



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.*

Staff Paper

2002 Business Analysis Summary Upper Peninsula Dairy Farms

Eric Wittenberg
And
Christopher Wolf

Staff Paper 2003-15

December, 2003



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

MSU is an Affirmative Action/Equal Opportunity Institution

2002 Michigan Upper Peninsula Dairy Farm Business Analysis Summary

2002 Michigan TelFarm and AgriSolutions Data
Staff Paper No. 03-15
by

Eric Wittenberg
and
Christopher Wolf

Copyright 2003 by Eric Wittenberg and Christopher Wolf. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

2002 Michigan Upper Peninsula Dairy Farm Business Analysis Summary
by
Eric Wittenberg and Christopher Wolf¹

Table of Contents	Page
Executive Summary.....	2

List of Tables

Summary Tables

1) Average 2002 Farm Characteristics.....	3
2) Average Income Statement.....	3
3) Average Profitability Indicators (market).....	4
4) Average Income and Expenses.....	5
5) Crop Production and Market Summary	6
6) Farm Income Statement.....	7
7) Inventory Changes.....	9
8) Depreciation and Other Capital Adjustments.....	10
9) Profitability Measures.....	11
10) Liquidity Measures.....	12
11) Balance Sheet at Cost Values.....	13
12) Balance sheet at Market Values.....	14
13) Statement of Cash Flows.....	15
14) Financial Standards Measures.....	16
15) Operator Information and Nonfarm Summary...	17
16) Financial Summary.....	18

¹ Co-workers in the TelFarm project were: R. Betz, L. Borton, R. Clark, G. Kole, T. Purdy, W. Schauer, D. Stein, and V. Varner with the assistance of Michigan State University Extension Agents. AgriSolutions co-workers were Kelly Tobin, Steve Eshelman, Janice Raymond, Tiffany Aldrich, Anne Gerke, Kathleen Spranger, and Lynette Wood. Farm Credit Services of Wisconsin co-worker was Steve Zimmerman.

Executive Summary

This report summarizes the 2002 financial and production records of 22 dairy farms from the Upper Peninsula of Michigan, Table 1. To be included, the farms must have produced at least 50 percent of gross cash farm income from milk and dairy animal sales. The records came from Michigan State University's TelFarm/MicroTel project, the Farm Credit Service system, or by AgriSolutions in Michigan. The values were pooled into averages for reporting purposes.

Farm records were included if a farm financial summary was completed on 2002 data including beginning and ending balance sheets, plus income and expenses. The data was checked to verify that cash discrepancy was less than 10% of gross cash inflow and that debt discrepancy was less than \$1,000. While considerable variation in the data exists, average values are reported in the summary tables that follow.

Data Sorting

The 2002 Business Summary uses different sort criteria than previous summaries. In the past, farm financial data were sorted on Net Farm Income (NFI), which is a dollar measure of profit. For 2002, the sort uses the Rate of Return to Assets (ROA) cost, which is a measure of profitability adjusted for value of assets. The switch from using net farm income to rate of return on assets for sorting does not change the average values across all farms but does affect the average of the low 25% and average of the high 25% farm results.

ROA is calculated as the net farm income plus interest and subtracting out the value of unpaid labor and management divided by the average total farm asset value. Rate of return on assets is a measure of how much profit the farm business assets generated. Accounting for total farm assets allows for a meaningful comparison across all farm sizes (e.g., operations 50 cows and those with 1000 cows). ROA reveals how both equity and borrow capital are performing, that is ROA is calculated as if the farm had no debt. ROA is the return to all assets.

Summary of Results

In 2002, the average dairy farm in the Upper Peninsula business analysis had 132 cows producing an average of 17,827 pounds of milk per cow (Table 1). Milk price, based on gross milk income, averaged \$12.62/cwt. The total average acres owned were 586 and the average cropped acres were 678.

Table 1. Average 2002 U.P Michigan Dairy Farm Characteristics

Average number of cows	132
Milk sold per cow (pounds)	17,827
Average price of milk sold (\$/cwt)	12.62
Total acres owned	586
Total crop acres	678
Number of farms	22

Net farm income is the profit (loss) remaining after all farm expenses and inventory changes have been recognized. The net farm income value is the return to operator unpaid management, labor and capital invested, as illustrated in Table 2. The average net farm income for 22 dairy farms in this business analysis was \$27,808, the median net farm income was \$31,936, and the standard deviation of net farm income was \$58,722. This average somewhat obscures a very large range of net farm income values. For example, the farms in the top 25 percent of the net farm income distribution averaged \$89,357 while those in the bottom 25 percent had a negative \$16,274.

Gross cash farm income averaged \$379,892 in 2002. The largest component of these revenues was milk sales, which averaged \$299,377. Government payments helped alleviate some of the milk sales shortfall in 2002 as they averaged \$34,069. This increase was likely related to the Milk Income Loss Contract payments. However, the average government payments does include some payments for the cropping program, this amount could not be extracted out the data and is included in the average.

Average total cash expenses were \$309,284 in 2002 and average net cash farm income was \$70,608. However, given less taxable income, dairy farms were still able to build total inventories. While prepaid expenses and supplies decreased, crops and feed inventories increased, with total inventories increasing on average \$5,650.

Table 2. Average 2002 U.P. Michigan Dairy Farm Income Statement

	2002
	(\$)
Gross cash farm income	379,892
Total cash expense	309,284
Net cash farm income	70,608
Inventory change	5,650
Depreciation and capital adjustments	-48,450
Net farm income	27,808

Table 3 compares profitability for three years from 2000 to 2002 with assets valued at cost. The cost value of an asset is the amount of cash paid for the asset less the amount of depreciation. Cost basis value is useful to monitor the progress of the business over time, because only changes in net worth resulting from earnings are included in the financial indicators. With assets valued on a cost basis, the three main indicators ROA, ROE and OPM were negative for 2002. In 2002, the ROA was a negative 1.9 percent and for 2001 the ROA was 2.8 percent, a 167 percent decrease. In 2000, the ROA was a negative 0.8 percent, a 137 percent decrease from 2000 to 2002. Return on equity from 2001 to 2002 had a greater percentage decrease than the ROA for 2002. For 2002, the ROE was a negative 7.0 percent, just above the 2000 ROE of a negative 8.0 percent.

Operating profit margin (OPM) measures the dollars of profit generated per dollar of revenue. In 2002, the OPM was a negative 4.7 percent and in 2001 the OPM was 6.4 percent, 173 percent decrease from 2001 to 2002.

The asset turnover ratio measures the efficiency with which farm assets generate income. In all three years the rates were very similar meaning that the farm assets produced similar revenues per dollar invested in farm assets. However, in 2001, farm assets generated 6 percent more revenue than 2002 or 2000. In 2001, all profitability indicators were higher than 2002 or 2000 due mainly to the higher price of milk. The 2001 Dairy Business Summary average price of milk was \$15.23 per hundredweight.

Table 3. Average U.P. Michigan Dairy Farm Profitability Indicators, 2000-2002

	2000	2001	2002
	(Percent)		
Rate of return on assets*	-0.8	2.8	-1.9
Rate of return on equity	-8.0	0.1	-7.0
Operating profit margin	-2.0	6.4	-4.7
Asset turnover rate*	41.0	44.2	41.4

* Assets valued at **cost** value (rather than market value).

Table 4 compares profitability measures across three years with assets valued at market. The market value approach includes the impact of price appreciation (inflation) of the asset base over time. Primarily land is the main focus here for price appreciation and reflex a form of income. Market value for assets is more appropriate when comparing across different farms.

The average 2002 (Table 4) dairy farm ROA was 0.5 percent, which was 90 percent below the 2001 average dairy farm ROA of 5.1 percent. Return on equity show even a greater percent loss of equity than ROA for 2002, with a 120 percent loss from 4.9 percent in 2001 to a negative 1.0 in 2002. Operating profit margin in 2002, U.P. Michigan dairy farms generated 1.9 cents of profit per dollar of revenue. In 2001 and 2000 the average operating profit margins were 18.7 and 17.9 respectively. Asset turnover measures the efficiency with which farm assets generate revenue. In 2002, this ratio was 24.8 percent remained very close to 2000 average but

both years were lower than 2001. Meaning that the farm assets generated less revenue than in 2001, given the lower milk prices in 2002.

Table 4. Average U.P. Michigan Dairy Farm Profitability Indicators, 2000-2002

	2000	2001	2002
	(Percent)		
Rate of return on assets*	4.4	5.1	0.5
Rate of return on equity	3.3	4.9	-1.0
Operating profit margin	17.9	18.7	1.9
Asset turnover rate*	24.4	27.3	24.8

* Assets valued at **market** value (rather than cost value).

Per Unit Income and Expenses

Table 5 gives the average income and expenses per hundredweight (cwt.) of milk and per cow for 22 dairy farms. Both income and expenses were adjusted to an accrual basis where detailed financial information was provided. Average, accrual adjusted income and expenses per cropped acre are also included.

Income items related to the dairy herd are included. Milk sales accounted for 81 percent of milk income items on average. Government payments include all farm government payments—not just those related to the dairy herd. It was not possible to separate crop payments from dairy payments. Given the very low milk prices in 2002, it is likely that many farms received a large portion of government payments in the form of the Milk Income Loss Contract (MILC) and were, in fact, related to the milking herd.

Table 5 should not be interpreted as an estimate of the true cost of producing milk. All farm sales are not included in the income items—only those that are related to the milking herd. Also, unpaid factors, including labor, management and capital, are not accounted for in the expense items. In addition, the allocation of resources amongst farm enterprises is not accurately reflected leaving the milking herd as the residual claimant on all expenses.

The largest expense was purchased feed at \$3.62/cwt. Hired labor was the second largest expense at \$2.39/cwt. Depreciation, interest, and repairs were also significant expenses on the average Upper Peninsula Michigan dairy farm.

The bottom of Table 4 presents the crop related expenses divided by the total cropped acres. To accurately calculate a crop cost of production would require labor and management—among other—expenses that are not separated out in the financial records.

Table 5. Average Income and Expenses, 2002

Income Items:	Per cwt.	Per Cow
Milk	\$12.62	\$2,240.23
Cull Cows and Calves	\$0.68	\$115.66
Dairy Steers	\$0.79	\$148.56
Dairy Heifers	\$1.00	\$172.14
Government Payments	\$1.52	\$265.39
Other Cash Income	\$0.25	\$45.18

Expense Items:	Per cwt.	Per Cow
Purchased Feeds	\$3.62	\$657.25
Breeding Fees	\$0.14	\$25.85
Veterinary	\$0.36	\$64.97
BST	\$0.23	\$49.57
Livestock Supplies	\$0.73	\$127.71
DHIA	\$0.12	\$19.88
Milk & Livestock Mkt. & Trucking	\$0.63	\$111.17
Interest	\$0.67	\$117.65
Fuel and Oil	\$0.47	\$80.15
Repairs	\$0.94	\$164.06
Custom Hire	\$0.36	\$67.59
Hired Labor	\$2.39	\$433.74
Leases	\$0.27	\$49.53
Real Estate Taxes	\$0.31	\$52.10
Farm Insurance	\$0.26	\$44.97
Utilities	\$0.40	\$70.98
Dues, Professional Fees	\$0.16	\$29.14
Miscellaneous	\$0.17	\$32.30
Machinery Depreciation	\$1.38	\$234.39
Building Depreciation	\$0.69	\$121.42

Expense Items per Cropped Acre:	Per Acre
Seed	\$9.41
Fertilizer	\$16.66
Crop Chemicals	\$8.74
Crop Insurance	\$0.70
Crop Miscellaneous	\$5.04
Land Rent	\$14.97

Table 6

Crop Production and Marketing Summary
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Dairy			
Number of farms	22	5	6
Average number of Cows	132	84	121
Milk production per Cow, lbs.	17,827	16,778	15,703
Average milk price per cwt.,	\$12.62	\$12.49	\$12.99
Acreage Summary			
Total acres owned	586	332	576
Total crop acres	678	509	636
Crop acres owned	402	209	410
Crop acres cash rented	277	299	226
Crop acres share rented	-	-	-
Total pasture acres	-	-	-
Average Price Received (Cash Sales Only)			
Hay, Mixed per ton	77.69	-	-

Table 7

Farm Income Statement
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Cash Farm Income			
Barley	499	-	-
Cordwood	417	-	-
Corn	390	-	-
Corn, Ear	273	-	-
Hay, Alfalfa	780	-	2,083
Hay, Mixed	1,992	157	83
Haylage, Mixed	209	-	-
Oats	33	-	122
Miscellaneous crop income	90	-	-
Dairy, Milk	299,377	178,940	240,390
Dairy, Dairy Calves	668	912	175
Dairy Heifers (for sale)	595	1,978	460
Dairy Replacement Heifers	7,195	3,380	-
Dairy Steers	2,397	2,045	2,213
Sheep, Market Lambs, Mkt Lambs	178	-	-
Cull breeding livestock	15,104	5,996	15,759
Other government payments	34,069	19,739	37,097
Custom work income	6,776	659	29
Patronage dividends, cash	1,177	394	911
Insurance income	813	-	2,891
Other farm income	6,859	2,501	2,550
Gross Cash Farm Income	379,892	216,700	304,763

Table 7 (continued)

Farm Income Statement
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Cash Farm Expense			
Seed	5,553	2,399	2,778
Fertilizer	13,806	7,550	7,041
Crop chemicals	3,589	795	2,261
Crop miscellaneous	544	-	776
Feeder livestock purchase	1,164	-	-
Purchased feed	89,713	52,243	59,376
Breeding fees	2,421	1,085	1,070
Veterinary	9,058	3,472	6,448
BST	1,215	31	-
Livestock supplies	14,947	11,972	10,302
DHIA	70	310	-
Hauling and trucking	1,482	2,140	3,651
Marketing	12,216	7,126	8,401
Bedding	705	-	282
Interest	15,432	7,106	13,411
Fuel & oil	10,613	8,781	8,342
Repairs	20,758	11,540	16,260
Custom hire	9,524	3,410	6,097
Hired labor	57,704	27,688	52,559
Land rent	6,906	7,129	8,147
Machinery & bldg leases	2,119	189	733
Real estate taxes	5,544	2,603	5,666
Personal property taxes	128	561	-
Farm insurance	5,004	3,581	4,089
Utilities	9,351	5,399	6,679
Dues & professional fees	3,723	4,353	2,671
Miscellaneous	5,996	2,044	2,826
Total cash expense	309,284	173,507	229,863
Net cash farm income	70,608	43,193	74,900
Inventory Changes			
Crops and feed	11,734	-4,359	14,339
Market livestock	1,302	-1,125	263
Accounts receivable	-2,689	-5,365	1,520
Prepaid expenses and supplies	-4,274	-910	-1,791
Accounts payable	-423	-3,345	11,178
Total inventory change	5,650	-15,105	25,510
Net operating profit	76,258	28,088	100,410
Depreciation and Other Capital Adjustments			
Breeding livestock	-2,061	-12,278	19,784
Machinery and equipment	-30,944	-17,191	-23,262
Buildings and improvements	-16,595	-15,530	-8,827
Other farm capital	1,151	637	1,253
Total depr. and other capital adj	-48,450	-44,362	-11,052
Net farm income	27,808	-16,274	89,357

Table 8

Inventory Changes
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Net cash farm income	70,608	43,193	74,900
Crops and Feed			
Ending inventory	79,407	36,011	56,303
Beginning inventory	67,674	40,370	41,964
Inventory change	11,734	-4,359	14,339
Market Livestock			
Ending inventory	17,102	5,250	11,330
Beginning inventory	15,800	6,375	11,067
Inventory change	1,302	-1,125	263
Accts Receivable & Other Current Assets			
Ending inventory	19,657	12,390	13,322
Beginning inventory	22,346	17,755	11,802
Inventory change	-2,689	-5,365	1,520
Prepaid Expenses and Supplies			
Ending inventory	6,818	260	2,258
Beginning inventory	11,091	1,170	4,048
Inventory change	-4,274	-910	-1,791
Accounts Payable & Accrued Expenses			
Beginning inventory	5,803	654	17,263
Ending inventory	6,226	3,999	6,085
Inventory change	-423	-3,345	11,178
Total inventory change	5,650	-15,105	25,510
Net operating profit	76,258	28,088	100,410

Table 9

Depreciation and Other Capital Adjustments
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Net operating profit	76,258	28,088	100,410
Breeding Livestock			
Ending inventory	263,109	166,970	210,392
Capital sales	1,450	2,122	320
Beginning inventory	252,357	180,890	169,425
Capital purchases	14,263	480	21,503
Depreciation, capital adjust.	-2,061	-12,278	19,784
Machinery and Equipment			
Ending inventory	111,013	52,445	79,901
Capital sales	206	-	-
Beginning inventory	103,936	58,391	51,458
Capital purchases	38,227	11,245	51,706
Depreciation, capital adjust.	-30,944	-17,191	-23,262
Buildings and Improvements			
Ending inventory	118,452	84,784	108,148
Capital sales	-	-	-
Beginning inventory	119,690	97,291	116,110
Capital purchases	15,357	3,022	866
Depreciation, capital adjust.	-16,595	-15,530	-8,827
Other Capital Assets			
Ending inventory	17,499	5,620	6,954
Capital sales	659	-	-
Beginning inventory	15,856	4,983	4,823
Capital purchases	1,151	-	878
Depreciation, capital adjust.	1,151	637	1,253
Total depreciation, capital adj.	-48,450	-44,362	-11,052
Net farm income	27,808	-16,274	89,357

Table 10

Profitability Measures
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Profitability (assets valued at cost)			
Net farm income	27,808	-16,274	89,357
Labor and management earnings	3,906	-36,629	72,989
Rate of return on assets	-1.9 %	-11.9 %	7.9 %
Rate of return on equity	-7.0 %	-18.2 %	12.6 %
Operating profit margin	-4.7 %	-38.6 %	15.1 %
Asset turnover rate	41.4 %	30.8 %	52.3 %
Interest on farm net worth	23,902	20,355	16,369
Farm interest expense	14,012	7,106	8,209
Value of operator lbr and mgmt.	55,719	45,369	54,951
Return on farm assets	-13,899	-54,537	42,615
Average farm assets	717,450	458,443	538,298
Return on farm equity	-27,911	-61,643	34,406
Average farm equity	398,365	339,249	272,811
Value of farm production	297,300	141,329	281,293
	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Profitability (assets valued at market)			
Net farm income	47,324	3,879	151,322
Labor and management earnings	-5,492	-36,315	108,219
Rate of return on assets	0.5 %	-4.4 %	10.6 %
Rate of return on equity	-1.0 %	-6.2 %	13.4 %
Operating profit margin	1.9 %	-24.3 %	37.2 %
Asset turnover rate	24.8 %	17.9 %	28.6 %
Interest on farm net worth	52,816	40,195	43,103
Farm interest expense	14,012	7,106	8,209
Value of operator lbr and mgmt.	55,719	45,369	54,951
Return on farm assets	5,617	-34,383	104,580
Average farm assets	1,199,343	789,108	983,865
Return on farm equity	-8,395	-41,490	96,370
Average farm equity	880,258	669,914	718,379
Value of farm production	297,300	141,329	281,293

Table 11)

Liquidity Measures
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Liquidity (cash)			
Net cash farm income	70,608	43,193	74,900
Net nonfarm income	5,799	5,452	5,509
Family living and taxes	44,597	30,341	51,009
Real estate principal payments	5,557	11,948	65
Cash available for interm. debt	26,254	6,356	29,334
Average intermediate debt	89,661	10,728	116,756
Years to turnover interm. debt	3.4	1.7	4.0
Expense as a % of income	81 %	80 %	75 %
Interest as a % of income	4 %	3 %	4 %
Liquidity (accrual)			
Total accrual farm income	390,238	205,850	320,885
Total accrual operating expense	313,981	177,762	220,475
Net accrual operating income	76,258	28,088	100,410
Net nonfarm income	5,799	5,452	5,509
Family living and taxes	44,597	30,341	51,009
Real estate principal payments	5,557	11,948	65
Available for intermediate debt	31,903	-8,749	54,844
Average intermediate debt	89,661	10,728	116,756
Years to turnover interm. debt	2.8	**	2.1
Expense as a % of income	80 %	86 %	69 %
Interest as a % of income	4 %	3 %	3 %

** Income insufficient to meet debt servicing requirements

Table 12

Balance Sheet at Cost Values
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of		Low 25%		High 25%	
	All Farms					
Number of farms	22		5		6	
	Beginning	Ending	Beginning	Ending	Beginning	Ending
Assets						
Current Farm Assets						
Cash and checking balance	9,519	8,261	6,908	8,624	21,331	15,593
Prepaid expenses & supplies	11,091	6,818	1,170	260	4,048	2,258
Growing crops	2,378	2,303	0	0	0	0
Accounts receivable	18,624	15,907	17,755	12,160	11,802	13,240
Hedging accounts	0	0	0	0	0	0
Crops held for sale or feed	67,674	79,407	40,370	36,011	41,964	56,303
Crops under government loan	0	0	0	0	0	0
Market livestock held for sale	15,800	17,102	6,375	5,250	11,067	11,330
Other current assets	1,345	1,447	0	230	0	82
Total current farm assets	126,430	131,245	72,579	62,535	90,213	98,806
Intermediate Farm Assets						
Breeding livestock	252,357	263,109	180,890	166,970	169,425	210,392
Machinery and equipment	103,936	111,013	58,391	52,445	51,458	79,901
Titled vehicles	0	0	0	0	0	0
Other intermediate assets	6,837	7,222	3,398	4,235	2,241	2,881
Total intermediate farm assets	363,130	381,344	242,680	223,650	223,124	293,174
Long Term Farm Assets						
Farm land	87,867	87,445	65,200	65,200	70,931	69,435
Buildings and improvements	119,690	118,452	97,291	84,784	116,110	108,148
Other long-term assets	9,019	10,277	1,584	1,384	2,582	4,073
Total long-term farm assets	216,576	216,174	164,075	151,368	189,623	181,656
Total Farm Assets	706,136	728,763	479,333	437,553	502,959	573,636
Total Nonfarm Assets	32,985	32,642	9,954	6,802	75,358	76,362
Total Assets	739,122	761,405	489,287	444,355	578,317	649,998
Liabilities						
Current Farm Liabilities						
Accrued interest	1,420	0	0	0	5,202	0
Accounts payable	4,384	6,226	654	3,999	12,062	6,085
Current notes	57,938	54,563	922	4,000	20,657	21,828
Government crop loans	0	0	0	0	0	0
Principal due on term debt	13,903	5,017	16,006	4,315	4,569	1,417
Total current farm liabilities	77,644	65,806	17,582	12,314	42,489	29,330
Total intermediate farm liabs	78,424	90,386	7,719	8,774	103,845	123,747
Total long term farm liabilities	147,679	178,230	94,202	97,797	105,083	126,479
Total farm liabilities	303,747	334,422	119,503	118,885	251,417	279,556
Total nonfarm liabilities	0	0	0	0	0	0
Total liabilities	303,747	334,422	119,503	118,885	251,417	279,556
Net worth (farm and nonfarm)	435,375	426,982	369,785	325,470	326,900	370,442
Net worth change		-8,393		-44,315		43,542
Ratio Analysis						
Current farm liabilities / assets	61 %	50 %	24 %	20 %	47 %	30 %
Curr. & interm farm liab. / assets	32 %	30 %	8 %	7 %	47 %	39 %
Long term farm liab. / assets	68 %	82 %	57 %	65 %	55 %	70 %
Total debt to asset ratio	41 %	44 %	24 %	27 %	43 %	43 %

Table 13

Balance Sheet at Market Values
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of		Low 25%		High 25%	
	All Farms					
Number of farms	22		5		6	
	Beginning	Ending	Beginning	Ending	Beginning	Ending
Assets						
Current Farm Assets						
Cash and checking balance	9,519	8,261	6,908	8,624	21,331	15,593
Prepaid expenses & supplies	11,091	6,818	1,170	260	4,048	2,258
Growing crops	2,378	2,303	0	0	0	0
Accounts receivable	18,624	15,907	17,755	12,160	11,802	13,240
Hedging accounts	0	0	0	0	0	0
Crops held for sale or feed	67,674	79,407	40,370	36,011	41,964	56,303
Crops under government loan	0	0	0	0	0	0
Market livestock held for sale	15,800	17,102	6,375	5,250	11,067	11,330
Other current assets	1,345	1,447	0	230	0	82
Total current farm assets	126,430	131,245	72,579	62,535	90,213	98,806
Intermediate Farm Assets						
Breeding livestock	252,357	265,850	180,890	166,260	169,425	212,667
Machinery and equipment	213,715	219,215	130,700	131,440	165,450	187,917
Titled vehicles	0	0	0	0	0	0
Other intermediate assets	19,260	19,190	3,398	4,235	2,241	2,881
Total intermediate farm assets	485,331	504,255	314,988	301,935	337,116	403,464
Long Term Farm Assets						
Farm land	383,702	397,862	287,470	293,140	312,483	357,342
Buildings and improvements	173,810	176,916	123,300	119,300	174,667	186,500
Other long-term assets	8,998	10,137	1,584	1,384	3,066	4,073
Total long-term farm assets	566,511	584,915	412,354	413,824	490,216	547,915
Total Farm Assets	1,178,272	1,220,414	799,921	778,295	917,545	1,050,186
Total Nonfarm Assets	55,713	55,364	9,954	5,562	130,467	132,295
Total Assets	1,233,985	1,275,778	809,875	783,856	1,048,012	1,182,481
Liabilities						
Current Farm Liabilities						
Accrued interest	1,420	0	0	0	5,202	0
Accounts payable	4,384	6,226	654	3,999	12,062	6,085
Current notes	57,938	54,563	922	4,000	20,657	21,828
Government crop loans	0	0	0	0	0	0
Principal due on term debt	13,903	5,017	16,006	4,315	4,569	1,417
Total current farm liabilities	77,644	65,806	17,582	12,314	42,489	29,330
Total intermediate farm liabs	78,424	90,386	7,719	8,774	103,845	123,747
Total long term farm liabilities	147,679	178,230	94,202	97,797	105,083	126,479
Total farm liabilities	303,747	334,422	119,503	118,885	251,417	279,556
Total nonfarm liabilities	0	0	0	0	0	0
Total liabs excluding deferreds	303,747	334,422	119,503	118,885	251,417	279,556
Total deferred liabilities	0	0	0	0	0	0
Total liabilities	303,747	334,422	119,503	118,885	251,417	279,556
Retained earnings	435,375	426,982	369,785	325,470	326,900	370,442
Market valuation equity	494,863	514,373	320,588	339,501	469,695	532,483
Net worth (farm and nonfarm)	930,238	941,356	690,373	664,971	796,595	902,925
Net worth excluding deferreds	930,238	941,356	690,373	664,971	796,595	902,925
Net worth change		11,118		-25,402		106,330
Ratio Analysis						
Current farm liabilities / assets	61 %	50 %	24 %	20 %	47 %	30 %
Curr. & interm farm liab. / assets	26 %	25 %	7 %	6 %	34 %	30 %
Long term farm liab. / assets	26 %	30 %	23 %	24 %	21 %	23 %
Total debt to asset ratio	25 %	26 %	15 %	15 %	24 %	24 %
Debt to assets excl deferreds	25 %	26 %	15 %	15 %	24 %	24 %

Table 14

Statement Of Cash Flows
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Beginning cash (farm & nonfarm)	9,519	6,908	21,331
Cash From Operating Activities			
Gross cash farm income	379,892	216,700	304,763
Net nonfarm income	5,799	5,452	5,509
Total cash farm expense	-309,284	-173,507	-229,863
Apparent family living expense	-42,699	-30,325	-47,107
Income and social security tax	-1,899	-16	-3,902
Cash from operations	31,810	18,304	29,399
Cash From Investing Activities			
Sale of breeding livestock	1,450	2,122	320
Sale of machinery & equipment	206	-	-
Sale of titled vehicles	-	-	-
Sale of farm land	2,776	-	177
Sale of farm buildings	-	-	-
Sale of other farm assets	659	-	-
Sale of nonfarm assets	-	-	-
Purchase of breeding livestock	-14,263	-480	-21,503
Purchase of machinery & equip.	-38,227	-11,245	-51,706
Purchase of titled vehicles	-	-	-
Purchase of farm land	-	-	-
Purchase of farm buildings	-15,357	-3,022	-866
Purchase of other farm assets	-1,151	-	-878
Purchase of nonfarm assets	-	-	-
Cash from investing activities	-63,908	-12,625	-74,454
Cash From Financing Activities			
Money borrowed	114,235	14,437	181,011
Cash gifts and inheritances	1,224	-	-
Principal payments	-83,983	-18,399	-141,694
Dividends paid	-	-	-
Gifts given	-636	-	-
Cash from financing activities	30,839	-3,962	39,317
Net change in cash balance	-1,258	1,716	-5,738
Ending cash (farm & nonfarm)	8,261	8,624	15,593

Table 15

Financial Standards Measures
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Liquidity			
Current ratio	1.99	5.08	3.37
Working capital	65,438	50,221	69,477
Solvency (market)			
Farm debt to asset ratio	27 %	15 %	27 %
Farm equity to asset ratio	73 %	85 %	73 %
Farm debt to equity ratio	38 %	18 %	36 %
Profitability (cost)			
Rate of return on farm assets	-1.9 %	-11.9 %	7.9 %
Rate of return on farm equity	-7.0 %	-18.2 %	12.6 %
Operating profit margin	-4.7 %	-38.6 %	15.1 %
Net farm income	27,808	-16,274	89,357
Repayment Capacity			
Term debt coverage ratio	163 %	46 %	232 %
Capital replacement margin	23,557	-12,807	50,340
Efficiency			
Asset turnover rate (cost)	41.4 %	30.8 %	52.3 %
Operating expense ratio	76.9 %	82.9 %	66.2 %
Depreciation expense ratio	12.4 %	21.6 %	3.4 %
Interest expense ratio	3.6 %	3.5 %	2.6 %
Net farm income ratio	7.1 %	-7.9 %	27.8 %

Table 16

Operator and Labor Information
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Operator Information			
Average number of operators	1.6	1.2	1.5
Average age of operators	50.7	50.4	50.7
Average number of years farming	23.6	22.2	19.3
Results Per Operator			
Working capital	41,133	41,851	46,318
Total assets (market)	801,918	653,214	788,320
Total liabilities	210,208	99,071	186,370
Net worth (market)	591,709	554,142	601,950
Net worth excl deferred liabs	591,709	554,142	601,950
Gross farm income	245,293	171,542	213,923
Total farm expense	227,814	185,103	154,352
Net farm income	17,479	-13,562	59,572
Net nonfarm income	3,645	4,544	3,673
Family living & tax withdrawals	28,033	25,284	34,006
Total acres owned	368.3	277.0	384.0
Total crop acres	426.2	424.0	424.0
Crop acres owned	252.4	174.5	273.1
Crop acres cash rented	173.8	249.5	150.9
Crop acres share rented	-	-	-
Total pasture acres	-	-	-
Labor Analysis			
Number of farms	22	5	6
Total unpaid labor hours	5,303	4,864	5,110
Total hired labor hours	5,348	2,943	5,937
Total labor hours per farm	10,651	7,807	11,047
Unpaid hours per operator	3,333	4,053	3,407
Value of farm production / hour	27.91	18.10	25.46
Net farm income / unpaid hour	5.24	-3.35	17.49
Partnerships			
Number of farms	8	1	2
Number of operators	2.0	-	-
Owner withdrawals per farm	-	-	-
Withdrawals per operator	-	-	-

Table 17

Financial Summary
U.P. Michigan Dairy Report, 2002
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	Low 25%	High 25%
Number of farms	22	5	6
Income Statement			
Gross cash farm income	379,892	216,700	304,763
Total cash farm expense	309,284	173,507	229,863
Net cash farm income	70,608	43,193	74,900
Inventory change	5,650	-15,105	25,510
Depreciation and capital adjust	-48,450	-44,362	-11,052
Net farm income	27,808	-16,274	89,357
Profitability (cost)			
Labor and management earnings	3,906	-36,629	72,989
Rate of return on assets	-1.9 %	-11.9 %	7.9 %
Rate of return on equity	-7.0 %	-18.2 %	12.6 %
Operating profit margin	-4.7 %	-38.6 %	15.1 %
Asset turnover rate	41.4 %	30.8 %	52.3 %
Profitability (market)			
Labor and management earnings	-5,492	-36,315	108,219
Rate of return on assets	0.5 %	-4.4 %	10.6 %
Rate of return on equity	-1.0 %	-6.2 %	13.4 %
Operating profit margin	1.9 %	-24.3 %	37.2 %
Asset turnover rate	24.8 %	17.9 %	28.6 %
Liquidity			
Term debt coverage ratio	163.0 %	46.5 %	232.1 %
Expense as a percent of income	80.5 %	86.4 %	68.7 %
Interest as a percent of income	3.6 %	3.5 %	2.6 %
Solvency (cost)			
Number of farms	22	5	6
Ending farm assets	728,763	437,553	573,636
Ending farm liabilities	334,422	118,885	279,556
Ending total assets	761,405	444,355	649,998
Ending total liabilities	334,422	118,885	279,556
Ending net worth	426,982	325,470	370,442
Net worth change	-8,393	-44,315	43,542
Ending farm debt to asset ratio	46 %	27 %	49 %
Beg total debt to asset ratio	41 %	24 %	43 %
End total debt to asset ratio	44 %	27 %	43 %
Solvency (market)			
Number of farms	22	5	6
Ending farm assets	1,220,414	778,295	1,050,186
Ending farm liabilities	334,422	118,885	279,556
Ending total assets	1,275,778	783,856	1,182,481
Ending total liabilities	334,422	118,885	279,556
Ending net worth	941,356	664,971	902,925
Net worth change	11,118	-25,402	106,330
Ending farm debt to asset ratio	27 %	15 %	27 %
Beg total debt to asset ratio	25 %	15 %	24 %
End total debt to asset ratio	26 %	15 %	24 %
Nonfarm Information			
Net nonfarm income	5,799	5,452	5,509
Crop Acres			
Total acres owned	586	332	576
Total crop acres	678	509	636
Total crop acres owned	402	209	410
Total crop acres cash rented	277	299	226
Total crop acres share rented	-	-	-