in 1996, only feedlots with a capacity greater than 1,000 head were surveyed, so trends in total number of feedlots have little meaning. The total number of feedlots with capacities of 1,000 head or more in 1996 was the lowest it has been since 1986 (Figure 1). All of the decrease in the number of feedlots having

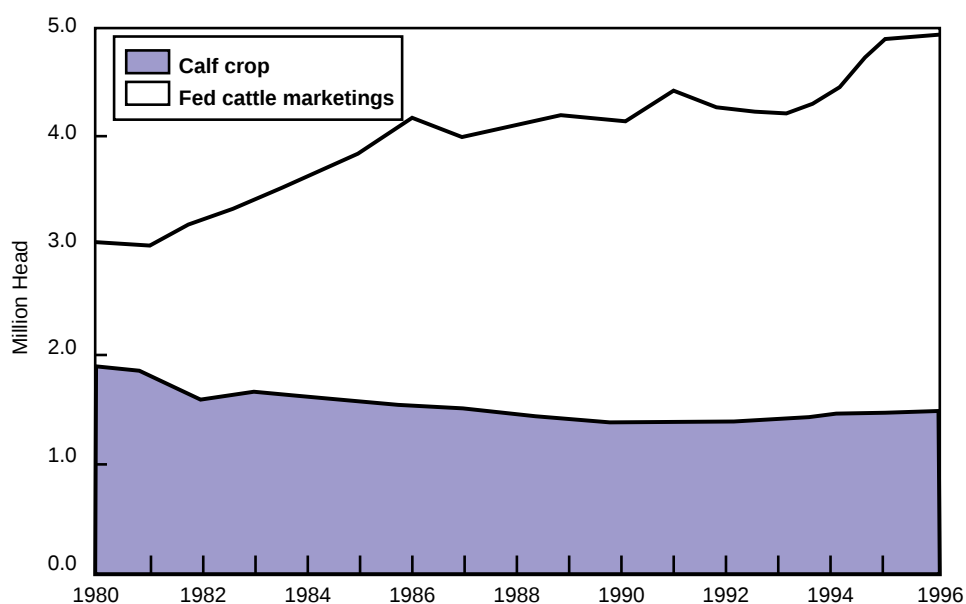


Figure 8. Kansas Annual Calf Crop and Fed-cattle Marketings

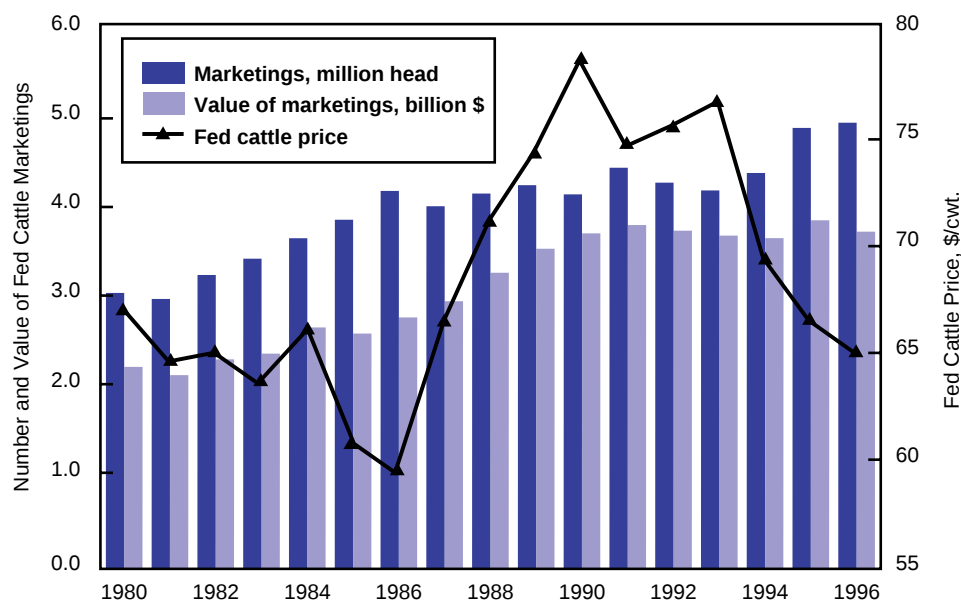


Figure 9. Number and Value of Annual Fed-cattle Marketings in Kansas

more than 1,000-head capacity in 1996 occurred in the number of feedlots having less than 2,000-head capacity (Table 5). The number of feedlots with capacities of 8,000 head or more has increased considerably since 1981. In 1996, there were 58 feedlots with capacities of 16,000 head or more compared to 33 feedlots of this size in 1981. Even though the number of feedlots has decreased significantly in the last 15 years, the feeding capacity of the state has increased.

Looking at data prior to 1996, when all feedlots were surveyed, the majority of the feedlots in Kansas were relatively small and made a small contribution to the number of cattle fed. Feedlots with a capacity of less than 2,000 head represented more than 90 percent of the total number of feedlots, but since the early '80s, these feedlots have accounted for less than 5 percent of the fed cattle marketed (Table 5). In contrast, feedlots with a one-time capacity greater than 16,000 head represented less than 3 percent of the feedlots and marketed

almost 70 percent of the fed cattle. Since 1980, these larger feedlots have increased their share of marketings while the small feedlots' share has decreased significantly (Figure 10). While more cattle are being fed in fewer, larger feedlots, it is important to note the vast majority of these operations are custom feedlots. That is, these commercial feedlots exist to provide professional cattle feeding and marketing services to thousands of cattlemen, including cow-calf and stocker producers who desire to retain ownership in their cattle through the finishing phase.

Figure 11 shows the geographic distribution of cattle on feed in feedlots with capacity greater than 1,000 head in Kansas as of January 1, 1997. Although cattle on feed at a given point in time does not give a perfect indication of the number of cattle marketed, it does reflect where most of the cattle are marketed. Unlike the beef cow and stocker segments, cattle feeding is extremely concentrated within the state. The heaviest

Table 5. Kansas Feedlots and Fed Cattle Marketed by Size Group

Feedlot capacity (head)	Number of feedlots					----- Fed cattle marketed (1,000 head) -----				
	1981	1986	1991	1995	1996	1981	1986	1991	1995	1996
Less than 1,000	2,761	1,636	1,607	2,100	**	261	70	50	120	**
1,000-1,999	99	82	115	137	58	183	81	50	65	50
2,000-3,999	39	58	60	45	40	143	194	180	95	100
4,000-7,999	30	34	26	25	28	234	365	175	250	260
8,000-15,999	38	48	41	34	36	684	1,010	920	975	720
16,000-31,999	25	27	37	44	43	842	1,050	1,580	1,650	2,050
32,000 or more	8	15	14	15	15	638	1,425	1,505	1,795	1,800
TOTAL	3,000	1,900	1,900	2,400	220	2,985	4,195	4,460	4,950	4,980

Feedlot capacity (head)	Percent of feedlots					----- Percent of cattle marketed -----				
	1981	1986	1991	1995	1996	1981	1986	1991	1995	1996
Less than 1,000	92.0	86.1	84.6	87.5	**	8.7	1.7	1.1	2.4	**
1,000-1,999	3.3	4.3	6.1	5.7	26.4	6.1	1.9	1.1	1.3	1.0
2,000-3,999	1.3	3.1	3.2	1.9	18.2	4.8	4.6	4.0	1.9	2.0
4,000-7,999	1.0	1.8	1.4	1.0	12.7	7.8	8.7	3.9	5.1	5.2
8,000-15,999	1.3	2.5	2.2	1.4	16.4	22.9	24.1	20.6	19.7	14.5
16,000-31,999	0.8	1.4	1.9	1.8	19.5	28.2	25.0	35.4	33.3	41.2
32,000 or more	0.3	0.8	0.7	0.6	6.8	21.4	34.0	33.7	36.3	36.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

** Beginning in 1996, only feedlots with capacities of 1,000 head or more.

Source: Kansas Farm Facts, Kansas Agricultural Statistics.

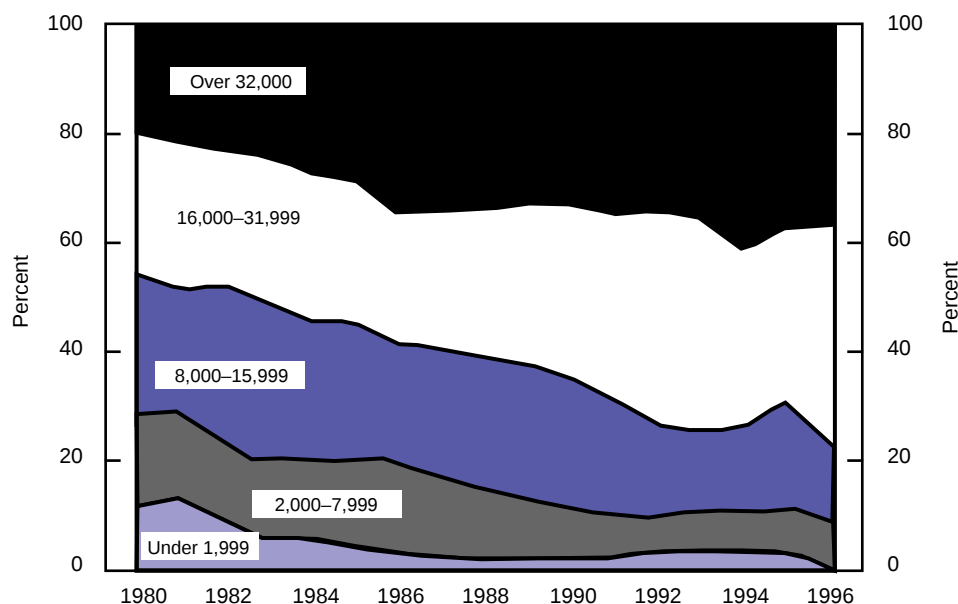


Figure 10. Percent of Fed Cattle Marketed by Feedlot Size

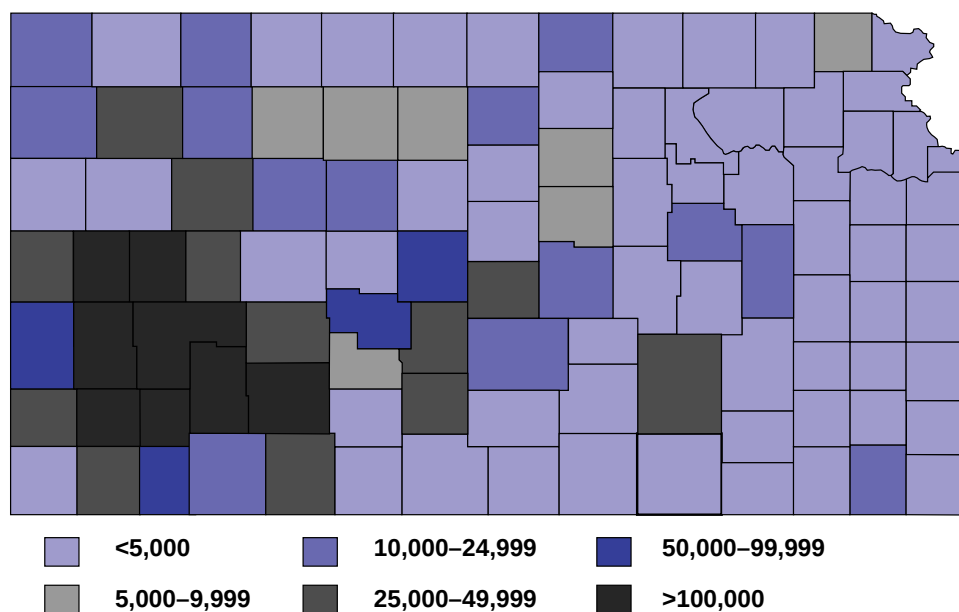


Figure 11. Geographic Distribution of Cattle on Feed in Kansas, January 1, 1997 (2.22 million head)

concentration of cattle on feed is in southwest Kansas. Other areas of substantial cattle feeding activity are in northwest and central Kansas. The counties with the highest density of cattle on feed seem to be located along U.S. highways 83 and 50 (not shown on map).

Historically, Kansas has ranked No. 3 in fed-cattle marketings, behind Texas and Nebraska (Figure 12). However, in 1995 and 1996, Kansas had more fed-cattle marketings than Nebraska, making Kansas the second-leading state in terms of fed-cattle marketings. Comparing the top three fed-cattle states, Kansas has had the fastest

growth rate when examining 1996 marketings compared to the marketings 5, 10, and 15 years earlier (Table 6). In 1981, Kansas accounted for 17.3 percent of fed-cattle marketings in the seven major cattle-feeding states. By 1996, Kansas' share had risen to 26.7 percent. Texas also has shown considerable growth over the last 15 years (Figure 12). Nebraska saw growth during the '80s peaking in 1988 and has been slowly decreasing the number of fed-cattle marketings since then. Of the seven major states, Iowa has shown the biggest loss in cattle marketings. Arizona and California also have had large declines, but they

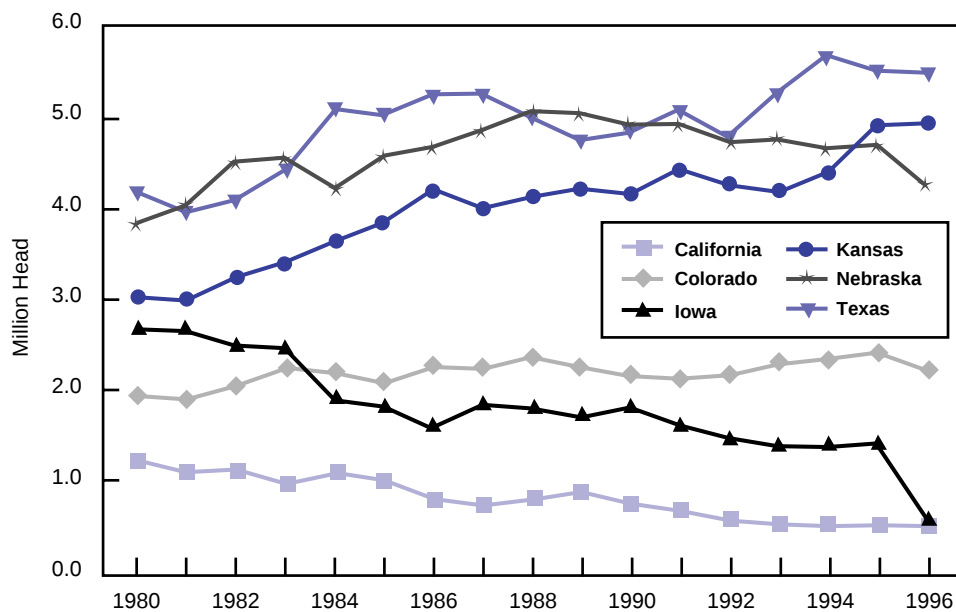


Figure 12. Fed-cattle Marketings in Major States

Table 6. Annual Fed-cattle Marketings in Major Cattle-feeding States

State	Number marketed (1,000 head)					Percent change			
	1981	1986	1991	1995	1996 ^a	96/95	96/91	96/86	96/81
Arizona	519	462	306	380	398	4.7	30.1	-13.9	-23.3
California	1,139	839	730	595	565	-5.0	-22.6	-32.7	-50.4
Colorado	1,915	2,290	2,170	2,464	2,275	-7.7	4.8	-0.7	18.8
Iowa	2,700	1,647	1,660	1,477	623	-57.8	-62.5	-62.2	-76.9
Kansas	2,985	4,195	4,460	4,950	4,980	0.6	11.7	18.7	66.8
Nebraska	4,050	4,680	4,960	4,730	4,295	-9.2	-13.4	-8.2	6.0
Texas	3,960	5,260	5,080	5,540	5,500	-0.7	8.3	4.6	38.9
7 States	17,268	19,373	19,366	20,136	18,636	-7.4	-3.8	-3.8	7.9
KS/7 States	17.3%	21.7%	23.0%	24.6%	26.7%	8.7	16.0	23.4	54.6

^a Beginning in 1996, marketings are only from feedlots with capacities of 1,000 head or more.

Source: USDA National Agricultural Statistics Service, Cattle on Feed Report.

account for fewer cattle than Iowa. One explanation for this trend has been a shift to cattle being fed in commercial feedlots rather than by farmer-feeders. The majority of large commercial feedyards are located in the Plains states. Because farmer-feeders tend to be located in the Corn Belt, the large reductions from 1995 to 1996 in Nebraska and Iowa also may be due to feedlots with less than 1,000 head capacity no longer being surveyed.

Returns to finishing cattle in commercial feedlots are dependent on many factors and

thus vary considerably from year to year. Returns are related to productivity (average daily gain, feed efficiency, etc.) and feed costs. Because returns in the feedlot sector are more dependent on buy-sell margins than absolute price levels, there is very little correlation between returns and fed-cattle prices (Figure 13). The estimated quarterly profit for feeding steers in a commercial feedlot has been about \$15 per head ranging from a low of -\$86 to a high of \$141 from 1980 through the first quarter of 1997. Quarterly average fed-cattle

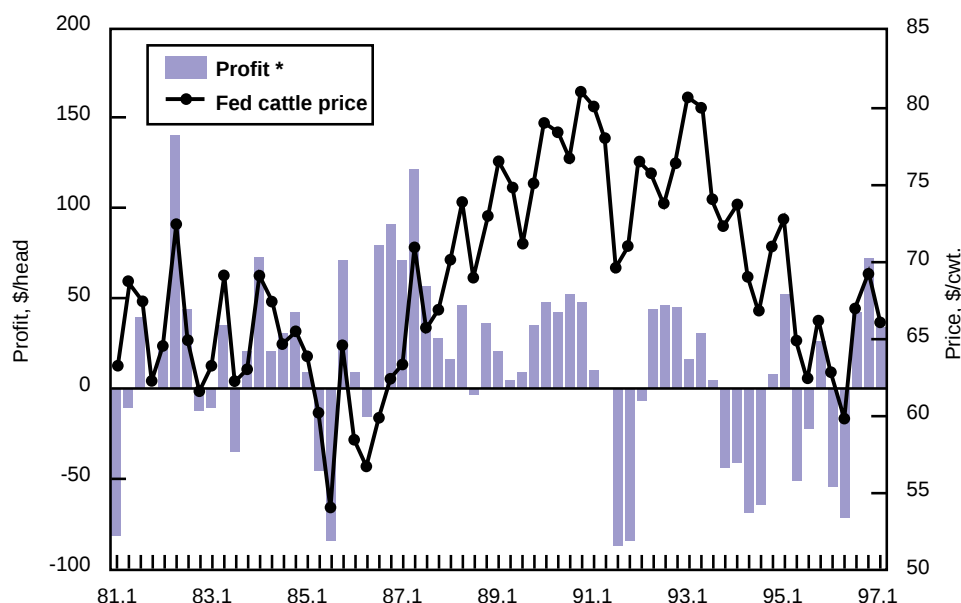


Figure 13. Quarterly Profit for Finishing Cattle in a Commercial Feedlot and Average Fed-cattle Price

* Source: K-State estimate.

prices have averaged \$68.90 per hundredweight and ranged from \$54.19 to \$81.04 per hundredweight over this same time period.

Cattle Imports

Kansas imports large numbers of stockers and feeder cattle into the state, amounting to more than 70 percent of the total fed cattle marketed. The number of cattle and calves imported into the state has increased almost 80 percent in the last 15 years from 2.4 million head in 1981 to almost 4.3 million head in 1996 (Table 7). Beginning in 1993, cattle exports out of the state also have been reported. During this time, exports have ranged from 739,000 to 884,000 head. Net imports of cattle (that is, imports less exports) were almost 3.6 million head in 1996. Approximately 80 percent of the cattle exports have been to Nebraska and Colorado. Reported data does not include cattle weights, so it is not known if these exports are going to Colorado and Nebraska to be finished in feedlots or processed in packing plants.

Cattle imports into Kansas vary from year to year, but have been trending upward at a fairly steady rate since 1980 (Figure 14). Oklahoma, Missouri, and Texas consistently provide most of the cattle imported into Kansas. In 1981, 1.35 million head (56.2 percent) of the imported cattle and calves came from these three states. In 1996, 1.9 million head originated from these states, but they represented only 44.2 percent of total imports. Therefore, as the number of

stocker and feeder cattle imported into Kansas have increased, there has been an increased need to procure cattle from states farther away. Table 7 lists the top 10 states supplying cattle and calves shipped into Kansas in 1996.

Commercial Slaughter

There are six major beef slaughter plants and one smaller plant in Kansas with a combined daily slaughter capacity of 27,700 head (Table 8). Five of the plants are located in southwest Kansas: Excel, IBP (Holcomb), Monfort, and National Beef Packing (Dodge City and Liberal). These five packers have a combined daily slaughter capacity of about 23,500 head — almost 85 percent of the state's total. Currently, the largest plant, IBP at Holcomb, accounts for nearly 22 percent of the state's slaughter capacity. Together, the two Kansas IBP plants (Holcomb and Emporia) account for approximately 36 percent of the state's total slaughter capacity. The two National Beef Packing plants account for approximately 29 percent of total slaughter capacity. Excel with only one plant has about 20 percent of the state's total slaughter capacity.

Kansas packers slaughtered almost 7 million head of fed cattle in 1996 (Table 9). This was an increase of 93.1 percent from 1981 and represented the second-most fed cattle slaughtered ever in Kansas. Kansas recorded an all-time high for fed cattle slaughtered in 1995 at 7.1 million head, which was 1.8 percent greater than the 1996 level. Since 1985, Kansas has consistently

Table 7. Source of Cattle and Calves Shipped into Kansas

State	Number of imported cattle (1,000 head)					Percent change			
	1981	1986	1991	1995	1996	96/95	96/91	96/86	96/81
Oklahoma	636.8	653.8	673.6	753.7	783.1	3.9	16.3	19.8	23.0
Missouri	372.2	740.1	603.5	647.0	676.4	4.5	12.1	- 8.6	81.7
Texas	337.3	451.6	525.0	542.6	440.0	- 18.9	- 16.2	- 2.6	30.4
Kentucky	113.3	214.5	216.1	239.7	318.3	32.8	47.3	48.4	180.9
Arkansas	100.4	107.3	159.0	194.7	192.9	- 0.9	21.3	79.8	92.1
New Mexico	N/A	68.1	87.1	189.7	184.4	- 2.8	111.7	170.8	N/A
Mississippi	N/A	86.9	116.3	194.1	164.2	- 15.4	41.2	89.0	N/A
Tennessee	81.1	185.8	194.2	144.0	154.7	7.4	- 20.3	- 16.7	90.8
South Dakota	N/A	61.1	62.4	70.1	156.0	122.5	150.0	155.3	N/A
Montana	54.3	89.2	115.8	111.3	138.3	24.3	19.4	55.0	154.7
Other states + Canada & Mexico	702.6	776.6	962.0	1,113.1	1,088.7	- 2.2	13.2	40.2	55.0
TOTAL	2,398	3,435	3,715	4,200	4,297	2.3	15.7	25.1	79.2

State	Percent of total cattle imports					Percent change			
	1981	1986	1991	1995	1996	96/95	96/91	96/86	96/81
Oklahoma	26.6	19.0	18.1	17.9	18.2	1.6	0.5	- 4.3	- 31.4
Missouri	15.5	21.5	16.2	15.4	15.7	2.2	- 3.1	- 26.9	1.4
Texas	14.1	13.1	14.1	12.9	10.2	- 20.7	- 27.5	- 22.1	- 27.2
Kentucky	4.7	6.2	5.8	5.7	7.4	29.8	27.3	18.6	56.8
Arkansas	4.2	3.1	4.3	4.6	4.5	- 3.2	4.9	43.7	7.2
New Mexico	N/A	2.0	2.3	4.5	4.3	- 5.0	83.0	116.5	N/A
Mississippi	N/A	2.5	3.1	4.6	3.8	- 17.3	22.1	51.0	N/A
Tennessee	3.4	5.4	5.2	3.4	3.6	5.0	- 31.1	- 33.4	6.5
South Dakota	N/A	1.8	1.7	1.7	3.6	117.5	116.1	104.1	N/A
Montana	2.3	2.6	3.1	2.7	3.2	21.5	3.3	23.9	42.1
Other states + Canada & Mexico	29.3	22.6	25.9	26.5	25.3	- 4.4	- 2.2	12.1	- 13.5

Source: Kansas Farm Facts, Kansas Agricultural Statistics.**Table 8. Kansas Beef-packing Plants and 1997 Daily Slaughter Capacity**

Company	Plant location	Daily slaughter capacity (head)	Slaughter share (%)
Excel	Dodge City	5,400	19.5
IBP	Emporia	3,990	14.4
IBP	Holcomb	6,000	21.7
Monfort	Garden City	4,000	14.4
National Beef Packing	Dodge City	2,700	9.7
National Beef Packing	Liberal	5,400	19.5
Wellington Quality Meats	Wellington	210	0.8
Total daily slaughter capacity		27,700	100.0

Source: Data provided by slaughter plants.

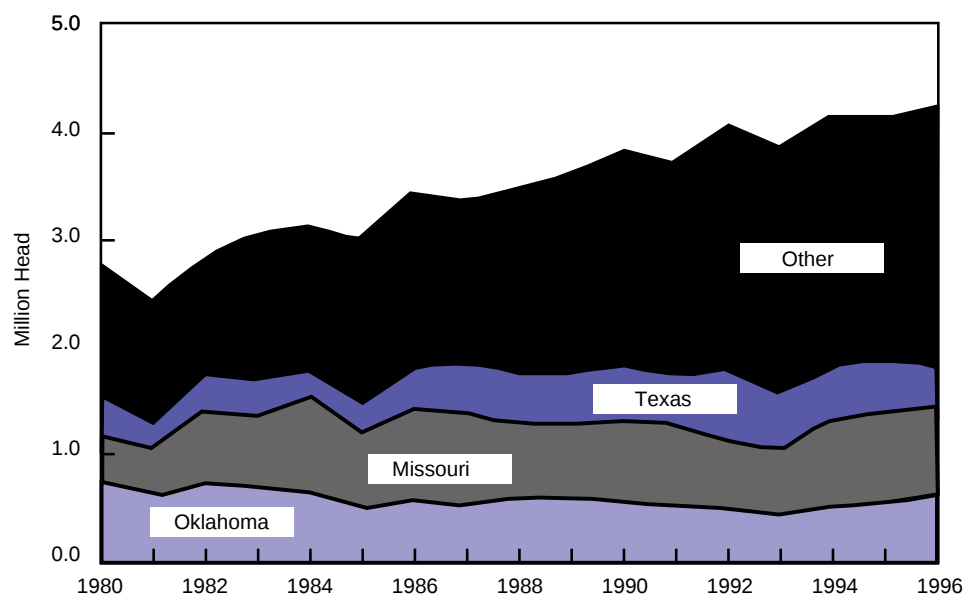


Figure 14. Number of Cattle and Calves Shipped into Kansas

Table 9. Kansas Fed-cattle Marketings, Commercial Slaughter, and Value of Beef Production

Item	1981	1986	1991	1995	1996	Percent change			
						96/95	96/91	96/86	96/81
Fed cattle marketings (1,000 head) ^a	2,985	4,195	4,460	4,950	4,980	0.6	11.7	18.7	66.8
Commercial slaughter (1,000 head)	3,619	6,494	6,027	7,113	6,988	- 1.8	15.9	7.6	93.1
Dressed meat production (million lbs)	2,465	4,525	4,368	5,282	5,146	- 2.6	17.8	13.7	108.7
Wholesale boxed beef cut-out value (\$/cwt) ^b	105.26	94.61	118.31	106.68	103.09	- 3.4	- 12.9	9.0	- 2.1
Value of slaughter (million \$) ^c	2,595	4,282	5,168	5,634	5,305	- 5.8	2.7	23.9	104.4

^a Beginning in 1996, marketings are only from feedlots with capacities of 1,000 head or more.

^b Choice, yield grade 2 or 3, 550- to 700-lb carcass. Source: *Red Meat Yearbook* (Internet).

^c K-State estimate.

Source: Kansas Farm Facts, Kansas Agricultural Statistics.

processed approximately 17 to 20 percent of the total number of fed cattle slaughtered in the United States. There were more cattle processed in Kansas in 1986 than in 1991; however, Kansas share of total U.S. slaughter was actually higher in 1991 because total U.S. slaughter numbers were down (Table 10).

Figure 15 compares the level of commercial slaughter with fed-cattle marketings in the state. In 1980, the commercial slaughter and fed-cattle

marketings were both around 3 million head. The beef-processing industry saw considerable growth during the early '80s, which increased the need to import fed cattle. Since 1985, more than 2 million head of fed cattle are typically imported into Kansas from neighboring states for processing. The exception to this was in 1991 and 1992 when fed cattle numbers and thus commercial slaughter were down. Because all fed cattle marketed in Kansas are not slaughtered in

Table 10. Annual Commercial Cattle Slaughter in Major Cattle-packing States

Number slaughtered (1,000 head)						----- Percent change -----			
State	1981	1986	1991	1995	1996	96/95	96/91	96/86	96/81
California	1,859	1,521	1,082	985	1,017	3.3	- 5.9	- 33.1	- 45.3
Colorado	1,507	1,920	2,236	2,569	2,571	0.1	15.0	33.9	70.6
Iowa	3,371	1,969	1,652	1,765	1,293	- 26.8	- 21.8	- 34.4	- 61.7
Kansas	3,619	6,494	6,027	7,113	6,988	- 1.8	15.9	7.6	93.1
Nebraska	5,920	5,700	6,310	6,769	7,293	7.8	15.6	27.9	23.2
Texas	5,847	6,207	5,607	6,455	6,800	5.3	21.3	9.5	16.3
U.S.	34,954	37,288	32,688	35,639	36,583	2.6	11.9	- 1.9	4.7
KS/US	10.4%	17.4%	18.4%	20.0%	19.1%	- 4.3	3.6	9.7	84.5

Average live weight (lbs/head)						----- Percent change -----			
State	1981	1986	1991	1995	1996	96/95	96/91	96/86	96/81
California	1,098	1,124	1,237	1,237	1,225	- 1.0	- 1.0	9.0	11.6
Colorado	1,038	1,110	1,178	1,168	1,208	3.4	2.5	8.8	16.4
Iowa	1,097	1,123	1,182	1,218	1,183	- 2.9	0.1	5.3	7.8
Kansas	1,092	1,118	1,151	1,187	1,173	- 1.2	1.9	4.9	7.4
Nebraska	1,104	1,115	1,177	1,177	1,197	1.7	1.7	7.4	8.4
Texas	1,019	1,045	1,098	1,126	1,095	- 2.8	- 0.3	4.8	7.5

Source: USDA National Agricultural Statistics Service, Annual Livestock Slaughter Report.

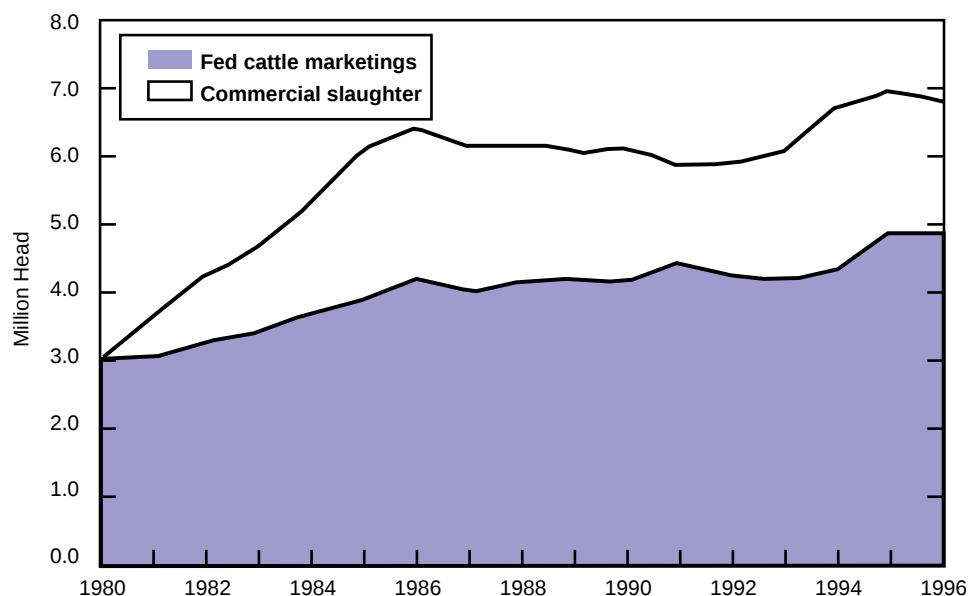


Figure 15. Annual Commercial Slaughter and Fed-cattle Marketings in Kansas

the state, the difference between slaughter and marketings equals net imports of fed cattle. The need to import fed cattle to meet commercial slaughter capacity is one factor that has encouraged feedlot expansion in Kansas since the mid-1980s.

The expansion in commercial slaughter in the last 15 years has outpaced the increase in fed-cattle marketings (93.1 percent vs. 66.8 percent), however the growth in fed-cattle marketings in the last 10 years has been greater than the growth in commercial slaughter (18.7 percent vs. 7.6 percent) (Table 9). From 1985 to 1993, the number of fed cattle slaughtered was fairly constant, but in the last 3 years (1994-1996) the number of cattle slaughtered has increased (Figure 15).

The wholesale value of cattle slaughtered in Kansas has increased from approximately \$2.6 billion in 1981 to just more than \$5.3 billion in 1996 (Table 9). This economic expansion has been due to an increase of 93.1 percent in the number of cattle slaughtered and an increase of 7.4 percent in average fed-cattle weight even though boxed beef cut-out values decreased 2.1 percent over this same time period. From 1980 to 1986, the wholesale boxed beef cut-out value dropped about \$15 per hundred pounds (Figure 16). However, the value of fed cattle slaughtered in Kansas continued to increase during this time because the increase in total beef tonnage offset the price decline. During the last half of the '80s, the tonnage stabilized, but the whole-

sale price of beef increased more than \$20 per hundred pounds from 1986 to 1990, allowing the value of fed-cattle slaughtered to increase. Since 1990, the wholesale price of beef has decreased at a fairly steady rate, but the value of slaughter has been either relatively constant or increasing due to an increase in the tonnage.

Kansas slaughtered more fed cattle than any other state from 1985 through 1990. Since 1990, the No. 1 state in terms of commercial slaughter has oscillated between Kansas and Nebraska (Figure 17). As with fed-cattle marketings, Kansas had the fastest growth rate of fed cattle slaughtered in the last 15 years when compared to other major cattle processing states (Table 10). At the same time, California and Iowa have shown the biggest decreases. Kansas has increased its share of total U.S. slaughter from 10.4 percent in 1981 to 19.1 percent in 1996.

Table 10 presents the number and average live weight of cattle slaughtered commercially in the major beef-packing states. Depending on the state, average live weight in 1996 was from 7.4 to 16.4 percent higher than in 1981. The average live weight has been trending up for all of the major cattle packing states since 1980 (Figure 18). California and Colorado have consistently processed the heaviest cattle and Texas has consistently processed the lightest cattle. The average finished weight in California has been more than 1,200 pounds since 1990, which is 100 pounds heavier than it was 10 years earlier. The average live weight of cattle

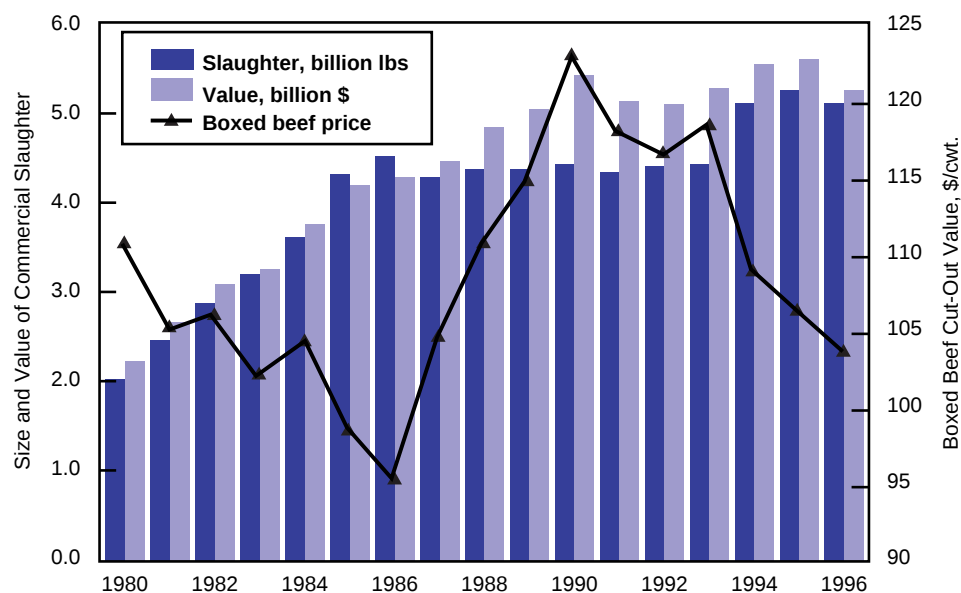


Figure 16. Size and Value of Annual Commercial Slaughter in Kansas

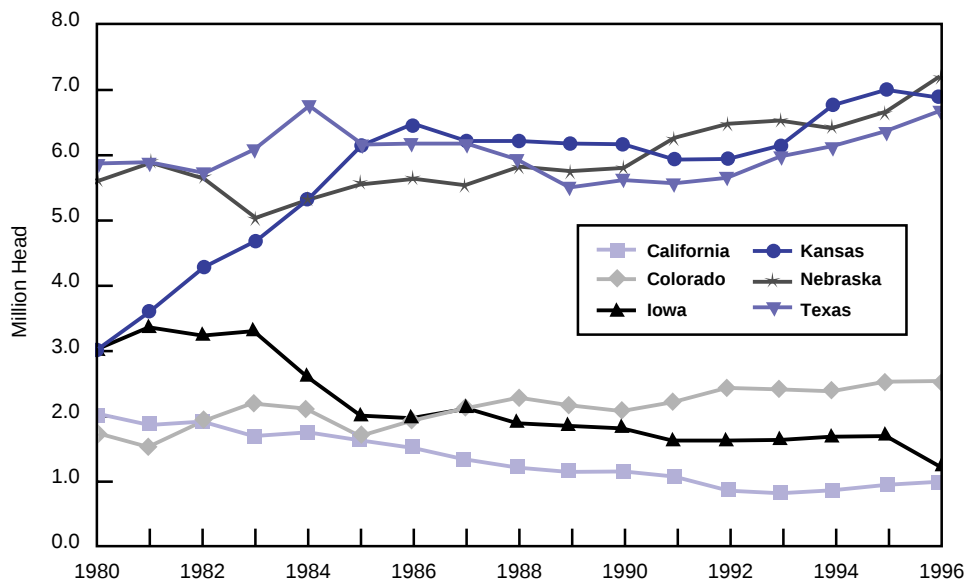


Figure 17. Annual Commercial Slaughter in Major Processing States

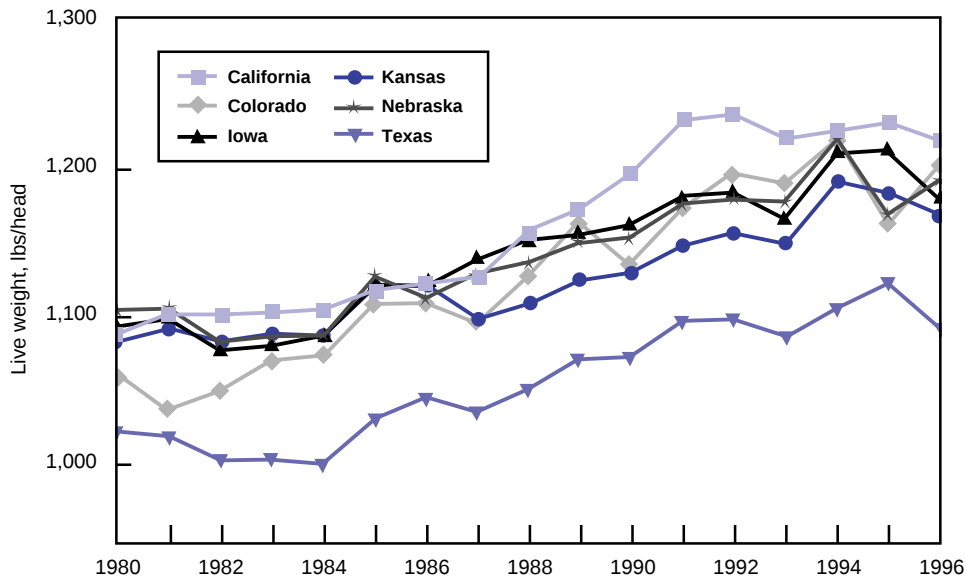


Figure 18. Average Live Weight of Commercial Beef Slaughter

slaughtered in Kansas increased about 80 pounds from 1981 to 1996, but was the second-lowest of the six major slaughtering states. Texas had the lowest average live weight of commercial cattle slaughtered during 1996, averaging almost 80 pounds less than cattle slaughtered in Kansas and 130 pounds less than California. The differences in weight are attributed to the type of cattle being fed and the way they are managed.

In addition to the value of cattle purchased and meat sold, the beef-processing industry also has a major effect on the state's economy as an employer. The number of employees and

the total payroll for the meat-packing industry has been growing steadily since 1981 (Figure 19). The number of employees in the meat-packing industry increased from slightly more than 6,000 in 1981 to more than 13,000 in 1994. The annual payroll increased from slightly less than \$120 million to more than \$276 million during this same time period. In contrast, the opposite trend occurred in the oil and extraction industry. The number of employees and annual payroll decreased dramatically from the early 1980s to the mid-1990s. The aircraft and parts industry continues to be a much larger industry in terms of em-

employees and payroll than the meat-packing industry, but the gap between them has narrowed since 1981. In 1981, the number of people employed in the meat-packing industry was only 15 percent of the number of people employed in the aircraft industry. However, in 1994 the meat-packing industry had 40 percent as many employees as the aircraft industry. The payroll of the meat-packing industry was 13 percent of the aircraft industry in 1981 and increased to 21 percent in 1994.

Crop Production

The number of cattle on feed in Kansas increased by almost 1 million head (100 percent) from January 1, 1982, to January 1, 1997 (Table 2). A concern directly related to increasing the number of cattle fed is whether enough feed is produced in the state or can be economically imported from other states to support increased feed requirements. Table 11 lists the crop production for selected years in Kansas.

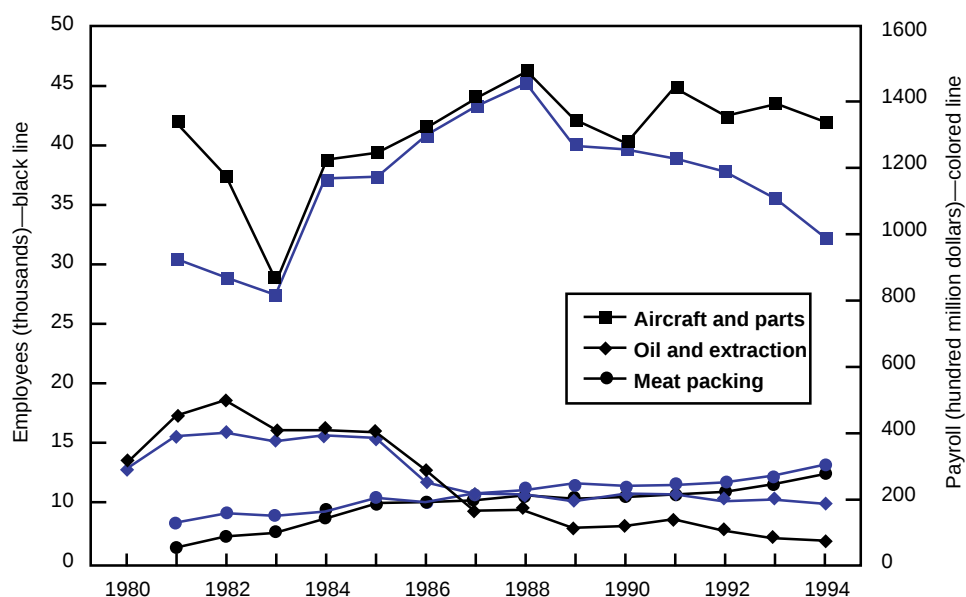


Figure 19. Number of Employees and Annual Payroll of Major Kansas Industries

Source: U.S. Bureau of the Census.

Table 11. Annual Kansas Crop Production

Feedstuff	1981	1986	1991	1995	1996	----- Percent change -----			
						96/95	96/91	96/86	96/81
Grains (million bushels)									
Wheat	305	337	363	286	255	− 10.8	− 29.7	− 24.2	− 16.3
Corn	159	182	206	244	357	46.2	73.2	96.7	125.0
Sorghum	239	311	176	174	354	104.0	100.8	13.8	48.5
Forages (thousand tons)									
Sorghum silage	3,780	1,820	1,000	800	1,680	110.0	68.0	− 7.7	− 55.6
Corn silage	2,890	1,520	1,820	1,755	1,950	11.1	7.1	28.3	− 32.5
Alfalfa hay	3,600	3,510	2,480	3,230	3,440	6.5	38.7	− 2.0	− 4.4
Other hay	2,470	2,880	2,550	3,325	3,570	7.4	40.0	24.0	44.5

Source: Kansas Farm Facts, Kansas Agricultural Statistics.

Table 12 shows estimated annual feed needs of Kansas feedlots at several levels of cattle on feed. Based on the estimated feed requirements in Table 12, crop production in Kansas greatly exceeds the annual feedyard needs. However, while cattle feeding is the biggest single user of feedgrains in the state, other livestock enterprises also compete for their use. Also, Kansas feeders must compete with Texas, Colorado, Oklahoma, Arizona and New Mexico for Kansas-produced feedgrains. Corn and grain sorghum (milo) are the primary feedgrains used in Kansas feedlots. Wheat is fed extensively

when the cost approaches 105 to 110 percent of corn on a per-bushel basis, as was the case in 1990 and 1991. Alfalfa hay, corn silage, and sorghum silage supply the bulk of roughages fed in Kansas feedlots. Molasses, mill feeds, fat, distillers' products and other by-products are also fed as economics dictates. Because Kansas has abundant supplies of feedgrains and roughages to help meet the feed requirements of the large feedlot industry, there is less reliance on imported feed from other states. Availability of locally raised feed helps keep feeding costs low, thus encouraging cattle feeding in the state.

Table 12. *Estimated Annual Feed Needs of Kansas Feedyards*

Feedstuff	Average number of cattle on feed (million head)		
	1.6	1.8	2.0
Grain (million bushels)	249.8	281.0	312.2
Silage (thousand tons) ^a	323.7	364.2	404.7
Hay (thousand tons) ^a	755.4	849.8	944.3
Supplement (thousand tons)	249.7	280.9	312.1
By-products (thousand tons)	454.7	511.5	568.4
Water (million gallons)	5,006	5,632	6,257

^a Forage fed is assumed to be 70% hay and 30% silage.

Source: K-State estimate.

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