12-22-2000

Profile of South Dakota Farms By Economic Class

Larry Janssen
South Dakota State University, larry.janssen@sdstate.edu

ECONOMICS COMMENTATOR

South Dakota State University | No. 416 | December 22, 2000

PROFILE OF SOUTH DAKOTA FARMS BY ECONOMIC CLASS

Dr. Larry Janssen
Professor of Economics

Family farms occur in many types and sizes and have changed considerably in the past 20 to 40 years. Forces of structural change in agriculture and changing composition of South Dakota's farm and ranch enterprises were reviewed by Dr. Matthew Diersen in *Economics Commentator* Nos. 409 and 414. The review of structural changes in South Dakota agriculture indicates that most farm economic trends are related to farm size as measured by volume of farm products sold. In this issue, the focus is on key changes in and current profile of four economic classes of South Dakota farms: large, medium, small, and very small. A more in-depth look at this topic is available in: *The Structure of South Dakota Agriculture: Change and Projections.*[1]

It is important to remember that all South Dakota farms are "small" businesses in the national context. All farms, regardless of size and complexity, are controlled by family management, and no farm business is large enough, nor has sufficient market power, to influence commodity prices or costs. However, the economic diversity of South Dakota's family farms becomes evident from the data presented.

Trends by economic class of SD farms

Many economic pressures (economies of size and scope, greater price / cost competition, increased costs of living, etc.) continue to "force" small businesses to expand the size of their operation. The "sales hurdle" also keeps increasing for the farming sector. From 1978 to 1987, the number of South Dakota farms annually selling more than $50,000 of products increased, while the number of farms selling less than $50,000 of products declined. From 1987 to 1997, $100,000 of farm product sales became the dividing line between increasing or decreasing numbers of farms. This $100,000 dividing line is used to classify South Dakota farms into four economic class categories (Table 1). Also shown is the corresponding sales volume needed in 1978 to maintain comparable purchasing power by farmers in each economic class.

Table 1. Proportion of South Dakota farm numbers and sales volume by economic class of farms, comparable sales categories, 1978 and 1997.

	Census years			
	1978		1997	
Economic Class	Farm no.	Sales Volume	Farm no.	Sales Volume
	percent			
Large	1.7	21.1	3.2	33.9
Medium	26.9	49.6	27.0	47.4
Small	49.2	27.1	36.5	16.7
Very Small	22.2	2.2	33.3	2.0
Total Percent	100.0	100.0	100.0	100.0
Total - Farm Number	38,631		31,284	
Total Sales Volume (millions of dollars)		$1,894.2		$3,570.0

Economic Class	Comparable Sales Volume[a]	
	1978	1997
Large	$250,000+	$500,000+
Medium	$50,000-249,999	$100,000-$499,999
Small	$10,000-$49,999	$20,000-$99,999
Very Small	$1,000-$9,999	$1,000-$19,999

[a]Volume of farm product sales needed to maintain comparable purchasing power for production items by farmers in each time period.

Source: South Dakota Census of Agriculture

Key changes from 1978 to 1997 by economic class of South Dakota farms are:

- Large farms are rapidly increasing in overall importance as measured by increasing total numbers, percent of total farms and sales volume.
- Medium size farms have remained stable as a proportion of farm numbers and sales volume, but overall numbers have declined.
- Small farms are rapidly declining in overall importance based on farm numbers and by percent of farm numbers and sales volume.
- Very small farms are increasing in farm numbers and percent of farms, but declining slightly in percent of farm product sales.

The greatest adjustments are occurring among small and medium size farms. These farms are often too small to generate adequate incomes for most farm families, but large enough to prevent operators from assuming substantial amounts of off-farm employment to obtain added income.

Profile of SD farms by economic class

Sales volume per farm is often used to assess structural trends and conditions in the farm sector. Data from the 1997 Census of Agriculture was used to develop a representative profile of farm characteristics for each of the four economic classes of South Dakota farms.

Large farms ($500,000 or more in sales)

Large farms, only 3.2% of all South Dakota farms, generated one-third of gross farm receipts, cash production expenses and net cash income. Less than 10% of large farms reported net cash return losses from farming in 1997.

Nearly one-half of these farms are partnerships or corporations – usually multi-family units (parents and children, brothers and sisters, etc.). In many cases, the multi-family unit structure makes it possible for individual family members to specialize in specific farm operations (crop production, animal husbandry, or marketing). It also indicates the importance of multi-operator management and continuity of management in these larger farms.

Most (72%) large farms are more than 2000 acres in size. Average farm size is 5560 acres operated, including 3425 acres of owned land and 2135 acres of leased land, and 2640 acres of harvested cropland.

Though large in size compared to other South Dakota farms and ranches, these farms have little market power to influence commodity prices. These farms are of sufficient size to achieve most technical (production) economies of size in farming and have quickly adopted new technology. Less than 5% of farm operators work full-time off-farm and nearly 65% employ full-time hired labor.

Operators of large farms generally rely on net farm income as their major source of household income. These farms usually receive the highest net farm income among all farms because they generate large sales volumes and control more assets than other farms. Most large farm operators are part owners and rent farmland from several landlords – an important source of capital. Most large farms (97%) are indebted and control an average of $2.24 million dollars of farm real estate assets and $390,000 of farm machinery and equipment. Large farms tend to have the highest rate of sales turnover per $100 of farm capital assets (real estate and machinery) and above average rates of net cash return per $100 of farm product sales.

Large farms are expected to continue to expand in size, due to rapid and successful adoption of new technology and due to greater potential of managerial continuity in a multi-family structure. Furthermore, some medium size farms will expand sufficiently to join their ranks.

Medium farms ($100,000 to $500,000 of sales)

Medium size farms are the typical example of commercial family farms in South Dakota. These 8450 medium size farms, 27% of all South Dakota farms, generate 47% of farm sales volume, 44% of farm production expenses, and 55% of net cash returns from farm product sales. In 1997, net cash returns from farm product sales (excluding government payments) averaged 26% of gross farm sales which was the highest cash rate of return on sales among all farm sizes. However, nearly 15% of medium size farm operations had negative net cash returns.

Medium size farms are usually one-family operations relying mostly on family labor and net income generated from farming. Almost all (95%) consider farming as their primary occupation. Only 27% employ full-time hired labor and few operators are employed off-farm. Many medium size farms are large enough to achieve most production economies of size in farming, while others are

struggling to remain in commercial farming without shifting to primary reliance on off-farm employment and income.

Two-thirds of medium farm operators own and lease more than 1000 acres. Average farm size is 2380 acres consisting of 1400 acres owned and 980 acres leased. Medium size and large farms tend to have similar land tenure arrangements with part-ownership as the predominant tenure category. Medium farms are also capital intensive, controlling an average of $806,000 of farm real estate and $164,000 of farm machinery and equipment. Most operators (84%) of medium size farms borrow money for farm operating expenses or farm capital purchases. Relative to other economic classes, medium farms tend to have moderate rates of sales turnover per $100 of capital assets.

A majority (56%) of operators of medium farms and large farms are middle-age (35 - 54 years old), compared to only 43% of farmers operating small and very small farms. Only 16% of medium size farms are organized as partnerships or corporations - a profile similar to smaller farms and much different than large farms.

Small farms ($20,000 to $100,000 of sales)

Small farms are still the most numerous size group in South Dakota with 11,400 farms, but their numbers and relative economic importance has been steadily declining. In 1959, small farms (sales volume adjusted for changes in farmer purchasing power) were a majority of South Dakota farms. In 1997, small farms were 36.5% of all farms generating only 16.7% of gross farm sales, 18.6% of farm production expenses and 12.7% of net cash returns from farm product sales. For small farms, net cash returns in 1997 were only 17% of gross farm sales, much lower than the 26% net return on sales obtained by medium size farms. In addition, 28% of small farms reported negative net cash returns from farm product sales.

Most (74%) small farms operate 180 to 2000 acres, with an average farm size of 1142 acres, consisting of 728 acres owned and 414 acres leased. One-half of small farm operators are part owner operators, one-third are full owners, and one-sixth are tenants.

Senior farm operators, 55 years of age and older, operate 45% of small and very small farms compared to only 35% of medium and large farms. This age distribution probably explains the higher incidence of full owners in the land tenure pattern of small farms, as senior farmers are more likely to be full-owners.

Most (81%) operators of small farms are primarily employed on their farms and consider their principal occupation as farming. However, a majority of household income is probably obtained from off-farm sources such as income earned by working spouses and from social security.

Most (72%) operators of small farms borrow money for farm operating expenses or farm capital purchases. Small farms are fairly capital intensive controlling an average of $369,000 of farm real estate assets and $68,000 of farm machinery and equipment. Compared to large and medium farms, small farms generate: (1) lower average sales turnover rates per $100 of farm capital assets, and (2) much lower rates of net cash return per $100 of farm product sales. This combination is much of the financial explanation for the economic pressures encountered by small farms.

Small farms used to be the place to get started in farming. Today the small farm continues as a place to live and work in one's senior or retirement years. It is no longer well suited for most middle-age operators who rely on the farm for most of their household income, because small farms no longer generate sufficient net income for a "middle class" living standard. Increasingly farmers in this group (and many medium size farms) are faced with five options:

- expand to a larger farm size, usually by borrowing more money;
- reduce input costs and increase net income by switching to more sustainable farming practices;
- limit the scope of farm operation and obtain more off-farm income;
- remain the same relative size and accept lower returns; or
- leave farming.

Very small farms (sales of less than $20,000)

Very small farms are best viewed as "residential farms" which provide a rural farm lifestyle, but do not provide a major source of household income.

These farms have increased in numbers over time, unlike their small and medium farm

counterparts. These 10,400 farms are one-third of all South Dakota farms, but they generate only 2% of gross farm sales and incur 3.5% of farm production expenses. Average net cash returns from farm product sales are negative (-$2,500 per farm) with 65% of very small farms reporting negative net cash returns from farming.

Nearly 65% of very small farms are less than 180 acres in size and very few exceed 1000 acres. Two-thirds of these operators own all of the land that they farm, the only economic sales class category where the number of full-owners exceeds the number of part owners.

Most (73%) residential farm operators are retired or employed full-time off-farm and generally do not consider farming as their principal occupation. Only two-fifths of very small farm operations are indebted. Very small farms control an average of $189,000 of farm real estate and $29,300 of farm machinery and equipment.

By most standards, very small farms are not viable economic units and cannot generate adequate net incomes for family living. However, these residential farm operators are important to the economic and social fabric of rural communities in South Dakota. Their continued economic existence depends as much on retirement benefits and economic conditions of their employers as on direct receipts from farming.

[1] Diersen, Matthew A., Larry Janssen, and Paula Loewe, *The Structure of South Dakota Agriculture: Changes and Projections*. Research Report 2000-1, Economics Department, South Dakota State University. February 2000. This report may be obtained online at **agecon.lib.umn.edu/sdsu.html** or by contacting the Economics Department.

ECONOMICS COMMENTATOR

ECONOMICS DEPARTMENT
South Dakota State University
Box 504
Brookings, SD 57007-0895

Phone: (605) 688-4141
Fax: (605) 688-6386
E-mail: Stover_Penny@sdstate.edu

450 copies of this newsletter were produced at a cost of less than $100

SDSU

SOUTH DAKOTA STATE UNIVERSITY
Economics Department
Box 504
Brookings, SD 57007

Address Service Requested

Non-Profit Org.
U. S. Postage
PAID
Brookings, S. D.
Permit 24