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# ***Staff Paper***

## **2002 Business Analysis Summary Dairy Grazing Farms**

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**Staff Paper 2003-16**

**December, 2003**



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## **2002 Michigan Dairy Grazing Farm Business Analysis Summary**

2002 Michigan TelFarm and AgriSolutions Data  
Staff Paper No. 03-16

by

Eric Wittenberg  
and  
Christopher Wolf

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## 2002 Michigan Dairy Grazing Farm Business Analysis Summary

by

Eric Wittenberg and Christopher Wolf<sup>1</sup>

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## Executive Summary

This report summarizes the financial and production records of 9 dairy farms that practiced grazing across Michigan. 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 were 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 and discussion that follows. The 2002 Business Summary farms were sorted by the Rate of Return to Assets (ROA), which is a measure of profitability adjusted for value of assets.

### *Summary of Results*

In 2002, the average dairy grazing farm in the business analysis had 111 cows producing an average of 15,758 pounds of milk per cow (Table 1). Milk price, based on gross milk income, averaged \$12.87/cwt. The average net farm income for 9 dairy grazing farms in the business analysis was \$16,945. The median was \$29,624 and the standard deviation was \$37,770.

**Table 1. Ave. 2002 Michigan Dairy Grazing Farm Characteristics**

	Grazing
Average number of cows	111
Milk sold per cow (pounds)	15,758
Average price of milk sold (\$/cwt)	12.87
Total acres owned	400
Total cropped acres	464
Cropped acres per cow	4.2
Number of farms	9

Gross cash farm income averaged \$277,302 in 2002. The largest component of these revenues was milk sales, which averaged \$218,422. Government payments helped alleviate some of the milk sales shortfall in 2002 as they averaged \$28,582. This increase was likely largely related to the Milk Income Loss Contract payments.

Average total cash expenses were \$237,264 in 2002 and average net cash farm income was \$40,038. Given less taxable income, these dairy farms were not able to build total inventories, which averaged a negative \$1,766. Depreciation and capital adjustments averaged a negative \$21,326.

The net farm income value is the return to operator unpaid management, labor and capital invested. Net farm income in 2002 averaged \$16,945, Table 2.

**Table 2. Average 2002 Michigan Dairy Grazing Farm Income Statement**

	2002
	(\$)
Gross cash farm income	277,302
Total cash expense	237,264
Net cash farm income	40,038
Inventory change	-1,766
Depreciation and capital adjustments	-21,326
Net farm income	16,945

**Table 3. Average Michigan Dairy Grazing Farm Profitability Indicators, 2000-2002**

	2000	2001	2002
	(percent)		
Rate of return on assets*	5.3	2.4	-2.8
Rate of return on equity	4.6	-0.5	-9.3
Operating profit margin	11.2	5.1	-7.3
Asset turnover rate*	46.9	47.1	38.8

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

Table 3 compares profitability across three years with assets valued at cost. In 2002, the financial indicators ROA, ROE and OPM were negative. In 2002, the ROA was a negative 2.8 percent and for 2001 the ROA was 2.4 percent, a 216 percent decrease. In 2000, the ROA was 5.3 percent, a 152 percent decrease from 2000 to 2002. In 2002, the return on equity was a negative 9.3 percent, a decrease from 2001 of nearly 9 percent. In 2002, the OPM was a negative 7.3 percent, a decrease of 12 percent from 2001. The asset turnover rate decreased from 47.1 percent in 2001 to 38.8 percent in 2002, an 18 percent decrease. On the cost side of profitability measures, on average, all dairy grazing farms had a negative returns or experienced a decrease. Given the lower price for milk in 2002, farms generated less revenues per dollar invested in farm assets.

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 reflects a form of income. Financial performance indicators like ROA can be looked upon in this comparison as the “opportunity cost of capital” or farming versus an alternative investments. Market value for assets is more appropriate when comparing across different farms (while cost is more appropriate to compare the same farm across time).

The average dairy grazing farms’ ROA for 2002 was 3.4 percent, which was 58 percent below the 2001 average dairy farm ROA of 8.0 percent. Return on equity show a greater percentage loss, in 2002 the ROE averaged 2.7 percent and in 2001 the average was 8.4 percent, a 68 percent decrease.

Operating profit margin measures the dollars of profit generated per dollar of revenue. In 2002, dairy grazing farms generated 16 cents of profit per dollar of revenue. In 2001, the average operating profit margin was 32.4 and in 2000 the average operating profit margins was 41.2, a 51 percent and 61 percent decline from 2002 value respectively. Asset turnover measures the efficiency with which farm assets generate revenue. In 2002, the asset turnover ratio was 21.5 percent, a decline of 12 percent but remained very close to 2001 and 2000 values, meaning that the farms were fairly equal in each year with respect to efficiency, given the lower milk price in 2002.

**Table 4. Average Michigan Dairy Grazing Farm Profitability Indicators, 2000-2002**

	2000	2001	2002
	(percent)		
Rate of return on assets*	9.6	8.0	3.4
Rate of return on equity	10.5	8.4	2.7
Operating profit margin	41.2	32.4	16.0
Asset turnover rate*	23.4	24.6	21.5

\* 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 9 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 79 percent of milk income items on average. Government payments includes 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 \$3.73/cwt. Hired labor was the second largest expense at \$1.95/cwt. Depreciation, interest, and repairs were also significant expenses on the average Michigan dairy farm.

The bottom of Table 5 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 across all grazing farms\*, 2002**

<b>Income Items:</b>	<b>Per cwt.</b>	<b>Per Cow</b>
Milk	\$12.87	\$1,991.53
Cull Cows and Calves	\$1.01	\$148.62
Dairy Steers	\$0.00	\$0.61
Government Payments	\$1.80	\$269.31
Other Cash Income	\$0.29	\$43.24
<b>Expense Items:</b>	<b>Per cwt.</b>	<b>Per Cow</b>
Purchased Feeds	\$3.73	\$595.36
Breeding Fees	\$0.09	\$16.08
Veterinary	\$0.47	\$70.96
BST	\$0.00	\$0.00
Livestock Supplies	\$1.00	\$149.93
DHIA	\$0.01	\$2.28
Milk & Livestock Mkt. & Trucking	\$0.87	\$134.15
Interest	\$0.79	\$120.98
Fuel and Oil	\$0.38	\$55.36
Repairs	\$1.66	\$238.29
Custom Hire	\$0.40	\$76.18
Hired Labor	\$1.95	\$295.84
Leases	\$0.04	\$7.88
Real Estate Taxes	\$0.18	\$25.03
Farm Insurance	\$0.27	\$41.44
Utilities	\$0.44	\$68.30
Dues, Professional Fees	\$0.14	\$22.62
Miscellaneous	\$0.18	\$33.48
Machinery Depreciation	\$0.72	\$114.97
Building Depreciation	\$0.34	\$61.51
<b>Expense Items per Cropped Acre:</b>	<b>Per Acre</b>	
Seed	\$14.72	
Fertilizer	\$15.11	
Crop Chemicals	\$3.77	
Crop Insurance	\$0.07	
Crop Miscellaneous	\$2.23	
Land Rent	\$7.29	

\*All income and expenses items were averaged across 9 farms whether they had this income or expenses item or not.

Table 6

Crop Production and Marketing Summary  
**Michigan Dairy (Grazing), 2002**  
 (Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Dairy	
Number of farms	9
Average number of Cows	111
Milk production per Cow,lbs.	15,758
Average milk price per cwt.	\$12.87
Cropped Acres per cow	4.3
Acreage Summary	
Total acres owned	400
Total crop acres	464
Crop acres owned	268
Crop acres cash rented	196
Crop acres share rented	-
Total pasture acres	-

Table 7

Farm Income Statement  
**Michigan Dairy (Grazing), 2002**  
 (Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Number of farms	9
Cash Farm Income	
Corn	764
Hay, Alfalfa	276
Hay, Mixed	3,770
Other crops	233
Beef Cow-Calf, Beef Calves	36
Dairy, Milk	218,422
Dairy, Dairy Calves	2,527
Dairy Steers	27
Cull breeding livestock	16,424
Other government payments	28,582
Custom work income	92
Patronage dividends, cash	4,236
Insurance income	462
Other farm income	1,451
Gross Cash Farm Income	277,302

Table 7 (continued)

## Farm Income Statement

**Michigan Dairy (Grazing), 2002**

(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Number of farms	9
Cash Farm Expense	
Seed	1,641
Fertilizer	5,027
Crop chemicals	1,119
Crop insurance	33
Crop miscellaneous	2,039
Purchased feed	66,965
Breeding fees	1,881
Veterinary	8,028
BST	812
Livestock supplies	13,153
Livestock utilities	1,627
Hauling and trucking	724
Marketing	13,097
Interest	13,578
Fuel & oil	7,129
Repairs	27,095
Custom hire	10,527
Hired labor	34,893
Land rent	5,316
Machinery & bldg leases	1,669
Real estate taxes	2,590
Personal property taxes	181
Farm insurance	4,258
Utilities	5,271
Dues & professional fees	2,051
Miscellaneous	6,560
Total cash expense	237,264
Net cash farm income	40,038
Inventory Changes	
Crops and feed	-1,116
Market livestock	981
Accounts receivable	290
Prepaid expenses and supplies	-1,312
Accounts payable	-610
Total inventory change	-1,766
Net operating profit	38,271
Depreciation and Other Capital Adjustments	
Breeding livestock	6,876
Machinery and equipment	-12,677
Buildings and improvements	-4,777
Other farm capital	-10,749
Total depr. and other capital adj	-21,326
Net farm income	16,945

Table 8

Inventory Changes  
**Michigan Dairy (Grazing), 2002**  
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Number of farms	9
Net cash farm income	40,038
Crops and Feed	
Ending inventory	56,196
Beginning inventory	57,312
Inventory change	-1,116
Market Livestock	
Ending inventory	6,840
Beginning inventory	5,859
Inventory change	981
Accts Receivable & Other Current Assets	
Ending inventory	15,628
Beginning inventory	15,338
Inventory change	290
Prepaid Expenses and Supplies	
Ending inventory	3,207
Beginning inventory	4,519
Inventory change	-1,312
Accounts Payable & Accrued Expenses	
Beginning inventory	10,543
Ending inventory	11,152
Inventory change	-610
Total inventory change	-1,766
Net operating profit	38,271

Table 9

Depreciation and Other Capital Adjustments  
**Michigan Dairy (Grazing), 2002**  
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Number of farms	9
Net operating profit	38,271
Breeding Livestock	
Ending inventory	201,044
Capital sales	1,520
Beginning inventory	195,147
Capital purchases	541
Depreciation, capital adjust.	6,876
Machinery and Equipment	
Ending inventory	56,977
Capital sales	-
Beginning inventory	56,461
Capital purchases	13,193
Depreciation, capital adjust.	-12,677
Buildings and Improvements	
Ending inventory	33,658
Capital sales	-
Beginning inventory	32,529
Capital purchases	5,906
Depreciation, capital adjust.	-4,777
Other Capital Assets	
Ending inventory	26,657
Capital sales	1,108
Beginning inventory	20,467
Capital purchases	18,046
Depreciation, capital adjust.	-10,749
Total depreciation, capital adj.	-21,326
Net farm income	16,945

Table 10

Profitability Measures  
**Michigan Dairy (Grazing), 2002**  
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Number of farms	9
Profitability (assets valued at cost)	
Net farm income	16,945
Labor and management earnings	-2,181
Rate of return on assets	-2.8 %
Rate of return on equity	-9.3 %
Operating profit margin	-7.3 %
Asset turnover rate	38.8 %
Interest on farm net worth	19,126
Farm interest expense	13,694
Value of operator lbr and mgmt.	46,512
Return on farm assets	-15,873
Average farm assets	560,635
Return on farm equity	-29,566
Average farm equity	318,772
Value of farm production	217,369

	Avg. Of All Farms
Number of farms	9
Profitability (assets valued at market)	
Net farm income	67,534
Labor and management earnings	21,461
Rate of return on assets	3.4 %
Rate of return on equity	2.7 %
Operating profit margin	16.0 %
Asset turnover rate	21.5 %
Interest on farm net worth	46,073
Farm interest expense	13,694
Value of operator lbr and mgmt.	46,512
Return on farm assets	34,716
Average farm assets	1,009,740
Return on farm equity	21,022
Average farm equity	767,876
Value of farm production	217,369

Table 11

Liquidity Measures  
**Michigan Dairy (Grazing), 2002**  
 (Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Number of farms	9
Liquidity (cash)	
Net cash farm income	40,038
Net nonfarm income	8,395
Family living and taxes	33,248
Real estate principal payments	5,860
Cash available for interm. debt	9,325
Average intermediate debt	89,653
Years to turnover interm. debt	9.6
Expense as a % of income	86 %
Interest as a % of income	5 %
Liquidity (accrual)	
Total accrual farm income	277,457
Total accrual operating expense	239,186
Net accrual operating income	38,271
Net nonfarm income	8,395
Family living and taxes	33,248
Real estate principal payments	5,860
Available for intermediate debt	7,558
Average intermediate debt	89,653
Years to turnover interm. debt	11.9
Expense as a % of income	86 %
Interest as a % of income	5 %



Table 12

Balance Sheet at Cost Values  
**Michigan Dairy (Grazing), 2002**  
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms	
Number of farms	9	
	Beginning	Ending
<b>Assets</b>		
Current Farm Assets		
Cash and checking balance	8,232	4,723
Prepaid expenses & supplies	4,519	3,207
Growing crops	10,598	11,048
Accounts receivable	4,740	4,525
Hedging accounts	0	0
Crops held for sale or feed	57,312	56,196
Crops under government loan	0	0
Market livestock held for sale	5,859	6,840
Other current assets	0	55
Total current farm assets	91,260	86,594
Intermediate Farm Assets		
Breeding livestock	195,147	201,044
Machinery and equipment	56,461	56,977
Titled vehicles	0	0
Other intermediate assets	7,129	7,661
Total intermediate farm assets	258,737	265,683
Long Term Farm Assets		
Farm land	162,657	157,820
Buildings and improvements	32,529	33,658
Other long-term assets	13,338	18,996
Total long-term farm assets	208,524	210,473
Total Farm Assets	558,521	562,749
Total Nonfarm Assets	26,845	42,079
Total Assets	585,366	604,828
<b>Liabilities</b>		
Current Farm Liabilities		
Accrued interest	1,528	1,643
Accounts payable	9,015	9,509
Current notes	11,620	15,392
Government crop loans	0	0
Principal due on term debt	22,203	20,684
Total current farm liabilities	44,367	47,228
Total intermediate farm liabs	74,160	73,055
Total long term farm liabilities	122,857	122,060
Total farm liabilities	241,384	242,344
Total nonfarm liabilities	1,556	1,441
Total liabilities	242,939	243,784
Net worth (farm and nonfarm)	342,427	361,044
Net worth change		18,617
<b>Ratio Analysis</b>		
Current farm liabilities / assets	49 %	55 %
Curr. & interm farm liab. / assets	34 %	34 %
Long term farm liab. / assets	59 %	58 %
Total debt to asset ratio	42 %	40 %

Table 13

Balance Sheet at Market Values  
**Michigan Dairy (Grazing), 2002**  
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of	
	All Farms	
Number of farms	9	
	Beginning	Ending
<b>Assets</b>		
<b>Current Farm Assets</b>		
Cash and checking balance	8,232	4,723
Prepaid expenses & supplies	4,519	3,207
Growing crops	10,598	11,048
Accounts receivable	4,740	4,525
Hedging accounts	0	0
Crops held for sale or feed	57,312	56,196
Crops under government loan	0	0
Market livestock held for sale	5,859	6,840
Other current assets	0	55
Total current farm assets	91,260	86,594
<b>Intermediate Farm Assets</b>		
Breeding livestock	195,147	201,044
Machinery and equipment	154,849	153,382
Titled vehicles	0	0
Other intermediate assets	8,187	8,388
Total intermediate farm assets	358,183	362,813
<b>Long Term Farm Assets</b>		
Farm land	438,370	475,776
Buildings and improvements	73,278	75,261
Other long-term assets	21,241	36,703
Total long-term farm assets	532,888	587,740
Total Farm Assets	982,331	1,037,148
Total Nonfarm Assets	55,842	72,812
Total Assets	1,038,173	1,109,960
<b>Liabilities</b>		
<b>Current Farm Liabilities</b>		
Accrued interest	1,528	1,643
Accounts payable	9,015	9,509
Current notes	11,620	15,392
Government crop loans	0	0
Principal due on term debt	22,203	20,684
Total current farm liabilities	44,367	47,228
Total intermediate farm liabs	74,160	73,055
Total long term farm liabilities	122,857	122,060
Total farm liabilities	241,384	242,344
Total nonfarm liabilities	1,556	1,441
Total liabs excluding deferreds	242,939	243,784
Total deferred liabilities	0	0
Total liabilities	242,939	243,784
Retained earnings	342,427	361,044
Market valuation equity	452,807	505,132
Net worth (farm and nonfarm)	795,234	866,176
Net worth excluding deferreds	795,234	866,176
Net worth change		70,942
<b>Ratio Analysis</b>		
Current farm liabilities / assets	49 %	55 %
Curr. & interm farm liab. / assets	26 %	27 %
Long term farm liab. / assets	23 %	21 %
Total debt to asset ratio	23 %	22 %
Debt to assets excl deferreds	23 %	22 %

Table 14

Statement Of Cash Flows  
**Michigan Dairy (Grazing), 2002**  
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Number of farms	8
Beginning cash (farm & nonfarm)	8,517
Cash From Operating Activities	
Gross cash farm income	217,035
Net nonfarm income	9,176
Total cash farm expense	-181,603
Apparent family living expense	-33,147
Income and social security tax	-2,934
Cash from operations	8,527
Cash From Investing Activities	
Sale of breeding livestock	1,711
Sale of machinery & equipment	-
Sale of titled vehicles	-
Sale of farm land	25,133
Sale of farm buildings	-
Sale of other farm assets	172
Sale of nonfarm assets	-
Purchase of breeding livestock	-609
Purchase of machinery & equip.	-14,305
Purchase of titled vehicles	-
Purchase of farm land	-
Purchase of farm buildings	-6,644
Purchase of other farm assets	-18,023
Purchase of nonfarm assets	-17,031
Cash from investing activities	-29,596
Cash From Financing Activities	
Money borrowed	67,511
Cash gifts and inheritances	11,401
Principal payments	-60,027
Dividends paid	-
Gifts given	-1,750
Cash from financing activities	17,135
Net change in cash balance	-3,934
Ending cash (farm & nonfarm)	4,582

Table 15

Financial Standards Measures  
**Michigan Dairy (Grazing), 2002**  
 (Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Number of farms	9
Liquidity	
Current ratio	1.83
Working capital	39,366
Solvency (market)	
Farm debt to asset ratio	23 %
Farm equity to asset ratio	77 %
Farm debt to equity ratio	30 %
Profitability (cost)	
Rate of return on farm assets	-2.8 %
Rate of return on farm equity	-9.3 %
Operating profit margin	-7.3 %
Net farm income	16,945
Repayment Capacity	
Term debt coverage ratio	75 %
Capital replacement margin	-9,922
Efficiency	
Asset turnover rate (cost)	38.8 %
Operating expense ratio	81.3 %
Depreciation expense ratio	7.7 %
Interest expense ratio	4.9 %
Net farm income ratio	6.1 %

Table 16

Operator and Labor Information  
**Michigan Dairy (Grazing), 2002**  
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Number of farms	9
Operator Information	
Average number of operators	1.3
Average age of operators	55.4
Average number of years farming	29.0
Results Per Operator	
Working capital	29,524
Total assets (market)	832,470
Total liabilities	182,838
Net worth (market)	649,632
Net worth excl deferred liabs	649,632
Gross farm income	208,093
Total farm expense	195,384
Net farm income	12,709
Net nonfarm income	6,296
Family living & tax withdrawals	24,936
Total acres owned	300.0
Total crop acres	348.2
Crop acres owned	201.3
Crop acres cash rented	146.9
Crop acres share rented	-
Total pasture acres	-
Labor Analysis	
Number of farms	9
Total unpaid labor hours	4,343
Total hired labor hours	4,048
Total labor hours per farm	8,392
Unpaid hours per operator	3,258
Value of farm production / hour	25.90
Net farm income / unpaid hour	3.90

Table 17

Financial Summary  
**Michigan Dairy (Grazing), 2002**  
(Farms Sorted By Rate of Return on Assets - Cost)

	Avg. Of All Farms
Number of farms	9
Income Statement	
Gross cash farm income	277,302
Total cash farm expense	237,264
Net cash farm income	40,038
Inventory change	-1,766
Depreciation and capital adjust	-21,326
Net farm income	16,945
Profitability (cost)	
Labor and management earnings	-2,181
Rate of return on assets	-2.8 %
Rate of return on equity	-9.3 %
Operating profit margin	-7.3 %
Asset turnover rate	38.8 %
Profitability (market)	
Labor and management earnings	21,461
Rate of return on assets	3.4 %
Rate of return on equity	2.7 %
Operating profit margin	16.0 %
Asset turnover rate	21.5 %
Liquidity	
Term debt coverage ratio	74.8 %
Expense as a percent of income	86.2 %
Interest as a percent of income	4.9 %
Solvency (cost)	
Number of farms	9
Ending farm assets	562,749
Ending farm liabilities	242,344
Ending total assets	604,828
Ending total liabilities	243,784
Ending net worth	361,044
Net worth change	18,617
Ending farm debt to asset ratio	43 %
Beg total debt to asset ratio	42 %
End total debt to asset ratio	40 %
Solvency (market)	
Number of farms	9
Ending farm assets	1,037,148
Ending farm liabilities	242,344
Ending total assets	1,109,960
Ending total liabilities	243,784
Ending net worth	866,176
Net worth change	70,942
Ending farm debt to asset ratio	23 %
Beg total debt to asset ratio	23 %
End total debt to asset ratio	22 %
Nonfarm Information	
Net nonfarm income	8,395
Crop Acres	
Total acres owned	400
Total crop acres	464
Total crop acres owned	268
Total crop acres cash rented	196
Total crop acres share rented	-