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Changing Swine Production and Market Movement Patterns in South Dakota, Late 1950's to 1980

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CHANGING SWINE PRODUCTION AND MARKET MOVEMENT PATTERNS

IN SOUTH DAKOTA, LATE 1950's to 1980

by

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SUMMARY AND CONCLUSIONS

Several major changes in production and marketing patterns of South Dakota swine producers from the late 1950's to 1980 are examined in this report.

Statewide Production Trends

The economic structure of South Dakota's swine industry is rapidly changing. For example the number of South Dakota swine producers declined 60 percent from 1959 to 1978. Total farm numbers declined 29 percent during this same period. In 1959, three of five South Dakota farmers produced hogs and pigs; in 1978 less than one-third were involved in swine production.

The average size of swine enterprise in South Dakota in 1978--223 hogs and pigs sold per farm--is three times the average in 1959. In 1959, 52.3 percent of South Dakota's 32,500 swine producers sold 50 - 199 head per year. By 1978, 48.5 percent of South Dakota's 13,000 swine producers sold 100 - 499 head per year and marketed 48.1 percent of all hogs and pigs.

Large swine enterprises have become fairly common. In 1978, the 300 largest South Dakota swine producers each sold 1,000 or more hogs and pigs each year, compared to only five producers in 1959. These large producers (2.3 percent of the State total) marketed an average of 2,200 hogs and pigs per farm and sold 22.8 percent of the swine marketed from South Dakota farms.

Younger producers (less than 35 years old) increased their share of hog and pig marketings from 16 percent in 1969 to 25 percent in 1978. This change resulted from higher number of young people entering farming in the 1970's compared to the 1960's and young farmers having larger swine production units than older producers.

Swine production is also related to farmland ownership and acreage operated. Part-owners have the highest percent of farms involved in swine production and the largest average size of swine enterprise. Swine production is becoming more concentrated on relatively large acreage farms (over 1,000 acres operated) and very small acreage (less than 100 acres operated) farms.

Feeder pig production and sales increased 80 percent from 1969 to 1978 while slaughter hog production declined slightly. Feeder pigs comprised 22 percent of the total number of hogs and pigs sold in 1978, up from 13 percent in 1969. Almost one of every four swine producers sells feeder pigs and many of these producers are completely specialized in feeder pig production.

Regional Trends in Swine Production

Swine production is concentrated in east central and southeastern South Dakota. It is expanding most rapidly on the western fringes of this concentrated swine area. The northeast region is the only region of actual decline in swine marketings from 1959-1978.

Geographic concentration is directly related to the marketing needs of agribusines serving swine producers, especially packers and market outlets desiring to reduce procurement and selling costs. Swine production densities--the number of hogs and pigs sold per rural square mile--in major hog production areas of Iowa and Illinois commonly range from 200 to 400. In 1978, sixteen counties in eastern and southeastern South Dakota had swine production densities exceeding 100. Production density was highest in Hutchinson and Union counties--over 200.

Production densities rapidly decline as one moves north and west from this 16 county area. Twenty three counties, mostly in central and northestern South Daktoa, have swine production densities of 30 - 95 and most western counties have production densities of less than 30.

Feeder pig production has increased in most counties of the State. The largest increases have occurred in western, central and portions of southeastern South Dakota. Since 1969, growth in feeder pig production has been the principal explanation of regional shifts in swine marketings.

Market Channel Trends

Market channels used by South Dakota swine roducers has changed considerably. Producers have increased direct shipments of slaughter hogs to packers and decreased their use of terminal markets. By the early 1970's, direct shipments to packers was the principal market channel used for slaughter hog sales which was accompanied by an increased perentage of hogs sold on a carcass basis (grade and yield).

Direct sale of feeder pigs to other farms is the principal method of marketing feeder pigs followed by marketing of feeder pigs through auctions.

Results from a 1980 marketing survey (and earlier surveys) indicated regional differences in producer selection of market channels. Western South Dakota swine producers tend to use auctions more while the greatest use of terminal markets is by producers in the east- central regions. Packers were the principal market channel for producers in central and southeastern South Dakota while buyers were more important in north central and northeastern South Dakota.

Most slaughter hogs and feeder pigs were sold within the producers home region. Interregional movement of slaughter hogs from respondents farms were mostly direct shipments to packers or shipments to terminal markets in Sioux Falls and Sioux City. Interregional movements of feeder pigs were primarily shipments to Sioux Falls, Huron or out-of-state.

INTRODUCTION

The economic structure of the swine industry in South Dakota and the United States is changing rapidly. For example, the number of South Dakota swine producers declined 60 percent from 1959 to 1978 and the average number of hogs and pigs sold per farm tripled. Rapid growth in production unit size has coincided with development of hog confinement technology, improved nutrition and disease control practices.

Changes in the swine industry are significant to the South Dakota economy because South Dakota is one of the top ten swine production states with about 3 million hogs and pigs marketed each year. Cash receipts from swine marketings are 10-12 percent of total agricultural sales from South Dakota farms. Cash receipts from South Dakota swine marketings in 1980 was $277.6 million dollars which amounted to 3.2 percent of U.S. swine marketings.[1]

Expansion of the swine industry in South Dakota has been accompanied with regional shifts in swine production and marketing. These regional shifts reflect the management decisions of thousands of producers which in turn affect location decisions of market outlets (auctions, buying stations, terminal markets and packing plants). Pork producers, like other business people, respond to economic incentives which include profitability of hog enterprises over time relative to other enterprises or to non-agricultural employment and investment opportunities. Regional shifts in production and marketing patterns are usually reflections of several interacting factors which affect relative profitability.

This report presents the following information on and analyses of changing swine production and marketing patterns in South Dakota:

1. Major characteristics of South Dakota swine producers and farms, 1959-1978,

2. Hog and pig marketings and market density by region of South Dakota, 1959-1978.

3. Growth of the South Dakota feeder pig industry by region, 1969-1978.

4. Trends in feeder pig and slaughter hog market channels and market movements.

Findings from earlier swine marketing reports are updated and extended in this study. This report is intended to provide readers with a detailed information base for use in assessing the future of the swine industry in South Dakota.

Data Sources Used in this Report

U.S. Census of Agriculture reports from 1959-1978 were used to obtain data on characteristics of South Dakota swine producers and swine farms[2]. County data on farm marketings of hogs and pigs was also obtained from this source. It is assumed that production patterns are reflected more accurately by data on farm marketings of hogs and pigs than by inventory data.

Swine production density was calculated by dividing the number of hogs and/or pigs marketed by the number of rural square miles in each county or region. Swine production density is of concern to marketing firms and agencies because procurement costs are lowered by assured high-density, high-volume supply. Regional changes in swine production density are important indicators to marketing firms in determining location of swine marketing outlets and processing plants.

For presentation purposes, counties are grouped by regions (usually Crop Reporting Districts) and regional trends are reported. Tables containing county-level data are also available in Appendix 1.

A 1980 marketing survey of nearly 600 South Dakota swine producers provides regional information on market channels used and market movements[3]. Comparisons are made to results of earlier surveys originally published in South Dakota Livestock Marketing - 1972[4].

CHANGING CHARACTERISTICS OF SOUTH DAKOTA SWINE FARMS

Swine production has increased in total volume and has become more specialized and concentrated in the United States and in South Dakota. From 1959 to 1978, South Dakota maintained its share of U.S. swine production (about 3 percent) and total numbers of hogs and pigs sold from South Dakota farms increased 15 percent.

The number of farms selling hogs and pigs has continually declined. In 1978, 470 thousand U.S. farms sold hogs and pigs. This is only 37 percent of U.S. farms which sold hogs and pigs in 1959. Almost 13 thousand South Dakota farms sold hogs and pigs in 1978 compared to 32.5 thousand in 1959 (Table 1).

Swine production has also become more specialized. In 1959, 58.3 percent of South Dakota farms sold hogs and pigs; in 1978 less than one-third (32.7 percent) did.

South Dakota and U.S. feeder pig production has greatly increased since first reported in 1969. From 1969 to 1978, U.S. feeder pig production increased almost five million head or 33 percent. During the same time period, South Dakota feeder pig production increased from 363 thousand to 653 thousand head or 80 percent. Feeder pig comprised about 22 percent of all hogs and pigs sold in the U.S. and in South Dakota (Table 2). Almost one of every four swine producers sold feeder pigs. Many of these producers are completely specialized in feeder pig production.

Changing Characteristics of Swine Operations

Swine production patterns are related to changing characteristics of swine farm operations including land tenure, operator age and farm size (Tables 3, 4, 5)[5].

Land tenure. Increased capital investment in swine production requires continued control of land and facilities for many years. Because land ownership generally provides more security than complete tenancy, swine producers increasingly own some farmland as part of their asset portfolio.

Part-owners, who operate both owned and rented land, have the highest percent of farms involved in swine production (39.1 percent) and largest average size of swine enterprise (240 hogs and pigs marketed). Part owners tend to be middle-aged (one-half are 35-54 years of age) and operate larger farms than tenants or full owners--factors contributing to their dominant position in hog production.

Full owners marketed 28 percent of South Dakota's hogs and pigs in 1978. Full owners tend to be older farm operators with relatively low total sales per farm.

Tenant farmers, who rent all farmland operated, represented over 30 percent of all South Dakota farmers in the 1950's and most of them raised hogs. By 1978, only one of every six South Dakota farmers was a tenant and only 35.8 percent of tenants raised hogs (Table 3). Less than one-seventh (14.1 percent) of South Dakota hog production was from tenant farms (Table 4). Tenant farms also had the lowest average number of hogs and pigs sold per farm (192) in 1978 (Table 5).

Operator age. A higher percentage of young producers (less than 35 years old) are involved in swine production than older producers. Middle aged producers (35-54 years of age) have the largest average size hog operations while older producers generally have the smallest swine enterprises. Average swine enterprise size has increased over time for all age groups.

Young producers also increased their share of hog and pig marketings from 16.7 percent in 1969 to 25 percent in 1978 (Table 4). During the 1970's young people entered farming at a higher rate than any time period since the late 1940's. Hog production was very profitable during most of this period and young farmers tended to start with larger hog operations than older producers.

Farm size. Hog production is becoming more concentrated on large (over 1,000 acres operated) and very small (less than 100 acres operated) acreage farms. In 1959 only 16 percent of swine production was on these farm sizes compared to over 40 percent in 1978 (Table 4). Although the number of South Dakota swine producers declined 60 percent from 1959 to 1978 the number of swine producers operating less than 100 acres actually increased. However, a majority of South Dakota swine producer operate farms of 260-999 acres.

Three major factors explain these trends. First, the number of South Dakota farm operators with very small and large acreage operations has increased since 1959. The greatest declines have been in number of farm opertions of 100-499 acres. Second, there has been some westward movement in South Dakota of swine production and most farms are larger in acres operated as one moves west across South Dakota. Finally, most hog operations are compatible with large and small acreage farms and modest size hog operations are compatible with part-time farmers who tend to live on smaller acreage farms.

Economic class. Swine production is generally found on moderate sized farms but is trending rapidly toward the larger units.

Large, medium, and small farms were classified based on gross farm sales reported. Gross farm sales was adjusted for changes in farmers purchasing power in each time period. Since the purchasing power in 1978 was roughly one-half that in 1959 and 1969, the sales volume used to characterize large, medium, and small farms in 1978 was double that for 1959 and 1969, as shown below:

Economic class	Sales volume in 1950 and 1969	Sales volume in 1978
Large	$100,000 or more	$200,000 or more
Medium	$20,000 - $99,999	$40,000 - $199,999
Small	Less than $20,000	Less than $40,000

Operators of large farms were only 2 percent of South Dakota's swine producers in 1978, but they marketed nearly 20 percent of the states hogs and pigs. These farmers tended to specialize in swine production with average marketings of 1,480 hogs and pigs per year and 1978 swine sales volume of over $150,000 per farm.

Large farm swine enterprises are a recent development--in 1969 only seven percent of hogs and pigs were shipped from large farms. Furthermore, average enterprise size is increasing reflecting trends of greater capital intensity and confinement hog production.

Most hogs (58 percent in 1978) are marketed from medium size farm operations which represent 46.8 percent of swine producers. One fifth of the medium size hog farms are highly specialized in swine production each marketing more than $40,000 of hogs and pigs in 1978. A higher proportion of medium size farm operations are involved in swine production (44.5 percent) than large farm operations (38.9 percent) and small farm operations (26.4 percent)(Table 3). For medium size farms, average swine enterprise size has increased over time.

Small farms dominated hog production as recently as 1959 when 81.8 percent of swine marketings and 90 percent of producers were from small farm operations. By 1978, only 22.4 percent of hog and pig marketings were from small farm operations which still numbered over one-half of all swine farms. The typical small farm marketed less than 100 hogs and pigs. Average swine enterprise sales volume in 1978 was $7,800.

Swine Enterprise Size

The average size of swine enterprise in South Dakota in 1978--223 hogs and pigs sold per farm--is three times the average in 1959. The distribution of Soutb Dakota swine farm numbers and swine marketings by enterprise size is shown in Table 6.

Data in this table clearly shows the rapid increase in swine enterprise over time. In 1959, the majority of hog producers (52.3 percent) marketed 50-199 hogs and pigs per year and only six percent sold 200 or more hogs and pigs each year. By 1978, nearly half (48.5 percent) of the pork producers marketed 100-499 hogs and pigs each year and nine percent sold 500 or more hogs and pigs each year.

In 1978, the 300 largest South Dakota swine producers each sold 1,000 or more hogs and pigs per year, compared to only five swine producers in 1959. These large producers (2.3 percent of the State total) marketed an average of 2,200 hogs and pigs per farm and sold 22.8 percent of the swine marketed from South Dakota farms (Table 6).

Swine production in South Dakota is still predominantly a family farm operation that has become more specialized and larger in average size over time. Rapid growth in swine enterprise size has coincided with developments in hog confinement technology, improved breeding herd management practices and improved nutrition and disease control. Given these rapid changes in average size and greater specialization in swine production, an important consideration are regional changes in South Dakota swine production.

Table 1. Hog and Pig Statistics, South Dakota and United States, 1959-1978.

	1959	1969	1978
United States:			
Thousands of hog and pig farms	1,273.3	645.1	470.5
Thousands of hogs and pigs sold	89,900	89,313	92,140
Average number of hogs and pigs sold per farm	63	138	196
South Dakota:			
Number of hog and pig farms	32,512	19,366	12,996
Thousand of hogs and pigs sold	2,513	2,700	2,891
Average number of hogs and pigs sold per farm	77	140	223
South Dakota/United States:			
Percent of hog and pig farms	2.55	2.92	2.76
Percent of hogs and pigs sold	3.10	3.01	3.14

Source: U.S. Department of Commerce, Bureau of Census, U.S. Census of Agriculture, U.S. and South Dakota, Vol. 1, 1978, 1969 and 1959 reports.

Table 2. Feeder Pig Statistics, South Dakota and United States, 1969-1978.

	1969	1978
United States:		
Thousands of farms selling feeder pigs	159.4	143.8
Thousands of feeder pigs sold	15,085	20,021
Percent of hog and pig farms selling feeder pigs	24.7	30.6
Feeder pigs sold as percent of hogs and pigs sold	16.9	21.7
South Dakota:		
Number of farms selling feeder pigs	3,145	3,124
Thousands of feeder pigs sold	363.0	653.1
Percent of hog and pig farms selling feeder pigs	16.2	24.5
Feeder pigs sold as percent of hogs and pigs sold	13.5	22.7
South Dakota/United States:		
Percent of feeder pig farms	1.97	2.17
Percent of feeder pigs sold	2.34	3.26

Source: U.S. Department of Commerce, Bureau of Census, U.S. Census of Agriculture, U.S. and South Dakota, Vol. 1, 1978 and 1969 reports.

Table 3. Proportion of South Dakota Farms Selling Hogs and Pigs by Farm Characteristic, 1959-1978.

	1959	1969	1978
	-----percent of farms selling hogs and pigs by each characteristic-----		
Farm Characteristic:			
All farms	58.3	42.3	32.7
Tenure:[a]			
Full owner	55.1	38.1	27.8
Part owner	63.0	50.3	39.1
Tenant	71.4	52.2	35.8
Acres Operated:			
1 - 99 acres	29.9	40.9	28.3
100 - 499 acres	66.0	51.2	33.3
500 - 999 acres	63.5	51.2	40.1
1,000 or more acres	41.6	34.2	28.3
Age of Operator:[b]			
Less than 35 years	na	53.2	38.4
35 - 44 years	na	52.7	36.0
45 - 54 years	na	48.0	35.7
55 - 64 years	na	43.1	30.8
65 years and older	na	28.7	18.0
Economic Sales Class[c]			
Small	53.4	35.9	26.4
Medium	61.3	56.6	44.5
Large	39.2	42.4	38.9

Source: U.S. Department of Commerce, Bureau of Census, U.S. Census of Agriculture, South Dakota, Vol. 1, 1978, 1969 and 1959 reports.

-cont.-

Table 3. Continued.

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[a]Definition of tenure classes:

Full owner - Farm operator owns all of the land operated.

Part owner - Farm operator owns some of the land operated and rents additional land.

Tenant - Farm operator rents or leases all of the land operated.

[b]Operator age data are not available by enterprise in 1959.

[c]Economic class definitions are based on rough adjustments in sales volume needed to maintain comparable purchasing powers by farmers in each time period. The adjustment is based on changes in the Index of Prices Paid for Items Used in Production by U.S. Farmers in each time period. The economic classes of farms are defined as follows:

Large:	1959 and 1969 sales volume of $100,000 and over 1978 sales volume of $200,000 and over
Medium:	1959 and 1969 sales volume of $20,000 to $99,999 1978 sales volume of $40,000 to $199,999
Small:	1959 and 1969 sales volume of less than $20,000 1978 sales volume of less than $40,000

The net impact of this classification system slightly overstates the importance of large and medium farm classes in 1978 relative to 1969 and 1959.

Table 4. Proportion of Hogs and Pigs Sold by Farm Characteristic, 1959-1978.

	1959	1969	1978
	-----percent of hogs and pigs sold-----		
Farm Characteristic:			
All farms	100.0	100.0	100.0
Tenure:[a]			
Full owner	23.3	24.3	28.5
Part owner	46.5	58.7	57.4
Tenant	30.2	20.3	14.1
	100.0	100.0	100.0
Age of Operator:			
Farm Size:			
1 - 99 acres	1.9	3.5	9.2
100 - 499 acres	61.2	43.3	30.2
500 - 999 acres	22.4	29.6	29.5
1,000 or more acres	14.5	23.6	31.1
	100.0	100.0	100.0
Age of Operator:[b]			
Less than 35 years	--	16.7	25.0
35 - 44 years	--	29.6	22.6
45 - 54 years	--	30.3	28.9
55 - 64 years	--	18.8	19.5
65 years and older	--	4.6	4.0
		100.0	100.0
Economic Sales Class[c]			
Small	81.8	33.1	22.4
Medium	17.1	59.8	58.0
Large	1.1	7.1	19.6
	100.0	100.0	100.0

Source: U.S. Department of Commerce, Bureau of Census, U.S. Census of Agriculture, South Dakota, Vol. 1, 1978, 1969 and 1959 reports.

[a, b, c] For explanation, see Table 3.

Table 5. Average Number of Hogs and Pigs Sold Per Farm Selling Hogs and Pigs by Farm Characteristic, 1959-1978.

	1959	1969	1978
Farm Characteristic:			
All farms	77	140	223
Tenure:[a]			
Full owner	76	126	221
Part owner	82	158	240
Tenant	77	125	192
Farm Size:			
1 - 99 acres	38	120	168
100 - 499 acres	76	124	176
500 - 999 acres	79	150	237
1,000 or more acres	92	186	311
Age of Operator:[b]			
Less than 35 years	na	150	214
35 - 44 years	na	169	272
45 - 54 years	na	146	241
55 - 64 years	na	118	183
65 years and older	na	99	129
Economic Sales Class Adjusted for Price Changes:[c]			
Small	68	81	97
Medium	159	207	280
Large	434	574	1,481

Source: U.S. Department of Commerce, Bureau of Census, U.S. Census of Agriculture, South Dakota, Vol. 1, 1978, 1969 and 1959 reports.

[a, b, c] For explanation, see Table 3.

Table 6. Distribution of Farms and Hog Sales by Number of Hogs and Pigs Sold Per Farm, 1959-1978.

Number of hogs and pigs sold per farm	1959	1969[a]	1978	1959	1969[a]	1978
	Percent of farms selling hogs and pigs			Percent of hogs and pigs sold		
1 - 49	41.7	24.9	23.1	na[b]	4.4	2.5
50 - 99	31.5	25.3	19.3	na	12.7	6.2
100 - 199	20.8	27.7	24.0	na	27.0	15.0
200 - 499	5.6	18.8	24.5	na	37.4	33.1
500 - 999	0.4	2.7	6.8	na	11.8	20.4
1000 or more		0.6	2.3	na	6.7	22.8
	100.0	100.0	100.0	na	100.0	100.0
Total number of farms selling hogs and pigs	32,512	18,832	12,996	--	--	--
Thousand of hogs and pigs sold	--	--	--	2,513	2,689	2,891

Source: U.S. Department of Commerce, Bureau of Census, U.S. Census of Agriculture, South Dakota, Vol. 1, 1978, 1969 and 1959 reports.

[a]For 1969, the number of hogs and pigs sold per farm was reported only for farms with gross farm sales of $2,500 or more. Consequently the number of farms and hogs and pigs reported here are slightly less than the numbers reported in Table 1.

[b]Data not published or available.

REGIONAL SHIFTS IN SOUTH DAKOTA SWINE PRODUCTION

Swine production is concentrated in east central and southeastern South Dakota. It is expanding most rapidly on the western fringes of this concentrated swine area.

Geographic concentration is directly related to the marketing needs of the agribusinesses serving swine producers, especially packers and others desiring to reduce procurement and selling costs. Swine production densities--the numbers of hgos and pigs sold per rural square mile--in major hog production areas of Iowa and Illinois commonly range from 200 to 400. In 1978, sixteen counties in eastern and southeastern South Dakota had production densities exceeding 100. These counties are: Brookings, Lake, Moody, Aurora, Davison, Hanson, McCook, Minnehaha, Douglas, Hutchinson, Turner, Lincoln, Bon Homme, Yankton, Clay, and Union. Production density was highest in Hutchinson and Union counties - over 200. (Figure 1)

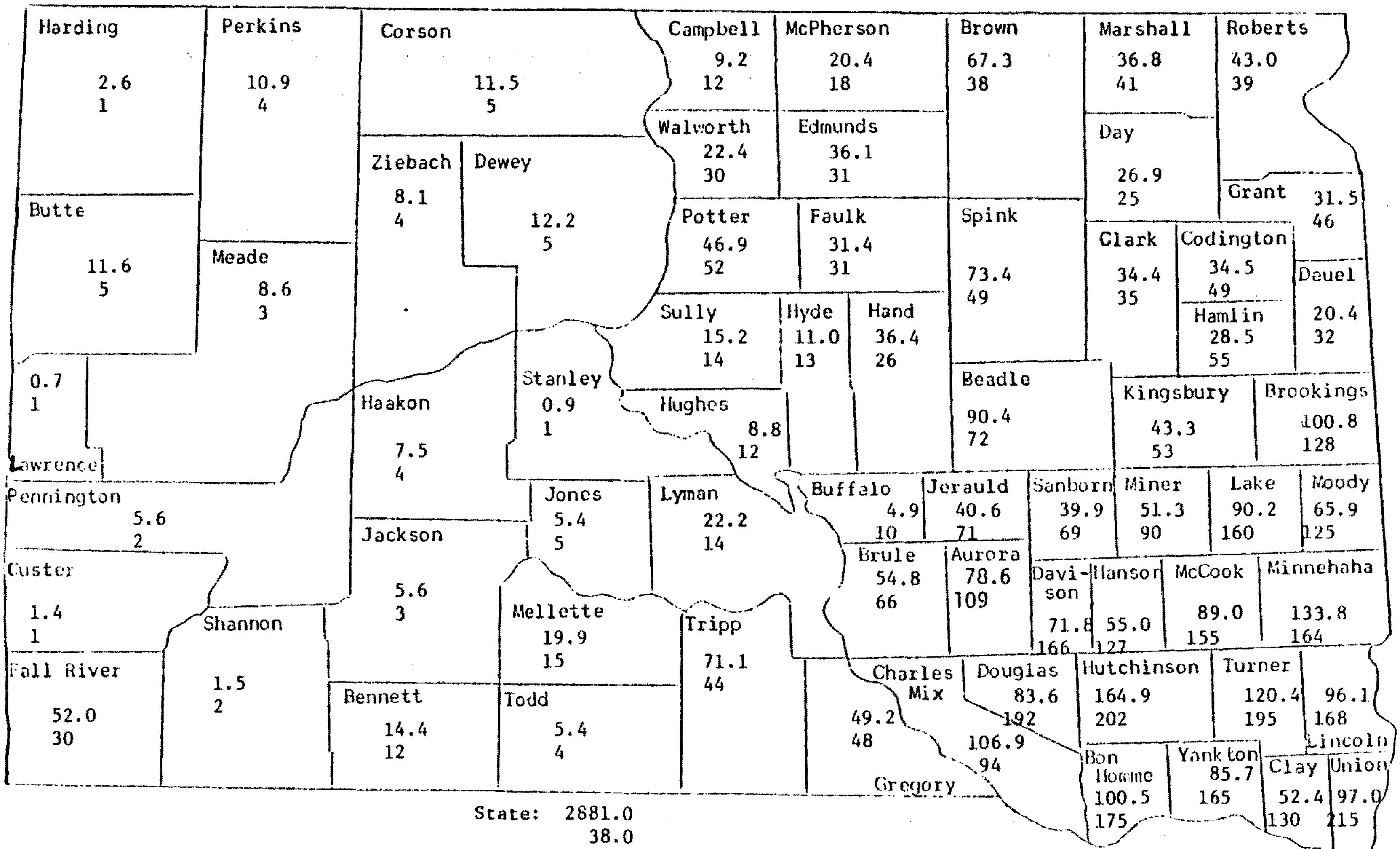
Production densities rapidly decline as one moves north and east from this 16 county area. Twenty three counties, mostly in central and northeastern South Dakota, have swine production densities of 30-95 and most westersn counties have production densities of less than 30.

From 1959 to 1978 annual swine marktings increased by 15 percent. Production density increased from 33.2 hogs and pigs sold per square mile in 1959 to 38 hogs and pigs in 1978.

Regional Swine Production Trends

Regional trends in South Dakota swine production are shown in Tables 7-10 and follow the regional boundaries shown in Figure 2.[7] (Swine production and marketing trends by county are available in Appendix 1).

Figure 1. Hog and Pig Numbers and Density by County, 1978



State: 2881.0
38.0

Top: Thousands of hogs and pigs sold in 1978
Bottom: Density - number of hogs and pigs sold per rural square mile

Source: Compiled from county-level data. U.S. Department of Commerce, Bureau of the Census, U.S. Census of Agriculture, South Dakota, Vol. 1, 1978 report

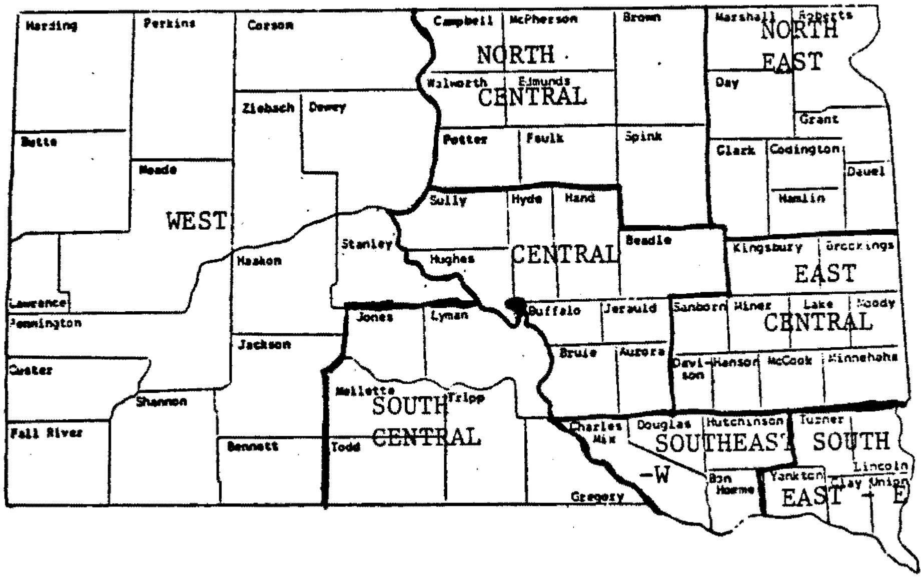


Figure 2. Hog Production Regions of South Dakota

The greatest density of swine production (175 in 1978) is in the southeast-E region. This five county region has traditionally been highest in swine production density. This region and the east central region have experienced little growth in swine marketings from 1959-1978. During this period, swine marketings increased only 1.2 percent in the southeast-E region and 3.1 percent in the east central region.

The principal high-density, high-growth region is the southeast-W region. During the 1959 to 1978 period, swine marketings increased by about 118 thousand head and swine production density increased from 114 to 154 (Table 7).

The central, north central and northeast regions have moderate production densities exceeding 30 hogs and pigs and have shown different trends in swine production. The central and north central regions show increasing swine marketings paced by increases in Aurora, Beadle, Davison, Edmunds, Jerauld, Potter, and Spink counties. The northeast region is the only region of actual decline in swine production during the 1959-1978 period (Table 7).

The south central region showed rapid increases in hog and pig production from 1959 to 1969 with small changes since then. Production densities are very low in the western region (less than 5 hogs and pigs sold per rural square mile) but numbers marketed have been increasing.

In 1978, one of three South Dakota farms sold hogs and pigs. The southeast-W region is the only region where a majority (54.5 percent) of farmers had a swine enterprise. Over 40 percent of farmers in the east central and southeast-E regions also raised hogs and pigs. In 1959, approximately 70-78 percent of all farmers in these regions raised hogs and pigs (Table 8).

The central and south central regions are slightly above the state average (32.9 percent) in proportion of farmers raising swine. Approximately one-fourth of north central and northeast farmers raise hogs while only 13.6 percent of western region farmers have a swine enterprise.

Feeder Pig Production Trends

A partial explanation of changing regional swine production patterns in South Dakota can be found in the examination of feeder pig production trends (Tables 9-10). Feeder pig production and marketing data are reported for

1969 and 1978 because county and regional feeder pig data for 1959 are not available.

Feeder pig production and sales increased 80 percent from 1969 to 1978. Feeder pigs comprised 22 percent of the total number of hogs and pigs sold in 1978, up from 13.5 percent in 1969 (Table 9). Almost one of every four swine producers sells feeder pigs. Many of these producers are completely specialized in feeder pig production.

Feeder pig production has increased in most counties of the state. The largest incresaes have occurred in western, central, east central and southeast-W regions. The western and south-central counties have the greatest amount of specialization in feeder pig production (63.2 percent and 35.0 percent respectively of total numbers of hogs and pigs sold)(Table 9). The lowest proportions of feeder pig to total swine marketings are in the extreme southeastern counties of the state (less than 13 percent).

Slaughter hog sales decreased statewide by 105.1 thousand from 1969 to 1978. The greatest number and rates of decline in slaughter hog sales occurred in the northeast and southeast-E regions. Most other regions showed relatively small changes in slaughter hog numbers.

In most counties, changes in feeder pig sales were the major factor influencing total changes in hog and pig numbers. Increased feeder pig production has been a major growth factor in the South Dakota pork industry and there are net feeder pig exports from South Dakota to neighboring states of Minnesota, Iowa, and Nebraska.

Swine Production Density Growth Patterns

Growth trends in swine production were further analyzed by classifying counties into four groups based on absolute change in swine production density (number of hogs and pigs sold per rural square mile) from 1959 to 1978. The four groups and their definitions are:

Change in swine production	1959-1978 change in swine production density
Rapid growth	+25.0 to +71.0
Moderate growth	+ 5.0 to +24.9
Little change	- 4.9 to + 4.9
Decline	- 5.0 to -62.0

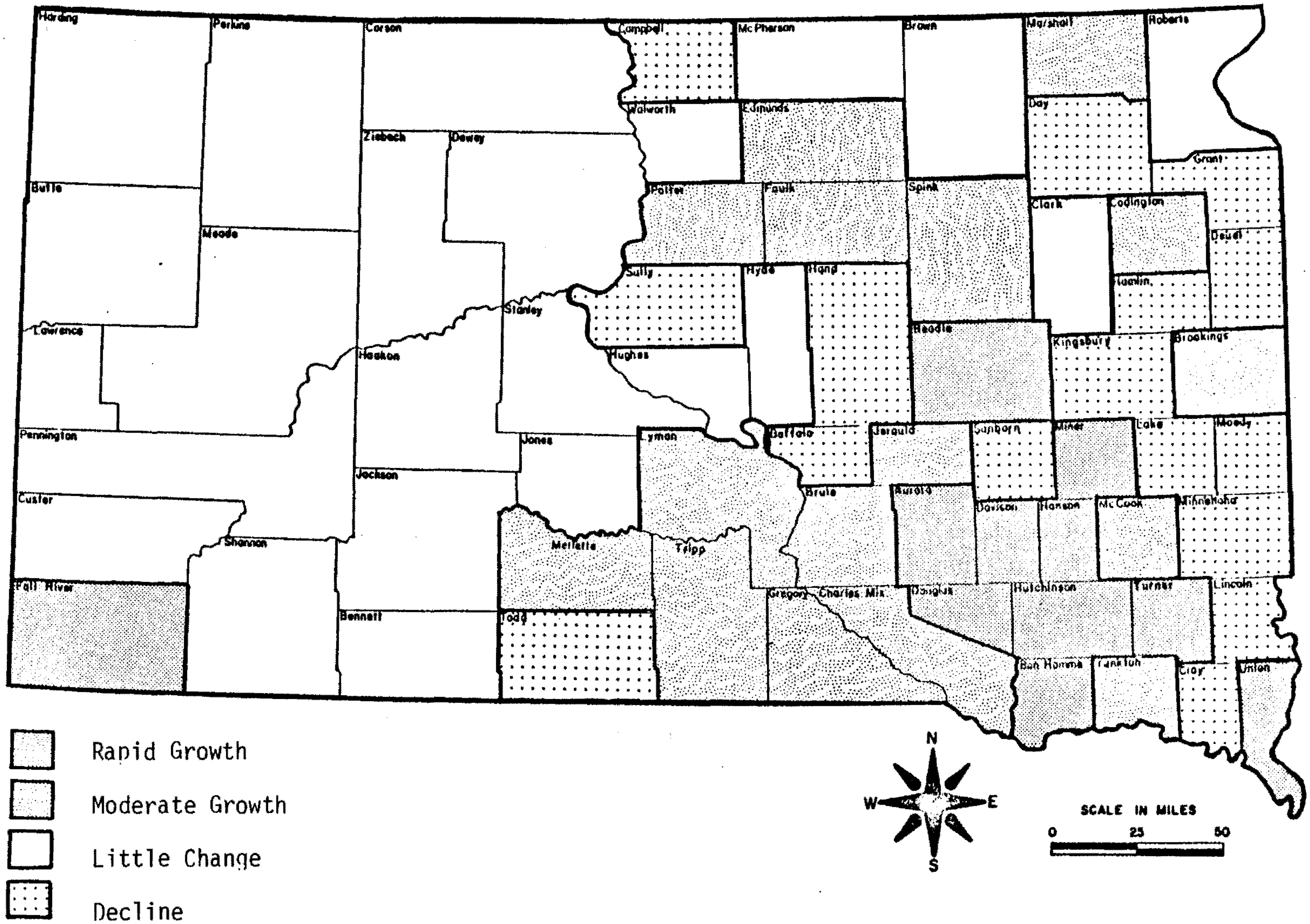
Absolute change in swine production density was used as the growth measure because it is most closely associated with market location decisions. Percentage changes in hog and pig numbers are not as meaningful due to vast differences in hog and pig density across the state. Results are shown in Figure 3 and Table 11.

Ten counties in central and southeastern South Dakota plus Fall River county constitute the rapid growth counties. Total hog and pig sales increased by 302 thousand (45.5 percent) from 1959 to 1978. Since 1969, more than three-fourths of the increase in total numbers is from feeder pig sales. Market share of South Dakota hogs and pigs sold from rapid growth counties has increased from 26.4 percent in 1959 to 33.5 percent in 1978 (Table 11).

Sixteen counties in south central, north central and eastern South Dakota have experienced moderate growth in swine marketings. Total hog and pig sales increased 195 thousand (27.6 percent) from 1959 to 1978. Since 1969, all of the increase in numbers has been due to feeder pig sales because there was little change in slaughter hog numbers sold. Market share of South Dakota hogs and pigs sold from moderate growth counties has increased from 28.1 percent of 1959 to 31.2 percent in 1978.

Little absolute change in hog production and sales has occurred in 23 counties which are mostly located in low-density regions of western, central and north central South Dakota. Production volume has increased 9.9 percent

Figure 3. Growth Patterns in Swine Production Density, 1959-1978



(27.6 thousand hogs and pigs sold) since 1959 with relatively little change in market share. Since 1969 feeder pig production has greatly increased while the number of slaughter hogs sold has slightly decreased.

Sixteen eastern and central South Dakota counties have experienced moderate to rapid declines in hog and pig sales. Five of these counties are located on the Minnesota-South Dakota border. Declining production counties vary much more in production density than counties included in the other groups. The greatest declines in production density occurred in Lincoln (-61.0) and Hamlin (-25.0) counties. All other declining counties had density declines of -5.0 to -14.0 hogs and pigs per square mile. From 1969 to 1978, feeder pig production increased by 52 percent while slaughter hog marketings decreased 20 percent. Market share of South Dakota hogs and pigs sold for these counties declined from 34 percent in 1959 to 24.3 percent in 1978.

Some Explanations of Regional Shifts

Regional shifts in swine production and marketing patterns are reflections of several interacting factors which affect profitabilty. These factors include changing relative production costs of corn and soybeans, energy costs, price and service competition between swine market outlets, relative profits from alternative enterprises and availability of non-agricultural employment and investment opportunities. The following observations are of particular importance in explanation of regional shifts.

First, feed grain exports greatly increased from the mid-1960's to 1980. Production regions closer to the Great Lakes and Mississippi River (Gulf ports) were in the most favorable position for export shipments. Rising energy costs which has generally increased grain transportation costs has also widened the basis in corn and soybean prices, resulting in lower relative prices in South Dakota. Feed grains in the western Cornbelt often have a comparative advantage by feeding it thorugh livestock, including hogs.

Second, feed grain production has expanded over time into the central and southeast-W regions. This has improved prospects for increased hog production in these regions. Furthermore, these regions are also closer to more marketing outlets for feeder pigs and slaughter hogs than pork producers in the north central and northeast regions.

Third, feeder pig production has increased the most in regions adjacent to the Cornbelt where feed grain supplies are more limited but are still relatively close to hog finishing producers in the Cornbelt. Structural changes in pork production (confinement facilities, feeder pig cooperatives, improved disease control and breeding herd husbandry) has also led to the development of feeder pig markets.

Regional differences and shifts in swine production contributed to changes in producer use of market channels and their movement of feeder pigs and slaughter hogs to market outlets.

Table 7. South Dakota Hog and Pig Numbers and Density by Region, 1959-1978.

Region[a]	1959	1969	1978
	-----thousand of hogs and pigs sold-----		
Western	76.7	86.3	155.4
North Central	265.5	294.5	307.1
Central	269.5	286.0	340.7
South Central	119.3	185.2	173.2
Northeast	277.8	273.7	256.1
East Central	718.6	693.9	741.0
Southeast-W	337.1	396.3	455.8
Souteast-E	446.5	480.1	451.7
State	2,511.0	2,696.0	2,881.0
	-----density - number of hogs and pigs sold per rural square mile-----		
Western	2.4	2.6	4.8
North Central	29.5	32.7	34.1
Central	34.0	36.1	43.0
South Central	14.9	23.2	21.7
Northeast	42.2	41.6	38.9
East Central	118.0	113.9	121.7
Southeast-W	113.9	133.9	154.0
Southeast-E	173.8	186.9	175.8
State	33.2	35.6	38.0

Source: Compiled from county level data available in U.S. Department of Commerce, Bureau of the Census, U.S. Census of Agriculture, South Dakota, 1978, 1969 and 1959 reports.

[a]See Figure 2 for map of regional boundaries.

Table 8. Number and Proportion of South Dakota Farms Selling Hogs and Pigs by Region, 1959-1978.

Region[a]	1959	1969	1978	1978/1959	1959	1969	1978
	-----number of farms selling hogs and pigs-----			Ratio	-----proportion of farms selling hogs and pigs-----		
Western	1,486	993	799	0.538	20.7	15.9	13.6
North Central	3,894	2,120	1,261	0.324	57.1	37.3	26.4
Central	3,387	1,945	1,429	0.422	62.7	43.2	37.5
South Central	1,730	1,219	873	0.505	49.5	39.5	33.3
Northeast	5,060	2,614	1,445	0.285	53.8	35.1	24.1
East Central	8,070	4,815	3,114	0.385	69.4	52.5	40.4
Southeast-W	8,969	2,656	1,880	0.474	77.7	63.4	54.5
Southeast-E	4,895	3,004	1,948	0.398	73.0	56.2	43.0
State	32,491	19,366	12,749[b]	0.392	58.3	42.3	32.9

Source: Compiled from county level data available in U.S. Department of Commerce, Bureau of the Census, U.S. Census of Agriculture, South Dakota, 1978, 1969 and 1959 reports.

[a]See Figure 2 for map of regional boundaries.

[b]Number of farms reporting hogs and pigs by county is slightly less than state totals reported elsewhere. The reason is that about 200 farm operators in 1978 did not report their county location.

Table 9. Number of Market Hogs and Feeder Pigs Sold by Region, 1969-1978.

Region[a]	1969	1978	Δ
	-----thousand of hogs and pigs sold-----		
Western	86.3	155.4	+ 69.1
North Central	294.5	307.1	+ 12.6
Central	286.0	340.7	+ 54.7
South Central	185.2	173.2	- 12.0
Northeast	273.7	256.1	- 17.6
East Central	693.9	741.0	+ 47.1
Southeast-W	396.3	455.8	+ 59.5
Southeast-E	480.1	451.7	- 28.4
State	2,696.0	2,881.0	+185.0
	-----thousand of slaughter hogs sold-----		
Western	52.3	57.1	+ 4.8
North Central	294.5	307.1	- 4.3
Central	283.6	240.9	+ 2.3
South Central	126.5	112.6	- 13.9
Northeast	231.5	188.8	- 42.7
East Central	621.3	607.0	- 14.3
Southeast-W	354.1	371.7	+ 17.6
Southeast-E	447.9	393.3	- 54.6
State	2,330.0	2,227.9	-105.1
	-----thousands of feeder pigs sold-----		
Western	34.0	98.3	+ 64.3
North Central	33.7	50.6	+ 16.9
Central	47.4	99.8	+ 52.4
South Central	58.7	60.6	+ 1.9
Northeast	42.2	67.3	+ 25.1
East Central	72.6	134.0	+ 61.4
Southeast-W	42.2	84.1	+ 41.9
Southeast-E	32.2	58.4	+ 26.2
State	363.0	653.1	+290.1
	-----feeder pigs as percent of hogs and pigs-----		
Western	39.4	63.2	
North Central	11.4	16.5	
Central	16.6	29.3	
South Central	31.7	35.0	
Northeast	15.4	26.2	
East Central	10.5	18.1	
Southeast-W	10.6	18.5	
Southeast-E	6.7	12.9	
State	13.5	22.7	

Source: Compiled from county level data available in U.S. Department of Commerce, Bureau of the Census, U.S. Census of Agriculture, 1978, 1969 reports.

[a]See Figure 2 for map of regional boundaries.

Table 10. Number and Proportion of South Dakota Farms Selling Feeder Pigs by Region, 1969-1978.

Region[a]	1969	1978
	-----number of farms selling feeder pigs-----	
Western	348	358
North Central	335	283
Central	378	412
South Central	394	320
Northeast	400	382
East Central	602	631
Southeast-W	360	407
Southeast-E	328	331
State	3,145	3,124
	-----percent of all farms-----	
Western	5.6	6.1
North Central	5.9	5.9
Central	8.4	10.8
South Central	12.8	12.2
Northeast	5.4	6.4
East Central	7.3	8.2
Southeast-W	8.6	11.8
Southeast-E	6.1	7.3
State	6.9	8.1
	-----percent of hog and pig farms selling feeder pigs-----	
Western	35.0	44.8
North Central	15.8	22.4
Central	19.4	28.8
South Central	26.5	36.6
Northeast	15.3	26.4
East Central	12.5	20.3
Southeast-W	13.5	21.6
Southeast-E	10.9	17.0
State	16.2	24.5

Source: Compiled from county-level data available in U.S. Department of Commerce Bureau of the Census, U.S. Census of Agriculture, South Dakota, 1978 and 1969 reports.

[a]See Figure 2 for map of regional boundaries

Table 11. South Dakota Hog and Pig Sales Growth Patterns, 1959-1978.

Characteristic	County Hog and Pig Sales Growth, 1959 to 1978[a, b]				
	Rapid Growth	Moderate Growth	Little Change	Decline	State Totals
Number of counties	11	16	23	16	66
Thousands of hogs and pigs sold					
1959	663.5	704.7	288.5	854.3	2,511.0
1969	767.4	847.8	283.6	797.2	2,696.0
1978	965.5	899.4	316.1	700.0	2,881.0
Percent change in number of hogs and pigs sold					
1959-1978	+45.5	+27.6	+ 9.9	-18.1	+14.7
Percent share of hogs and pigs sold					
1959	26.4	28.1	11.5	34.0	100.0
1969	28.5	31.4	10.5	29.6	100.0
1978	33.5	31.2	11.0	24.3	100.0
Density: Average number of hogs and pigs sold per square mile					
1959	82.4	43.6	7.4	69.4	33.2
1969	95.3	52.4	7.2	64.8	35.6
1978	119.9	55.6	8.1	56.9	38.0
Thousands of feeder pigs sold					
1969	80.1	138.2	59.0	85.7	363.0
1978	236.5	191.7	94.5	130.4	653.1
Thousands of slaughter hogs sold					
1969	687.3	709.6	224.6	711.5	2,333.0
1978	729.0	707.7	221.6	569.6	2,227.9

-cont.-

Table 11. Continued.

Characteristic	County Hog and Pig Sales Growth, 1959 to 1978[a, b] Rapid Growth	Moderate Growth	Little Change	Decline	State Totals
Percent change (1969-1978):					
Number of feeder pigs sold	+195.2	+38.7	+60.2	+52.1	+79.9
Number of slaughter hogs sold	+ 6.1	- 0.3	- 1.3	-20.0	- 5.5
Number of hogs and pigs sold	+ 25.8	+ 6.1	+11.4	-12.2	+ 6.9
Feeder pigs sold as percent of hogs and pigs sold:					
1969	10.4	16.3	20.8	10.8	13.5
1978	24.5	21.3	29.9	18.6	22.7

Source: Compiled from county level data available in U.S. Department of Commerce, Bureau of the Census, U.S. Census of Agriculture, South Dakota, 1978 and 1969 reports.

[a] See Figure 3 for map of regional growth boundaries.

[b] Definition of county hog and pig sales growth groups:

County group	1959-1978 change in average number of hogs and pigs sold per rural square mile
Rapid growth	+25.0 to +71.0
Moderate growth	+ 5.0 to +24.9
Little change	- 4.9 to + 4.9
Decline	- 5.0 to -62.0

SWINE MARKET CHANNEL AND MOVEMENT TRENDS

During the past 25 years there has been considerable change in swine producers use of market channels. In general, producers have increased direct shipments of slaughter hogs to packers and decreased their use of terminal markets. Auction markets have maintained or increased their share of slaughter hog marketings by producers. In 1957, 52 percent of slaughter hogs were marketed through public stockyards (terminal markets), 30 percent to packers and buyers and 18 percent though auction markets. Fifteen years later, packers and buyers directly purchased an estimated 46 percent of slaughter hogs, 30 percent were sold through terminal markets and 24 percent were sold through aucton markets (Table 12).

Market channel data reported by South Dakota packers from 1969 to 1980 show similar trends (Table 13). Packers purchased an increased share of slaughter hogs direct from producers. Packers also increased their purchases from terminal mrkets and decreased slaughter hog purchases from auction markets. An increased percentage of slaughter hogs were purchased on a carcass weight (grade and yield) basis instead of on a liveweight basis (3.8 percent in 1969 and 17.2 percent in 1981). Relative to all U.S. hog packing plants, South Dakota packers usually purchased a higher percentage of slaughter hogs from terminal markets and a lower percentage from auction markets.

Regional Differences in Slaughter Hog Marketings

Slaughter hog market channel use differs by region of South Dakota (see Figure 4 for description of swine marketing regions). From 1957 to 1972 the following regional differences in market channel use were observed:[8]

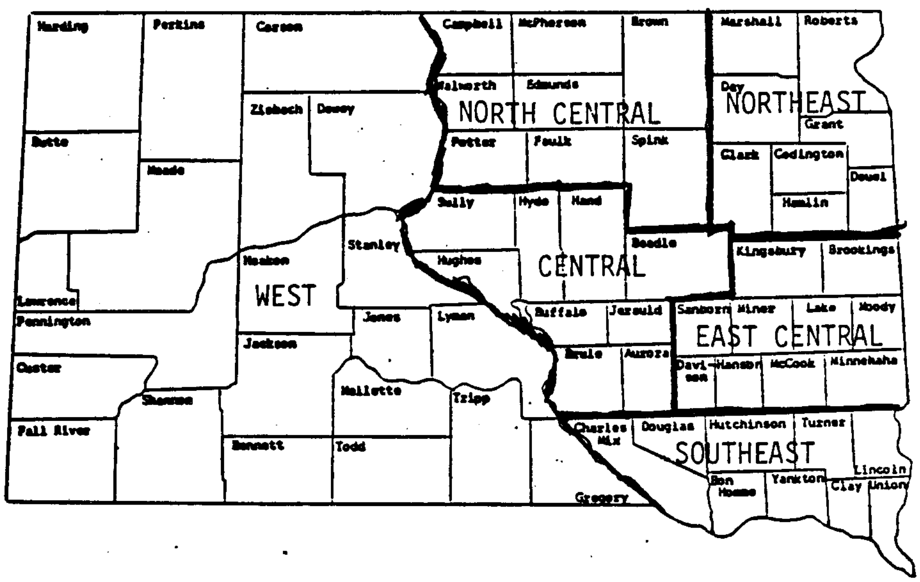


Fig. 4. S.D. Swine Marketing Regions Used in Study

(1) Auctions were the principal market channel used by hog producers in western South Dakota.

(2) Producers in the southeast and east central regions marketed a higher percentage of slaughter hogs through the terminal markets than other South Dakota swine producers, reflecting their closer proximity to public stockyards in Sioux Falls and Sioux City.

(3) In 1957 public stockyards were the principal market channel by producers in all South Dakota regions east of the Missouri River. By 1972 packers and buyers were the principal market channels used by producers in the central, north central, northeast and east central regions.

More recent information on producer use of swine market channels and movement patterns was obtained from a 1980 marketing survey of 587 South Dakota hog producers. This survey was conducted by the author (and Kevin

Weischedel) in cooperation with the South Dakota Pork Producers Council and the SDSU Agricultural Experiment Station.[9]

In the 1980 survey, regional location was also related to respondents selection of slaughter hog mraket channels (Table 14). Western hog producers used auction markets more than other market channels. Respondents from north central and northeastern South Dakota sold more hogs to buyers than through other market channels.[10] Packers were the principal market channel for producers in central and southeastern South Dakota. Producer use of terminal markets was greatest in the east-central region and slightly exceeded the percentage of hogs shipped directly to packers (41.1 percent vs. 39.6 percent).

Direct shipments to packers was the market channel used to ship the largest proportion (36.5 percent) of respondents hogs. Twenty-nine percent of respondents hogs were shipped to terminal markets, 19.8 percent to buyers and 14.7 percent through auction markets. Over 80 percent of hogs sold to buyers or through auctions were initially sold within the respondents home region. The hogs were then shipped to packing plants in Huron, Sioux Falls, Sioux City and other locations.

Regional movements of market hogs indicates 63 percent of slaughter hogs were first sold within the respondents home region (Table 15). Most inter-regional movements of slaughter hogs from respondents farms reflected shipments to terminal markets in Sioux Falls or Sioux City or direct shipments to packers located in Huron, Sioux Falls or in surrounding states of Iowa, Minnestoa and Nebraska.

The high proportion (58.3 percent) of shipments to the the east central region is mostly accounted for by producer shipments to the packing plant and terminal market located in Sioux Falls. Forty-eight percent of respondents hogs were shipped to Sioux Falls. Approximately one-half of respondents hogs shipped to Sioux Falls were from east central farms, 40 percent from the southeastern region and 10 percent from other regions of South Dakota.

Approximately one eighth (11.7 percent) of the slaughter hogs were shipped by respondents to out-of-state locations. Almost all out-of-state shipments were originated by respondents located in the west, southeast, or northeast regions of South Dakota.

Regional Differences in Feeder Pig Marketings

Feeder pig production and marketing has rapidly expanded in South Dakota. Producer surveys by USDA in 1957 indicated feeder pig marketings were four percent of total swine marketings from South Dakota farms. Feeder pig marketings increased to six percent of total swine marketings in 1964 and 20 percent in 1972. By 1972, feeder pig marketings were nearly equal to the number of slaughter hogs marketed from western South Dakota. Feeder pig marketings ranged from 15-26 percent of total hogs and pigs marketed in central and eastern South Dakota.[11]

A majority of South Dakota feeder pig marketings were direct shipments between farms followed by auction marketings. This finding was verified in the 1964, 1972 and 1980 surveys. Auction markets tend to be used more by western and central region feeder pig producers while direct shipments between farms is the dominant feeder pig market channel in all other regions.

Most feeder pig market movements (84 percent) occurred within the same region, usually less than 50 miles from the respondents home location. Interregional feeder pig movements were 16 percent of total feeder pig shipments by 1980 survey respondents. Over two-thirds of these interregional movements were feeder pig shipments to Sioux Falls and Huron.

Table 12. South Dakota Slaughter Hog and Feeder Pig Market Channels, 1957-1972

	Slaughter Hog Market Channels			
Year	Terminal Markets	Auction Markets	Direct to Packers, Buyers	Total
	-----percent of slaughter hogs marketed-----			
1957	52	18	30	100
1964	44	22	34	100
1972	30	24	46	100

	Feeder Pig Market Channels			
Year	Terminal Markets	Auction Markets	Purchased from Farmers, Dealers	Total
	-----percent of feeder pigs marketed-----			
1964	17	33	50	100
1972	15	30	55	100

Source: Data for 1957, 1964, and 1972 are obtained from the U.S. Department of Agriculture South Dakota - Livestock Marketing - 1972 Statistical Reporting Services, Washington, D.C.: John Ranek, Statistician in Charge, June 1974, p. 29.

Table 13. Number of Hogs Slaughtered and Method of Purchase by Packers, South Dakota and United States, 1969-1980.

Year		Thousands of hogs Slaughtered	Percent Purchased Through: Direct shipment country dealers buyers, etc.	Terminal Markets	Auction Markets	Percent Purchased on a carcass grade and yield basis
			-----percent of slaughter hogs-----			
1969	South Dakota[a]	2,921	67.8	15.2	16.9	3.8
	United States	81,441	67.4	18.9	13.7	3.8
1972	South Dakota	2,831	71.1	14.2	14.8	4.3
	United States	90,825	69.3	16.9	13.8	4.9
1975	South Dakota	2,043	74.5	19.1	6.4	29.5
	United States	68,076	71.6	16.3	12.1	8.9
1978	South Dakota	2,602	69.7	23.6	6.7	17.6
	United States	73,776	73.8	15.9	10.3	10.4
1979	South Dakota	3,071	71.6	24.1	4.4	16.9
	United States	82,630	74.6	14.7	10.7	11.5
1980	South Dakota	3,219	74.0	22.4	3.6	17.2
	United States	92,989	76.6	13.5	9.9	10.7

Source: Packers and Stockyards Resume--summary of annual reports filed with the Packers and Stockyard Administration, U.S. Department of Agriculture.

[a]Number of hogs slaughtered and percent distribution are based on the state where hogs are slaughtered, not the farm or market channel location where hogs were purchased. These figures include slaughter hogs imported into South Dakota but do not include slaughter hogs exported from South Dakota.

Table 14. Proportion of Respondent Slaughter Hogs Sold Through Each Market Channel from Each Region, 1980.

Respondents Regional Location[a]	Market Channel[b]					Thousands of Slaughter Hogs Sold by Respondents
	Auction	Terminal	Packer	Buyer-Other[c]	Total	
	-----percent of slaughter hogs marketed-----					
West	41.3	18.9	4.1	35.7	100.0	14.3
Central	21.0	3.5	60.3	15.2	100.0	12.3
North Central	11.8	8.2	16.8	63.2	100.0	16.4
Northeast	24.2	5.4	29.9	40.5	100.0	26.8
East Central	2.9	41.1	39.6	16.4	100.0	100.8
Southeast	18.9	30.8	39.6	10.7	100.0	119.4
Total Respondents[c]	14.7	29.0	36.5	19.8	100.0	290.0

Source: 1980 producer survey

[a]See Figure 4 for description of regional boundaries.

[b]Niney-nine percent (566 of 572(respondents marketing slaughter hogs (including cull sows) reported regional location <u>and</u> market channel. slaughter hog marketing of these repsondents are included in this table.

[c]Order buyer, packer buyer and local collection points.

Table 15. Market Movements of Respondent Slaughter Hogs--Shipments by Region, 1980.

Respondents Regional Location[a]	Regional Destination - Point of First Sale[a]: West	Central	North Central	Northeast	East Central	Southeast	Out-of State	Total	Thousands of Slaughter Hogs Sold by Respondent[b]
	-----percent of slaughter hogs marketed-----								Thousand
West	68.3	---	---	---	7.7	2.2	21.8	100.0	13.2
Central	---	75.6	---	---	23.1	1.3	---	100.0	11.9
North Central	---	15.7	72.9	---	11.4	---	---	100.0	14.8
Northeast	---	5.3	---	57.8	23.9	---	13.0	100.0	22.4
East Central	---	3.3	0.4	---	95.7	---	0.6	100.0	96.7
Southeast	---	1.1	---	---	48.7	27.8	22.4	100.0	114.4
Total Respondent	3.3	6.2	4.0	4.7	58.3	11.8	11.7	100.0	273.4

Source: 1980 producer survey.

[a]See Figure 4 for description of regional boundaries.

[b]Ninety-five percent of respondents marketing slaughter hogs (including cull sows) reported the regional location of the market channel that they used. Slaughter hog marketing of these respondents are included in this table.

ENDNOTES

[1]Source: U.S. Department of Agriculture, Economic Indicators of the Farm Sector: State Income and Balance Sheet Statistics, 1980, Statistical Bulletin 678, ERS, Washington, DC, November 1981.

[2]During the 1959-1980 time period the U.S. Census of Agriculture was conducted five times - 1959, 1964, 1969, 1978, and 1978. South Dakota statistics are found in Volume 1 of these reports. Results from the most recent (1982) Census of Agriculture were not yet released when this report was prepared.

[3]The 1980 marketing survey of approximately 600 South Dakota pork producers covered many topics including respondent swine enterprise structure and mix, slaughter hog marketing methods, alternative pricing methods (cash markets, forward contracts and futures markets), transportation methods and feeder pig/slaughter hog marketing channels. A major emphasis in the report was the relationship of producer marketing behavior to respondent personal and business (structural) characteristics. A copy of the report is available as Larry Janssen and Kevin Weischedel, Swine Marketing in South Dakota: Results of a Producer Survey, Economics Department Research Report 83-5, South Dakota State University, Brookings, South Dakota. October, 1983.

[4]U.S. Department of Agriculture, South Dakota - Livestock Marketing - 1972, Statistical Reporting Services, Washington, DC: John Ranek, Statistician in Charge, June 1974.

[5]A complete discussion of changing farm structure, which includes these farm characteristics, of South Dakota agriculture is reported in Larry Janssen and Mark Edelman, The Changing Structure of South Dakota Agricutlure, Economics Department Research Redport 83-2, South Dakota State University, Brookings, SD, January, 1983. The Janssen-Edelman report covers all types of South Dakota farms. Comparisons are made when appropriate to findings in that report.

[6]Changes in farm purchasing power can be measured by the Index of Prices Paid for Items Used for Production, Interest, Wages and Taxes by U.S. farmers. (A separate index for South Dakota hog producers is not available). This measure is a broad index of changes in prices paid for purchase inputs excluding family living items. The index values for 1959, 1969 and 1978 were 41, 51, and 109 respectively with base year 1977 = 100. On the average, a farm selling $40,000 of products in 1959 needed $49,800 of sales in 1969 and $106,000 of sales in 1978 to maintain similar purchasing power in each time period.

[7]Hog production regions in Figure 2 generally follow Crop Reporting District boundaries with some regrouping. The Western region combines three Crop Reporting Districts (Northwest, West Central, and Southwest because hog production numbers and density are very low in this region. On the other hand, the Southeast Crop Reporting District with the highest production numbers and density was split into two regions. The souteast-W region includes Bon Homme, Charles Mix, Douglas, and Hutchinson counties. The southest-E region includes Clay, Lincoln, Turner, Union and Yankton counties.

[8]Market channel information by region of South Dakota for 1957, 1964, and 1972 is reported in the USDA publication South Dakota - Livestock Marketing - 1972, Statistical Reporting Service, Washington, DC: John Ranek, Statistician in Charge, June 1974.

[9]Respondents to the 1980 marketing survey numbered five percent of South Dakota's pork producers and marketed 12-13 percent of all hogs and pigs in eastern South Dkaota and 6-7 percent of all hogs and pigs sold from central and western South Dakota farms. The sample frame for the 1980 survey was a mailing list of 3,500 active swine producers developed and used by the South Dakota Pork Producers Council. This mailing list tends to include medium and large-scale pork produers and does not have a representative proportion of very small swine operations. Respondents to the 1980 survey were representative of producers on the mailing list but are not statistically representative of all South Dakota swine producers.

[10]The number of respondents to the 1980 marketing survey by region were: southest - 226, east central - 193, northeast - 66, central - 39, west - 32, and north central - 31. Because the number of respondents in the north central, western and central regions is rather "thin", less reliability can be placed on specific market channel estimates for these regions than for eastern South Dakota regions.

[11]Market channel information for feeder pigs is also reported in the U.S. Department of Agriculture publication, South Dakota - Livestock Marketing - 1972, Statistical Reporting Service, Washington, DC; John Ranek, Statistician in Charge, June 1974.

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APPENDIX TABLE 1.1

SOUTH DAKOTA HOG AND PIG NUMBERS AND DENSITY BY COUNTY, 1959-1978

		NUMBER OF HOGS AND PIGS MARKETED					DENSITY - NUMBER OF HOGS AND PIGS SOLD PER RURAL SQUARE MILE				
	COUNTY	1959	1964	1969	1974	1978	1959	1964	1969	1974	1978
1	AURORA	39843	56737	59447	71412	78567	55.4	78.9	82.7	99.3	109.3
2	BEADLE	57996	59907	68043	80056	90440	46.4	47.9	54.4	64.0	72.4
3	BENNETT	8778	8546	9807	9625	14430	7.5	7.3	8.4	8.2	12.3
4	BON HOMME	82489	92752	94887	91656	100520	144.0	161.9	165.6	160.0	175.4
5	BROOKINGS	91146	87321	85487	97685	100821	115.2	110.4	108.1	123.5	127.5
6	BROWN	69044	75974	70365	77274	67272	39.5	43.4	40.2	44.2	38.4
7	BRULE	49025	51910	52375	49317	54786	58.6	62.0	62.6	58.9	65.5
8	BUFFALO	7944	5700	4594	5773	4937	16.6	11.9	9.6	12.1	10.3
9	BUTTE	1780	2542	8333	9565	11618	0.8	1.1	3.6	4.2	5.1
10	CAMPBELL	19387	16339	20846	17106	9249	25.0	21.1	26.9	22.1	11.9
11	CHARLES MIX	88489	113145	105348	116728	106895	78.0	99.8	92.9	102.9	94.3
12	CLARK	32302	38586	31019	32311	34423	33.2	39.6	31.8	33.2	35.3
13	CLAY	56886	72065	73565	61556	52407	141.2	178.8	182.5	152.7	130.0
14	CODINGTON	28625	21387	26408	21800	34501	40.8	30.5	37.7	31.1	49.2
15	CORSON	19979	9710	13400	16305	11527	7.9	3.8	5.3	6.5	4.6
16	CUSTER	729	508	1718	1823	1392	0.5	0.3	1.1	1.2	0.9
17	DAVISON	51663	52077	54171	63187	71761	119.6	120.5	125.4	146.3	166.1
18	DAY	37975	29877	39626	36688	26907	35.8	28.2	37.3	34.6	25.4
19	DEUEL	25145	32425	31341	29962	20373	39.8	51.3	49.6	47.4	32.2
20	DEWEY	6923	13169	4501	11404	12211	2.8	5.4	1.8	4.7	5.0
21	DOUGLAS	59367	70461	70171	89700	83571	136.5	162.0	161.3	206.2	192.1
22	EDMUNDS	21823	16796	21109	32799	36113	18.8	14.5	18.2	28.3	31.2
23	FALL RIVER	3668	3926	3418	22180	52052	2.1	2.2	1.9	12.6	29.6
24	FAULK	23293	25796	28032	28234	31396	22.9	25.3	27.5	27.7	30.8
25	GRANT	35918	28743	30861	28941	31513	52.0	41.6	44.7	41.9	45.6
26	GREGORY	42796	55671	54958	52731	49180	41.5	53.9	53.3	51.1	47.7
27	HAAKON	2498	4318	3574	5937	7484	1.4	2.4	2.0	3.3	4.1
28	HAMLIN	41866	43339	36563	32349	28499	80.5	83.3	70.3	62.2	54.8
29	HAND	46714	42723	43580	43425	36354	32.8	30.0	30.6	30.5	25.5
30	HANSON	43156	45450	49269	56643	54984	99.9	105.2	114.0	131.1	127.3
31	HARDING	2618	2834	3230	3854	2625	1.0	1.1	1.2	1.4	1.0
32	HUGHES	7103	7631	8662	5525	8767	9.4	10.1	11.4	7.3	11.6
33	HUTCHINSON	106746	111925	125870	160924	164853	130.7	137.0	154.1	197.0	201.8
34	HYDE	9986	4903	4929	7244	10999	11.5	5.7	5.7	8.4	12.7
35	JACKSON	0	501	878	1577	2010	0.0	0.6	1.1	1.9	2.5
36	JERAULD	29647	23742	21983	29404	40628	55.8	44.7	41.4	55.4	76.5
37	JONES	3890	3270	6182	6024	5441	4.0	3.3	6.3	6.1	5.5
38	KINGSBURY	58635	64306	61244	46915	43289	72.0	79.0	75.2	57.6	53.2
39	LAKE	96032	71419	70011	86530	90168	170.9	127.1	124.6	154.0	160.4
40	LAWRENCE	349	253	832	906	759	0.4	0.3	1.0	1.1	1.0
41	LINCOLN	131690	124645	103141	104443	96144	229.4	217.2	179.7	182.0	167.5
42	LYMAN	12525	17881	16313	24622	22168	7.6	10.9	9.9	15.0	13.5
43	MCCOOK	83405	83702	85631	96565	89031	145.6	146.1	149.4	168.5	155.4
44	MCPHERSON	20597	16177	15758	18203	20427	17.8	14.0	13.6	15.7	17.7
45	MARSHALL	27590	36065	34460	33185	36841	31.0	40.6	38.8	37.3	41.4
46	MEADE	5466	3439	5143	12021	8633	1.6	1.0	1.5	3.4	2.5
47	MELLETTE	6287	9705	18324	18153	19903	4.8	7.4	14.1	13.9	15.3
48	MINNER	33876	38950	38011	52067	51354	59.6	68.6	66.9	91.7	90.4
49	MINNEHAHA	145891	138445	132512	159272	133835	179.0	169.9	162.6	195.4	164.2
50	MOODY	70500	78012	78857	78647	65860	133.8	148.0	149.6	149.2	125.0
51	PENNINGTON	5418	5602	7523	7984	5581	1.9	2.0	2.7	2.9	2.0
52	PERKINS	9257	7647	8633	16703	10914	3.2	2.6	3.0	5.7	3.7
53	POTTER	30242	30995	38070	46557	46931	33.7	34.5	42.4	51.8	52.3
54	ROBERTS	48375	39390	43469	52742	43045	43.5	35.5	39.1	47.5	38.7
55	SANBORN	44287	42808	38704	39949	39959	76.9	74.3	67.2	69.4	69.4
56	SHANNON	1571	1988	4139	3693	1521	1.6	2.1	4.3	3.8	1.6

APPENDIX TABLE 1.1

SOUTH DAKOTA HOG AND PIG NUMBERS AND DENSITY BY COUNTY, 1959-1978

		NUMBER OF HOGS AND PIGS MARKETED					DENSITY - NUMBER OF HOGS AND PIGS SOLD PER RURAL SQUARE MILE				
	COUNTY	1959	1964	1969	1974	1978	1959	1964	1969	1974	1978
57	SPINK	56975	68373	79931	76195	73394	37.7	45.3	52.9	50.4	48.6
58	STANLEY	1413	2977	2531	5182	918	0.9	2.0	1.7	3.4	0.6
59	SULLY	21192	18103	22397	23530	15205	20.0	17.1	21.2	22.2	14.4
60	TODD	14237	7641	9404	6454	5445	10.2	5.5	6.7	4.6	3.9
61	TRIPP	39580	54572	80061	70000	71109	24.3	33.5	49.1	43.0	43.7
62	TURNER	102641	110695	113888	137304	120390	166.4	179.4	184.6	222.5	195.1
63	UNION	82005	88665	90216	88795	97005	181.4	196.2	199.6	196.4	214.6
64	WALWORTH	24113	21755	20378	21682	22357	32.5	29.3	27.5	29.2	30.1
65	YANKTON	73281	98140	99314	100377	85707	140.1	187.6	189.9	191.9	163.9
66	ZIEBACH	2075	2796	4162	10487	8082	1.1	1.4	2.1	5.3	4.1

APPENDIX TABLE 1.2

SOUTH DAKOTA FEEDER PIG NUMBERS AND DENSITY, BY COUNTY, 1969-1978

		NUMBER OF FEEDER PIGS MARKETED			DENSITY - NUMBER OF FEEDER PIGS SOLD PER RURAL SQUARE MILE			FEEDER PIGS SOLD AS PERCENT OF HOGS AND PIGS SOLD		
	COUNTY	1969	1974	1978	1969	1974	1978	1969	1974	1978
1	AURORA	5419	8333	28064	7.5	11.6	39.0	9.1	11.7	35.7
2	BEADLE	12264	17418	18489	9.8	13.9	14.8	18.0	21.8	20.4
3	BENNETT	5330	3433	4389	4.5	2.9	3.7	54.3	35.7	30.4
4	BON HOMME	10105	8952	17430	17.6	15.6	30.4	10.6	9.8	17.3
5	BROOKINGS	10173	8787	8912	12.9	11.1	11.3	11.9	9.0	8.8
6	BROWN	6091	7812	9658	3.5	4.5	5.5	8.7	10.1	14.4
7	BRULE	6553	6328	10223	7.8	7.6	12.2	12.5	12.8	18.7
8	BUFFALO	331	918	1663	0.7	1.9	3.5	7.2	15.9	33.7
9	BUTTE	3537	3263	3149	1.5	1.4	1.4	42.4	34.1	27.1
10	CAMPBELL	3342	3038	1912	4.3	3.9	2.5	16.0	17.8	20.7
11	CHARLES MIX	8653	6086	16197	7.6	5.4	14.3	8.2	5.2	15.2
12	CLARK	3341	4879	7620	3.4	5.0	7.8	10.8	15.1	22.1
13	CLAY	6081	3654	10750	15.1	9.1	26.7	8.3	5.9	20.5
14	CODINGTON	6463	2962	15098	9.2	4.2	21.5	24.5	13.6	43.8
15	CORSON	3400	5406	5825	1.3	2.1	2.3	25.4	33.2	50.5
16	CUSTER	341	667	720	0.2	0.4	0.5	19.8	36.6	51.7
17	DAVISON	6373	10572	12008	14.8	24.5	27.8	11.8	16.7	16.7
18	DAY	7735	9492	10974	7.3	8.9	10.3	19.5	25.9	40.8
19	DEUEL	4241	4111	2963	6.7	6.5	4.7	13.5	13.7	14.5
20	DEWEY	4173	7272	8823	1.7	3.0	3.6	92.7	63.8	72.3
21	DOUGLAS	8084	13492	20811	18.6	31.0	47.8	11.5	15.0	24.9
22	EDMUNDS	3577	1425	5634	3.1	1.2	4.9	16.9	4.3	15.6
23	FALL RIVER	464	5700	50840	0.3	3.2	29.0	13.6	25.7	97.7
24	FAULK	3659	3105	6935	3.6	3.1	6.8	13.1	11.0	22.1
25	GRANT	3624	2889	2949	5.2	4.2	4.3	11.7	10.0	9.4
26	GREGORY	14819	13570	11697	14.4	13.1	11.3	27.0	25.7	23.8
27	HAAKON	1064	2119	4485	0.6	1.2	2.5	29.8	35.7	59.9
28	HAMLIN	3204	1726	3641	6.2	3.3	7.0	8.8	5.3	12.8
29	HAND	8980	8420	12264	6.3	5.9	8.6	20.6	19.4	33.7
30	HANSON	6099	11192	12265	14.1	25.9	28.4	12.4	19.8	22.3
31	HARDING	1823	668	975	0.7	0.2	0.4	56.4	17.3	37.1
32	HUGHES	2986	1184	3702	3.9	1.6	4.9	34.5	21.4	42.2
33	HUTCHINSON	15364	20767	29707	18.8	25.4	36.4	12.2	12.9	18.0
34	HYDE	945	1240	3915	1.1	1.4	4.5	19.2	17.1	35.6
35	JACKSON	227	1090	1728	0.3	1.3	2.1	25.9	69.1	86.0
36	JERAULD	3928	5100	15033	7.4	9.6	28.3	17.9	17.3	37.0
37	JONES	2573	2573	3523	2.6	2.6	3.6	41.6	42.7	64.7
38	KINGSBURY	4196	5017	7773	5.2	6.2	9.5	6.9	10.7	18.0
39	LAKE	4168	7082	13754	7.4	12.6	24.5	6.0	8.2	15.3
40	LAWRENCE	55	769	556	0.1	1.0	0.7	6.6	84.9	73.3
41	LINCOLN	8695	11243	12828	15.1	19.6	22.3	8.4	10.8	13.3
42	LYMAN	4330	10270	9846	2.6	6.3	6.0	26.5	41.7	44.4
43	MCCOOK	14807	13679	19154	25.8	23.9	33.4	17.3	14.2	21.5
44	MCPHERSON	1899	2469	2802	1.6	2.1	2.4	12.1	13.6	13.7
45	MARSHALL	8201	10983	14567	9.2	12.4	16.4	23.8	33.1	39.5
46	MEADE	2299	3537	2258	0.7	1.0	0.6	44.7	29.4	26.2
47	MELLETTE	9352	10572	12334	7.2	8.1	9.5	51.0	58.2	62.0
48	MINNER	3014	14338	19890	5.3	25.2	35.0	7.9	27.5	38.7
49	MINNEHAHA	10069	20531	25554	12.4	25.2	31.4	7.6	12.9	19.1

APPENDIX TABLE 1.2

SOUTH DAKOTA FEEDER PIG NUMBERS AND DENSITY, BY COUNTY, 1969-1978

		NUMBER OF FEEDER PIGS MARKETED			DENSITY - NUMBER OF FEEDER PIGS SOLD PER RURAL SQUARE MILE			FEEDER PIGS SOLD AS PERCENT OF HOGS AND PIGS SOLD		
	COUNTY	1969	1974	1978	1969	1974	1978	1969	1974	1978
50	MOODY	10354	7475	10357	19.6	14.2	19.7	13.1	9.5	15.7
51	PENNINGTON	1686	3671	2849	0.6	1.3	1.0	22.4	46.0	51.0
52	PERKINS	2638	2849	3647	0.9	1.0	1.3	30.6	17.1	33.4
53	POTTER	4801	7456	9303	5.3	8.3	10.4	12.6	16.0	19.8
54	ROBERTS	5401	4978	9516	4.9	4.5	8.6	12.4	9.4	22.1
55	SANBORN	3332	3764	4323	5.8	6.5	7.5	8.6	9.4	10.8
56	SHANNON	434	1270	459	0.5	1.3	0.5	10.5	34.4	30.2
57	SPINK	8069	6856	8060	5.3	4.5	5.3	10.1	9.0	11.0
58	STANLEY	265	4093	244	0.2	2.7	0.2	10.5	79.0	26.6
59	SULLY	5997	8126	6433	5.7	7.7	6.1	26.8	34.5	42.3
60	TODD	1333	805	2245	1.0	0.6	1.6	14.2	12.5	41.2
61	TRIPP	26319	20056	20921	16.2	12.3	12.8	32.9	28.7	29.4
62	TURNER	8203	11612	21789	13.3	18.8	35.3	7.2	8.5	18.1
63	UNION	4769	13717	5284	10.6	30.3	11.7	5.3	15.4	5.4
64	WALWORTH	2228	1152	6310	3.0	1.6	8.5	10.9	5.3	28.2
65	YANKTON	4449	4524	7794	8.5	8.7	14.9	4.5	4.5	9.1
66	ZIEBACH	1900	4574	4839	1.0	2.3	2.5	45.7	43.6	59.9

APPENDIX 1.3

South Dakota Hog and Pig Farms, Number and Percent of All Farms by County, 1959-1978

	County	Number of Farms Selling Hogs and Pigs					Percent of Farms Selling Hogs and Pigs				
		1959	1964	1969	1974	1978	1959	1964	1969	1974	1978
1	AURORA	534	454	360	337	298	73.4	65.8	61.1	62.3	59.5
2	BEADLE	840	598	483	422	354	61.0	50.8	42.7	40.1	37.9
3	BENNETT	108	101	74	66	69	32.6	31.8	25.4	23.7	23.2
4	BON HOMME	962	793	671	543	466	75.6	68.1	64.3	54.7	53.0
5	BROOKINGS	1131	828	648	551	414	66.8	57.0	49.4	45.1	37.2
6	BROWN	910	614	497	414	302	55.3	42.6	35.3	30.7	24.5
7	BRULE	472	365	308	247	206	76.1	67.5	58.3	51.2	45.3
8	BUFFALO	91	53	41	34	31	64.5	37.1	39.0	33.3	30.7
9	BUTTE	80	78	95	70	67	14.2	14.3	18.7	14.3	13.8
10	CAMPBELL	330	250	196	137	87	57.8	51.1	45.3	31.2	22.8
11	CHARLES MIX	1118	876	703	584	473	78.4	70.4	59.5	53.7	51.3
12	CLARK	564	455	328	261	192	47.9	44.3	37.1	32.5	26.9
13	CLAY	635	531	397	323	220	64.5	61.3	53.3	47.3	36.1
14	CODINGTON	510	311	257	188	152	49.6	34.7	30.1	24.5	21.7
15	CORSON	274	169	126	128	90	42.9	30.3	24.7	26.1	18.4
16	CUSTER	33	23	24	24	16	9.3	7.5	7.8	9.0	5.9
17	DAVISON	582	420	315	279	252	77.1	61.9	51.8	50.5	49.6
18	DAY	749	408	339	295	181	52.4	33.2	31.5	29.0	21.3
19	DEUEL	596	403	289	231	162	55.6	40.7	32.2	28.3	21.7
20	DEWEY	141	86	74	73	76	28.6	17.6	19.0	19.6	20.4
21	DOUGLAS	685	576	446	405	331	83.4	78.5	70.0	70.8	62.5
22	EDMUNDS	436	271	223	180	116	55.1	37.7	32.3	27.4	20.6
23	FALL RIVER	77	59	38	38	41	19.3	15.4	11.6	11.8	13.4
24	FAULK	307	216	172	151	117	51.0	40.9	33.8	32.0	29.3
25	GRANT	658	378	303	251	158	57.6	37.2	33.3	28.4	21.5
26	GREGORY	663	526	411	322	289	66.6	58.5	49.2	41.6	41.9
27	HAAKON	56	62	62	64	56	14.5	16.9	17.0	20.9	17.9
28	HAMLIN	598	453	354	271	143	66.4	56.3	49.5	40.0	24.6
29	HAND	558	414	315	241	201	58.0	49.3	40.1	35.7	30.9
30	HANSON	570	425	327	277	228	76.7	65.9	58.5	55.5	49.4
31	HARDING	58	48	31	40	31	16.1	14.9	9.3	11.5	10.1
32	HUGHES	125	93	85	50	54	39.9	32.7	29.5	19.9	22.1
33	HUTCHINSON	1204	978	836	721	610	76.0	67.6	63.0	57.0	54.5
34	HYDE	186	89	73	68	66	57.2	29.1	26.0	25.0	26.8
35	JACKSON	23	17	17	21	20	13.4	10.4	12.1	12.4	13.0
36	JERAULD	379	254	176	165	157	68.8	51.4	39.4	40.8	43.4
37	JONES	66	47	48	41	25	25.2	18.9	19.5	17.6	11.3
38	KINGSBURY	671	553	402	294	220	54.4	52.9	41.7	34.8	28.6
39	LAKE	923	645	512	446	327	78.8	61.5	56.4	52.3	43.4
40	LAWRENCE	20	10	14	4	15	6.6	3.9	5.3	1.6	5.8
41	LINCOLN	1294	985	718	574	463	80.8	68.3	54.2	45.2	39.0
42	LYMAN	203	181	132	144	112	36.6	36.1	25.5	29.3	25.6
43	MCCOOK	914	741	598	477	384	74.6	68.7	63.6	55.2	48.5
44	MCPHERSON	531	351	217	166	103	58.3	45.1	29.9	27.2	19.7
45	MARSHALL	478	344	250	188	169	54.5	44.8	34.9	29.6	30.7
46	MEADE	161	87	86	81	57	18.8	10.7	10.8	10.1	7.9
47	MELLETTE	103	91	102	90	85	34.1	36.5	37.1	33.6	34.0
48	MINNER	539	421	342	274	215	61.0	54.1	49.6	46.7	39.4
49	MINNEHAHA	1357	1083	883	734	552	66.5	57.7	52.1	46.0	37.0
50	MOODY	829	676	504	429	319	70.0	63.3	54.1	49.1	40.8

APPENDIX 1.3

South Dakota Hog and Pig Farms, Number and Percent of All Farms by County, 1959-1978

		Number of Farms Selling Hogs and Pigs					Percent of Farms Selling Hogs and Pigs				
	County	1959	1964	1969	1974	1978	1959	1964	1969	1974	1978
51	PENNINGTON	143	107	96	72	66	20.5	16.8	13.7	12.0	11.6
52	PERKINS	142	140	112	123	105	19.2	21.0	17.2	17.2	16.3
53	POTTER	289	214	210	181	133	62.2	52.2	51.2	45.6	36.4
54	ROBERTS	907	580	494	404	288	51.1	37.3	35.4	30.2	25.9
55	SANBORN	554	396	284	261	203	79.4	60.6	49.7	46.4	41.2
56	SHANNON	32	24	28	26	14	16.9	12.0	18.3	17.1	9.0
57	SPINK	775	539	456	354	282	58.5	47.8	42.7	35.4	31.4
58	STANLEY	41	30	21	29	13	20.3	16.2	11.1	15.5	7.3
59	SULLY	202	151	104	97	62	53.0	43.1	30.4	30.8	19.7
60	TODD	191	95	82	52	40	55.0	30.7	27.9	18.0	16.0
61	TRIPP	504	481	444	362	322	49.0	50.7	48.6	41.8	41.7
62	TURNER	1213	1005	794	683	528	72.9	67.8	59.1	51.8	45.7
63	UNION	883	647	512	386	334	71.4	61.7	54.0	46.5	42.7
64	WALWORTH	316	206	149	145	121	62.1	44.8	33.6	32.7	29.1
65	YANKTON	870	728	583	478	403	71.5	68.3	59.6	54.5	51.1
66	ZIEBACH	43	51	56	69	39	13.1	15.5	24.6	27.5	18.4

APPENDIX TABLE 1.4

SOUTH DAKOTA FEEDER PIG FARMS, NUMBER AND PERCENT BY COUNTY, 1969-1978

	COUNTY	NUMBER OF FARMS SELLING FEEDER PIGS			PERCENT OF HOG AND PIG FARMS SELLING FEEDER PIGS			PERCENT OF TOTAL FARMS SELLING HOGS AND PIGS		
		1969	1974	1978	1969	1974	1978	1969	1974	1978
1	AURORA	53	61	93	14.7	18.1	31.2	9.0	9.0	18.6
2	BEADLE	107	109	93	22.2	25.8	26.3	9.5	9.5	10.0
3	BENNETT	38	33	31	51.4	50.0	44.9	13.1	13.1	10.4
4	BON HOMME	77	77	108	11.5	14.2	23.2	7.4	7.4	12.3
5	BROOKINGS	87	84	74	13.4	15.2	17.9	6.6	6.6	6.6
6	BROWN	64	64	62	12.9	15.5	20.5	4.6	4.6	5.0
7	BRULE	48	53	40	15.6	21.5	19.4	9.1	9.1	8.8
8	BUFFALO	5	13	13	12.2	38.2	41.9	4.8	4.8	12.9
9	BUTTE	28	26	28	29.5	37.1	41.8	5.5	5.5	5.7
10	CAMPBELL	34	24	21	17.3	17.5	24.1	7.9	7.9	5.5
11	CHARLES MIX	92	64	84	13.1	11.0	17.8	7.8	7.8	9.1
12	CLARK	53	55	52	16.2	21.1	27.1	6.0	6.0	7.3
13	CLAY	45	30	46	11.3	9.3	20.9	6.0	6.0	7.6
14	CODINGTON	39	45	38	15.2	23.9	25.0	4.6	4.6	5.4
15	CORSON	37	37	35	29.4	28.9	38.9	7.3	7.3	7.2
16	CUSTER	7	13	8	29.2	54.2	50.0	2.3	2.3	2.9
17	DAVISON	44	58	65	14.0	20.8	25.8	7.2	7.2	12.8
18	DAY	70	93	65	20.6	31.5	35.9	6.5	6.5	7.6
19	DEUEL	39	36	31	13.5	15.6	19.1	4.3	4.3	4.1
20	DEWEY	35	44	49	47.3	60.3	64.5	9.0	9.0	13.2
21	DOUGLAS	64	73	88	14.3	18.0	26.6	10.0	10.0	16.6
22	EDMUNDS	37	29	28	16.6	16.1	24.1	5.4	5.4	5.0
23	FALL RIVER	7	12	15	18.4	31.6	36.6	2.1	2.1	4.9
24	FAULK	28	30	43	16.3	19.9	36.8	5.5	5.5	10.8
25	GRANT	35	29	26	11.6	11.6	16.5	3.9	3.9	3.5
26	GREGORY	107	82	73	26.0	25.5	25.3	12.8	12.8	10.6
27	HAAKON	16	30	31	25.8	46.9	55.4	4.4	4.4	9.9
28	HAMLIN	40	31	18	11.3	11.4	12.6	5.6	5.6	3.1
29	HAND	57	60	58	18.1	24.9	28.9	7.3	7.3	8.9
30	HANSON	43	60	58	13.1	21.7	25.4	7.7	7.7	12.6
31	HARDING	12	14	7	38.7	35.0	22.6	3.6	3.6	2.3
32	HUGHES	35	15	18	41.2	30.0	33.3	12.2	12.2	7.4
33	HUTCHINSON	127	117	127	15.2	16.2	20.8	9.6	9.6	11.3
34	HYDE	17	13	23	23.3	19.1	34.8	6.0	6.0	9.3
35	JACKSON	5	12	11	29.4	57.1	55.0	3.5	3.5	7.1
36	JERAULD	36	44	55	20.5	26.7	35.0	8.1	8.1	15.2
37	JONES	18	16	20	37.5	39.0	80.0	7.3	7.3	9.0
38	KINGSBURY	38	35	41	9.5	11.9	18.6	3.9	3.9	5.3
39	LAKE	50	50	47	9.8	11.2	14.4	5.5	5.5	6.2
40	LAWRENCE	2	4	7	14.3	100.0	46.7	0.8	0.8	2.7
41	LINCOLN	84	80	86	11.7	13.9	18.6	6.3	6.3	7.2
42	LYMAN	35	68	56	26.5	47.2	50.0	6.8	6.8	12.8
43	MCCOOK	93	80	103	15.6	16.8	26.8	9.9	9.9	13.0
44	MCPHERSON	41	47	26	18.9	28.3	25.2	5.6	5.6	5.0
45	MARSHALL	53	66	77	21.2	35.1	45.6	7.4	7.4	14.0
46	MEADE	32	43	28	37.2	53.1	49.1	4.0	4.0	3.9
47	MELLETTE	54	45	50	52.9	50.0	58.8	19.6	19.6	20.0
48	MINNER	43	52	63	12.6	19.0	29.3	6.2	6.2	11.5
49	MINNEHAHA	101	102	100	11.4	13.9	18.1	6.0	6.0	6.7
50	MOODY	64	49	45	12.7	11.4	14.1	6.9	6.9	5.8
51	PENNINGTON	25	34	30	26.0	47.2	45.5	3.6	3.6	5.3
52	PERKINS	21	33	33	18.8	26.8	31.4	3.2	3.2	5.1
53	POTTER	37	35	26	17.6	19.3	19.5	9.0	9.0	7.1
54	ROBERTS	71	65	75	14.4	16.1	26.0	5.1	5.1	6.7
55	SANBORN	39	50	35	13.7	19.2	17.2	6.8	6.8	7.1
56	SHANNON	11	11	5	39.3	42.3	35.7	7.2	7.2	3.2

APPENDIX TABLE 1.4

SOUTH DAKOTA FEEDER PIG FARMS, NUMBER AND PERCENT BY COUNTY, 1969-1978

	COUNTY	NUMBER OF FARMS SELLING FEEDER PIGS			PERCENT OF HOG AND PIG FARMS SELLING FEEDER PIGS			PERCENT OF TOTAL FARMS SELLING HOGS AND PIGS		
		1969	1974	1978	1969	1974	1978	1969	1974	1978
57	SPINK	63	61	46	13.8	17.2	16.3	5.9	5.9	5.1
58	STANLEY	4	14	5	19.0	48.3	38.5	2.1	2.1	2.8
59	SULLY	20	31	19	19.2	32.0	30.6	5.8	5.8	6.1
60	TODD	14	10	10	17.1	19.2	25.0	4.8	4.8	4.0
61	TRIPP	166	103	111	37.4	28.5	34.5	18.2	18.2	14.4
62	TURNER	91	91	95	11.5	13.3	18.0	6.8	6.8	8.2
63	UNION	59	35	46	11.5	9.1	13.8	6.2	6.2	5.9
64	WALWORTH	31	26	31	20.8	17.9	25.6	7.0	7.0	7.5
65	YANKTON	49	42	58	8.4	8.8	14.4	5.0	5.0	7.4
66	ZIEBACH	29	36	20	51.8	52.2	51.3	12.7	12.7	9.4