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J L. Parcell

Kevin C. Dhuyvetter

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Abstract

Trends in the size of swine operations in Kansas and the V. S. are toward fewer and larger operations. The number of operations in Kansas and the U.S. continues to decline; however, the number of hogs marketed has increased because of an increase in operation size. Kansas producers have increased operation size at a slower rate compared to U.S. producers. Kansas ranks tenth nationally in hogs marketed. A migration of swine production from eastern, central, and northern Kansas to southwest Kansas has occurred in the past 5 years.; Swine Day, Manhattan, KS, November 20, 1997

Keywords

Swine day, 1997; Kansas Agricultural Experiment Station contribution; no. 98-142-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 795; Swine; Swine operations; Hog marketings; Trends

TRENDS IN THE SWINE INDUSTRY: OPERATIONS AND MARKETINGS

J. L. Parcell[1] and K. C. Dhuyvetter[2]

Summary

Trends in the size of swine operations in Kansas and the U.S. are toward fewer and larger operations. The number of operations in Kansas and the U.S. continues to decline; however, the number of hogs marketed has increased because of an increase in operation size. Kansas producers have increased operation size at a slower rate compared to U.S. producers. Kansas ranks *tenth* nationally in hogs marketed. A migration of swine production from eastern, central, and northern Kansas to southwest Kansas has occurred in the past 5 years.

(Key Words: Swine Operations, Hog Marketings, Trends.)

Introduction

The Kansas and the U.S. swine industries have undergone numerous structural changes in the past 15 years. Structural change is motivated by profitability. Swine operations, large or small, locate in areas where they can receive the highest rate of return and where the rate of return to swine production is larger than that of alternative enterprises.

Producers in Kansas need to be aware of where they rate relative to U.S. production and marketing trends. Determining if Kansas swine production is expanding, contracting, or stable and in what locations of the state changes are occurring is important for production, marketing, and policy decisions. The focus of this report is on trends in the number and size of swine operations and hog marketings for Kansas and the U.S.

Procedures

Number of swine operations, hogs marketed annually, annual marketings per operation, and inventory by size of operation for Kansas and the U.S. were obtained from various issues of the United States Department of Agriculture (USDA) Hogs and Pigs report. Hog marketings by state were obtained from various issues of the USDA's Meat Animals Production, Disposition, and Income report. Kansas pig crop data were obtained from Kansas *Farm Facts* (Kansas Department of Agriculture).

Number and Size of Operations

The number of swine operations has declined substantially over the last 15 years for Kansas and the U.S. (Table 1 and Figure 1). From 1980 to the present, Kansas has experienced a 71% decline in the number of operations, and the number of U.S. hog operations has declined by 77%. These are annual declines of 7.4% and 8.7% for Kansas and the U.S., respectively. The annual decline in swine operations has decreased for Kansas and increased for the U.S., and over the past 6 years, the number of operations has declined at annual rates of 6.2% in Kansas and 8.9% in the U.S. However, the number of hogs marketed per operation during this time has increased dramatically to ultimately increase the total number of hogs marketed annually (Table 1 and Figure 2).

[1]Department of Agricultural Economics.
[2]Northeast Area Extension Office.

This increase has been larger for the U.S. than Kansas during the past 5 years; however, these values converged in 1996. Thus, Kansas producers are becoming larger at a slower rate compared to other producers in the U.S. However, Kansas producers have historically been larger, which decreases their potential rate of expansion.

Table 2 indicates how operation size has grown in Kansas and for selected states in the U.S. The general trend has been toward operations larger than 1000 head. In Kansas, not much change has occurred in the distribution of operations, but a major change has occurred in inventories. This increase in operation size is related directly to the economies of scale (i.e., decreasing average cost by becoming larger) and marketing advantages of large-scale swine production. This has forced medium and small producers to become larger to compete in the marketplace to take advantage of genetics, health risks, and marketing methods.

States not having laws to deter corporate hog farming are increasing the percent of inventory for large operations at a staggering rate. For instance, larger operations in Oklahoma account for 95% of the inventory within the state. This structural change coincided with the opening of the Seaboard hog processing plant in Guyman, Oklahoma. These changes in operation size have influenced the level and location of swine production in the U.S.

Hog Marketings

Table 3 shows the rankings of the 10 largest hog-producing states and their shares of the U.S. market for 1996. Also shown is each state's rank and share in 1991. This indicates in which states hog production has increased and decreased because of expansion, relocation, entries, and exits. Kansas has maintained the rank of *tenth*. The small loss of market share is due to the increase in the number of hogs marketed in the U.S. over the previous 5 years and not to a decline in the number of hogs marketed in Kansas. Two states stand out as growing rapidly, North Carolina and Oklahoma. Although North Carolina has experienced substantial growth during the past 10 years, Oklahoma is only beginning to experience growth.

Table 4 shows the market share of U.S. hog marketings for selected states from 1980 through 1996. Similarly, Figures 3 and 4, respectively, plot the market share of hogs marketed for Kansas compared to neighboring states to the south and west and neighboring states to the north and east (Iowa was not included because of the large market share).

Oklahoma and Colorado have each experienced increased market share with the opening of the Seaboard hog processing plant in Guyman, Oklahoma. How much these states will continue to increase market share is uncertain. Clearly, the Kansas swine industry has not experienced the same growth pattern as these states.

Missouri and Nebraska have experienced large fluctuations in market share. Recently, Missouri has overtaken Nebraska, primarily because of expansions in Premium Standard Farms, Murphy Family Farms, and Continental Grain. The 5-year trend in Nebraska is a declining market share. Missouri has experienced much more market share variability during the past 5 years.

Figures 5 and 6 summarize the geographic distribution of the Kansas pig crops for 1991 and 1996, respectively. Pig production has shifted from eastern, central, and northern Kansas to southwest Kansas. Since 1991, the market share of the Kansas pig crop in the southwest has increased from 11% to 36% or from 255,000 to 927,000 (a 263% increase). This increase coincides with the opening of the Seaboard plant in Guyman, Oklahoma.

Table 1. Numbers of Swine Operations and Marketings in Kansas and U.S.

	Number of Operations		Hogs Marketed (1000 head)		Marketings per Operation (head)	
Year	Kansas	U.S.	Kansas	U.S.	Kansas	U.S.
1980	14,000	674,800	3,300	100,651	236	149
1985	8,300	391,000	2,636	86,731	318	222
1990	6,000	275,440	2,476	89,373	413	324
1995	4,300	181,750	2,203	102,684	512	565
1996	4,100	157,450	2,553	101,809	623	647

Source: USDA Hogs and Pigs.

Table 2. Percent of Operations and Inventory by Inventory Size*

		1-99 Head		100-499 Head		500-999 Head		1000+ Head	
State	Year	Oper	Inv	Oper	Inv	Oper	Inv	Oper	Inv
KS	1985	60.9	8.9	30.7	37.7	6.8	53.4	–	–
	1990	51.0	7.5	40.0	36.5	5.7	16.0	3.5	40.0
	1995	53.5	5.0	35.0	22.0	6.3	15.0	5.2	58.0
	1996	58.5	4.5	29.0	18.0	7.6	15.0	4.9	62.5
NC	1985	88.3	10.4	7.8	12.5	3.9	77.1	–	–
	1990	83.0	4.2	8.0	5.3	3.0	5.6	6.0	87.0
	1995	67.7	1.0	7.1	1.5	4.0	2.5	21.2	95.0
	1996	66.7	0.5	5.2	1.0	3.2	1.5	25.0	97.0
NE	1985	44.3	6.3	42.9	37.1	12.8	56.5	–	–
	1990	36.0	4.0	47.0	33.0	11.4	23.0	5.6	40.0
	1995	32.0	3.0	47.0	27.0	13.0	21.5	8.0	48.5
	1996	32.5	3.0	43.8	23.0	13.8	20.0	10.0	54.0
IA	1985	30.7	3.9	49.8	39.4	21.0	56.7	–	–
	1990	26.0	2.5	47.0	31.0	18.5	32.5	8.5	34.0
	1995	20.4	1.5	44.0	22.0	22.8	28.0	12.8	48.5
	1996	21.9	1.0	41.9	18.0	21.9	25.0	14.3	56.0
MO	1985	65.9	14.8	28.3	44.7	5.8	40.5	–	–
	1990	62.0	10.0	29.5	39.0	6.0	23.5	2.5	27.5
	1995	51.7	3.5	31.7	16.5	10.0	16.0	6.5	64.0
	1996	51.4	2.0	32.9	12.0	10.0	12.0	5.7	74.0
OK	1985	–	–	–	–	–	–	–	–
	1990	–	–	–	–	–	–	–	–
	1995	94.1	2.5	2.9	3.0	0.6	2.0	2.4	92.5
	1996	94.1	2.0	2.4	2.0	0.6	1.0	2.9	95.0
U.S.	1985	73.8	10.3	19.5	34.2	6.7	55.5	–	–
	1990	64.7	6.5	25.0	28.0	6.5	23.5	3.8	42.0
	1995	59.4	3.5	25.0	18.0	8.6	17.5	6.9	61.0
	1996	61.0	3.0	23.0	15.0	8.5	15.0	7.6	67.0

*In 1990 a larger size class of producers with inventory of 1000 plus was added.
Source: USDA Hogs and Pigs.

Table 3. Hog Marketings of Leading States

1996 Rank	1991 Rank	State	1996 Hogs Marketed (1000 Head)	1996 Share of U.S. (%)	1991 Share of U.S. (%)
1	1	Iowa	22,190	21.80	24.71
2	6	N. Carolina	14,234	13.98	6.19
3	3	Minnesota	9,097	8.94	8.50
4	2	Illinois	8,315	8.17	10.21
5	7	Missouri	6,718	6.60	5.18
6	4	Indiana	6,634	6.52	7.93
7	5	Nebraska	6,453	6.34	7.92
8	8	Ohio	3,117	3.06	3.66
9	22	Oklahoma	2,836	2.79	0.45
10	10	Kansas	2,553	2.51	2.68

Source: USDA Meat Animals Production, Disposition, and Income.

Table 4. Share of Annual Hog Marketings, Selected States (1980-1996)

Year	KS	NC	NE	IA	OK	CO	MO
1980	3.28	3.85	6.56	23.26	0.54	0.72	7.23
1981	3.20	3.79	6.40	24.30	0.54	0.48	6.85
1982	3.17	3.53	6.92	26.85	0.35	0.61	6.01
1983	3.09	3.96	6.76	25.40	0.29	0.56	6.89
1984	2.99	4.15	6.76	25.52	0.38	0.52	6.71
1985	3.04	4.32	6.49	26.30	0.34	0.36	6.55
1986	2.98	4.57	7.33	25.76	0.34	0.41	5.91
1987	2.72	4.93	7.53	24.87	0.37	0.36	5.73
1988	2.76	5.01	7.36	24.87	0.38	0.38	5.64
1989	2.81	5.62	7.62	24.35	0.46	0.42	5.17
1990	2.77	5.64	7.74	24.61	0.48	0.47	5.02
1991	2.68	6.19	7.92	24.71	0.45	0.61	5.22
1992	2.54	7.08	7.72	25.67	0.44	0.72	4.91
1993	2.52	8.27	7.65	24.64	0.60	0.84	5.20
1994	2.33	9.78	7.29	24.66	1.01	1.08	5.81
1995	2.15	11.97	6.98	22.86	1.57	0.99	6.84
1996	2.51	13.98	6.34	21.80	2.79	1.35	6.60

Source: USDA Meat Animals Production, Disposition, and Income.

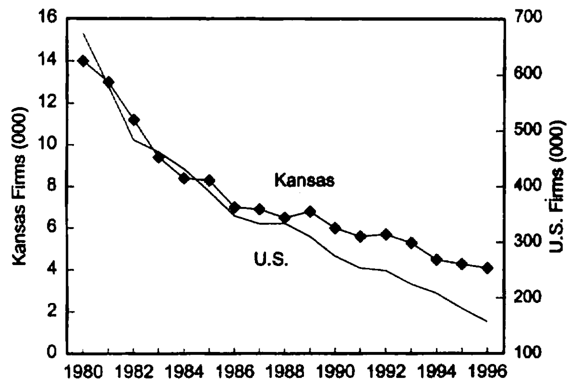

Figure 1. **Number of Swine Operations, Kansas and U.S.**

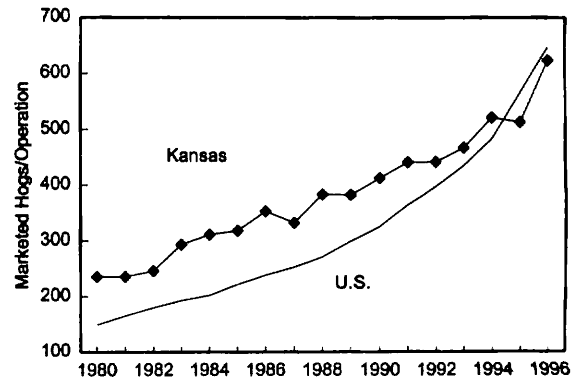

Figure 2. **Numbers of Hogs Marketed per Operation, Kansas and U.S.**

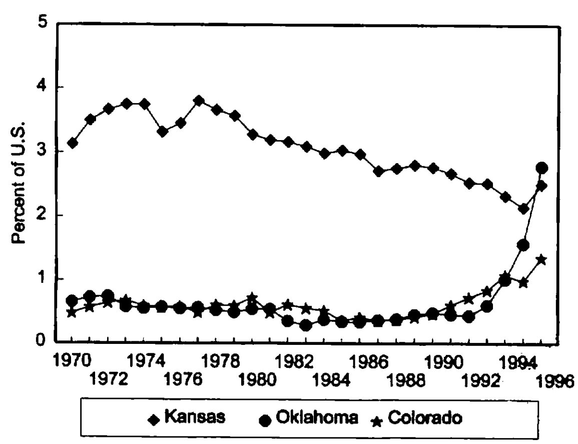

Figure 3. **Shares of Marketings for Colorado, Kansas, and Oklahoma**

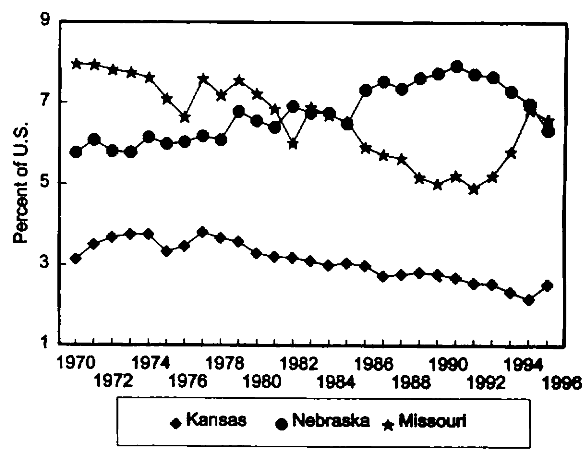

Figure 4. **Shares of Marketings for Kansas, Missouri, and Nebraska.**

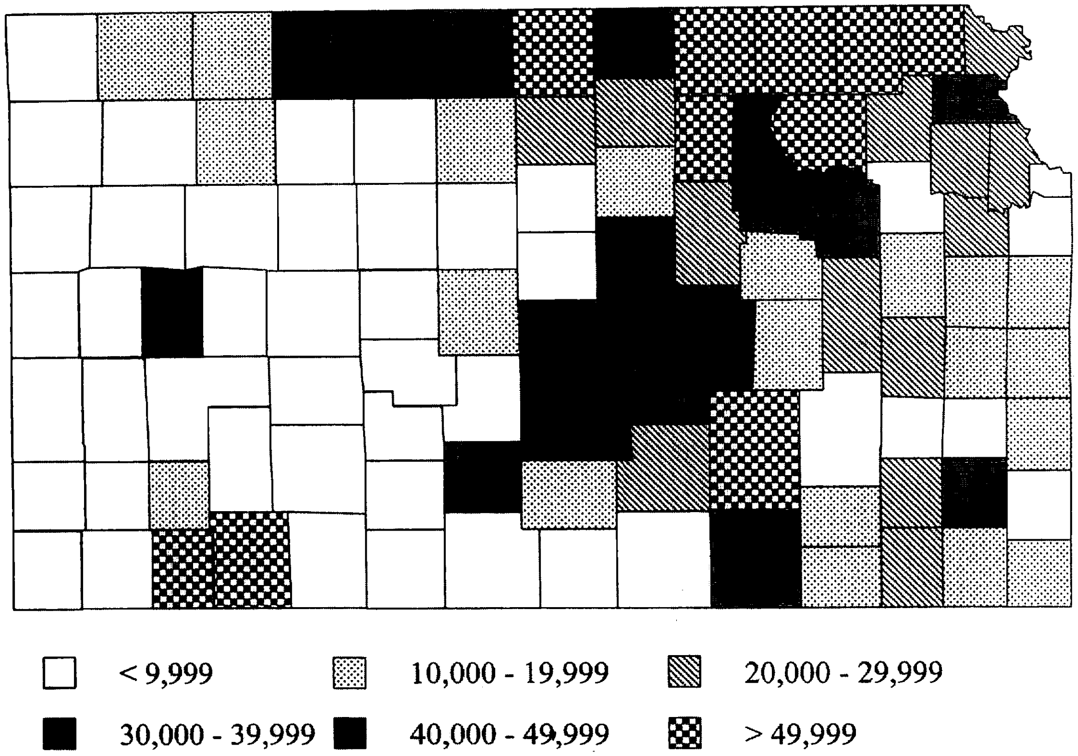

Figure 5. Geographic Distribution of Pig Crop in Kansas, 1991 (Total = 2.3 million head)

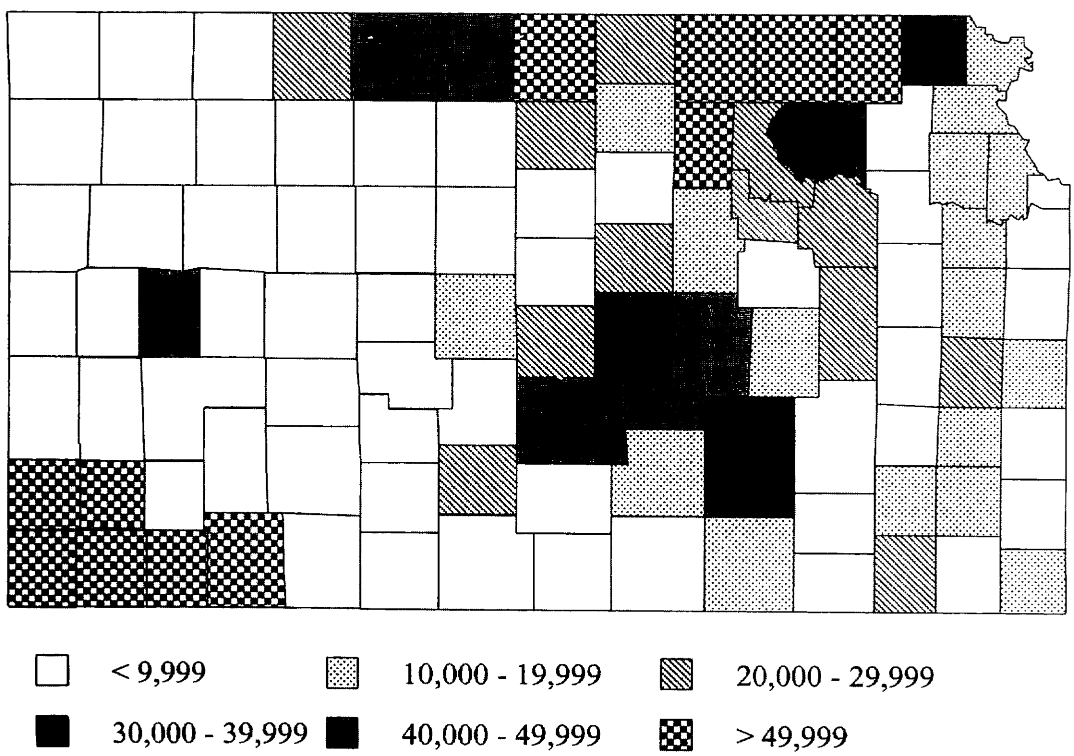

Figure 6. Geographic Distribution of Pig Crop in Kansas, 1996 (Total = 2.6 million head)