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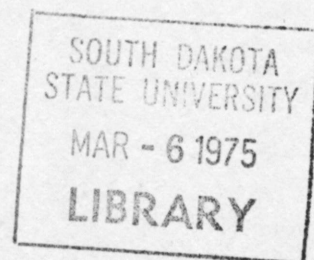
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FINANCIAL ANALYSIS
SOUTH DAKOTA FARM PANEL RECORDS PROGRAM
1972

Data used in developing this summary were obtained from a group of selected farm operators. These farmers have been cooperating in a pilot research program for the development of a computerized farm financial information system. Data in the following tables are presented for the purpose of providing guidelines and standards that may be useful to the individual operator as he studies his own business operations.

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FINANCIAL ANALYSIS
SOUTH DAKOTA FARM PANEL RECORDS PROGRAM - 1972

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 It is the amount of money that may be withdrawn from the business and used for family living and new investments without dipping into farm capital.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 Hyde, Hand and Faulk counties, South Dakota. It is a summary of data gathered in the first 3 years of 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 all areas of South Dakota. However, it can serve as a guide to those persons with farm operations similar to the ones included in this report.

This analysis compares the 1972 costs and returns for the average farm on the panel with costs and returns in 1970 and 1971. Individual operators may likewise study their businesses by comparing this years records with those of past years. Such a comparison may be just as helpful as comparing their individual operation to the average farm operation.

Net farm income per farm more than doubled in 1972 compared to 1971. The average net farm income in 1972 was \$28,295.89 compared to \$12,245.42 in 1971. This was due to the significant rise in farm prices during 1972. Hog prices rose from the \$22 level in January to the \$28 level in December. Likewise, calf prices rose from \$40 to \$50 during 1972. The index of prices received ^{1/} rose 14% from 1971 to 1972. Costs also begin to rise in 1972 but they lagged behind prices received. The index of prices paid for items used in production rose by 6% from 1971 to 1972. This left a margin of profit to permit net farm income to be significantly greater in 1972.

^{1/} Crop and Livestock Reporting Service, South Dakota Agriculture, 1972, South Dakota Crop and Livestock Reporting Service, Page 56.

When we have a year with rising prices, such as in 1972, it may be more helpful to estimate our performance by looking at some of the physical efficiency factors such as crop yields, pigs weaned per litter, etc. On the average farm corn yields averaged 65 bu. per acre in 1972. This compares with 25 bu. per acre in 1971. Spring Wheat yields were down from 27 bu. per acre in 1971 to 12 bu. per acre in 1972. The total value of crop production was \$34,984.31 per farm. This resulted in a gross value of crop production per acre of \$57.22 in 1972. The comparable return for 1971 was \$28.44 per acre or slightly more than double the return in 1971. However, expenses were also higher in 1972. Expenses per crop acre were \$8.44 in 1972 compared to \$3.82 in 1971. Expenses include any expenditures for seed, crop insurance, fertilizer, weed spray and pesticides.

Cash income from livestock sales more than doubled in 1972 compared to 1971. Rising feed costs, however, are revealed in the fact that the return per dollar feed fed in 1972 was not much higher than in 1971. The return was \$2.09 in 1972 compared to \$1.96 in 1971. In spite of more favorable price situations farmers must continue to use recommended production practices in order to receive the benefits of a favorable price.

The average return on capital owned for all farms was 13.45 percent. This compares with 6.26 percent in 1971 and 7.66 percent in 1970. The 1972 year is the only year in the recent 3 year period when the return on capital has been above the going rate of interest.

Net worth also rose significantly in 1972. Under favorable conditions of this kind farmers have an incentive for replacing worn out machinery and making other new investments. As a guideline for new machinery investments the data on page 9 is presented. This table gives the remaining value of farm crop machinery as a percent of purchase cost

for 10 different farming operations. The remaining value of crop machinery at the end of 1972 was 52.14% of its' purchase cost on the average. This means that the machinery is about 1/2 depreciated. This figure varies from a high of 68.45% to a low of 40.13%. If we are at the high end of this scale it probably means we have relatively new machinery. If we are at the low end of the scale we may need to be good mechanics to keep the machinery serviceable. New investments in machinery will need to be weighed quite carefully if we have a good portion of a machines useful life still remaining.

But this does not automatically mean new investments should not be made. Each new purchase must be considered on its own merit and other factors need to be considered. Data from records such as that presented in this report serve only as guidelines for us and provide clues as to the areas of our business that may deserve further thought and study. Ownership cost on machinery is one important factor driving up the machine and power cost per acre. The machine and power cost per acre has risen each of the three years in which records have been kept. It jumped from \$16.84 per acre in 1971 to \$20.05 in 1972. Likewise, machine investment per acre rose from \$28.37 to \$25.79. On the other side of the argument we must recognize that the least cost method of production is not always the most profitable. A higher machine cost per acre may be necessary to permit timeliness of operations or substitute for hired labor, etc. Analysis factors, such as those obtained from our farm records, may serve only as caution signs along the highway.

Farm Record Summary
AVERAGE FOR ALL FARMS

INCOME STATEMENT

	1970 Average of <u>14 Farms</u>	1971 Average of <u>12 Farms</u>	1972 Average of <u>10 Farms</u>
Livestock Sales	\$42,999.15	\$36,769.53	\$76,018.06
Crop Sales	5,892.83	6,217.23	2,914.18
Other Income	<u>5,633.22</u>	<u>4,716.11</u>	<u>5,296.20</u>
TOTAL CASH INCOME	\$54,525.20	\$47,702.87	\$84,228.44
Home Used Produce	213.28	228.92	362.45
Inventory Change	<u>6,212.38</u>	<u>10,656.79</u>	<u>31,787.35</u>
GROSS INCOME	\$60,950.86	\$58,588.57	116,378.24
Less Feed Bought	4,492.63	4,421.70	7,779.99
Less Livestock Purchased	<u>13,186.72</u>	<u>12,830.61</u>	<u>44,233.71</u>
GROSS PROFIT	\$43,271.51	\$41,336.25	\$64,314.54
Less Operating Expenses	\$13,291.17	\$13,562.68	\$17,482.22
Less Overhead Expenses	9,153.04	9,473.54	12,347.27
Less Depreciation	5,810.80	5,857.29	6,203.44
Capital Gains or Losses	<u>271.46</u>	<u>- 197.32</u>	<u>14.41</u>
NET FARM INCOME	\$15,287.96	\$12,245.42	\$28,296.02
Plus Interest Paid	3,342.02	3,505.61	6,474.59
Less Operator Labor - \$350 per mo.	4,200.00	4,200.00	4,200.00
Less Family Labor - \$250 per mo.	<u>996.42</u>	<u>1,027.08</u>	<u>600.00</u>
RETURN TO CAPITAL AND MGT.	\$13,433.56	\$10,523.95	\$29,970.61
Less Interest on Land Owned @ 6%	\$ 3,914.51	\$ 4,668.00	5,009.40
Less Interest on Inventory @ 7%	<u>6,755.47</u>	<u>6,464.27</u>	<u>9,844.67</u>
RETURN TO MANAGEMENT	\$ 2,763.58	\$ -608.33	15,116.54

Farm Record Summary
AVERAGE FOR ALL FARMS

BUSINESS ANALYSIS FACTORS

	1970 Average of <u>14 Farms</u>	1971 Average of <u>12 Farms</u>	1972 Average of <u>10 Farms</u>
<u>RESOURCES USED</u>			
Value of Land and Improvements	\$ 88,190.34	\$ 86,641.14	\$101,669.94
Machinery and Equipment	22,477.54	20,650.30	22,518.28
Livestock and Feed	<u>64,632.82</u>	<u>60,688.69</u>	<u>98,695.02</u>
Total Capital Owned	\$175,300.70	\$167,980.13	\$222,883.24
Total Acres Operated	1,893.00	1,604.08	1,406.60
Acres Rented	841.00	667.83	471.60
Acres of Cropland	839.00	741.58	611.40
Months of Labor Used	19.34	18.44	18.15
<u>OPERATING RATIOS</u>			
Net Worth Change	\$ 8,619.19	\$ 5,821.10	\$ 27,446.71
Gross Value of Crops per Crop Acre	28.14	28.44	57.22
Crop Expenses per Crop Acre	3.54	3.82	8.44
Machine Investment per Crop Acre	26.79	28.37	35.79
Returns per Dollar Feed Fed	1.99	1.96	2.09
Machine and Power Cost per Crop Acre	15.43	16.84	20.05
Gross Profit per Man	26,848.89	27,867.87	41,638.67
Gross Profit per Dollar Net Income	2.83	3.38	2.27
Current Ratio		4.47	5,486.55
Net Capital Ratio (End of Year)	4.01	3.21	4.00
Operating Capital		81,338.97	121,213.27
Percent Return on Capital Owned	7.66	6.26	13.45
Percent Return on Operating Capital		7.20	20.59
<u>CROP AND LIVESTOCK PRODUCTION</u>			
Pigs Weaned per Litter	8.86	6.12	6.51
Calves Weaned per Cow	0.94	0.93	0.92
Lambs Weaned per Ewe	0.99	1.07	1.25
Corn Yield per Acre	27.08	25.83	64.85
Winter Wheat Yield per Acre	30.05	36.50	37.20
Spring Wheat Yield per Acre	22.02	27.33	11.85
Corn Silage Tons per Acre	6.09	5.83	10.22
Oat Yield per Acre	40.78	52.81	49.34
Alfalfa Hay Tons per Acre	1.53	1.44	2.66

Farm Record Summary - 1972

INCOME STATEMENT

	<u>High 1/3 of Farms</u>	<u>Low 1/3 of Farms</u>	<u>Your Farm</u>
Livestock Sales	\$144,224	\$15,325	_____
Crop Sales	852	2,998	_____
Other Income	<u>8,013</u>	<u>3,563</u>	_____
TOTAL CASH INCOME	\$153,089	\$21,886	_____
Home Used Produce	676	50	_____
Inventory Change	<u>57,543</u>	<u>8,835</u>	_____
GROSS INCOME	\$211,308	\$30,771	_____
Less Feed Bought	12,892	1,766	_____
Less Livestock Purchased	<u>96,522</u>	<u>1,417</u>	_____
GROSS PROFIT	\$101,894	\$27,588	_____
Less Operating Expenses	27,699	7,934	_____
Less Overhead Expense	19,666	3,688	_____
Less Depreciation	7,977	2,555	_____
Capital Gains or Losses	<u>- 187</u>	<u>0</u>	_____
NET FARM INCOME	\$ 46,365	\$13,411	_____
Plus Interest Paid	11,626	756	_____
Less Operator Labor @ \$350 per mo.	4,200	4,200	_____
Less Family Labor @ \$250 per mo.	<u>333</u>	<u>500</u>	_____
RETURN TO CAPITAL AND MGT.	\$ 53,458	\$ 9,467	_____
Less Interest on Land Owned @ 6%	6,858	2,240	_____
Less Interest on Inventory @ 7%	<u>15,743</u>	<u>\$ 2,866</u>	_____
RETURN TO MANAGEMENT	\$ 30,857	\$ 4,361	_____

Farm Record Summary - 1972

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	\$148,567	\$43,326	_____
Machinery and Equipment	32,774	9,552	_____
Livestock and Feed	<u>155,409</u>	<u>25,402</u>	_____
Total Capital Owned	\$336,750	78,280	_____
Total Acres Operated	1,835	960	_____
Acres Rented	972	387	_____
Acres of Cropland	684	441	_____
Months of Labor Used	20.17	14.5	_____

OPERATING RATIOS

Net Worth Change	\$ 46,352	\$11,911	_____
Gross Value of Crops Per Acre	69	58.38	_____
Crop Expenses Per Crop Acre	\$ 15.44	6.71	_____
Machine Investment per Crop Acre	44.62	26.36	_____
Returns per Dollar Feed Fed	2.11	1.89	_____
Machine & Power Cost per Crop Acre	21.41	18.81	_____
Gross Profit per Man	\$ 61,689	23,260	_____
Gross Profit per Dollar Net			_____
Farm Income	2.20	2.06	_____
Current Ratio	1.44	18,284	_____
Net Capital Ratio (End of the Year)	2.19	5.90	_____
Operating Capital	188,183	34,954	_____
Percent Return on Capital Owned	15.87	12.09	_____
Percent Return on Operating Capital	24.76	20.67	_____

CROP AND LIVESTOCK PRODUCTION

Pigs Weaned per Litter	0	7.05	_____
Calves Weaned per Cow	.95	.97	_____
Lambs Weaned per Ewe	0	1.49	_____
Corn Yield per Acre, bu.	73.33	67.44	_____
Winter Wheat Yield per Acre, bu.	0	0	_____
Spring Wheat Yield per Acre, bu.	0	11.85	_____
Corn Silage Tons per Acre	11.50	10.00	_____
Oat Yield per Acre, bu.	50.68	43.32	_____
Alfalfa Hay Tons per Acre	2.99	2.86	_____

Remaining Value of Farm Crop Machinery
as Percent of Purchase Cost for 10 Farms
1972 Farm Records

Purchase Cost	Remaining Value Dec., 1972	Remain Value as % of Purchase Cost	Acres of Cropland
\$25,200	\$12,752	50.6	571
36,437	17,462	47.92	678
22,914	13,575	59.25	395
17,526	7,615	43.45	658
60,978	29,453	48.30	1095
31,712	12,726	40.13	507
21,693	12,488	57.57	707
16,854	10,837	64.30	574
12,474	5,168	41.43	157
85,974	58,851	68.45	772
Average for 10 Farms			
\$33,176	18,093	52.14	611