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# ***Staff Paper***

**BUSINESS ANALYSIS SUMMARY FOR FRUIT  
FARMS  
1996 Telfarm**

Sherrill B. Nott and Ralph E. Hepp

Staff Paper 97-26

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Department of Agricultural Economics  
MICHIGAN STATE UNIVERSITY  
East Lansing, Michigan 48824

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## **Business Analysis Summary for Fruit Farms**

**Sherrill B. Nott and Ralph E. Hepp**  
**nott@pilot.msu.edu and hepp@pilot.msu.edu**

**19 pages**

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# **BUSINESS ANALYSIS SUMMARY FOR FRUIT FARMS**

## **1996 Michigan Telfarm/MicroTel Data**

by

Sherrill B. Nott and Ralph E. Hepp<sup>1</sup>

### **Introduction**

The body of this report is organized as follows:

- I. Introduction and Table of Contents
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- II. Data Tables
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#### **Data Source**

Farm types were assigned using the 1992 Census of Agriculture's Standard Industrial Classification (SIC) definitions. Basically, any farm with 50 percent or more of value of farm sales from one item becomes a farm of that type. Fruit farms have 50 percent or more of value of combined sales from cherries, apples, berries, and other fruits.

This report is a summary of the financial and production records kept by fruit farmers enrolled in the Telfarm/MicroTel record program through Michigan State University Extension. Farm records were included if a Finan<sup>2</sup> summary was completed on 1996 data including beginning

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<sup>1</sup>Co-workers in the Telfarm/MicroTel project were: J. Jones, D. Stein, T. Purdy, S. Harsh, M. Kelsey, R. Betz, G. Schwab, A. Shapley, W. Schauer, and G. Kole with the assistance of MSU Extension Agents in Michigan.

<sup>2</sup>Finan = financial analysis, one of the parts of Finpack, a financial software package from the Center for Farm Financial Management at the University of Minnesota.

and ending balance sheets, income and expenses plus crop acres and yields. The summary was included if cash discrepancy was less than 10 % of gross cash inflow, and if the debt discrepancy was less than \$1,000.

This report has three purposes: 1) to provide statistical information about the financial results on grain farms during 1996; 2) to provide production costs for comparative analysis and forward planning; and 3) to provide information on the trends in resource use, income and costs during the last few years. Following trends will be a problem this year, as Telfarm/MicroTel and the Department of Agricultural Economics adopted Finansum,<sup>3</sup> a different software package for doing annual analysis. Some bridging inferences can be drawn from earlier publications. For 1994, the old method of analysis calculation was reported in Agricultural Economics Report Number 592, Business Analysis Summary for Fruit Farms, 1994 Telfarm Data. The new method was reported in Staff Paper No. 96-86, Michigan Farm Database, New Directions for 1995; it contains averages of 23 fruit farms calculated with Finansum.

Finansum allows rapid analysis of group averages with some degree of choice over how the results are presented. We chose to show the average of the high or low 25 percent by net income, but only if the 25 percent meant 6 or more farms. In order to get at least 6 farms, we increased the percentage. The farm was accepted in the average regardless of whether the farm was a proprietorship, partnership, limited liability company, or corporation. Finansum will produce a variety of report options; we include a subset in the publication.

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<sup>3</sup>Finansum provides summarization calculations for data files generated by Finan. It also comes from the Center for Farm Financial Management.

**Table 1. CROP PRODUCTION AND MARKETING SUMMARY, 1996**

**Michigan Fruit Farms, 6 Western Counties**

(Farms sorted by Net Farm Income)

	Average of <u>All Farms</u>	Average of <u>Low 33 %</u>	Average of <u>High 33 %</u>
Number of Farms	18	6	6
ACREAGE SUMMARY			
Total Acres Owned	226	299	238
Total Crop Acres	163	147	228
Crop Acres Owned	126	129	151
Crop Acres Cash Rented	36	18	78
Crop Acres Share Rented	1	-	-
Total Pasture Acres	-	-	-
AVERAGE PRICE RECEIVED (CashSales Only)			
Cherries per lb.	\$0.21		
Apples per bu.	\$4.29		
AVERAGE YIELD PER ACRE			
Apples (bu.)	323	-	-
Hay, Alfalfa (ton)	3	-	-
Cherries (lb.)	4,158	-	-
Peaches (bu.)	127	-	-
Corn (bu.)	98	-	-
Corn Silage (ton)	12	-	-
Asparagus (cwt.)	12	-	-
Cherries, Tart (lb.)	5,366	-	-
Oats (bu.)	57	-	-
Cherries, Sweet (lb.)	<u>6,531</u>	-	-

**Table 2. FARM INCOME STATEMENT, 1996**  
**Michigan Fruit Farms, 6 Western Counties**  
(Farms sorted by Net Farm Income)

	Average Of <u>Farms</u>	Average Of <u>Low 34%</u>	Average Of <u>High 34%</u>
Number of Farms	18	6	6
<b>CASH FARM INCOME</b>			
Apples	\$68,371	\$22,242	\$93,235
Asparagus	2,557	-	
Cherries	36,922	7,344	86,732
Sweet Cherries	29,893	38,548	27,312
Tart Cherries	27,981	43,153	20,075
Grapes	1,117	-	-
Alfalfa Hay	510	-	1,489
Peaches	15,100	33,162	9,481
Pears	73	-	179
Peppers	105	316	-
Plums	1,879	1,445	2,837
Pumpkins	5	15	-
Rye	7	-	-
Squash	358	-	-
Straw	43	-	130
Sweet Corn	1,465	1,946	-
Other crops	1,625	4,430	-
Beef Replacement Heifers	389	-	1,167
Background Beef	2,406	-	7,219
Finish Cull Cows	123	-	370
Misc. livestock income	(8)	(25)	-
Deficiency payments	191	-	572
Other government payments	748	401	922
Custom work income	813	626	1,370
Patronage dividends, cash	746	696	630
Insurance income	982	1,684	543
Other farm income	<u>5,344</u>	<u>2,635</u>	<u>4,374</u>
 Gross Cash Farm Income	 <u>\$199,746</u>	 <u>\$158,619</u>	 <u>\$258,636</u>

**Table 2. FARM INCOME STATEMENT, 1996 (Continued)**  
**Michigan Fruit Farms, 6 Western Counties**  
(Farms sorted by Net Farm Income)

	Average Of All Farms	Average Of Low 34%	Average Of High 34%
Number of Farms	18	6	6
Seed	\$2,159	\$2,812	\$2,084
Fertilizer	6,473	4,959	10,904
Crop chemicals	26,838	21,882	34,529
Crop insurance	589	258	33
Irrigation energy	23	-	69
Crop marketing	2,191	5,536	73
Crop miscellaneous	4,411	9,057	1,321
Feeder livestock purchase	27	-	80
Purchased feed	323	-	851
Breeding fees	1	-	4
Veterinary	109	-	312
Livestock supplies	218	-	655
Livestock marketing	21	-	63
Interest	12,998	17,794	8,060
Fuel & oil	6,089	4,954	8,115
Repairs	12,980	12,425	11,429
Custom hire	4,406	5,288	3,411
Hired labor	50,886	57,424	46,841
Land rent	4,378	3,914	7,878
Machinery & bldg leases	4,983	8,779	951
Real estate taxes	3,197	4,355	3,145
Personal property taxes	86	134	44
Farm insurance	5,208	5,891	5,175
Utilities	3,309	3,607	3,487
Dues & professional fees	2,079	1,805	2,809
Miscellaneous	<u>11,724</u>	<u>4,614</u>	<u>18,649</u>
Total cash expense	\$165,704	\$175,488	\$170,970
Net cash farm income	34,042	(16,868)	87,666
INVENTORY CHANGES			
Crops and feed	21,593	13,753	52,659
Market livestock	858	-	2,573
Accounts receivable	4,159	1,169	(390)
Prepaid expenses and supplies	(613)	(4,313)	1,584
Accounts payable	<u>1,045</u>	<u>156</u>	<u>3,181</u>
Total inventory change	\$27,042	\$10,766	\$59,608
Net operating profit	61,084	(6,102)	147,274
DEPRECIATION AND OTHER CAPITAL ADJUSTMENTS			
Breeding livestock	833	-	2,500
Machinery and equipment	(15,248)	(10,159)	(28,150)
Buildings and improvements	(1,724)	(2,868)	(5,168)
Other farm capital	<u>(3,482)</u>	<u>(487)</u>	<u>(8,851)</u>
Total depr. and other capital adj	<u>\$(19,620)</u>	<u>\$(13,514)</u>	<u>\$(39,669)</u>
			\$107,605
Net farm income	<u>\$41,464</u>	<u>(\$19,616)</u>	

**Table 3. INVENTORY CHANGES, 1996**  
**Michigan Fruit Farms, 6 Western Counties**  
(Farms sorted by Net Farm Income)

	Average Of All Farms	Average Of Low 34%	Average Of High 34%
Number of Farms	18	6	6
Net cash farm income	\$34,042	\$(16,868)	\$87,666
<b>CROPS AND FEED</b>			
Ending inventory	80,852	49,602	157,095
Beginning inventory	59,259	35,849	104,436
Inventory change	21,593	13,753	52,659
<b>MARKET LIVESTOCK</b>			
Ending inventory	2,717	-	8,150
Beginning inventory	1,859	-	5,577
Inventory change	858	-	2,573
<b>ACCTS RECEIVABLE &amp; OTHER CURRENT</b>			
Ending inventory	18,610	37,145	1,023
Beginning inventory	14,452	35,976	1,413
Inventory change	4,159	1,169	(390)
<b>PREPAID EXPENSES AND SUPPLIES</b>			
Ending inventory	3,474	4,478	4,045
Beginning inventory	4,087	8,791	2,461
Inventory change	(613)	(4,313)	1,584
<b>ACCOUNTS PAYABLE</b>			
Beginning inventory	5,630	5,472	8,094
Ending inventory	4,585	5,316	4,913
Inventory change	1,045	156	3,181
Total inventory change	<u>27,042</u>	<u>10,766</u>	<u>59,608</u>
Net operating profit	<u>\$61,084</u>	<u>\$(6,102)</u>	<u>\$147,274</u>

**Table 4. DEPRECIATION AND OTHER CAPITAL ADJUSTMENTS, 1996**

**Michigan Fruit Farms, 6 Western Counties**

(Farms sorted by Net Farm Income)

	Average Of All Farms	Average Of Low 34%	Average Of High 34%
Number of Farms	18	6	6
Net operating profit	\$61,084	\$(6,102)	\$147,274
<b>BREEDING LIVESTOCK</b>			
Ending inventory	2,017	-	6,050
Capital sales	-	-	-
Beginning inventory	1,183	-	3,550
Capital purchases	-	-	-
Depreciation, capital adj.	833	-	2,500
<b>MACHINERY AND EQUIPMENT</b>			
Ending inventory	62,575	40,414	117,893
Capital sales	1,175	225	2,350
Beginning inventory	69,504	45,296	130,776
Capital purchases	9,493	5,503	17,616
Depreciation, capital adj.	(15,248)	(10,159)	(28,150)
<b>BUILDINGS AND IMPROVEMENTS</b>			
Ending inventory	62,059	60,112	69,550
Capital sales	4,611	-	-
Beginning inventory	63,719	61,553	68,039
Capital purchases	4,675	1,426	6,679
Depreciation, capital adj.	(1,724)	(2,868)	(5,168)
<b>OTHER CAPITAL ASSETS</b>			
Ending inventory	32,464	17,867	45,870
Capital sales	11,543	22,944	5,164
Beginning inventory	31,243	14,112	58,331
Capital purchases	16,246	27,186	1,553
Depreciation, capital adj.	(3,482)	(487)	(8,851)
Total depreciation, capital adj.	<u>(19,620)</u>	<u>(13,514)</u>	<u>(39,669)</u>
Net farm income	<u>\$41,464</u>	<u>\$(19,616)</u>	<u>\$107,605</u>

**Table 5. PROFITABILITY ANALYSIS, 1996**  
**Michigan Fruit Farms, 6 Western Counties**  
(Farms sorted by Net Farm Income)

	Avg. of <u>All Farms</u>	Avg. of <u>Low 33%</u>	Avg. of <u>High 33%</u>	Avg. of <u>All Farms</u>	Avg. of <u>Low 33%</u>	Avg. of <u>High 33%</u>
Number of Farms	18	6	6	18	6	6
PROFITABILITY	-----	Cost	-----	-----	Market	-----
Net farm income	41,464	(19,616)	107,605	48,429	(16,928)	123,480
Labor and management earnings	29,362	(30,214)	87,781	15,214	(57,479)	82,812
Rate of return on assets	5.4%	-6.2%	13.1%	3.7%	-2.4%	9.7%
Rate of return on equity	4.9%	-27.5%	18.4%	2.9%	-6.0%	11.3%
Operating profit margin	9.6%	-14.6%	21.6%	12.6%	-13.1%	26.6%
Asset turnover rate	57.0%	42.0%	60.6%	29.5%	18.6%	36.3%
Interest on farm net worth	12,103	10,597	19,824	33,215	40,551	40,668
Farm interest expense	12,767	17,667	7,071	12,767	17,667	7,071
Value of operator lbr and mgmt.	32,548	23,468	46,703	32,548	23,468	46,703
Return on farm assets	21,683	(25,418)	67,973	28,648	(22,729)	83,848
Average farm assets	398,121	412,953	519,716	768,850	931,966	867,113
Return on farm equity	8,916	(43,085)	60,902	15,881	(40,396)	76,777
Average farm equity	182,858	156,835	330,403	553,587	675,848	677,800
Value of farm production	<u>226,840</u>	<u>173,542</u>	<u>315,048</u>	<u>226,840</u>	<u>173,542</u>	<u>315,048</u>

Table 6. LIQUIDITY ANALYSIS, 1996  
**Michigan Fruit Farms, 6 Western Counties**  
(Farms sorted by Net Farm Income)

	<u>Average of</u> <u>All Farms</u>	<u>Average of</u> <u>Low 34%</u>	<u>Average of</u> <u>High 34%</u>
Number of Farms	18	6	6
LIQUIDITY (Cash)			
Net cash farm income	34,042	(16,868)	87,666
Net nonfarm income	34,711	70,360	15,240
Family living and taxes	47,765	43,510	63,599
Real estate principal payments	9,230	10,643	7,545
Cash available for interm. debt	11,758	(662)	31,762
Average intermediate debt	32,554	29,896	34,279
Years to turnover interm. debt	2.8	**	1.1
Expense as a % of income	83%	111%	66%
Interest as a % of income	7%	11%	3%
LIQUIDITY (Accrual)			
Total accrual farm income	226,356	173,542	313,479
Total accrual farm expense	165,271	179,644	166,205
Net accrual operating income	61,084	(6,102)	147,274
Net nonfarm income	34,711	70,360	15,240
Family living and taxes	47,765	43,510	63,599
Real estate principal payments	9,230	10,643	7,545
Available for intermediate debt	38,800	10,104	91,370
Average intermediate debt	32,554	29,896	34,279
Years to turnover interm. debt	0.8	3.0	0.4
Expense as a % of income	73%	104%	53%
Interest as a % of income	<u>6%</u>	<u>10%</u>	<u>2%</u>

\*\* Income insufficient to meet debt servicing requirements

**Table 7. BALANCE SHEET AT COST VALUES, 1996**  
**Michigan Fruit Farms, 6 Western Counties**  
(Farms sorted by Net Farm Income)

Number of Farms	Average of All Farms		Average of Low 33 %		Average of High 33 %	
	18		6		6	
	Beginning	Ending	Beginning	Ending	Beginning	Ending
<b>ASSETS</b>						
Current Farm Assets						
Cash and checking balance	\$28,093	\$24,535	\$33,380	\$20,415	\$42,274	\$40,715
Prepaid expenses & supplies	4,087	3,474	8,791	4,478	2,461	4,045
Growing crops	-	-	-	-	-	-
Accounts receivable	1,892	6,301	13	1,183	663	1,023
Hedging accounts	-	-	-	-	-	-
Crops held for sale or feed	59,259	80,852	35,849	49,602	104,436	157,095
Crops under government loan	-	-	-	-	-	-
Market livestock held for sale	1,859	2,717	-	-	5,577	8,150
Other current assets	12,560	12,310	35,963	35,963	750	-
Total current farm assets	107,749	130,188	113,996	111,640	156,160	211,029
Intermediate Farm Assets						
Breeding livestock	1,183	2,017	-	-	3,550	6,050
Machinery and equipment	69,504	62,575	45,296	40,414	130,776	117,893
Other intermediate assets	14,089	17,710	5,623	5,623	17,833	15,000
Total intermediate farm assets	84,776	82,302	50,919	46,037	152,160	138,943
Long-Term Farm Assets						
Farm land	116,094	117,447	181,402	179,512	82,675	89,509
Buildings and improvements	63,719	62,059	61,553	60,112	68,039	69,550
Other long-term assets	17,154	14,754	8,489	12,244	40,498	30,870
Total long-term farm assets	196,967	194,261	251,445	251,868	191,212	189,929
Total Farm Assets	389,492	406,751	416,360	409,546	499,532	539,901
Total Nonfarm Assets	19,353	30,387	34,740	59,922	-	-
Total Assets	408,845	437,137	451,100	469,468	499,532	539,901
<b>LIABILITIES</b>						
Current Farm Liabilities						
Accrued interest	3,661	3,431	4,178	4,050	4,248	3,259
Accounts payable	1,969	1,154	1,294	1,265	3,846	1,653
Current notes	8,353	7,414	20,119	3,318	3,938	11,833
Government crop loans	-	-	-	-	-	-
Principal due on term debt	13,698	14,311	13,237	15,487	15,119	16,441
Total current farm liabilities	27,681	26,342	38,829	24,216	27,151	33,187
Intermediate Farm Liabilities	26,804	28,198	19,305	31,885	29,636	23,590
Long-term Farm Liabilities	170,215	151,286	213,912	184,088	143,115	121,950
Total Farm Liabilities	224,701	205,826	272,045	240,189	199,901	178,726
Total Nonfarm Liabilities	7,179	11,806	19,705	31,518	1,833	3,900
Total Liabilities	231,880	217,632	291,750	271,707	201,735	182,626
Net Worth (farm and nonfarm)	176,965	219,506	159,350	197,761	297,797	357,274
Net Worth Change		42,541		38,411		59,477
<b>RATIO ANALYSIS</b>						
Current Farm Liabilities / Assets	26%	20%	34%	22%	17%	16%
Curr. & Intern Farm Liab / Assets	28%	26%	35%	36%	18%	16%
Long Term Farm Liab. / Assets	86%	78%	85%	73%	75%	64%
Total Liabilities / Assets	<u>57%</u>	<u>50%</u>	<u>65%</u>	<u>58%</u>	<u>40%</u>	<u>34%</u>

**Table 8. BALANCE SHEET AT MARKET VALUES, 1996**  
**Michigan Fruit Farms, 6 Western Counties**  
(Farms sorted by Net Farm Income)

Number of Farms	Average of All Farms 18		Average of Low 33 % 6		Average of High 33 % 6	
	Beginning	Ending	Beginning	Ending	Beginning	Ending
<b>ASSETS</b>						
Current Farm Assets						
Cash and checking balance	\$28,093	\$24,535	\$33,380	\$20,415	\$42,274	\$40,715
Prepaid expenses & supplies	4,087	3,474	8,791	4,478	2,461	4,045
Growing crops	-	-	-	-	-	-
Accounts receivable	1,892	6,301	13	1,183	663	1,023
Hedging accounts	-	-	-	-	-	-
Crops held for sale or feed	59,259	80,852	35,849	49,602	104,436	157,095
Crops under government loan	-	-	-	-	-	-
Market livestock held for sale	1,859	2,717	-	-	5,577	8,150
Other current assets	12,560	12,310	35,963	35,963	750	-
Total current farm assets	107,749	130,188	113,996	111,640	156,160	211,029
Intermediate Farm Assets						
Breeding livestock	1,183	2,017	-	-	3,550	6,050
Machinery and equipment	127,037	123,245	115,591	113,148	151,935	145,256
Other intermediate assets	14,089	17,710	5,623	5,623	17,833	15,000
Total intermediate farm assets	142,309	142,971	121,215	118,771	173,318	166,306
Long-Term Farm Assets						
Farm land	382,083	381,695	585,865	583,032	291,082	293,404
Buildings and improvements	98,220	98,301	84,463	84,206	179,110	183,330
Other long-term assets	26,379	27,807	28,489	32,253	39,321	41,167
Total long-term farm assets	506,681	507,803	698,818	699,491	509,513	517,900
Total Farm Assets	756,738	780,962	934,028	929,903	838,992	895,235
Total Nonfarm Assets	92,566	102,525	118,681	140,390	113,588	113,588
Total Assets	849,304	883,487	1,052,710	1,070,293	952,580	1,008,823
<b>LIABILITIES</b>						
Current Farm Liabilities						
Accrued interest	3,661	3,431	4,178	4,050	4,248	3,259
Accounts payable	1,969	1,154	1,294	1,265	3,846	1,653
Current notes	8,353	7,414	20,119	3,318	3,938	11,833
Government crop loans	-	-	-	-	-	-
Principal due on term debt	13,698	14,311	13,237	15,487	15,119	16,441
Total current farm liabilities	27,681	26,342	38,829	24,216	27,151	33,187
Intermediate Farm Liabilities	26,804	28,198	19,305	31,885	29,636	23,590
Long-term Farm Liabilities	170,215	151,286	213,912	184,088	143,115	121,950
Total Farm Liabilities	224,701	205,826	272,045	240,189	199,901	178,726
Total Nonfarm Liabilities	7,179	11,806	19,705	31,518	1,833	3,900
Total Deferred Liabilities	-	-	-	-	-	-
Total Liabilities	231,880	217,632	291,750	271,707	201,735	182,626
Net Worth (farm and nonfarm)	617,424	665,855	760,960	798,586	750,845	826,197
Net Worth Change		48,431		37,626		75,352
<b>RATIO ANALYSIS</b>						
Current Farm Liabilities / Assets	26%	20%	34%	22%	17%	16%
Curr. & Interm Farm Liab. / Assets	22%	20%	25%	24%	17%	15%
Long Term Farm Liabilities / Assets	34%	30%	31%	26%	28%	24%
Total Liabilities / Assets	<u>27%</u>	<u>25%</u>	<u>28%</u>	<u>25%</u>	<u>21%</u>	<u>18%</u>

**Table 9. STATEMENT OF CASH FLOWS, 1996**  
**Michigan Fruit Farms, 6 Western Counties**  
(Farms sorted by Net Farm Income)

		Average of <u>All Farms</u>	Average of <u>Low 33 %</u>	Average of <u>High 33 %</u>
Number of Farms		18	6	6
(a) Beginning cash balance (farm & nonfarm)		28,204	33,547	42,274
<b>CASH FROM OPERATING ACTIVITIES</b>				
Gross cash farm income		199,746	158,619	258,636
Net nonfarm income	(+)	34,711	70,360	15,240
Total cash farm expense	(-)	165,704	175,488	170,970
Apparent family living expense	(-)	41,991	34,761	59,270
Income and social security tax	(-)	5,088	8,750	2,271
(b) Cash from operations	(=)	21,764	9,981	41,366
<b>CASH FROM INVESTING ACTIVITIES</b>				
Sale of breeding livestock		-	-	-
Sale of machinery & equipment	(+)	1,175	225	2,350
Sale of farm land	(+)	3,915	5,579	-
Sale of farm buildings	(+)	4,611	-	-
Sale of other farm assets	(+)	11,543	22,944	5,164
Sale of nonfarm assets	(+)	382	-	-
Purchase of breeding livestock	(-)	-	-	-
Purchase of machinery & equip.	(-)	9,493	5,503	17,616
Purchase of farm land	(-)	-	-	-
Purchase of farm buildings	(-)	4,675	1,426	6,679
Purchase of other farm assets	(-)	16,246	27,186	1,553
Purchase of nonfarm assets	(-)	6,994	15,000	-
(c) Cash from investing activities	(=)	(15,783)	(20,367)	(18,336)
<b>CASH FROM FINANCING ACTIVITIES</b>				
Money borrowed		58,145	98,341	42,176
Cash gifts and inheritances	(+)	8,959	17,324	6,435
Principal payments	(-)	72,087	118,211	60,337
Dividends paid	(-)	686	-	2,058
Gifts given	(-)	3,612	33	10,804
(d) Cash from financing activities	(=)	(9,282)	(2,579)	(24,588)
(e) Net change in cash balance	(b+c+d)	(3,391)	(12,965)	(1,558)
Ending cash balance (farm & nonfarm)		<u>24,813</u>	<u>20,582</u>	<u>40,715</u>

**Table 10. FINANCIAL GUIDELINES MEASURES, 1996**

**Michigan Fruit Farms, 6 Western Counties**

(Farms sorted by Net Farm Income)

Number of Farms	Average For All Farms		Average For Low 33 %		Average For High 33 %	
	18		6		6	
LIQUIDITY	Beginning	Ending	Beginning	Ending	Beginning	Ending
Current ratio	3.89	4.94	2.94	4.61	5.75	6.36
Working capital	\$80,067	\$103,846	\$75,167	\$87,424	\$129,010	\$177,842
SOLVENCY (Market)	Beginning	Ending	Beginning	Ending	Beginning	Ending
Farm debt to asset ratio	30 %	26 %	29 %	26 %	24 %	20 %
Farm equity to asset ratio	70 %	74 %	71 %	74 %	76 %	80 %
Farm debt to equity ratio	42 %	36 %	41 %	35 %	31 %	25 %
PROFITABILITY	Cost	Market	Cost	Market	Cost	Market
Rate of return on farm assets	5.4 %	3.7 %	-6.2 %	-2.4 %	13.1 %	9.7 %
Rate of return on farm equity	4.9 %	2.9 %	-27.5 %	-6.0 %	18.4 %	11.3 %
Operating profit margin	9.6 %	12.6 %	-14.6 %	-13.1 %	21.6 %	26.6 %
Net farm income	\$41,464	\$48,429	\$(19,616)	\$(16,928)	\$107,605	\$123,480
REPAYMENT CAPACITY	Cash	Accrual	Cash	Accrual	Cash	Accrual
Term debt coverage ratio	125 %	222 %	88 %	119 %	183 %	389 %
Capital replacement margin	\$6,995	\$34,037	\$(4,142)	\$6,624	\$24,188	\$83,796
EFFICIENCY						
Asset turnover rate (market)	29.5 %		18.6 %		36.3%	
Operating expense ratio	67.4 %		93.3 %		50.8%	
Depreciation expense ratio	8.7 %		7.8 %		12.7%	
Interest expense ratio	5.6 %		10.2 %		2.3%	
Net farm income ratio	18.3 %		(11.3) %		34.3%	
LABOR ANALYSIS						
Total unpaid labor hours	2,580		2,179			
Total hired labor hours	6,113		7,948		3,405	
Total labor hours per farm	8,693		10,127		5,891	
Value of farm production / hour	\$26.09		\$17.14		9,296	
Net farm income / unpaid hour	<u>\$16.07</u>		<u>\$(9.00)</u>		<u>\$33.89</u>	
					<u>\$31.60</u>	

## EXPLANATORY NOTES FOR THE WHOLE-FARM REPORTS<sup>4</sup>

The number of farms included in each of the crop and livestock tables varies because all farms do not have the same enterprises. Some farmers' records were complete enough to be included in the whole-farm tables, but at times, these same farmers' crop or livestock records were not complete enough to include in the respective crop or livestock tables.

Rounding of individual items may have caused minor discrepancies between those items and the printed totals which are calculated before rounding.

### Farm Income Statement

This statement is a summary of income, expenses, and resultant profit or loss from farming operations during the calendar year. The first section lists cash farm income from all sources. The second section lists cash expenses. "Interest" includes only interest actually paid. No opportunity charges on farm equity capital or unpaid labor are included. The difference between "Gross Cash Farm Income" and "Total Cash Expense" is the "Net Cash Farm Income." This is net farm income on a cash basis.

The third and fourth sections deal with noncash changes in the farm business. The "Inventory Changes" and "Depreciation and Other Capital Adjustments" sections are used to convert the cash income Statement (Net Cash Farm Income) derived from the first two sections into an accrual income statement. The resulting "Net Farm Income" represents the return to the operator's and family's unpaid labor, management, and equity capital (net worth). In other words, it represents the return to all of the resources which are owned by the farm family and, hence, not purchased or paid a wage. However, it does not include any asset appreciation, debt forgiveness or asset repossessions.

### Inventory Changes

This is the detailed statement of inventory changes which is summarized. It includes beginning and ending inventories and the calculated changes.

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<sup>4</sup> This section is copied and adjusted from Staff Paper p96-4, Dept. Of applied Economics, University of Minnesota, St. Paul, MN 55108, titled "1995 Annual Report, Southwestern Minnesota Farm Business Management Association."

## **Depreciation and Other Capital Adjustments**

This is the detailed statement of depreciation and other capital adjustments which is summarized. It includes beginning and ending inventories, sales, repossessions, and depreciation.

## **Profitability and Liquidity Analysis**

Various measures of performance are calculated for the farms in this report. These include measures of profitability and liquidity. No opportunity costs are used in the Net Income Statement, the Inventory changes, nor the depreciation and other Capital Adjustments. Opportunity costs are used in the Profitability and Liquidity Analysis. Changes in market value of assets are used in calculating the market values of these measures. The measures and their components are described below.

### ***Profitability***

Profitability is measured in both cost basis and market basis (if available).

"Labor and management earnings" equals "Net Farm Income" minus an opportunity interest cost of 6% on average farm net worth.

"Rate of return on assets" is the "Return to farm assets" divided by "Average farm assets."

"Rate of return on equity" is the "Return to farm equity" divided by "Average farm equity."

"Operating profit margin" is the "Return to farm assets" divided by "Value of farm production."

"Asset turnover rate" is the "Value of farm production" divided by "Average farm assets."

"Interest on farm net worth" is the "Average farm net worth" multiplied by a 6% opportunity interest cost charge.

"Farm interest expense" is the accrued interest cost so it will be different from the cash interest paid.

"Value of operator's labor and management" is its opportunity cost.

"Return on farm assets" is calculated by adding "Farm interest expense" and "Net farm income" and then subtracting the "Value of operator's labor and management."

"Average farm assets" is the average of beginning and ending total farm assets.

"Return to farm equity" is calculated by subtracting the "Value of operator's labor and management" from "Net farm income."

“Average farm equity” is the average of beginning and ending farm net worth.

“Value of farm production” is gross farm income minus feeder livestock purchased and adjusted for inventory changes in crops, market livestock and breeding livestock.

### ***Liquidity: Cash Basis***

“Family Living and Taxes” is the apparent total family expenses and income and social security taxes paid.

“Real estate principal income is taken from the farmer’s data.

“Cash available for intermediate debt service” on the cash basis is “Total net income” minus “Family living and taxes” and “Real estate principal payments.”

“Average intermediate debt” is the average of beginning and ending intermediate farm liabilities.

“Years to turn over intermediate debt” is “Average intermediate debt” divided by “Cash available for intermediate debt service.” If either the cash-based or accrual-based “Cash available for intermediate debt” is a negative number, debt repayment is not possible because of negative cash flow and “Years to turn over intermediate debt” cannot be calculated.

“Expense as a percent of income” is “Total cash expense” divided by “Gross cash farm income.”

“Interest as a percent of income” is “Interest” divided by “Gross cash farm income.”

### ***Liquidity: Accrual Basis***

“Cash available for intermediate debt service” on the accrual basis is “Total net accrual income” minus “Family living and taxes” and “Real estate principal payments.”

“Accrual expense as a percent of income” is “Total accrual farm expense” divided by “Total accrual farm income.”

“Interest as a percent of income” is “Interest” minus beginning accrued interest plus ending accrued interest divided by “Total accrual farm income.”

## **Balance Sheets**

The beginning and ending balance sheets and solvency measures are presented. They include sole proprietors; partnerships and corporations.

## **Statement of Cash Flows**

This table reports the sources from which cash was available or obtained and where that cash was used or remains at the end of the year.

## **Financial Guidelines Measures and Labor Analysis**

This table contains two sections: first, the financial measures and, second, the labor summary. In the first section, the Farm Financial Standards Task Force's 16 financial measures for evaluating a farm's financial position and performance are reported. These 16 measures are explained below following the descriptions found in the FINPACK manual.

### ***Liquidity***

The "current ratio" is calculated by dividing the total current farm assets by the total current farm liabilities.

Working capital" is calculated by subtracting current farm liabilities from current farm assets.

### ***Solvency (Market)***

The "farm debt to asset ratio" is calculated by dividing the total farm liabilities by the total farm assets. It is similar to the total percent in debt ratio listed earlier. The difference is that nonfarm assets and liabilities are included in the total percent in debt but not in the farm debt to asset ratio.

The "farm equity to asset ratio" is calculated by dividing farm equity or net worth by the total farm assets. It measures the proportion of the farm assets financed by the owner's equity as opposed to debt. This is the opposite of the debt to asset ratio. These two measures always add up to 100% because they described how total farm assets are financed.

The "farm debt to equity ratio" measures farm debt relative to farm equity. It is calculated by dividing the total farm liabilities by the total farm net worth. The debt to equity ratio measures the amount of borrowed capital being employed for every dollar of equity capital.

## ***Profitability***

The “rate of return on farm assets” can be thought of as the average interest rate being earned on all investments in the farm or ranch business. If assets are valued at market value, the rate of return on assets can be looked at as the “opportunity cost” of farming versus alternate investments. If assets are valued at cost value, the rate of return on assets more closely represents the actual return on the average dollar invested in the farm. The rate of return on farm assets is calculated as follows:  $\text{Rate of Return on Assets} = \text{Return on Farm Assets} \div \text{Average Farm Investment}$ , where:  $\text{Return on Farm Assets} = \text{Net Farm Income} + \text{Farm Interest} - \text{Value of Operator's Labor \& Management}$ , and  $\text{Average Farm Investment} = (\text{Beginning Total Farm Assets} + \text{Ending Total Farm Assets}) \div 2$ .

The “rate of return on farm equity” represents the interest rate being earned on your farm net worth. If assets are valued at market value, this return can be compared to returns available if the assets were liquidated and invested in alternate investments. If assets are valued at cost value, this more closely represents the actual return on the funds that have been invested or retained in the business. The rate of return on farm equity is calculated as follows:  $\text{Rate of Return on Equity} = \text{Return on Farm Equity} \div \text{Average Farm Net Worth}$ , where:  $\text{Return on Farm Equity} = \text{Net Farm Income} - \text{Value of Operator's Labor \& Management}$ , and  $\text{Average Farm Net Worth} = (\text{Beginning Farm Net Worth} + \text{Ending Farm Net Worth}) \div 2$ .

“Operating profit margin” is a measure of the operating efficiency of the business. It is calculated as follows:  $\text{Operating Profit Margin} = \text{Return to Farm Assets} \div \text{Value of Farm Production}$ . If expenses are held in line relative to the value of output produced, the farm will have a healthy net profit margin. A low net profit margin may be caused by low prices, high operating expenses, or inefficient production.

“Net farm income” represents the returns to unpaid labor, management, and equity capital invested in the business.

## ***Repayment Capacity***

The “term debt coverage ratio” measures whether the business generated enough cash to cover term debt payments. It is calculated by dividing the funds generated by the business for debt repayment (net cash farm income + nonfarm income + interest expense - family living expense - income taxes) by total term debt payments (annual scheduled principal and interest payments on intermediate and long term debt). A ratio less than 100 percent indicates that the business did not generate sufficient cash to meet scheduled payments in the past year. A ratio greater than 100 indicates the business generated enough cash to pay all term debt payments.

The “capital replacement margin” is the amount of money remaining after all operating expenses, taxes, family living costs, and scheduled debt payments have been made. It is the cash generated by the farm business that is available for financing capital replacement such as machinery and equipment. FINAN calculates the capital replacement margin by first adding interest due on intermediate and long term loans to the amount available for principal payments.

It then subtracts scheduled principal and interest payments from this total.

### ***Efficiency***

“Asset turnover rate” is a measure of efficiency in using capital. It is calculated as follows:  
 $\text{Asset Turnover Rate} = \text{Value of Farm Production} \div \text{Total Farm Assets}$ . This will be a market or cost rate depending on how the assets are valued.

The last four ratios reflect the distribution of gross income to cover operating expenses and generate farm income. The sum of the operating expense ratio, the depreciation expense ratio, and the interest expense ratio equals the percent of gross income used to pay business expenses. The amount remaining is net farm income. The gross farm income used to calculate these ratios is the accrual gross farm income.

The “operating expense ratio” is calculated as  $(\text{Total Farm Operating Expense} - \text{Farm Interest Expense}) \div \text{Gross Farm Income}$ . This indicates the percent of the gross farm income that was used to pay operating expenses. Total farm operating expense is the accrual total operating expense.

The “depreciation expense ratio” is calculated as  $\text{Depreciation} \div \text{Gross Farm Income}$ . This ratio indicates the percent of the gross farm income that was used to cover depreciation and other capital adjustments.

The “interest expense ratio” is calculated as  $\text{Farm Interest Expense} \div \text{Gross Farm Income}$ . This ratio indicates the percent of the gross farm income used for farm interest expenses. This is the same ratio as the accrual interest as a percent of income from the Liquidity section in Table 4.

The “net farm income ratio” is calculated as  $\text{Net Farm Income} \div \text{Gross Farm Income}$ . This ratio indicates the percent of the gross farm income that remained after all expenses.

### **Crop Production and Marketing Summary**

This table contains three sections. The first section reports average acreage by land use. The next two sections show average price received and average yields for major crops.