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12-1-1974

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Recommended Citation

Allen, Herbert R., "Financial Analysis South Dakota Farm Panel Records Program 1973" (1974). *Agricultural Experiment Station Agricultural Economics Pamphlets*. 157.
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FINANCIAL ANALYSIS
SOUTH DAKOTA FARM PANEL RECORDS PROGRAM
1973

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FINANCIAL ANALYSIS
SOUTH DAKOTA FARM PANEL RECORDS PROGRAM - 1973

By

Herbert R. Allen*

Definition of Terms

Gross Income: This term represents the volume of business done. It is total cash income adjusted for value of home used produce and inventory change. The figure is comparable between farms whether or not feeding livestock is purchased.

Gross Profit: This is another measure of "business size." It is Gross Income less feed and livestock purchases. It represents an adjustment for feed and livestock produced off the farm and is therefore a measure of total "on farm" production.

Net Farm Income in this record summary identifies income to the farm operator. Landlord income and expenses are not included. This figure represents the return to the farm operator for his land, labor, capital and management. It is the amount of money that may be withdrawn from the business and used for family living and new investments without dipping into farm capital.

Management Return is the amount of net farm income remaining after deducting a charge for all resources except management. The following charges are deducted: Operator labor at \$350 per month; family labor at \$250 per month; six percent on land owned; seven percent on the liquid assets (average feed and livestock inventory); seven percent on the average machinery investment.

Return Per \$100 Feed Fed: Total livestock increase divided by value of feed fed.

Value of Crops Per Crop Acre: Gross value of crop production (including government diversion payments) divided by total acres in cropland.

Machine and Power Cost Per Crop Acre: This includes machine repair, fuel and oil, custom work hired, farm share of the auto, telephone, electricity and depreciation. It is the sum of these costs divided by total acres of cropland.

Machine Investment Per Crop Acre: Annual average machinery value divided by total acres in cropland.

Gross Profits Per Man: Gross profits divided by man years of labor.

Gross Profit Per Dollar Net Farm Income: Gross profits divided by net farm income.

Return on Capital Owned: Return to capital and management divided by total capital owned.

Net Capital Ratio: Total assets divided by total liabilities.

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FARM BUSINESS SUMMARY

The data in this report have been obtained from a selected number of farms located in Central South Dakota. It is a summary of data gathered in a pilot program for the development of a computerized farm financial information system. For this reason the data in this report cannot be interpreted as representative of all farms or areas in South Dakota. However, it can serve as a guide to those persons with farm operations similar to the ones included in this report.

Data is presented in this report on the average of all farms participating in the record keeping activities. It includes data for the high 1/3 of the farms and the low 1/3 of the farms. The high and low is in terms of net farm income realized and not the high and low for each individual factor. Such data is useful in order to get a feel of the range of results as well as the average.

Farm Earnings

Net farm income in 1973 was 40 percent greater than in 1972. Prices received increased more rapidly than farm costs and resulted in record high earnings. Net farm income averaged \$39,845.69 for the 9 farms included in this summary. After subtracting a charge for labor and capital this left \$22,696.61 as a return to management. This compares with a \$15,116.54 management return in 1972 and a -\$608.33 in 1971.

The rise in farm prices that began in 1972 continued into 1973. Corn increased from \$1.19 per bushel in January to \$2.15 in December.* Wheat, during this same period, increased from \$2.10 to \$4.61 per bushel. Beef calf

*Crop and Livestock Reporting Service, South Dakota Agriculture, 1973, pages 53-56.

prices were at the \$53 level in January, reached a high of \$70 in August and then declined to \$38 per cwt. in December. Hogs followed a similar pattern with a high of \$56 per cwt. in August. These price movements resulted in a 38 percent increase in gross livestock sales. Crop sales were tripled in 1973 compared to 1972. Grain prices increased throughout the year but livestock prices dropped sharply near the end of the year. For this reason farmers and ranchers with livestock sales near the end of the year did not do as well as those with livestock sales in the middle of the year. Wide price fluctuations and conditions of instability throughout the economy have made it extremely difficult to plan ahead with any degree of confidence. Such conditions may exist for several years in the future. With a situation of this nature it becomes important to study new investments carefully and make expenditures only where the returns justify the cost.

Operating Ratios

Gross value of crops per crop acre increased from \$57.22 per acre in 1972 to \$70.36 in 1973. Crop expenses plus machine and power cost per acre amounted to \$34.05 in 1973. These expenses include fertilizer, insecticide, seed, weed control, machine depreciation and operating expenses for machinery. Even though these expenses may increase in future years, rather than decrease, we must look at them in relation to their affect upon the gross value of our crop production. We cannot afford to eliminate any expense items that will affect our gross crop returns more than it affects our costs. In other words, high expenditures for fertilizer and other inputs will continue to be justified as long as the increase in value of crop production is greater than their cost.

There are a number of operating ratios presented in this report. You may be interested in comparing your 1973 figures with the average figures in this report and also with those of past years on your own farm. Perhaps only a few

of the ratios are of particular interest to you because they deviate significantly from the average. One or two ratios may be all that is needed to indicate where you are strong or weak. In crop production the gross value of crops per acre and expenses per acre are basic ratios to examine. In livestock production the returns per dollar of feed fed is a basic ratio to look at. If you are weak in this ratio it may cause you to look at other factors such as pigs saved per litter or calves weaned per cow to determine if your problem is in physical production efficiency or possibly in the marketing of your livestock. As stated previously, wide fluctuations in price received had significant effect upon returns to feed fed in 1973. The average return was \$2.72 per dollar of feed fed, but it ranged from \$1.18 up to \$4.41 per dollar of feed fed.

Machine investment per crop acre has increased every year since records were first kept in 1970. The investment per acre was \$26.79 in 1970 and in 1973 it was \$41.38. Data on the last page of this report indicate that, on the average, crop machinery is about half way depreciated out. The remaining value as a percent of purchase cost is 53.88 percent. However, it ranges from 40 percent up to almost 70 percent. If we are on the upper range of this scale we would have relatively new equipment on hand and would perhaps give more careful thought to additional investment than if we are at the lower end of this scale. Such interpretation needs to be made with care, however. Each farm and ranch situation is unique. Individual items of equipment may need replacing and/or higher investments may be necessary to offset a short labor supply.

Operating ratios are like thermometers. They measure the temperature of our business performance and only indicate areas that may deserve special attention and examination.

Farm Record Summary
AVERAGE FOR ALL FARMS

INCOME STATEMENT

	1971 <u>Average of 12 Farms</u>	1972 <u>Average of 10 Farms</u>	1973 <u>Average of 9 Farms</u>
Livestock Sales	\$36,769.53	\$ 76,018.06	\$105,069.88
Crop Sales	6,217.23	2,914.18	9,276.24
Other Income	<u>4,761.11</u>	<u>5,296.20</u>	<u>6,344.33</u>
 TOTAL CASH INCOME	 \$47,702.87	 \$ 84,228.44	 \$120,690.44
Home Used Produce	228.92	362.45	517.89
Inventory Change	<u>10,656.79</u>	<u>31,787.35</u>	<u>29,745.42</u>
 GROSS INCOME	 \$58,588.57	 \$116,378.24	 \$150,953.69
Less Feed Bought	4,421.70	7,779.99	13,566.43
Less Livestock Purchased	<u>12,830.61</u>	<u>44,283.71</u>	<u>50,149.67</u>
 GROSS PROFIT	 \$41,336.25	 \$ 64,314.54	 \$ 87,237.56
Less Operating Expenses	\$13,562.68	\$ 17,482.22	\$ 25,147.37
Less Overhead Expenses	9,473.54	12,347.27	14,226.26
Less Depreciation	5,857.29	6,203.44	8,744.24
Capital Gains or Losses	<u>- 197.32</u>	<u>14.41</u>	<u>726.01</u>
 NET FARM INCOME	 \$12,245.42	 \$ 28,296.02	 \$ 39,845.69
Plus Interest Paid	3,505.61	6,474.59	7,260.49
Less Operator Labor - \$350 per mo.	4,200.00	4,200.00	4,200.00
Less Family Labor - \$250 per mo.	<u>1,027.08</u>	<u>600.00</u>	<u>666.67</u>
 RETURN TO CAPITAL AND MGT.	 \$10,523.95	 \$ 29,970.61	 \$ 42,239.52
Less Interest on Land Owned @ 6%	4,688.00	5,009.40	6,099.33
Less Interest on Inventory @ 7%	<u>6,464.27</u>	<u>9,844.67</u>	<u>13,443.57</u>
 RETURN TO MANAGEMENT	 \$ -608.33	 \$ 15,116.54	 \$ 22,696.61

Farm Record Summary
AVERAGE FOR ALL FARMS

BUSINESS ANALYSIS FACTORS

	1971 Average of <u>12 Farms</u>	1972 Average of <u>10 Farms</u>	1973 Average of <u>9 Farms</u>
<u>RESOURCES USED</u>			
Value of Land and Improvements	\$ 86,641.14	\$101,669.94	\$120,261.30
Machinery and Equipment	20,650.30	22,518.23	27,484.71
Livestock and Feed	<u>60,688.69</u>	<u>98,695.02</u>	<u>141,510.58</u>
Total Capital Owned	\$167,980.13	\$222,883.24	\$289,256.59
Total Acres Operated	1,604.08	1,406.60	1,562.56
Acres Rented	667.83	471.60	259.44
Acres of Cropland	741.58	611.40	684.33
Months of Labor Used	18.44	18.15	18.83
<u>OPERATING RATIOS</u>			
Net Worth Change	\$ 5,821.10	\$ 27,446.71	\$ 31,435.10
Gross Value of Crops per Crop Acre	28.44	57.22	70.36
Crop Expenses per Crop Acre	3.82	8.44	11.48
Machine Investment per Crop Acre	28.37	35.79	41.38
Returns per Dollar Feed Fed	1.96	2.09	2.72
Machine and Power Cost per Crop Acre	16.84	20.05	22.57
Gross Profit per Man	27,867.87	41,638.67	54,960.37
Gross Profit per Dollar Net Income	3.38	2.27	2.19
Current Ratio	4.47	5,486.55	5.02
Net Capital Ratio (End of Year)	3.21	4.00	3.45
Operating Capital	81,338.97	121,213.27	168,995.25
Percent Return on Capital Owned	6.26	13.45	14.60
Percent Return on Operating Capital	7.20	20.59	21.39
<u>CROP AND LIVESTOCK PRODUCTION</u>			
Pigs Weaned per Litter	6.12	6.51	6.47
Calves Weaned per Cow	0.93	0.92	0.93
Lambs Weaned per Ewe	1.07	1.25	1.41
Corn Yield per Acre	25.83	64.85	50.60
Winter Wheat Yield per Acre	36.50	37.20	0.00
Spring Wheat Yield per Acre	27.33	11.85	23.50
Corn Silage Tons per Acre	5.83	10.22	8.10
Oat Yield per Acre	52.81	49.34	37.27
Alfalfa Hay Tons per Acre	1.44	2.66	2.21

Farm Record Summary - 1973

INCOME STATEMENT

	<u>High 1/3 of Farms</u>	<u>Low 1/3 of Farms</u>	<u>Your Farm</u>
Livestock Sales	\$101,694	\$33,472	_____
Crop Sales	5,400	7,558	_____
Other Income	<u>3,917</u>	<u>3,617</u>	_____
TOTAL CASH INCOME	\$111,011	\$44,647	_____
Home Used Produce	80	787	_____
Inventory Change	<u>45,885</u>	<u>11,890</u>	_____
GROSS INCOME	\$156,976	\$57,324	_____
Less Feed Bought	9,024	5,564	_____
Less Livestock Purchased	<u>29,879</u>	<u>10,155</u>	_____
GROSS PROFIT	\$118,073	\$41,605	_____
Less Operating Expenses	29,663	11,926	_____
Less Overhead Expense	12,742	13,733	_____
Less Depreciation	10,603	5,741	_____
Capital Gains or Losses	<u>100</u>	<u>1,710</u>	_____
NET FARM INCOME	\$ 65,165	\$11,915	_____
Plus Interest Paid	3,975	7,079	_____
Less Operator Labor @ \$350 per mo.	4,200	4,200	_____
Less Family Labor @ \$250 per mo.	<u>750</u>	<u>917</u>	_____
RETURN TO CAPITAL AND MGT.	\$ 64,190	\$13,877	_____
Less Interest on Land Owned @ 6%	6,960	3,840	_____
Less Interest on Inventory @ 7%	<u>13,901</u>	<u>8,454</u>	_____
RETURN TO MANAGEMENT	\$ 43,329	\$ 1,583	_____

Farm Record Summary - 1973

BUSINESS ANALYSIS FACTORS

	<u>High 1/3 of Farms</u>	<u>Low 1/3 of Farms</u>	<u>Your Farm</u>
<u>RESOURCES USED</u>			
Value of Land Owned	\$130,611	\$69,473	_____
Machinery and Equipment	27,837	16,931	_____
Livestock and Feed	<u>148,139</u>	<u>98,366</u>	_____
Total Capital Owned	\$306,587	\$184,770	_____
Total Acres Operated	1,493	1,899	_____
Acres Rented	293	160	_____
Acres of Cropland	849	524	_____
Months of Labor Used	21.33	17.87	_____

OPERATING RATIOS

Net Worth Change	\$ 47,579	\$ 8,105	_____
Gross Value of Crops Per Acre	53.66	46.98	_____
Crop Expenses Per Crop Acre	8.48	6.01	_____
Machine Investment per Crop Acre	33.18	35.24	_____
Returns per Dollar Feed Fed	4.41	1.18	_____
Machine & Power Cost per Crop Acre	21.86	21.94	_____
Gross Profit per Man	68,088	29,385	_____
Gross Profit per Dollar Net			_____
Farm Income	1.81	3.49	_____
Current Ratio	2.71	6.97	_____
Net Capital Ratio (End of the Year)	3.31	3.38	_____
Operating Capital	175,976	115,297	_____
Percent Return on Capital Owned	20.94	7.51	_____
Percent Return on Operating Capital	32.52	8.71	_____

CROP AND LIVESTOCK PRODUCTION

Pigs Weaned per Litter	5.41	0.00	_____
Calves Weaned per Cow	.96	.87	_____
Lambs Weaned per Ewe	1.17	1.69	_____
Corn Yield per Acre, bu.	50.00	27.50	_____
Winter Wheat Yield per Acre, bu.	0.00	0.00	_____
Spring Wheat Yield per Acre, bu.	25.00	0.00	_____
Corn Silage Tons per Acre	6.27	9.14	_____
Oat Yield per Acre, bu.	35.00	30.00	_____
Alfalfa Hay Tons per Acre	1.05	1.63	_____

Remaining Value of Farm Crop Machinery
as Percent of Purchase Cost for 10 Farms
1973 Farm Records

<u>Purchase Cost</u>	<u>Remaining Value Dec., 1973</u>	<u>Remain Value as % of Purchase Cost</u>	<u>Acres of Cropland</u>
\$33,213	\$17,515	52.73	773
44,956	21,838	48.58	678
24,791	15,018	60.58	373
20,076	8,195	40.82	658
63,354	26,519	41.86	1095
37,621	17,911	47.61	507
36,227	23,955	66.13	857
19,354	11,519	59.52	574
50,378	21,827	43.33	542
100,940	67,877	67.24	676
Average for 10 Farms			
\$43,091	23,217	53.88	673