



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

1967–1971

A FIVE-YEAR SUMMARY OF FARM BUSINESS RECORDS,
SOUTHERN MINNESOTA

Truman Nodland
Janet Otis
Paul Hasbargen

Department of Agricultural and Applied Economics
Institute of Agriculture, University of Minnesota
St. Paul, Minnesota 55101

A FIVE-YEAR SUMMARY OF FARM BUSINESS RECORDS,
SOUTHERN MINNESOTA, 1967-1971

Truman Nodland, Janet Otis and Paul Hasbargen

TABLE OF CONTENTS

	Page
Introduction	1
Capital Managed	5
Earnings	8
The Cropping Program	16
Some Concluding Statements	18

INTRODUCTION

This is a study of the farm records of 160 members of the Southeastern and the Southwestern Minnesota Farm Management Associations who have continuous and complete records for the five-year period, 1967-1971. The farms were arrayed on the basis of a five-year average of earnings. The arrayed earnings of the 160 farms were then divided into ten groups of 16 farms each, with the 16 highest in earnings called Group 1 and the 16 lowest in earnings called Group 10. Data in table 1 show five-year average labor earnings and labor earnings for each of the five years included in this study for the ten groups.

The purpose of this study is (1) to present average costs and income of farmers in southern Minnesota over a period of years, (2) to show the consistency in the level of earnings over a period of years, and (3) to supply data for farm planning that are more stable than that found in annual averages.

Table 1. Labor and Management Earnings by Years, Southern Minnesota, 1967-1971

Group	5-year average	1967	1968	1969	1970	1971
1	\$23,064	\$15,445	\$25,168	\$29,308	\$25,099	\$20,303
2	15,847	9,887	16,226	19,179	18,726	15,219
3	12,153	8,903	12,711	17,287	11,147	10,719
4	10,581	7,280	9,008	12,196	10,838	13,581
5	9,310	5,500	10,651	12,392	9,375	8,632
6	8,497	5,880	10,981	9,773	8,101	7,750
7	7 237	5,310	8,693	9,589	7,408	5,186
8	5,723	3,708	6,155	7,442	7,006	4,180
9	4,263	1,763	5,784	7,542	4,960	1,264
10	970	964	2,727	3,524	833	-3,197

Farms included in this study are located in the southern one-fourth of the state (figure 1). Of the 160 farms, 84 are from the Southwestern Minnesota Farm Management Association and 76 are from the Southeastern Minnesota Farm Management Association.

Because farmers included in this study are, in general, above average in managerial ability and operate larger and more productive farms, their returns to labor and management are higher than the average returns reported in census type data. Wide variations in management and practices followed do exist between farms. It can be assumed that similar variations occur among all farmers in the area.

The type of farming followed by high and low earnings farmers is shown in table 2 and is quite representative of all farms included in this study. Farms were classified according to the source of cash income received from

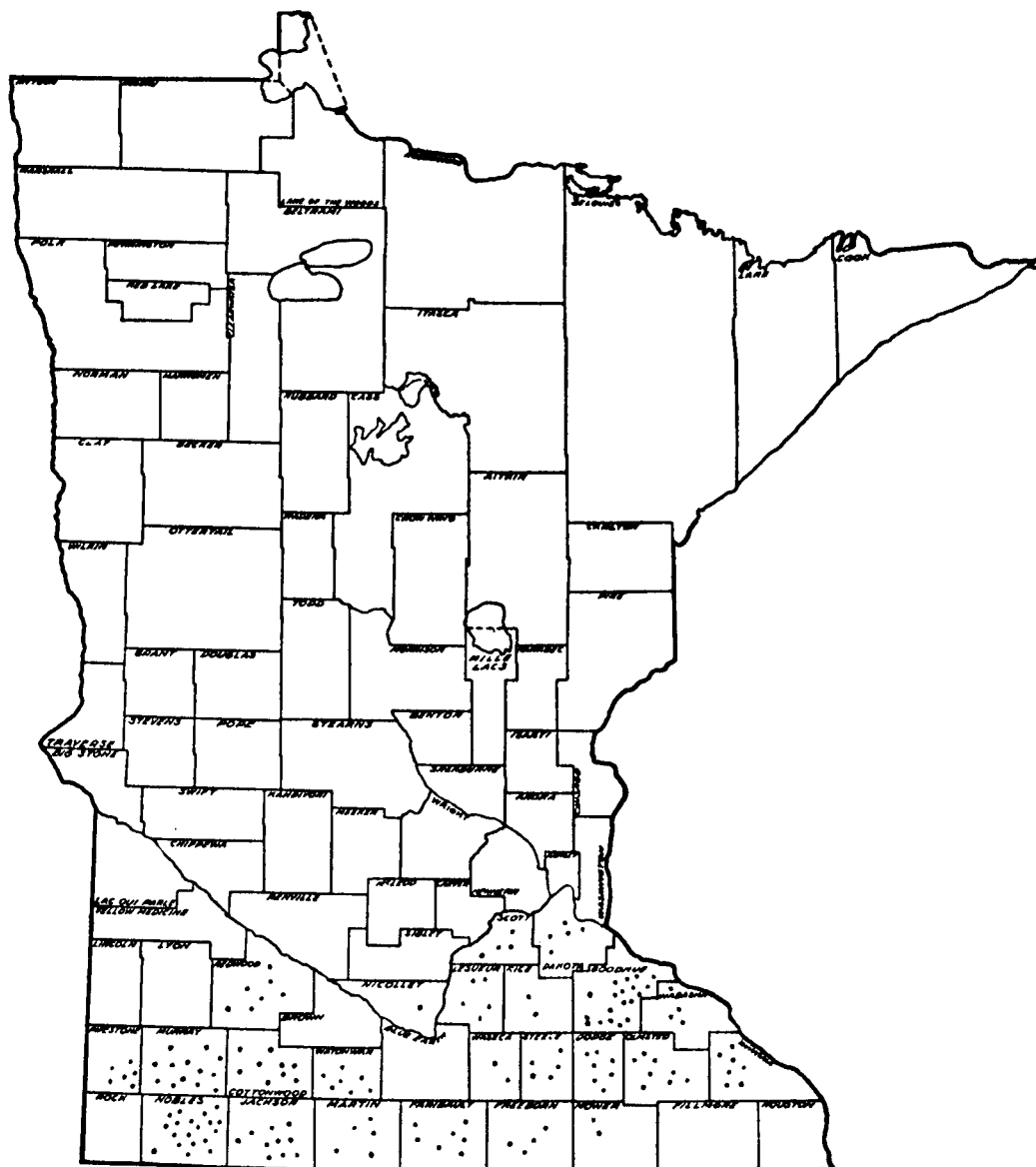


Figure 1. Location of Farms Included in This Study.

various livestock enterprises and from the sale of crops. The following classifications were used:

1. One enterprise farms--80 percent or more of the cash income was from one enterprise or source.
2. Two enterprise farms--80 percent or more of the cash income was from two enterprises, with a minimum of 20 percent from the smaller of the two.
3. Three enterprise farms--80 percent or more of the income came from three enterprises, with a minimum of 20 percent from the smallest.

Few farmers maintained more than three enterprises. Types of farming which included dairy cattle or hogs were most common in southeastern Minnesota, while feeder cattle and hogs were prominent livestock enterprises in southwestern Minnesota. An important share of the crops is used on the farm and thus contributes to cash income through livestock.

Twelve farmers in the high earnings group maintained hogs as one enterprise and ten farmers had a cash crop enterprise. In the low earnings group, 12 farmers had a cash crop enterprise and seven had dairy cattle.

Table 2. Type of Farming Followed by High and Low Earnings Farmers, 1967-1971

Number in high earnings group	Type of farming	Number in low earnings group
1	Dairy	4
0	Dairy and cash crops	3
2	Dairy, hogs & cash crops	0
1	Dairy and feeder cattle	0
1	Hogs	0
3	Hogs and cash crops	4
2	Hogs and feeder cattle	0
4	Hogs, feeder cattle and cash crops	1
1	Feeder cattle	0
1	Feeder cattle & cash crops	2
0	Cash crops	2

Simple arithmetic averages are used throughout the report. Calculations were made for each year and the 1967-1971 results were averaged. It is suggested that farmers copy facts concerning their business into the "your farm" column so comparisons can be made with the most appropriate averages. Comparisons with averages will not tell a farmer what to do but they will yield ideas that he can consider in operating his own business.

The report is divided into four sections. The first section deals with capital managed. The second section includes various kinds of earnings statements. Land use and crop yields are included in the third section. The final section summarizes some of the characteristics of high and low earnings groups.

CAPITAL MANAGED

Average capital managed on January 1, 1967 and December 31, 1971 for the various earnings groups is shown in table 3. These data represent values as reported by farmers in their farm business records. These values approximate current market values except for real estate. Land is valued at cost and buildings are valued at cost and depreciated according to length of life and have not been adjusted for the price inflation which has occurred since purchase. All other capital items purchased are valued at cost less annual depreciation based on estimated length of life.

The most profitable farms used more than twice as much capital as low earnings farms. High earnings farms showed growth in capital for the five-year period of approximately \$95,000; the lowest growth in capital, about \$11,000, was reported by Group 9, the next to the lowest earnings group. Additional land represents the largest single item of increase.

Table 3. Summary of Inventories, Southern Minnesota, 1967-1971.

Item	Your farm	Average	Group 1	Group 2	Group 3
1. Size of farm in 1967 (acres)	_____	339	527	365	361
2. Size of business (work units)	_____	427	657	495	448
Farm capital managed January 1, 1967					
3. Dairy cows	\$ _____	\$ 3249	\$ 2732	\$ 3226	\$ 3187
4. Other dairy cattle	_____	2041	1880	2029	1997
5. Beef cattle (incl. feeders)	_____	8784	22996	11207	13295
6. Hogs	_____	3595	9157	5939	3319
7. Other productive livestock	_____	363	104	197	256
8. Productive livestock total	\$ _____	\$ 18032	\$ 36869	\$ 22598	\$ 22054
9. Crop, seed and feed	\$ _____	\$ 14205	\$ 26249	\$ 16300	\$ 13370
10. Auto & truck (farm share)	\$ _____	\$ 1773	\$ 1934	\$ 1815	\$ 1670
11. Tractors & crop machinery	_____	10930	16888	11506	11253
12. Livestock equipment	_____	2510	3869	2605	3642
13. Machinery & equipment total	\$ _____	\$ 15213	\$ 22691	\$ 15926	\$ 16565
14. Land	\$ _____	\$ 44695	\$ 72055	\$ 48155	\$ 44318
15. Buildings, fences, etc.*	_____	18093	25800	21397	19488
16. Total farm capital managed	\$ _____	\$110238	\$183664	\$124376	\$115795
17. Size of farm in 1971 (acres)	_____	399	631	480	422
18. Size of business (work units)	_____	462	718	564	477
Farm capital managed December 31, 1971					
19. Dairy cows	\$ _____	\$ 4414	\$ 4577	\$ 4896	\$ 4387
20. Other dairy cattle	_____	3018	2836	3947	3273
21. Beef cattle	_____	13938	41187	23773	17553
22. Hogs	_____	4356	11759	6946	2314
23. Other productive livestock	_____	233	25	183	125
24. Productive livestock total	\$ _____	\$ 25959	\$ 60384	\$ 39745	\$ 27652
25. Crop, seed and feed	\$ _____	\$ 19248	\$ 40732	\$ 27983	\$ 18053
26. Auto & truck (farm share)	\$ _____	\$ 2425	\$ 3296	\$ 3290	\$ 2162
27. Tractors & crop machinery	_____	16672	23206	19759	18711
28. Livestock equipment	_____	3370	4897	3645	4347
29. Machinery & equipment total	\$ _____	\$ 22467	\$ 31399	\$ 26694	\$ 25220
30. Land	\$ _____	\$ 63367	\$114702	\$ 75915	\$ 61021
31. Buildings, fences, etc.	_____	22994	30905	30143	20905
32. Total farm capital managed	\$ _____	\$154035	\$278122	\$200480	\$152851

* Not including farm dwelling.

Table 3. Summary of Inventories, Southern Minnesota, 1967-1971 (continued)

	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
1.	302	313	297	300	344	286	297
2.	440	407	385	434	361	321	316
Farm capital managed January 1, 1967							
3.	\$ 4099	\$ 3310	\$ 3799	\$ 4693	\$ 2338	\$ 2429	\$ 2621
4.	2162	1950	2421	2674	1702	1891	1685
5.	8585	3912	7896	3916	6802	5655	3449
6.	3762	1877	2279	1630	3206	2219	2542
7.	540	916	335	630	283	298	64
8.	<u>\$ 19148</u>	<u>\$ 11965</u>	<u>\$ 16730</u>	<u>\$ 13543</u>	<u>\$ 14331</u>	<u>\$ 12492</u>	<u>\$ 10361</u>
9.	\$ 11214	\$ 12937	\$ 11740	\$ 11625	\$ 13718	\$ 13273	\$ 11595
10.	\$ 1427	\$ 2170	\$ 2214	\$ 1616	\$ 1410	\$ 1601	\$ 1860
11.	8691	10598	9092	10081	9731	9251	12132
12.	2166	3078	1876	3125	1864	1558	1273
13.	<u>\$ 12284</u>	<u>\$ 15846</u>	<u>\$ 13182</u>	<u>\$ 14822</u>	<u>\$ 13005</u>	<u>\$ 12410</u>	<u>\$ 15265</u>
14.	\$ 43890	\$ 45900	\$ 37234	\$ 40153	\$ 38983	\$ 34323	\$ 41578
15.	<u>18391</u>	<u>18882</u>	<u>14025</u>	<u>15384</u>	<u>17627</u>	<u>17051</u>	<u>12858</u>
16.	\$104927	\$105530	\$ 92911	\$ 95527	\$ 97664	\$ 89549	\$ 91657
17.	406	376	344	360	354	293	326
18.	520	469	413	465	359	310	321
Farm capital managed December 31, 1971							
19.	\$ 7130	\$ 3750	\$ 4693	\$ 6127	\$ 2224	\$ 3188	\$ 3150
20.	3931	3316	3735	3656	1561	2380	1546
21.	20104	5382	8598	3352	11223	5468	2735
22.	5094	2802	2818	2610	4353	2043	2826
23.	59	868	164	453	89	369	8
24.	<u>\$ 36318</u>	<u>\$ 16118</u>	<u>\$ 20008</u>	<u>\$ 16198</u>	<u>\$ 19450</u>	<u>\$ 13448</u>	<u>\$ 10265</u>
25.	\$ 17310	\$ 16868	\$ 16215	\$ 15116	\$ 15229	\$ 13731	\$ 11247
26.	\$ 2376	\$ 2245	\$ 2385	\$ 2083	\$ 1948	\$ 2072	\$ 2393
27.	16103	16121	13675	18226	11484	12846	16585
28.	4227	3273	2736	3677	3152	1408	2333
29.	<u>\$ 22706</u>	<u>\$ 21639</u>	<u>\$ 18796</u>	<u>\$ 23986</u>	<u>\$ 16584</u>	<u>\$ 16326</u>	<u>\$ 21311</u>
30.	\$ 71497	\$ 64905	\$ 55103	\$ 54174	\$ 43680	\$ 38783	\$ 53894
31.	<u>26544</u>	<u>20740</u>	<u>17390</u>	<u>24842</u>	<u>20469</u>	<u>18187</u>	<u>19819</u>
32.	\$174375	\$140270	\$127512	\$134316	\$115412	\$100475	\$116536

Table 4. Average Investment in Real Estate, Southern Minnesota, 1967-1971.

Item	Your farm	5-year average	Group 1	Group 2	Group 3
1. Land	\$ _____	\$ 53492	\$ 88668	\$ 62829	\$ 52215
2. Farm buildings	_____	20811	29790	27702	21118
3. Estimated investment in dwelling	_____	15000	15000	15000	15000
4. Total investment in real estate	_____	89303	133458	105531	88333
5. Number of acres	_____	369	586	425	464
6. Average investment per acre	\$ _____	\$ 242	\$ 228	\$ 248	\$ 190

The information in table 4 shows the investment in real estate. The value of land and farm buildings are adapted from data reported in table 3. The average value of the farm dwelling is estimated to be \$15,000. Average investment per acre is slightly lower for the high earnings group than it is for the low earnings groups. An additional \$175 to \$200 per acre would more nearly reflect current market prices for real estate.¹ This would add a large amount to capital managed and decrease calculated labor and management earnings and rate earned on capital managed because of high interest charges.

EARNINGS

Total sales, purchases, and labor and management earnings are shown in table 5. Any landlord's share, in the case of rented farms, is included to make records comparable on a whole farm basis. Labor and management earnings is the amount that would remain as salary to the farm operator if he paid customary wages

1. Mandale, Maurice and Philip M. Raup, "The Minnesota Real Estate Market in 1972." Economic Study Report S73-1, Department of Agricultural and Applied Economics, University of Minnesota, April 1973.

Table 4. Average Investment in Real Estate, Southern Minnesota, 1967-1971 (con'd)

	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
1.	\$ 55592	\$ 54738	\$ 48723	\$ 45546	\$ 42386	\$ 36738	\$ 47346
2.	20342	20133	16213	21137	19223	17872	17993
3.	15000	15000	15000	15000	15000	15000	15000
4.	90934	89871	79936	81683	76609	69610	80339
5.	348	346	322	321	348	291	307
6.	\$ 261	\$ 260	\$ 248	\$ 254	\$ 220	\$ 239	\$ 262

to unpaid family labor and an annual charge of 5.7 percent for the use of all capital managed.

Every study of farm earnings shows wide variations from one farm to another. In this study, the top ten percent of the farms (group 1) received \$22094 more earnings than the lowest ten percent (group 10). Interest on average capital managed, cattle purchases, and feed bought make up the three largest items of expense.

Since capital purchases, such as machinery, equipment and buildings, are used for several years, only the annual depreciation enters into the calculation of labor and management earnings by showing increases in capital as a receipt and decreases as an expense. Increases or decreases are the differences in the average farm capital managed between the beginning and end of the year. This summarizes in one figure the net effect of the following:

1. Products bought but not fully used up during the year, such as depreciable farm assets and supplies bought for use next year.
2. Depreciation on capital assets.
3. Products produced but not sold during the year, so they are on the end of the year inventory.

Table 5. Summary of Earnings - Cash Statement, Southern Minnesota, 1967-1971

Item	Your farm	5-year average	Group 1	Group 2	Group 3
RECEIPTS					
1. Dairy cattle sold	\$ _____	\$ 2395	\$ 2065	\$ 2670	\$ 2501
2. Dairy products sold	_____	10252	9982	12376	11127
3. Beef cattle sold	_____	17280	45162	26284	26081
4. Hogs sold	_____	10228	26231	15772	8043
5. Other livestock sold	_____	1072	35	427	2886
6. Crops - corn	_____	5798	6488	5424	4417
7. - soybeans	_____	4140	7520	5414	4610
8. - small grains	_____	514	611	465	587
9. - other crops	_____	2486	5070	3030	2422
10. Other cap. assets sold	_____	420	539	475	419
11. Work off the farm	_____	864	1108	874	1032
12. Miscellaneous farm income	_____	931	1482	1239	1196
13. Total sales	\$ _____	\$56380	\$106293	\$74450	\$65321
14. Increase in capital	_____	4701	9931	9612	3903
15. Family living from farm	_____	337	349	334	379
16. Total received	\$ _____	\$61418	\$116573	\$84396	\$69603
EXPENSES					
17. Dairy cattle bought	\$ _____	\$ 324	\$ 202	\$ 219	\$ 254
18. Beef cattle bought	_____	9692	25579	16640	14271
19. Hogs bought	_____	570	382	672	348
20. Other livestock bought	_____	149	4	91	465
21. Misc. livestock expense	_____	1142	1814	1627	1089
22. Feed bought	_____	6958	13228	9350	9079
23. Fertilizer bought	_____	2791	4571	3305	2452
24. Other crop expense	_____	2951	5092	3369	2889
25. Custom work hired	_____	1600	1910	1949	1570
26. Gas, oil, grease bought	_____	1456	1930	1601	1517
27. Rep. pow. & crop mach.	_____	1906	2864	2110	1936
28. Repair real estate	_____	565	760	920	549
29. Repair livestock equip.	_____	315	606	455	245
30. Wages of hired labor	_____	1765	4158	2406	1596
31. Electricity expense	_____	449	531	529	469
32. Real estate taxes	_____	2032	3071	2388	2036
33. General farm expense	_____	710	938	792	753
34. Total cash expense	\$ _____	\$35375	\$67640	\$48423	\$41518
35. New power & machinery	_____	4720	6584	5754	5085
36. New livestock equipment	_____	767	1346	869	690
37. New real estate	_____	2386	3195	3393	1802
38. Total purchases	\$ _____	\$43248	\$78765	\$58439	\$49095
39. Decrease in farm capital	_____				
40. Interest at 5.7%*	_____	7434	12621	9084	7703
41. Unpaid family labor	_____	879	1882	869	541
42. Board for hired labor	_____	87	241	156	111
43. Total expense	\$ _____	\$51648	\$93509	\$68548	\$57450
44. Labor & management earnings	\$ _____	\$ 9770	\$23064	\$15848	\$12153

* Interest is calculated on the "book" value of capital managed. If current market prices were applied to real estate, about 50 percent would be added to the average interest on capital managed. An interest charge of 5.5% was used in 1967-69 and 6% in 1970-71, for an average for the five years of 5.7%.

Table 5. Summary of Earnings - Cash Statement, Southern Minnesota, 1967-1971 (cont'd)

	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
RECEIPTS							
1.	\$ 2780	\$ 3034	\$ 2945	\$ 2904	\$ 1545	\$ 1642	\$ 1850
2.	11326	12322	11524	15040	6039	6104	6625
3.	17811	6720	15527	4667	14210	8656	7652
4.	11507	6319	6504	5397	9730	5878	6891
5.	861	3832	681	822	611	300	260
6.	4763	6488	3213	5309	4938	8645	8282
7.	3741	3559	3551	3385	4468	2454	2700
8.	431	660	561	264	438	690	428
9.	2075	2819	2598	2060	2005	1445	1329
10.	396	441	397	454	322	300	470
11.	944	300	475	1324	504	959	1117
12.	824	953	670	990	661	644	643
13.	\$57459	\$47447	\$48646	\$42616	\$45471	\$37717	\$38247
14.	8234	3026	2635	4440	2288	1171	1739
15.	413	363	356	352	291	236	299
16.	\$66106	\$50836	\$51637	\$47408	\$48050	\$39124	\$40285
EXPENSES							
17.	\$ 864	\$ 50	\$ 195	\$ 578	\$ 210	\$ 337	\$ 329
18.	10825	3131	8116	1557	7810	4761	4206
19.	1240	473	263	251	602	547	927
20.	142	372	167	74	98	42	37
21.	1209	1247	1015	1304	700	739	670
22.	7982	5556	6171	4673	5800	3799	3929
23.	2708	2957	2174	2165	2406	2459	2712
24.	2923	2796	2067	2329	2675	2697	2670
25.	1923	1529	1622	1424	1520	1244	1303
26.	1619	1266	1355	1360	1269	1276	1361
27.	2006	1696	1621	1755	1656	1694	1720
28.	549	607	490	536	435	420	381
29.	330	260	281	287	234	207	245
30.	1280	1958	1379	1095	1642	782	1351
31.	484	464	421	456	348	391	395
32.	1853	1767	1941	1822	1902	1562	1976
33.	654	655	606	710	624	692	670
34.	\$38591	\$26784	\$29884	\$22376	\$29931	\$23649	\$24882
35.	4700	4757	3947	5306	3047	3711	4300
36.	937	705	534	975	695	280	635
37.	3003	1974	1409	2995	2044	1508	2531
38.	\$47231	\$34220	\$35774	\$31652	\$35717	\$29148	\$32348
39.							
40.	7398	6921	6487	6501	6082	5423	6107
41.	859	348	813	1950	456	253	818
42.	37	37	66	68	72	37	42
43.	\$55525	\$41526	\$43140	\$40171	\$42327	\$34861	\$39315
44.	\$10581	\$ 9310	\$ 8497	\$ 7237	\$ 5723	\$ 4263	\$ 970

4. Products that were produced during the previous year or years (on hand at the beginning of the year) and sold this year.

5. Products sold that were previously purchased for later resale, such as feeder cattle and feeder pigs.

6. Casualty losses.

The data in table 6 shows earnings on an enterprise basis. Instead of stressing farm sales and farm purchases, as shown in table 5, this arrangement stresses net value produced (net value added) and net expense. Net increase in value produced includes sales, value of products used in the home, changes in inventories,

Table 6. Summary of Earnings - Enterprise Statement, 1967-1971, Southern Minnesota

Item	Your farm	5-year average	Group 1	Group 2	Group 3
RECEIPTS AND NET INCREASES					
1. Milk cows	\$ _____	\$10430	\$10242	\$12688	\$11316
2. Other dairy cattle	_____	2742	2442	3262	3144
3. Beef breeding herd	_____	464	1153		687
4. Feeder cattle	_____	8090	22128	12630	11846
5. Hogs	_____	9844	26433	15374	7532
6. Other livestock	_____	913	19	362	2420
7. Total livestock	\$ _____	\$32483	\$62417	\$44316	\$36945
8. Feed fed	_____	18575	34863	24209	21692
9. Return over feed	\$ _____	\$13908	\$27554	\$20107	\$15253
10. Value added by crops	_____	19751	34398	24706	20388
11. Income labor off farm	_____	424	496	513	415
12. Misc. farm income	_____	931	1482	1239	1196
13. Total receipts	\$ _____	\$35014	\$63930	\$46565	\$37252
EXPENSES AND NET DECREASES					
14. Truck and auto	\$ _____	\$ 1312	\$ 1639	\$ 1413	\$ 1385
15. Electricity expense	_____	449	531	529	469
16. Tractors & machinery	_____	5797	8364	6669	5703
17. Livestock equipment	_____	876	1598	1056	911
18. Buildings, fencing	_____	2245	3394	3100	2296
19. Misc. livestock expense	_____	1142	1814	1627	1089
20. Labor*	_____	3247	6896	4059	2754
21. Real estate taxes	_____	2032	3071	2388	2036
22. General farm expense	_____	710	938	792	753
23. Interest at 5.7%	_____	7434	12621	9084	7703
24. Total expenses	\$ _____	\$25244	\$40866	\$30717	\$25099
25. Labor & management earnings	\$ _____	\$ 9770	\$23064	\$15848	\$12153

* Includes wages paid and value of board to hired labor, unpaid family labor, and a part of the payment for custom work hired.

and accounts for transfers between enterprises. The value of purchased livestock is subtracted so the result shows the value of livestock and livestock products added by the enterprise during the year.

In the calculation of value added by crops, credit is given to crops for feed raised on the farm and consumed by livestock. The return to crops, as shown in table 6, becomes the net value produced by crops for the year less the cost of purchased seed, fertilizers and similar expenses.

Each category of expenses is calculated in the same manner. Depreciation,

Table 6. Summary of Earnings - Enterprise Statement, 1967-1971, Southern Minnesota (continued)

	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
RECEIPTS AND NET INCREASES							
1.	\$11436	\$12492	\$11748	\$15243	\$ 6181	\$ 6251	\$ 6645
2.	3107	3900	3338	2941	1783	1688	1806
3.	390	296	76	372	672	645	348
4.	9008	3208	7446	2672	6157	3168	2616
5.	10587	6052	6354	5371	9380	5331	6026
6.	608	3466	502	723	516	280	226
7.	<u>\$35136</u>	<u>\$29414</u>	<u>\$29464</u>	<u>\$27322</u>	<u>\$24689</u>	<u>\$17363</u>	<u>\$17667</u>
8.	20838	15828	16432	14329	15691	11149	10677
9.	<u>\$14298</u>	<u>\$13586</u>	<u>\$13032</u>	<u>\$12993</u>	<u>\$ 8998</u>	<u>\$ 6214</u>	<u>\$ 6990</u>
10.	19423	18735	16930	16799	16635	15485	13977
11.	511	124	251	706	355	422	444
12.	824	953	670	987	661	644	643
13.	<u>\$35056</u>	<u>\$33398</u>	<u>\$30883</u>	<u>\$31485</u>	<u>\$26649</u>	<u>\$22765</u>	<u>\$22054</u>
EXPENSES AND NET DECREASES							
14.	\$ 1221	\$ 1262	\$ 1337	\$ 1198	\$ 1214	\$ 1235	\$ 1218
15.	484	464	421	456	348	391	395
16.	6011	5774	5204	5538	4926	4690	5078
17.	826	927	732	942	608	520	637
18.	2028	2229	1854	2188	1858	1791	1707
19.	1209	1247	1015	1301	700	739	670
20.	2791	2842	2788	3592	2664	1459	2626
21.	1853	1767	1942	1822	1902	1562	1976
22.	654	655	606	710	624	692	670
23.	7398	6921	6487	6501	6082	5423	6107
24.	<u>\$24475</u>	<u>\$24088</u>	<u>\$22386</u>	<u>\$24248</u>	<u>\$20926</u>	<u>\$18502</u>	<u>\$21084</u>
25.	\$10581	\$ 9310	\$ 8497	\$ 7237	\$ 5723	\$ 4263	\$ 970

Table 7. Rate Earned on Capital Managed, Southern Minnesota, 1967-1971

Item	Your farm	5-year average	Group 1	Group 2	Group 3
1. Labor & management earnings \$_____		\$ 9770	\$23064	\$15848	\$12153
2. Interest on capital managed _____		<u>7434</u>	<u>12621</u>	<u>9084</u>	<u>7703</u>
3. Total (1 + 2) \$_____		\$17204	\$35685	\$24932	\$19856
4. Estimated wage for operator _____		<u>8000</u>	<u>8000</u>	<u>8000</u>	<u>8000</u>
5. Return to cap. & mgmt. \$_____		\$ 9204	\$27685	\$16932	\$11856
(3 - 4)					
6. Average capital managed \$_____		\$129920	\$220338	\$158469	\$134778
7. Rate earned on cap. mgd. _____%		7.1%	12.6%	10.7%	8.8%
(5 ÷ 6)					

repairs, gas, oil, etc., are accounted for. This type of earnings statement more accurately reflects annual production for each productive enterprise and annual costs for each service enterprise.¹

Crops were the largest source of income for all groups of farms included in this study. Most of the income from livestock came from dairying, cattle feeding and hogs. Income from labor off the farm was small.

Under this method of calculating labor and management earnings, the largest item of expense is the interest charge of approximately 5.7 percent on total capital managed. This amounts to approximately 30 percent of the total expenses. Tractor and crop machinery expenses rank second and labor expense, other than the farm operator, ranks third.

The top earnings group had nearly three times as much in receipts as the low earnings group. Total expenses for the high earnings group were only twice as high as for the low earnings group. Differences in production seem to be more important

1. For the method of calculation of income and expenses on an enterprise basis, see Nodland, Truman R., "Know Your Farm Business," University of Minnesota Agricultural Extension Service Pamphlet 138, revised 1971.

Table 7. Rate Earned on Capital Managed, Southern Minnesota, 1967-1971 (cont'd)

	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
1.	\$10581	\$ 9310	\$ 8497	\$ 7237	\$ 5723	\$ 4263	\$ 970
2.	<u>7398</u>	<u>6921</u>	<u>6487</u>	<u>6501</u>	<u>6082</u>	<u>5423</u>	<u>6107</u>
3.	\$17979	\$16231	\$14984	\$13738	\$11805	\$ 9686	\$ 7077
4.	<u>8000</u>	<u>8000</u>	<u>8000</u>	<u>8000</u>	<u>8000</u>	<u>8000</u>	<u>8000</u>
5.	\$ 9979	\$ 8231	\$ 6984	\$ 5738	\$ 3805	\$ 1686	\$ -923
6.	\$128977	\$121023	\$113352	\$113591	\$106453	\$ 94970	\$106946
7.	7.7%	6.8%	6.2%	5.1%	3.6%	1.8%	-.9%

in their effect on earnings than differences in expenses.

Rate earned on average capital managed is an illustration of a second type of earnings statement and is most useful in dealing with larger than average farms (see table 7). In this statement, returns to capital and management is the residual remaining after an estimated charge has been deducted for the operator's labor. An arbitrary charge of \$8000 was used in this study on all sizes of farms and for all levels of profitability. A constant charge for the operator's labor is probably unrealistic in that the better operators could command higher wages in alternative opportunities and the lower earnings operators might command a wage equal to that paid for hired labor.

A well organized farm should yield a reasonable return to the operator for his labor and management as well as a return to capital. The information in table 7 shows the higher earnings farmers did receive a relatively good return on the "book" value of their capital managed. The lowest earnings group received \$7077 for their labor and no return on capital managed. If real estate values are adjusted upward to near current market values, only the very top earnings groups would receive a relatively high rate earned on capital.

Table 8. Distribution of Acres in Farm, Southern Minnesota, 1967-1971

Item	Your farm	5-year average	Group 1	Group 2	Group 3
1. Canning peas	_____	1.0	1.8	.2	.3
2. Wheat	_____	1.5	1.1	1.3	1.1
3. Oats for silage	_____	2.0	1.7	2.0	2.2
4. Oats for grain	_____	21.0	26.7	26.0	25.5
5. Other small grain	_____	3.6	1.4	1.5	4.8
6. Total small grain & peas	_____	29.1	32.7	31.0	33.9
7. Corn grain	_____	137.3	228.8	157.0	122.7
8. Soybeans for grain	_____	57.8	98.3	79.8	71.0
9. Sweet corn	_____	2.9	8.9	2.4	4.4
10. Corn silage	_____	14.9	26.0	16.2	17.2
11. Total cultivated crops	_____	212.9	362.0	255.4	215.3
12. Alfalfa hay	_____	35.5	46.9	35.8	39.6
13. Other hay	_____	1.1	1.9	1.1	1.4
14. Total till. land in hay	_____	36.6	48.8	36.9	41.0
15. Alfalfa pasture	_____	6.7	1.9	7.2	7.3
16. Other tillable pasture	_____	1.2	2.4	1.8	1.7
17. Total till land in past.	_____	7.9	4.3	9.0	9.0
18. Feed grain program	_____	30.7	58.1	42.0	26.7
19. Tillable land not cropped	_____	.9	.4	.5	.6
20. Total tillable land	_____	318.1	506.3	374.8	326.5
21. Wild hay	_____	2.0	3.0	2.1	2.0
22. Non-tillable pasture	_____	20.6	42.4	20.4	30.6
23. Timber not pastured	_____	4.9	1.8	3.7	5.1
24. Roads and waste	_____	13.7	18.1	12.7	18.6
25. Farmstead	_____	9.4	14.2	11.2	9.6
26. Total acres in farm	_____	368.7	585.8	424.9	392.4
27. Percent land tillable	_____	86	86	88	83
28. Percent tillable land in high return crops	_____	66	70	65	63

THE CROPPING PROGRAM

Data in tables 8 and 9 show average acres per farm and yields of major crops for the various categories of farms included in this study. The main crops, ranked in the order of their importance, are corn for grain, soybeans, alfalfa hay and pasture, and oats. Approximately 8 percent of the tillable land was placed in the

Table 8. Distribution of Acres in Farm, Southern Minnesota, 1967-1971 (continued)

	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
1.	1.6	1.6	1.8	.6	1.2		1.0
2.	1.7	.7	3.8	.9	2.4	1.1	.5
3.	1.3	3.7	1.7	3.8	2.2	1.4	.4
4.	16.6	25.2	18.4	20.6	19.6	13.3	18.3
5.	<u>3.1</u>	<u>6.8</u>	<u>3.1</u>	<u>3.2</u>	<u>.4</u>	<u>11.0</u>	<u>.3</u>
6.	24.3	38.0	28.8	29.1	25.8	26.8	20.5
7.	139.3	125.8	102.0	106.0	119.8	128.1	142.9
8.	47.3	47.0	51.2	46.4	59.2	34.2	43.9
9.	4.2	2.2	2.2	3.0	.5	.6	.5
10.	<u>21.0</u>	<u>11.0</u>	<u>13.6</u>	<u>10.8</u>	<u>14.2</u>	<u>11.5</u>	<u>7.9</u>
11.	211.8	186.0	169.0	166.2	193.7	174.4	195.2
12.	35.9	39.6	37.4	46.1	27.1	22.8	23.7
13.	<u>1.3</u>	<u>1.5</u>	<u>.6</u>	<u>1.1</u>	<u>1.2</u>	<u>.6</u>	<u>.7</u>
14.	37.2	41.1	38.0	47.2	28.3	23.4	24.4
15.	7.3	4.6	8.4	9.8	5.8	8.3	6.0
16.	<u>.5</u>	<u>1.8</u>	<u>.5</u>	<u>1.4</u>	<u>.3</u>	<u>.6</u>	<u>1.6</u>
17.	7.8	6.4	8.9	11.2	6.1	8.9	7.6
18.	23.0	31.5	36.1	26.9	26.6	20.4	15.5
19.	<u>1.0</u>	<u>.6</u>	<u>.1</u>	<u>.4</u>	<u>3.7</u>	<u>.9</u>	<u>.8</u>
20.	305.1	303.6	280.9	281.0	284.2	254.9	264.0
21.	3.5	.4	1.3	.3	4.2	1.4	1.7
22.	15.9	10.4	14.1	14.3	29.6	12.2	16.1
23.	2.3	14.8	2.7	4.1	9.2	.6	4.5
24.	10.7	10.6	15.2	12.7	11.5	13.4	13.1
25.	<u>10.5</u>	<u>7.0</u>	<u>7.9</u>	<u>9.1</u>	<u>8.9</u>	<u>8.4</u>	<u>7.9</u>
26.	348.0	346.8	322.1	321.5	347.6	290.8	307.3
27.	88	88	87	87	82	88	86
28.	67	63	64	63	65	69	72

feed grain program.

Approximately 55 percent of the value added on these farms is derived from crop production, as was shown in table 6. This serves to stress the need for good management in crop production as well as in the other phases of the farm business. The more profitable farms generally had higher yields than low earnings farms.

Table 9. Crop Yields per Acre, Southern Minnesota, 1967-1971

Item	Your farm	5-year average	Group 1	Group 2	Group 3
1. Canning peas, \$	\$ _____	\$63.16	*		*
2. Wheat, bu.	_____	31.6	32.9	28.6	30.1
3. Oats for silage, tons	_____	6.0	5.8	7.0	6.2
4. Oats for grain, bu.	_____	60.5	70.7	63.5	61.3
5. Barley, bu.	_____	48.6	*	51.3	53.8
6. Corn for grain, bu.	_____	92.4	97.9	97.7	93.1
7. Soybeans, bu.	_____	27.6	29.5	29.6	27.0
8. Sweet corn, tons	_____	5.0	4.6	4.6	5.4
9. Corn for silage, tons	_____	14.5	14.7	15.8	13.5
10. Alfalfa hay, tons	_____	3.4	3.6	3.7	3.7
11. Feed grain program, \$	\$ _____	\$61.62	\$61.71	\$61.91	\$62.01

* Less than 5 cases.

Corn yields ranged from 98 bushels per acre on high earnings farms to 87 bushels per acre on low earnings farms. Similar differences in yields were reported for most of the other major crops.

SOME CONCLUDING STATEMENTS

Data in table 10 summarizes some of the characteristics of the southern Minnesota farms included in this study. There were wide variations in labor earnings and rate earned on capital managed among the ten groups of farms. Anyone earning less than 8 percent probably would experience difficulty in paying interest and even modest amounts on the principal of large sums of borrowed capital.

The following are some of the characteristics of the most profitable farms, as compared to the least profitable farms:

Table 9. Crop Yields per Acre, Southern Minnesota, 1967-1971 (continued)

	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
1.	*	\$68.33	\$46.98	*	\$57.34		\$55.78
2.	33.6	41.7	30.9	32.3	33.3	27.8	28.4
3.	5.8	5.6	6.5	4.9	6.1	*	*
4.	55.7	59.5	62.3	60.4	58.0	52.4	60.1
5.	50.4	*	*	40.4		41.7	
6.	94.7	91.9	90.9	92.4	89.6	89.5	86.6
7.	29.3	28.4	29.1	28.6	24.8	25.3	24.8
8.	5.6	*	5.0	4.4	*	*	*
9.	14.8	14.2	15.4	15.2	13.7	12.8	15.4
10.	3.7	3.2	3.5	3.3	3.3	3.2	3.1
11.	\$62.54	\$64.01	\$59.64	\$62.84	\$58.01	\$61.40	\$64.08

1. Much greater size of business in terms of total work units, total value produced or total farm sales.
2. More total workers per farm and more work accomplished per worker (work units per worker).
3. Much greater capital managed per farm and capital managed per worker.
4. Much larger farms in terms of total acres or tillable acres.
5. Higher per acre crop yields.
6. Much larger number of animal units per farm and many more animal units per 100 acres (livestock intensity).
7. Higher index of returns from livestock.
8. Less power, machinery, equipment and building expense per work unit (per unit of size of business).

Approximately 55 percent of the total value added is from the crop enterprises although only one-third of the work units (size of business) resulted from crops. This stresses the need for a good livestock manager to be able to manage crop production as well.

Table 10. Some Characteristics of the Farms Included in This Study, Southern Minnesota, 1967-1971

Item	Your farm	5-year average	Group 1	Group 2	Group 3
Earnings					
1. Labor & mgmt. earnings	\$ _____	\$ 9770	\$23064	\$15848	\$12153
2. Rate earned on cap. mgd.	_____	7.1%	12.6%	10.7%	8.8%
Size of business					
3. Total work units	_____	439	674	523	464
4. Change in work units 1967-71	_____	35	61	69	29
5. Total value produced	\$ _____	\$35014	\$ 63930	\$46565	\$37252
6. Total farm sales	\$ _____	\$56380	\$106293	\$74450	\$65321
Labor					
7. Number of workers	_____	1.7	2.3	1.9	1.7
8. Work units per worker	_____	258	293	275	273
Capital					
9. Total capital managed	\$ _____	\$129920	\$220338	\$158469	\$134778
10. Change in cap. mgd. 1967-71	\$ _____	\$ 43797	\$ 94458	\$ 76104	\$ 37056
11. Capital managed per worker	\$ _____	\$ 76424	\$ 95799	\$ 83405	\$ 79281
Land					
12. Total acres	_____	369	586	425	392
13. Changes in acres 1967-71	_____	60	104	115	61
14. Tillable acres	_____	318	506	375	326
15. Index of crop yields	_____	100	107	105	101
Livestock					
16. Number of animal units	_____	118	253	153	147
17. Animal units per 100 acres	_____	37	50	48	42
18. Index of returns per \$100 of feed to livestock	_____	100	111	109	103
Overhead expenses					
19. All pow., mach., equip., & bldg. exp. per work unit	\$ _____	\$25.90	\$23.50	\$25.08	\$23.73
20. Power & crop mach. expense per work unit	\$ _____	\$18.66	\$16.03	\$16.97	\$16.88
21. Livestock equipment expense per work unit	\$ _____	\$ 1.89	\$ 2.43	\$ 1.90	\$ 1.91
22. Building expense per WU	\$ _____	\$ 5.35	\$ 5.04	\$ 6.21	\$ 4.94
23. Tractor & crop machinery expense per crop acre	\$ _____	\$17.45	\$16.41	\$17.44	\$17.36

Table 10. Some Characteristics of the Farms Included in This Study, Southern Minnesota, 1967-1971 (continued)

	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
1.	\$10581	\$ 9310	\$ 8497	\$ 7237	\$ 5723	\$ 4263	\$ 970
2.	7.7%	6.8%	6.2%	5.1%	3.6%	1.8%	-.9%
3.	463	432	391	451	357	314	319
4.	80	62	28	31	-8	-11	5
5.	\$35056	\$33398	\$30883	\$31485	\$26649	\$22765	\$22054
6.	\$57459	\$47447	\$48646	\$42616	\$45471	\$37717	\$38247
7.	1.6	1.6	1.6	1.8	1.6	1.3	1.6
8.	289	270	244	250	223	242	199
9.	\$128977	\$121023	\$113352	\$113591	\$106453	\$ 94970	\$106946
10.	\$ 69448	\$ 34740	\$ 34601	\$ 38789	\$ 17748	\$ 10926	\$ 24879
11.	\$ 80611	\$ 75639	\$ 70845	\$ 63106	\$ 66533	\$ 73054	\$ 66841
12.	348	347	322	322	348	291	307
13.	104	63	47	60	10	7	29
14.	305	304	281	281	284	259	264
15.	101	99	101	100	95	97	94
16.	124	93	99	84	97	63	65
17.	39	37	36	30	33	29	26
18.	100	104	102	99	94	90	93
19.	\$23.23	\$24.86	\$25.01	\$26.44	\$26.21	\$30.94	\$30.05
20.	\$17.19	\$17.92	\$18.33	\$19.07	\$18.81	\$22.99	\$22.40
21.	\$ 1.68	\$ 1.93	\$ 1.82	\$ 1.83	\$ 1.74	\$ 1.53	\$ 2.10
22.	\$ 4.36	\$ 5.01	\$ 4.86	\$ 5.54	\$ 5.64	\$ 6.42	\$ 5.55
23.	\$17.17	\$17.86	\$17.72	\$18.74	\$15.87	\$17.02	\$18.91