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NET WORTH, CASH FLOWS, AND RATIOS ON TELFARMERS, 1980

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ABSTRACT

NET WORTH, CASH FLOWS, AND RATIOS ON TELFARMERS, 1980

By

Mark Proctor and Sherrill B. Nott[1]

This report presents net worth statement averages as of December 31, 1980 on dairy, swine, potato, fruit, and grain farms. Net worth (assets minus debts) ranged from 62 percent of total assets on swine farms to 77 percent on fruit farms. Cash inflows and cash outflows are given for the same sample of Michigan Telfarms. Amount of new principal borrowed per dollar of principal repaid ranges from $0.94 on potato farms to $1.98 on fruit farms. Capital and income ratios are compared. The capital turnover ratio ranges from .21 on small cash grain farms to .44 on potato farms. The income statement measures of labor income and percent return to capital are given for the year of 1980. Labor income ranges from $-6,500 on fruit farms to $53,000 on Saginaw Valley crop farms.

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[1]Graduate assistant and professor, respectively.
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INTRODUCTION

Farm accounting projects at land grant universities have traditionally published annual summaries of income, expense, and physical production factors. In recent years, the agricultural sector has put increasing emphasis on financial structure and financial ratios. Several state accounting projects are beginning to publish debt data [4].[2] In 1978 a paper on cash flow and balance sheet data was developed [5] and discussed with Michigan farm lenders. It appears an ongoing need for comparative financial status exists among credit suppliers and farmers. This paper attempts to meet this need by reporting balance sheet, cash flow, and related financial benchmark data.

SOURCE OF DATA

The farms included in this study came from the Telfarm accounting system, and are referred to hereafter as Telfarmers. Telfarm is a computerized farm record keeping project sponsored by the MSU Cooperative Extension Service. Farmers join voluntarily and pay a fee for the use of the system. When compared to census data, Telfarmers are larger and earn a higher level of income than do the average of all Michigan farms. Table 1 shows the number of farms by type and size. It gives the acreages operated, both owned and rented, plus the average number of person equivalents utilized. The sample

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[2]Numbers in brackets refer to the bibliography ranking.

TABLE 1. TYPE, NUMBER AND SIZE OF FARMS STUDIED
Michigan Telfarmers During 1980

Farm Type	No. of Farms Averaged	Tillable Acres		Person Equivalents*
		Owned	Rented	
Dairy				
Less than 50 cows	91	160	77	1.7
50-74.9 cows	86	204	103	2.3
75-99.9 cows	57	277	159	2.8
100 or more cows	93	384	265	4.3
Hogs				
Farrow to finish	18	304	163	2.2
Cash Grain				
Less than 400 acres	34	199	60	.7
400-799.9 acres	22	262	321	1.2
800+ acres	5	570	746	2.6
All Potato Farms	14	383	137	3.9
All Michigan Fruit Farms	18	121	30	3.3
Saginaw Valley Crops	26	285	256	1.6

*3000 hours per year of adult labor.

size of each group varies considerably. Only farms with no obvious reporting errors in debt transactions were included in this study. Consequently, the sample sizes are smaller than those reported in the annual Telfarm "type of farm" reports [3].

NET WORTH STATEMENTS, DECEMBER 31, 1980

Tables 2 and 3 give the average net worth statements by type of farm. The format is identical to that used in the Telfarm year-end business analyses. The individual statistics are calculated by adding the item for each farm and then dividing by the number of farms in the sample. For instance, in Table 2 under the dairy farms with less than 50 cows, there is a $72 entry under other livestock. Most farms probably had no livestock other than dairy, while on a few farms the other livestock category was an important item. This same procedure was used to compile the liabilities section. The average balance sheet shows money borrowed from all possible sources. On any individual farm one usually finds a subset of three or four sources of borrowed money.

Except for machinery and buildings, the asset values are market value estimates provided by individual farmers. The machinery and equipment plus the buildings and improvements categories were valued using the historical cost less accumulated depreciation method. This may understate the market

TABLE 2. AVERAGE BALANCE SHEETS ON LIVESTOCK AND POTATO FARMS

Telfarmers, December 31, 1980

Farm Type	DAIRY Less Than 50 Cows	DAIRY 50-74.9 Cows	DAIRY 75-99.9 Cows	DAIRY 100 Or More Cows	Swine Farrow To Finish	Potato
ASSETS:						
Cash on hand	$ 875	$ 2,727	$ 5,076	$ 2,310	$ 9,686	$ 9,938
Accounts receivable	1,599	4,505	7,005	26,152	7,237	5,780
Crops, feed, supplies	29,889	46,280	70,354	125,630	100,911	210,607
Dairy cattle	65,710	111,236	146,448	252,406	---	650
Hogs	---	---	6	2	118,344	---
Other livestock	72	---	19	206	---	---
Machinery & equipment	43,349	65,884	95,568	149,462	105,080	127,452
Nonfarm business & household	819	1,563	89	2,760	3,268	6,437
Buildings & improvements	29,842	62,521	95,257	144,130	141,807	71,598
Real estate	136,981	165,544	238,432	313,319	261,216	355,454
Total Assets	$309,136	$460,260	$658,254	$1,016,377	$747,549	$787,916
LIABILITIES AND NET WORTH:						
Revolving accounts	$ 159	$ 2,004	$ 8,539	$ 11,222	$ 651	$ ---
Merchants or dealers	1,982	1,212	7,174	4,757	2,119	465
Production Credit Association	9,374	20,507	24,584	31,222	23,157	59,038
Banks	13,630	23,535	28,474	47,898	23,526	20,719
Individuals	17,462	22,280	28,964	64,156	34,188	53,909
Federal Land Banks	15,608	35,843	61,988	96,989	104,340	84,329
Insurance companies	100	296	430	1,662	803	370
Farmers Home Administration	26,820	38,620	35,864	55,022	58,937	17,912
Other	7,546	5,939	9,707	11,619	36,412	37,816
Total Liabilities	$ 92,681	$150,236	$205,724	$ 324,547	$284,133	$274,558
Net Worth	$216,455	$310,024	$452,530	$ 691,830	$463,416	$513,358
TOTAL LIABILITIES & NET WORTH	$309,136	$460,260	$658,254	$1,016,377	$747,549	$787,916
Net Worth as % of Assets	70%	67%	68%	68%	62%	65%

TABLE 3. AVERAGE BALANCE SHEETS FOR CROP AND FRUIT FARMS

Telfarmers, December 31, 1980

Farm Type	CASH GRAIN Less Than 400 Acres	CASH GRAIN 400-799.9 Acres	CASH GRAIN 800+ Acres	Saginaw Valley Crops	All Michigan Fruit
ASSETS:					
Cash on hand	$ 5,881	$ 4,698	$ 1,791	$ 2,980	$ 873
Accounts receivable	6,485	7,319	56,085	2,435	16,199
Crops, feed, supplies	46,569	102,127	262,623	136,886	37,782
Dairy cattle	94	---	---	---	---
Hogs	17	642	---	1,500	---
Other livestock	3,232	---	---	---	---
Machinery & equipment	36,916	72,466	196,606	77,287	32,154
Nonfarm business & household	6,728	2,613	46,118	1,634	2,806
Buildings & improvements	21,831	32,521	75,917	50,873	40,891
Real estate	204,069	321,636	750,723	460,834	206,719
Total Assets	$331,822	$544,022	$1,289,863	$734,429	$337,424
LIABILITIES AND NET WORTH:					
Revolving accounts	$ 1,090	---	$ 43,687	$ 11,761	$ 10,239
Merchants or dealers	8,350	6,839	33,914	4,007	1,715
Production Credit Association	6,535	23,455	33,694	16,399	3,492
Banks	13,762	18,807	73,709	25,568	8,667
Individuals	14,741	36,798	93,981	45,541	26,389
Federal Land Banks	19,500	52,054	110,500	43,818	10,108
Insurance companies	6,979	979	---	3,564	1,985
Farmers Home Administration	7,073	1,224	---	6,743	10,136
Other	8,840	22,982	12,973	21,506	2,807
Total Liabilities	$ 86,870	$163,138	$ 402,458	$178,907	$ 75,538
Net Worth	$244,952	$380,884	$ 987,405	$555,522	$261,886
TOTAL LIABILITIES & NET WORTH	$331,822	$544,022	$1,289,863	$734,429	$337,424
Net Worth as % of Assets	74%	70%	71%	75%	77%

value of individual tractors and self-propelled harvesting equipment after several years of inflation. The real estate total is estimated by asking the farmers for the current market value of all the real estate owned including land, buildings, improvements, and residences. Telfarm then subtracts the amount assigned to buildings and improvements through the cost less depreciation method. The remainder is the real estate value in Tables 2 and 3. The nonfarm business and household assets are probably understated because only a few Telfarmers report these types of assets. Tables 2 and 3 list the average net worth for the particular farm types and show the relative percentage of net worth to assets. This ratio indicates the amount of capital the farmers actually own.

The accounts receivable category needs special consideration. Across all types of farms, it is a noticeable amount of money. Among all the categories in Tables 2 and 3, it is probably the least consistently reported. On many farms, accounts receivable are actually personal nonfarm loans made to family members. This reporting technique is followed due to an idiosyncrasy of the Telfarm software. It avoids unaccounted for cash in the monthly Telfarm report, but it is not a farm business asset. At the end of the month, most dairy farmers have shipped a half month's milk production for which payment has not yet been received. Few, if any, dairy Telfarmers report this item. Some assets listed under crops,

feed, and supplies more closely fit the definition of accounts receivable. Current discussions about marketing systems raise questions about who effectively owns and controls commodities once they leave the farm. Detailed supporting schedules behind farm balance sheets will probably tend, in the future, to separate grain held on the farm from grain stored under other arrangements at nonfarm locations. The accounts receivable category in Tables 2 and 3 are probably understated.

Crops, Feed, and Supplies

The crops, feed, and supplies item in the asset list vary considerably with type of farm. Table 4 presents a more detailed breakdown of what is contained in this categoy for a subset of the farms in Tables 2 and 3. Careful analysis of these items should be considered. Corn silage and hay equivalent are not commonly bought or sold in a well-developed market making prices hard to establish. The quantity on hand of these items will vary with the time of year; many of the feed crops could be reduced to near zero levels by early summer on livestock farms. If a net worth statement was made in early summer, these reductions would be offset to some degree by growing crops. In late fall the crops, feed, and accounts receivable reach their highest amounts. In the "other items" category of Table 4, growing wheat, which was planted in September, would be the single largest item.

TABLE 4. COMPOSITION OF FEED, CROPS, AND SUPPLIES BY FARM TYPE

Subset Of Farms Studied
December 31, 1980

Item	Dairy 50-74.9 Cows	Farrow To Finish	Potato	Cash Grain 400-799.9 Acres	Saginaw Valley Crops	Fruit Farms
Corn grain	$19,739	$ 80,564	$ 33,855	$ 62,297	$ 39,368	$ ---
Corn silage	7,250	---	126	398	115	---
Oats for grain	885	738	229	1,202	533	---
Hay equivalent	14,027	1,040	114	328	260	---
Wheat	388	1,681	1,939	464	8,283	---
Sugar beets	---	---	459	---	24,349	---
Edible beans	---	---	784	992	27,324	---
Soybeans	195	2,000	571	20,969	14,316	---
Apples	384	---	---	---	---	17,876
Cherries	---	---	---	---	---	13,818
Potatoes	---	---	158,993	---	42	---
Feed purchased	177	4,597	---	---	---	---
Other items	3,235	10,291	13,537	15,477	22,296	6,088
Total	$46,280	$100,911	$210,607	$102,127	$136,886	$37,782

Liabilities

To perform ratio analysis, it is desirable to have liabilities divided among the categories of short, intermediate, and long-term debt. Because farmers do not report their debts to Telfarm in these categories, it was necessary to assume which portion of each loan should be allocated to which category. We examined references [2,6,7, and 8] which indicated how the major credit suppliers have made their loans by length of repayment terms. From these, we arrived at the percentage distributions in Table 5. Given our understanding of Michigan agriculture, it seemed reasonable to differentiate between crops and livestock farms. We believe the allocation between short and intermediate term debts from PCA's and banks differs as indicated in Table 5 for this sample of farms. If feeder livestock (either hogs or beef) had been included, they would have had to have their own allocation. If more accuracy in the aggregate sample is desired in the future, Telfarmers will have to be motivated to report more details about their debt structure.

When the assumptions in Table 5 are applied to the debts reported in Tables 2 and 3, then the results are Tables 6 and 7. The total dollars in long-term liabilities are primarily a result of farmer reporting. The proportions in short and intermediate liabilities are mostly a function of our Table 5 assumptions. The assets are free of this bias as the farmer reporting categories clearly show which items belong in current, intermediate, or long-term categories.

TABLE 5. PERCENTAGE DISTRIBUTION ASSUMED AMONG LOAN TYPES
1980 Telfarm Sample

Source Of Debt	LOAN Short	REPAYMENT Intermediate	TERMS Long
CROP FARMS:			
Revolving accounts	100	---	---
Merchants or dealers	---	100	---
Production Credit Association	80	20	---
Banks	55	15	30
Individuals	---	---	100
Federal Land Banks	---	---	100
Insurance companies	---	---	100
Farmers Home Administration	12	38	50
Other	---	100	---
LIVESTOCK FARMS:			
Revolving accounts	100	---	---
Merchants or dealers	---	100	---
Production Credit Association	20	80	---
Banks	15	55	30
Individuals	---	---	100
Federal Land Banks	---	---	100
Insurance companies	---	---	100
Farmers Home Administration	12	38	50
Other	---	100	---

Sources: [2, 6, 7, 8]

TABLE 6. ASSETS AND DEBTS GROUPED BY LOAN LIFE

Livestock And Potato Farms
December 31, 1980

Item	DAIRY Less Than 50 Cows	50-74.9 Cows	75-99.9 Cows	100 Or More Cows	Swine Farrow To Finish	Potato
ASSETS:						
Current	$ 32,363	$ 53,512	$ 82,435	$ 154,092	$117,834	$226,381
Intermediate	109,950	178,684	242,131	404,836	226,692	134,539
Long term	166,823	228,064	333,688	457,449	403,023	426,996
Total Assets	$309,136	$460,260	$658,254	$1,016,377	$747,549	$787,916
LIABILITIES:						
Current	$ 7,297	$ 14,270	$ 22,031	$ 31,254	$ 15,885	$ 60,775
Intermediate	34,715	51,177	65,837	89,403	92,392	60,003
Long term	50,669	84,789	117,856	203,890	175,856	153,780
Total Liabilities	$ 92,681	$150,236	$205,724	$ 324,547	$284,133	$274,558

TABLE 7. ASSETS AND DEBTS GROUPED BY LOAN LIFE

Crop And Fruit Farms
December 31, 1980

Item	CASH GRAIN Less Than 400 Acres	CASH GRAIN 400-799.9 Acres	CASH GRAIN 800+ Acres	Saginaw Valley Crops	All Michigan Fruit
ASSETS:					
Current	$ 58,936	$114,144	$ 320,499	$142,299	$ 54,853
Intermediate	46,986	75,722	242,725	80,421	34,960
Long term	225,900	354,156	826,639	511,709	247,611
Total Assets	$331,822	$544,022	$1,389,863	$734,429	$337,424
LIABILITIES:					
Current	$ 14,736	$ 29,255	$ 111,182	$ 39,752	$ 19,016
Intermediate	23,249	37,798	64,682	35,190	10,372
Long term	48,885	96,085	226,594	103,965	46,150
Total Liabilities	$ 86,870	$163,138	$ 402,458	$178,907	$ 75,538

CASH FLOW STATEMENTS

Tables 8 and 9 provide the summarized cash flows. A reporting problem noted was that some Telfarmers fail to report any new money borrowed. Furthermore, many Telfarmers do not report family living withdrawals. As a result, there is a noticeable amount of unreconciled cash which was labeled "unaccounted for cash." Family living and income taxes would be major components of this category. Normally, operating expenses include interest, but a breakdown was provided to show the interest incurred by the particular size and type of farm.

The last category in Tables 8 and 9 is an attempt to measure the movement of borrowed principal in and out of the business during the year. The data source did not identify whether it was short, intermediate, or long-term debt. If there is a reduction in the debts owed at the end of the year compared to the debts owed at the beginning of the year, the new money borrowed per dollar of principal paid should be less than 1. On these farms, only the potato farms, with .94, achieved this stature. The remaining values ranged from 1.06 on large dairy farms to 1.98 on fruit farms. The lack of beginning of the year balance sheets on the exact same sample of farms precluded us from verifying this apparent change in debt balance.

TABLE 8. CASH FLOW ITEMS ON LIVESTOCK AND POTATO FARMS

Telfarmers For The Year 1980

Item	DAIRY Less Than 50 Cows	50-74.9 Cows	75-99.9 Cows	100 Or More Cows	Swine Farrow To Finish	Potato
CASH COMING IN:						
Beginning cash balance	$ 1,146	$ 3,323	$ 3,090	$ 3,539	$ 2,090	$ 9,328
Crops sold	8,248	11,790	17,891	29,357	40,776	307,580
Livestock & products sold	77,635	134,006	184,110	334,337	207,933	451
Other cash income	1,796	2,392	3,937	6,991	5,363	15,075
Resale items sold	77	1,477	---	5,130	3,588	6,638
Capital sales	4,169	3,090	1,587	3,596	1,942	4,145
Nonfarm income	1,746	2,660	2,601	9,878	3,746	5,146
New money borrowed	32,642	39,392	73,076	92,286	147,723	106,130
Decrease in receivables	240	262	1,283	18,010	2,010	12,208
Total Cash In	$127,699	$198,392	$287,575	$503,124	$415,171	$466,701
CASH GOING OUT:						
Operating expenses	$ 39,335	$ 63,742	$ 97,665	$178,848	$107,586	$233,713
Interest	6,518	11,922	17,675	30,213	25,526	26,407
Resale items purchased	58	1,479	58	995	2,013	10,586
Livestock purchased	4,752	7,047	7,475	14,415	6,957	---
Feed purchased	12,719	19,984	27,680	55,965	85,297	36
Capital purchases	24,428	43,057	57,664	92,712	75,140	48,699
Nonfarm expenses	23	568	26	4,025	568	5,363
Principal paid	18,568	27,313	55,526	87,147	92,728	113,332
Increase in receivables	794	1,708	2,194	21,928	3,020	353
Cash unaccounted for	19,629	18,845	16,536	14,566	6,650	18,274
Ending cash balance	875	2,727	5,076	2,310	9,686	9,938
Total Cash Out	$127,699	$198,392	$287,575	$503,124	$415,171	$466,701
New money borrowed/$1.00 principal paid	$1.76	$1.44	$1.32	$1.06	$1.59	$ .94

TABLE 9. CASH FLOW ITEMS ON CROP AND FRUIT FARMS

Telfarmers For The Year 1980

Item	CASH GRAIN Less Than 400 Acres	CASH GRAIN 400-799.9 Acres	CASH GRAIN 800+ Acres	Saginaw Valley Crops	All Michigan Fruit
CASH COMING IN:					
Beginning cash balance	$ 3,624	$ 2,957	$ 4,520	$ 5,360	$ 2,854
Crops sold	57,341	114,258	355,047	190,471	98,269
Livestock & products sold	2,140	3,855	325	3,273	---
Other cash income	3,540	6,770	10,023	8,025	5,940
Resale items sold	2,039	1,675	1,197	3,393	374
Capital sales	2,501	569	5,770	2,370	1,018
Nonfarm income	5,133	8,910	72,912	4,331	5,135
New money borrowed	35,616	88,424	125,948	70,646	35,107
Decrease in receivables	2,864	4,274	26,274	1,398	12,931
Total Cash In	$114,798	$231,892	$ 602,016	$289,267	$161,628
CASH GOING OUT:					
Operating expenses	$ 38,896	$ 89,395	$ 228,389	$115,913	$ 82,318
Interest	7,532	16,083	36,199	18,894	4,781
Resale items purchased	3,979	1,947	15,677	1,281	1,007
Livestock purchased	215	---	200	3,673	---
Feed purchased	49	13	252	15	---
Capital purchases	20,940	37,731	96,668	52,475	17,687
Nonfarm expenses	295	2,564	13,646	90	200
Principal paid	31,074	71,080	96,659	52,711	17,734
Increase in receivables	339	7,035	33,059	20	13,261
Cash unaccounted for	5,598	1,346	79,476	41,215	23,767
Ending cash balance	5,881	4,698	1,791	2,980	873
Total Cash Out	$114,798	$231,892	$ 602,016	$289,251	$160,514
New money borrowed/$1.00 principal paid	$1.15	$1.24	$1.30	$1.34	$1.98

RATIO ANALYSIS

Tables 10 and 11 provide a series of ratios described in [1] which may be used for a comparative business analysis. The ratios all indicate the sample farms were in a strong financial position. The first series of ratios were calculated with data from Tables 2, 3, 6, and 7. To some degree all ratios calculated from the net worth statement give an indication of the farms' solvency position. The current ratio reflects the ability of the farm to cover current debts by the liquidation of current assets. A value greater than one indicates that the business is able to cover current debt through the liquidation of current assets. The intermediate ratio is very similar in concept to the current ratio. In calculating the intermediate ratio, the group of assets has been expanded to include both current and intermediate assets, as has the liabilities. Both the current and intermediate ratios were markedly influenced by the assumptions in Table 5 and its associated discussion.

The net capital ratio, debt/equity ratio, and the equity/value ratio are indicators of long-term solvency of a business. These ratios indicate a manager's willingness to use borrowed capital in the operation of his business [1]. For example, the lower the net capital ratio for a given farm, the more that business is using outside capital in relation to equity capital. There are various rules of thumb lending

TABLE 10. RATIO ANALYSIS ON LIVESTOCK AND POTATO FARMS

Telfarmers, 1980

Ratio	DAIRY Less Than 50 Cows	50-74.9 Cows	75-99.9 Cows	100 Or More Cows	Swine Farrow To Finish	Potato
FROM NET WORTH:						
Current ratio	4.43	3.75	3.74	4.93	7.42	3.72
Intermediate ratio	4.56	3.55	3.69	4.63	3.18	2.99
Net capital ratio	3.33	3.06	3.19	3.13	2.63	2.87
Debt:equity	.43	.48	.45	.47	.61	.53
Equity:value	.70	.67	.69	.68	.62	.65
FROM INCOME STATEMENT:						
Operating ratio	.39	.49	.43	.47	.44	.61
Fixed ratio	.29	.36	.30	.29	.40	.22
Gross ratio	.68	.85	.73	.76	.84	.83
NET WORTH/INCOME STATEMENT:						
Capital turnover	.31	.33	.34	.39	.38	.44

TABLE 11. RATIO ANALYSIS ON CROP AND FRUIT FARMS

Telfarmers, 1980

Ratio	CASH GRAIN Less Than 400 Acres	CASH GRAIN 400-799.9 Acres	CASH GRAIN 800+ Acres	Saginaw Valley Crops	All Michigan Fruit
FROM NET WORTH:					
Current ratio	4.00	3.90	2.88	3.56	2.88
Intermediate ratio	2.79	2.83	3.20	2.97	3.05
Net capital ratio	3.82	3.33	3.45	4.10	4.47
Debt:equity	.35	.43	.41	.32	.28
Equity:value	.74	.70	.71	.76	.78
FROM INCOME STATEMENT:					
Operating ratio	.47	.46	.48	.41	.69
Fixed ratio	.33	.30	.34	.24	.21
Gross ratio	.80	.76	.82	.65	.90
NET WORTH/INCOME STATEMENT:					
Capital turnover	.21	.30	.27	.32	.32

institutions tend to go by when analyzing these ratios. For example, a farm business with relatively stable expense and income situations, such as dairy enterprises, may be able to get by with a 1.4 net capital ratio. On farm types where income and expenses fluctuate greatly, an individual may need a net capital ratio as high as 2 or 3 to be considered a good risk.

Ratios calculated from the income statement give an indication of the relative profitability of a business and the degree of flexibility the farm has in meeting expenses. In establishing these ratios total expenses were broken up into operating and fixed. The fixed expenses are insurance, building and land leases, taxes, intermediate and long-term interest (only), and depreciation. Perhaps the most important of these three ratios is the gross ratio, which is the proportion of total expenses to gross farm income. Income and expenses include inventory changes in this report. If the gross ratio is greater than 1, the business is not covering the total expenses of operation. Values less than 1 indicate the business is generating a positive net farm income.

The primary analysis factor using both the net worth and income statement is the capital turnover ratio. This ratio compares the velocity or use of invested capital in the business in relationship to the income generated. The higher the ratio the more efficient the business is in its use of invested capital.

INCOME MEASUREMENTS

Tables 12 and 13 provide the average annual income measures for 1980 for the farms in the study. These factors were used in some of the previously mentioned ratios. The net farm income is the starting point for calculating the various profit and return measures. Net farm income is a return to unpaid family labor plus owner's labor, management, and equity capital. Cash interest paid was an expense item in the net farm income calculation. Taking net farm income and deducting the average charge for unpaid family labor hours which were reported by the Telfarmers gives the return on operator's labor, capital, and management (ROLCM).

The next step is to reflect the noncompensated operator's inputs. Taking ROLCM and deducting the opportunity cost of equity capital (the average farm net worth times a selected interest rate) yields labor income. This is the amount left over to reward the owner for management and labor. This return was negative on small grain and on fruit farms in 1980. A $4.75 per hour charge for average operator's labor is subtracted from labor income to get management income. Management income is the residual left from net farm income after all family labor, owner's labor, and opportunity cost of capital have been deducted. Management income ranged from $-16,955 on fruit farms to $41,932 on Saginaw Valley crop farms. Five of the 11 average farm types earned negative management incomes in 1980.

TABLE 12. PROFIT OR RETURN ANALYSIS FACTOR

Livestock And Potato Telfarmers, 1980

Item	DAIRY Less Than 50 Cows	50-74.9 Cows	75-99.9 Cows	100 Or More Cows	Swine Farrow To Finish	Potato
Net farm income before taxes	$ 26,860	$ 40,389	$ 53,827	$ 81,163	$ 32,076	$ 57,426
ROLCM*	20,732	30,860	42,408	66,476	24,946	46,572
Labor income	7,225	10,545	15,651	24,137	911	25,359
Management income	- 7,148	- 4,199	1,097	9,474	- 8,684	15,032
ROCM**	6,358	16,116	27,854	51,813	15,351	36,245
Percent return to total capital	4%	6%	7%	8%	5%	8%
Percent return to operator's capital	3%	5%	6%	7%	3%	7%

*ROLCM = return on operator's labor, capital, and management.

**ROCM = return on operator's capital and management.

TABLE 13. PROFIT OR RETURN ANALYSIS FACTORS

Crop And Fruit Telfarmers, 1980

Item	CASH GRAIN Less Than 400 Acres	CASH GRAIN 400-799.9 Acres	CASH GRAIN 800+ Acres	Saginaw Valley Crops	All Michigan Fruit
Net farm income before taxes	$ 14,033	$ 38,087	$ 66,048	$ 82,871	$ 10,042
ROLCM*	12,608	35,517	57,769	77,836	4,332
Labor income	- 532	21,742	31,856	53,038	- 6,472
Management income	- 7,776	13,296	23,724	41,932	-16,955
ROCM**	5,364	27,071	49,637	66,730	- 6,151
Percent return to total capital	4%	8%	6%	12%	0%
Percent return to operator's capital	2%	7%	5%	12%	-2%

*ROLCM = return on operator's labor, capital, and management.

**ROCM = return on operator's capital and management.

The next measure is return on operator's labor and management (ROCM). It is the ROLCM minus the $4.75 per hour charge for unpaid operator's labor. This item can be used to determine percent return on total capital and percent return on operator's capital. To calculate the percentage return on total capital invested in the business, add the cash interest paid on borrowed capital back into ROCM. This is divided by average total assets invested in the business resulting in a rate of return to total capital. This figure can be compared with the rate of return in other types of businesses to determine the relative efficiency of capital utilization by the farm being studied.

The percentage return to operator's capital is calculated by using ROCM and dividing by the average operator's net worth. This percent return should be compared to the operator's expected return on capital in the next best alternative. Over several years it is assumed manager's want to earn a percentage return greater than the average percentage paid on low risk bonds. Only Saginaw Valley crop farms managed, on the average, to do so in 1980. When calculating these last two ratios, the beginning total asset values and beginning net worth figures for 1980 were not available, so the ratios were calculated on ending 1980 data. This bias may have slightly reduced the calculated returns. It is customary to use an average of beginning and ending values when calculating these ratios.

SUMMARY

This report presents average net worth statements, cash flows, ratios, and profit measures for selected Michigan Telfarmers having complete debt records. These are average figures taken directly from the numbers reported by the Telfarmers. These statistics provide guidelines which enable managers with farms of the same type and size to do a comparative financial analysis of their own business.

The percent that net worth is of total assets on the Michigan Telfarms studied is comparable to data on all the farms in the United States. Variation existed in financial ratios among size and types of farms. Profits, however, varied considerably among farm groups. Five of the 11 size and types of farms had negative returns to management. Most had percentage returns to capital below alternative low risk investments. All but one of the farm types finished the year owing more money than they did at the start of the year.

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