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2006 Michigan Swine Business Analysis Summary

Eric Wittenberg and Stephen Harsh

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2006 Michigan TelFarm and Farm Credit Services Data Staff Paper No. 07-12

by

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Eric Wittenberg and Stephen Harsh¹

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Executive Summary

This report summarizes the financial and production records of 14 Michigan swine farms. To be included, the farms must have produced at least 50 percent of gross cash farm income from one or a combination of fat hogs, feeder pigs and cull breeding hogs sales. The records came from Michigan State University's TelFarm project and the Farm Credit Service system in Michigan. The values were pooled into averages for reporting purposes.

Farm records were included if a farm financial summary was completed on 2006 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 below.

Summary of Results

The average size of a farrow to finish swine farm contained in this 2006 business analysis was 161 sows, 292 acres owned and 555 acres cropped, Table 1. Additional data on farm characteristics indicated that the average weight for a finished hog was 250 pound and the average price was \$46.34 per hundredweight.

Table 1. Average Michigan Swine Farm Characteristics, 2002-2006

<u> </u>					
	2002	2003	2004	2005	2006
Average number of sows	1095	364	178	161	161
Total acres owned	491	769	587	401	292
Total crop acres	800	1036	919	536	555
Average weight of hogs sold	247	252	256	254	250
(lbs.)					
Average price/cwt.	\$36.47	\$44.82	51.77	54.90	46.34
Number of farms	7	9	12	11	14

Net farm income (NFI) is the amount remaining after all cash farm expenses and depreciation have been subtracted from net cash farm income and inventory changes have been recognized. The net farm income value is the return to operator unpaid management, labor and equity capital invested. Income statement data presented in Table 2 indicates that net farm income in 2006 averaged \$104,651. This average somewhat obscures a very large range of net farm income values. The range was a negative \$17,264 to \$450,382 and the standard deviation was \$125,537.

Gross cash farm income averaged \$728,924 in 2006. The largest components of this revenue are finished feeder pigs sales which averaged \$282,291, finished raised hogs sales which

averaged \$178,804 and weaning to finished hogs sales which averaged \$135,694. Government payments averaged \$20,560 per farm in 2006.

Average total cash expenses were \$612,742 in 2006 and average net cash farm income was \$116,182. Inventory levels increased and averaged \$48,017 per farm. Crops, feeds, market livestock, and accounts receivable increased while prepaid expenses, supplies and accounts payable decreased.

Table 2. Average Swine Farm Income Statement, 2002-2005

	2002	2003	2004	2005	2006
			(\$)		
Gross cash farm income	1,986,148	1,001,043	1,089,291	842,919	728,924
- Total cash expense	2,149,235	833,911	892,506	681,217	612,742
= Net cash farm income	-163,087	167,132	196,785	161,703	116,182
+ Inventory change	111,150	-35853	79,912	5,050	48,017
+ Depreciation and capital	<i>-</i> 71,696	<u>-113880</u>	<u>-78,960</u>	<u>-73,922</u>	<u>-59,548</u>
<u>adjustments</u>					
= Net farm income	-123,632	17399	197,737	92,830	104,651

Table 3 compares profitability for the years 2002 - 2006 with assets valued at cost. Profitability indicators calculated using assets valued at cost, can be used to compare the same farm over time. The average 2006 swine farm ROA was 9.9 percent, which was an 41 percent increase over 2005 value. Return on equity averaged 18 percent. Operating profit margin measures the dollars of profit generated per dollar of revenue. In 2006, the OPM was 18.4 percent. Asset turnover measures the efficiency with which farm assets generate revenue. In 2006, this ratio was 53.9 percent. All these profitability measures indicate that on the average, 2006 was a profitable year financially.

Four key financial performance indicators are presented in Table 3. The rate of return on assets (ROA) is calculated as if the farm has no debt. ROA indicates the farm earnings, after subtracting out an allowance for unpaid operator labor and management, as a percentage of invested assets. ROA provides the key summary performance indicator for your farm. By multiplying the operating profit margin by the asset turnover rate, the ROA is determined. The ROA for 2006 averaged 9.9 percent.

The rate of return on equity (ROE), expressed as a percentage of own equity capital, represents the farm earnings after interest payments. Ideally the ROE should be higher than the ROA indicating that profit is being made on borrowed money. This was the case in 2006. ROE performance for 2006 averaged 18 percent. This farm summary indicates that these farms were profitable in 2006.

Table 3. Average Swine Farm Profitability Indicators, 2002-2005

	2002	2003	2004	2005	2006
			(%)		
Rate of return on assets*	-3.2	0.7	16.1	7.0	9.9
Rate of return on equity	-14.8	-10.2	52.4	11.8	18.0
Operating profit margin	-7.0	1.4	25.3	13.8	18.4
Asset turnover rate*	45.6	49.8	63.5	50.8	53.9

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

Table 4 compares profitability measures across the years 2002 - 2006 valued at market. The market value approach includes the impact of price appreciation (inflation) of the asset base overtime. Land is the main reason 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" of farming versus 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 return on assets (ROA) for 2006 was 7.9 percent, a positive change when compared to 2005. Return on equity (ROE) for 2006 was 9.5 percent. Operating profit margin (OPM) measures the dollars of profit generated per dollar of revenue. In 2005 the OPM was 26.7 percent. In 2006 these swine farms are generating good profit per dollar of revenue.

Asset turnover ratio measures the efficiency with which farm assets generate revenue. In 2006, the asset turnover ratio was 29.6 percent. This was a slight decrease when compared with 2005. Higher prices for production or lower total asset value will increase ATO. This is a slight decrease of 6 percent, meaning that the farm assets generated less dollars per dollar invested in farm assets. The trend with respect to profitability in 2006 was good.

Table 4. Average Swine Farm Profitability Indicators, 2002-2005

	2002	2003	2004	2005	2006
			(%)		
Rate of return on assets*	-0.1	2.8	10.1	7.7	7.9
Rate of return on equity	-3.6	1.7	13.9	9.8	9.5
Operating profit margin	-0.5	11.0	32.4	28.4	26.7
Asset turnover rate*	31.2	25.1	31.0	27.2	29.6

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

Table 5	Crop Production and Marketing Summary
	2006 MI Swine Farms
	(Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	14
Acreage Summary	
Total acres owned	292
Total crop acres	555
Crop acres owned	189
Crop acres cash rented	366
Crop acres share rented	_
Total pasture acres	_

Farm Income Statement 2006 MI Swine Farms

	Avg. Of All Farms
Number of farms	14
Cash Farm Income	
Beans, Navy	8,398
Corn	23,133
Hay, Mixed	75
Soybeans	27,591
Straw	778
Sugar Beets	12,527
Wheat, Winter	12,955
Miscellaneous crop income	14
Hogs, Farrow-Fin, Raised Hogs	178,804
Hogs, Feeder Pigs, Feeder Pigs	40,311
Hogs, Finish Feeder Pigs	241,980
Hogs, Contractee	2,629
Hogs, Weaning to Feeder	3,364
Hogs, Weaning to Finish	135,694
Cull breeding livestock	8,823
Direct & CC govt payments	3,673
Other government payments	16,887
Custom work income	4,332
Patronage dividends, cash	1,384
Insurance income	1,716
Cash from hedging accts	714
Other farm income	3,142
Gross Cash Farm Income	728,924

Farm Income Statement (Continued)

2006 MI Swine Farms

	Avg. Of All Farms
Number of farms	14
Cash Farm Expense Seed	21 064
Fertilizer	21,864 22,654
Crop chemicals	14,172
Crop insurance	3,241
Drying fuel	9,327
Crop supplies	1,725
Crop marketing	282
Crop miscellaneous	919
Feeder livestock purchase	120,685
Purchased feed	167,510
Breeding fees	3,662
Veterinary	6,243
Livestock supplies	2,232
Livestock leases Livestock hauling and trucking	502 711
Livestock mauring and trucking	6,735
Livestock miscellaneous	4,193
Interest	24,046
Packaging and supplies	256
Fuel & oil	15,926
Repairs	23,882
Custom hire	27,694
Hired labor	29,320
Land rent	27,248
Machinery leases	21,331
Real estate taxes	6,697
Personal property taxes	99
Farm insurance	8,408
Utilities	21,014
Hauling and trucking	179
Dues & professional fees Hedging account deposits	2,589 3,214
Miscellaneous	14,184
Total cash expense	612,742
Net cash farm income	116,182
	110,102
Inventory Changes	F.C. 27.C
Crops and feed Market livestock	56,276
Accounts receivable	1,348 1,822
Prepaid expenses and supplies	-7,722
Accounts payable	-3,706
Total inventory change	48,017
Net operating profit	164,199
Depreciation and Other Capital Adjust	ments
Breeding livestock	-8,615
Machinery and equipment	-34,326
Buildings and improvements	-16,607
Other farm capital	0
Total depr. and other capital adj	-59,548
Net farm income	104,651

Table 7 Inventory Changes 2006 MI Swine Farms (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	14
Net cash farm income	116,182
Crops and Feed Ending inventory Beginning inventory Inventory change	164,770 108,494 56,276
Market Livestock Ending inventory Beginning inventory Inventory change	202,294 200,946 1,348
Accts Receivable & Other Current Asse Ending inventory Beginning inventory Inventory change	21,834 20,012 1,822
Prepaid Expenses and Supplies Ending inventory Beginning inventory Inventory change	53,362 61,084 -7,722
Accounts Payable & Accrued Expenses Beginning inventory Ending inventory Inventory change	14,476 18,182 -3,706
Total inventory change	48,017
Net operating profit	164,199

Table 8 Depreciation and Other Capital Adjustments 2006 MI Swine Farms (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	14
Net operating profit	164,199
Breeding Livestock Ending inventory Capital sales Beginning inventory Capital purchases Depreciation, capital adjust.	34,686 4,020 37,414 9,907 -8,615
Machinery and Equipment Ending inventory Capital sales Beginning inventory Capital purchases Depreciation, capital adjust.	97,966 2,257 89,292 45,257 -34,326
Buildings and Improvements Ending inventory Capital sales Beginning inventory Capital purchases Depreciation, capital adjust.	77,095 - 57,540 36,162 -16,607
Other Capital Assets Ending inventory Capital sales Beginning inventory Capital purchases Depreciation, capital adjust.	17,561 3,626 18,161 3,026
Total depreciation, capital adj.	-59,548
Net farm income	104,651

Profitability Measures 2006 MI Swine Farms

	Avg. Of All Farms
	AII Parms
Number of farms	14
Profitability (assets valued at cost) Net farm income Labor and management earnings Rate of return on assets Rate of return on equity Operating profit margin Asset turnover rate Interest on farm net worth Farm interest expense Value of operator lbr and mgmt. Return on farm assets Average farm assets Return on farm equity Average farm equity Value of farm production	104,651 82,291 9.9 % 18.0 % 18.4 % 53.9 % 22,360 26,596 40,990 90,258 912,205 63,662 352,807 491,559
	Avg. Of All Farms
Number of farms	14
Profitability (assets valued at marker Net farm income Labor and management earnings Rate of return on assets Rate of return on equity Operating profit margin Asset turnover rate	145,553 79,376 7.9 % 9.5 % 26.7 % 29.6 %
Interest on farm net worth Farm interest expense Value of operator lbr and mgmt. Return on farm assets Average farm assets Return on farm equity Average farm equity Value of farm production	66,177 26,596 40,990 131,159 1,662,345 104,563 1,102,947 491,559

Table 10 Liquidity Measures 2006 MI Swine Farms (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	14
Liquidity (cash) Net cash farm income Net nonfarm income Family living and taxes Principal due on long term debt Cash available for interm. debt Average intermediate debt	116,182 12,162 47,236 22,224 58,883 144,291
Years to turnover interm. debt Expense as a % of income Interest as a % of income Working capital to gross income	2.5 84 % 3 % 37 %
Liquidity (accrual) Total accrual farm income Total accrual operating expense Net accrual operating income Net nonfarm income Family living and taxes Principal due on long term debt Available for intermediate debt Average intermediate debt	788,369 624,170 164,199 12,162 47,236 22,224 106,901 144,291
Years to turnover interm. debt Expense as a % of income Interest as a % of income Working capital to gross income	1.3 79 % 3 % 34 %

Table 11 Balance Sheet at Cost Values 2006 MI Swine Farms (Farms Sorted By Rate of Return on Assets - Mkt)

Avg. Of All Farms

Number of farms 1

	Beginning	Ending
Assets		
Current Farm Assets		
Cash and checking balance	9,306	
Prepaid expenses & supplies	61,084	53,362
Growing crops	2,976	
Accounts receivable	11,968	15,194
Hedging accounts	2,926	3,816
Crops held for sale or feed	108,494	164,770
Crops under government loan	0	0
Market livestock held for sale	200,946	202,294
Other current assets	2,143	
Total current farm assets	399,843	454,363
Intermediate Farm Assets	0.5.44.4	04.505
Breeding livestock	37,414	
Machinery and equipment	89,292	
Titled vehicles	0	480
Other intermediate assets	16,193	15,593
Total intermediate farm assets	142,899	148,245
Long Term Farm Assets	250 474	201 016
Farm land	259,474	281,016
Buildings and improvements	57,540	
Other long-term assets	1,968	
Total long-term farm assets	318,981	
Total Farm Assets	861,723	962,687
Total Nonfarm Assets	70,622	83,176
Total Assets	932,345	1,045,863
Liabilities		
Current Farm Liabilities		
Accrued interest		4,899
Accounts payable	12,127	13,283
Current notes	121,021	123,397
Government crop loans	0	0
Principal due on term debt	44,226	
Total current farm liabilities	179,722	186,355
Total intermediate farm liabs	121,257	124,177
Total long term farm liabilities	238,988	
Total farm liabilities	539,967	
Total nonfarm liabilities	12,366	18,534
Total liabilities	552,332	597,362
Net worth (farm and nonfarm)	380,012	448,500
Net worth change		68,488
Ratio Analysis		
Current farm liabilities / assets	45 %	
Curr. & interm farm liab. / assets	55 %	
Long term farm liab. / assets	75 %	
Total debt to asset ratio	59 %	57 %

Balance Sheet at Market Values 2006 MI Swine Farms

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

Avg. Of All Farms

Number	of	farms	1	4

Number of farms	14	+
	Beginning	Ending
Assets	Degriming	Bliding
Current Farm Assets		
Cash and checking balance	9,306	12,103
Prepaid expenses & supplies	61,084	53,362
Growing crops	2,976	2,824
Accounts receivable	11,968	15,194
Hedging accounts	2,926	
Crops held for sale or feed	108,494	
Crops under government loan	0	0
Market livestock held for sale	200,946	
Other current assets Total current farm assets	2,143 399,843	
Total Cullent Talm assets	399,043	454,303
Intermediate Farm Assets		
Breeding livestock	38,635	35,734
Machinery and equipment	267,470	
Titled vehicles	2,929	
Other intermediate assets	16,402	15,736
Total intermediate farm assets	325,435	342,566
Long Term Farm Assets		
Farm land		683,829
Buildings and improvements		213,335
Other long-term assets	34,860	39,185 936,348
Total long-term farm assets Total Farm Assets		1,733,277
TOTAL PALIE ASSECT	1,331,412	1,733,277
Total Nonfarm Assets	220,491	237,963
Total Assets		1,971,240
Liabilities		
Current Farm Liabilities		
Accrued interest	2,349	
Accounts payable	12,127	
Current notes	121,021	
Government crop loans Principal due on term debt	0 44,226	
Total current farm liabilities	179,722	
Total carrent rarm readilities	110,122	100,333
Total intermediate farm liabs	121,257	124,177
Total long term farm liabilities	238,988	268,296
Total farm liabilities	539,967	578,828
Total nonfarm liabilities	12,366	
Total liabs excluding deferreds	552,332	597,362
Total deferred liabilities	0	0
Total liabilities	552,332	597,362
Retained earnings	380,012	448,500
Market valuation equity	879 558	925,378
Net worth (farm and nonfarm)		1,373,878
Net worth excluding deferreds		1,373,878
Net worth change	, , -	114,308
Ratio Analysis		
Current farm liabilities / assets	45 %	41 %
Curr. & interm farm liab. / assets	41 %	39 %
Long term farm liab. / assets	28 %	29 %
Total debt to asset ratio Debt to assets excl deferreds	30 % 30 %	30 % 30 %
Debt to appete extr deterreds	<i>3</i> 0 %	30 %

Statement Of Cash Flows 2006 MI Swine Farms

	Avg. Of All Farms
Number of farms	14
Beginning cash (farm & nonfarm)	9,813
Cash From Operating Activities Gross cash farm income Net nonfarm income Total cash farm expense Apparent family living expense Income and social security tax Cash from operations	728,924 12,162 -612,742 -47,093 -143 81,107
Cash From Investing Activities Sale of breeding livestock Sale of machinery & equipment Sale of titled vehicles Sale of farm land Sale of farm buildings Sale of other farm assets Sale of nonfarm assets Purchase of breeding livestock Purchase of machinery & equip. Purchase of titled vehicles Purchase of farm land Purchase of farm buildings Purchase of other farm assets Purchase of nonfarm assets Cash from investing activities	4,020 2,257 - 3,889 - 3,626 - -9,907 -44,778 -480 -15,828 -36,162 -3,026 -17,477 -113,865
Cash From Financing Activities Money borrowed Cash gifts and inheritances Principal payments Dividends paid Gifts given Cash from financing activities	381,896 1,706 -339,701 - -8,699 35,201
Net change in cash balance	2,444
Ending cash (farm & nonfarm)	12,257

Table 14 Financial Standards Measures 2006 MI Swine Farms (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	14
Liquidity Current ratio Working capital	2.44 268,008
Solvency (market) Farm debt to asset ratio Farm equity to asset ratio Farm debt to equity ratio	33 % 67 % 50 %
Profitability (cost) Rate of return on farm assets Rate of return on farm equity Operating profit margin Net farm income	9.9 % 18.0 % 18.4 % 104,651
Repayment Capacity Term debt coverage ratio Capital replacement margin	225 % 77,547
Efficiency Asset turnover rate (cost) Operating expense ratio Depreciation expense ratio Interest expense ratio Net farm income ratio	53.9 % 75.8 % 7.6 % 3.4 % 13.3 %

Table 15 Operator and Labor Information 2006 MI Swine Farms (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of
	All Farms
Number of farms	14
Operator Information	
Average number of operators	1.4
Average age of operators	46.3 21.5
Average number of years farming	21.5
Results Per Operator	
Working capital	187,606
Total assets (market) Total liabilities	1,379,868
Net worth (market)	418,153 961,715
Net worth excl deferred liabs	961,715
	,
Gross farm income	551,859
Total farm expense	478,603
Net farm income	73,256
Net nonfarm income	8,513
Family living & tax withdrawals	33,065
Total acres owned	204.1
Total crop acres	388.8
Crop acres owned	132.4
Crop acres cash rented	256.4
Crop acres share rented Total pasture acres	_
iotai pasture acres	_
Labor Analysis	
Number of farms	14
Total unpaid labor hours Total hired labor hours	2,816 1,545
Total labor hours per farm	4,360
Unpaid hours per operator	1,971
Value of farm production / hour	112.73
Net farm income / unpaid hour	37.17
Average hourly hired labor wage	19.31

Table 16 Financial Summary 2006 MI Swine Farms (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	14
Income Statement Gross cash farm income Total cash farm expense Net cash farm income Inventory change Depreciation and capital adjust Net farm income Profitability (cost) Labor and management earnings Rate of return on assets Rate of return on equity Operating profit margin Asset turnover rate Profitability (market) Labor and management earnings Rate of return on assets	728,924 612,742 116,182 48,017 -59,548 104,651 82,291 9.9 % 18.0 % 53.9 %
Rate of return on equity Operating profit margin Asset turnover rate Liquidity	9.5 % 26.7 % 29.6 %
Ending current ratio Ending working capital End working capital to gross inc Term debt coverage ratio Expense as a percent of income	2.44 268,008 36.8 % 224.5 % 79.2 %
Interest as a percent of income Solvency (cost) Number of farms Ending farm assets Ending farm liabilities Ending total assets Ending total liabilities Ending net worth Net worth change Ending farm debt to asset ratio Beg total debt to asset ratio End total debt to asset ratio	3.4 % 962,687 578,828 1,045,863 597,362 448,500 68,488 60 % 59 % 57 %
Solvency (market) Number of farms Ending farm assets Ending farm liabilities Ending total assets Ending total liabilities Ending net worth Net worth change Ending farm debt to asset ratio Beg total debt to asset ratio End total debt to asset ratio Nonfarm Information Net nonfarm income	14 1,733,277 578,828 1,971,240 597,362 1,373,878 114,308 33 % 30 % 30 %
Crop Acres Total acres owned Total crop acres Total crop acres owned Total crop acres cash rented Total crop acres share rented	292 555 189 366 -