

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.

2009 Michigan Swine Business Analysis Summary

Eric Wittenberg and Stephen Harsh

Staff Paper 2010-05

December, 2010







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

MSU is an Affirmative Action/Equal Opportunity Institution

2009 Michigan Swine Business Analysis Summary

2009 Michigan TelFarm and Farm Credit Services Data Staff Paper No. 10-05

by

Eric Wittenberg and Stephen Harsh

Copyright 2010 by Eric Wittenberg and Stephen Harsh. 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.

2009 Michigan Swine Business Analysis Summary

by

Eric Wittenberg and Stephen Harsh¹

Table of Contents	Page
Executive Summary	4
List of Tables	
Summary Tables	
1) Average Farm Characteristics, 2005-2009	4
2) Average Income Statement, 2005-2009	. 5
3) Average Profitability Indicators (cost), 2005-2009	6
4) Average Profitability Indicators (market), 2005-2009	6
Average of 9 Swine Farms	
5) Livestock, Crop Production and Market Summary	7
6) Farm Income Statement	8
7) Inventory Changes	9
8) Depreciation and Other Capital Adjustment	12
9) Profitability Measures	13
10) Liquidity Measures	14
11) Balance Sheet at Cost Values	15
12) Balance sheet at Market Values	16
13) Statement of Cash Flows	17
14) Financial Standards Measures	18
15) Operator and Labor Information	19
16) Financial Summary	20

¹ Co-workers in the TelFarm project were: R. Betz, L. Borton, C. Talley, W. Schauer, D. Stein, and V. Varner with the assistance of Michigan State University Extension Agents. Greenstone Farm Credit Services of Michigan co-workers were: Kelly Tobin, Steve Eshelman, Janice Raymond, Anne Gerke, Sonya Pentecost, and Lynette Wood. Farm Credit Services of Wisconsin co-worker was Steve Zimmerman.

Executive Summary

This report summarizes the financial and production records of 9 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 2009 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 swine farm contained in this 2009 business analysis 216 acres owned and 613 acres cropped, Table 1. Additional data on farm characteristics indicated that the average weight for a finished hog was 251 pound and the average price was \$41.90 per hundredweight.

Table 1. Average Michigan Swine Farm Characteristics, 2005-2009

	2005	2006	2007	2008	2009
Average number of sows	161	161	N/A	324	N/A
Total acres owned	401	292	355	308	216
Total crop acres	536	555	664	950	613
Average weight of hogs sold	254	250	258	265	251
(lbs.)					
Average price/cwt.	54.90	46.34	45.86	47.23	41.90
Number of farms	11	14	12	11	9

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 2009 averaged a negative \$89,158. This average somewhat obscures a very large range of net farm income values. The range was a negative \$610,112 to \$93,727 and the standard deviation was \$201,485.

Gross cash farm income averaged \$888,160 in 2009. The largest components of this revenue are finished feeder pigs sales which averaged \$272,872, finished feeder pigs sales which averaged \$215,928 and weaning to finished hogs sales which averaged \$96,844. Government payments averaged \$11,223 per farm in 2009.

Average total cash expenses were \$903,887 in 2009 and average net cash farm income was a negative \$15,728. Inventory levels increased and averaged a negative \$34,767 per farm. Crops, feeds, market livestock, and accounts receivable increased while prepaid expenses, supplies and accounts payable decreased. Depreciation for 2009 averaged a negative \$38,664.

Table 2. Average Swine Farm Income Statement, 2005-2009

	2005	2006	2007	2008	2009
	(\$)	(\$)	(\$)	(\$)	(\$)
Gross cash farm income	842,919	728,924	911,706	1,051,242	888,160
- Total cash expense	681,217	612,742	830,744	989,492	903,887
= Net cash farm income	161,703	116,182	80,962	61,750	-15,728
+ Inventory change	5,050	48,017	-18,929	27,742	-34,767
+ Depreciation and capital adjustments	-73,922	<u>-59,548</u>	-57,203	<u>-48308</u>	<u>-38,664</u>
= Net farm income	92,830	104,651	4,830	41,184	-89,158

Table 3 compares profitability for the years 2005 - 2009 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 2009 swine farm ROA was negative 6.9 percent. Return on equity averaged negative 42.7 percent. Operating profit margin measures the dollars of profit generated per dollar of revenue. In 2009, the OPM was negative 17.0 percent. Asset turnover measures the efficiency with which farm assets generate revenue. In 2009, this ratio was 40.8 percent. All these profitability measures indicate that on the average, 2009 was a very bad 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 2009 averaged negative 6.9 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 not the case in 2009. ROE performance for 2009 averaged a negative 42.7. This farm summary indicates that these farms were losing equity in 2009.

Table 3. Average Swine Farm Profitability Indicators, 2005-2009

	2005	2006	2007	2008	2009
	(%)	(%)	(%)	(%)	(%)
Rate of return on assets*	7.0	9.9	0.2	3.1	-6.9
Rate of return on equity	11.8	18.0	-14.2	-1.9	-42.7
Operating profit margin	13.8	18.4	0.5	6.4	-17.0
Asset turnover rate*	50.8	53.9	46.2	49.3	40.8

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

Table 4 compares profitability measures across the years 2005 - 2009 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 2009 was a negative 5.2 percent. Return on equity (ROE) for 2009 was a negative 12.5 percent. Operating profit margin (OPM) measures the dollars of profit generated per dollar of revenue. In 2009 the OPM was a negative 22.9 percent. In 2009 these swine farms were not profitable per dollar of revenue.

Asset turnover ratio measures the efficiency with which farm assets generate revenue. In 2009, the asset turnover ratio was 22.8 percent. This was a decrease when compared with 2008. Low prices for production or higher total asset value will decrease ATO. This is a slight decrease of 5 percent, meaning that the farm assets generated less dollars per dollar invested in farm assets. The trend with respect to profitability in 2009 was not good.

Table 4. Average Swine Farm Profitability Indicators, 2005-2009

	2005	2006	2007	2008	2009
	(%)	(%)	(%)	(%)	(%)
Rate of return on assets*	7.7	7.9	4.0	1.9	-5.2
Rate of return on equity	9.8	9.5	2.9	-0.5	-12.5
Operating profit margin	28.4	26.7	15.6	6.7	-22.9
Asset turnover rate*	27.2	29.6	25.4	27.9	22.8

• Assets valued at <u>market</u> value (rather than cost value).

Table 5 Crop Production and Marketing Summary 2009 MI Swine (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	9
Acreage Summary Total acres owned Total crop acres	216 613
Crop acres owned Crop acres cash rented	243 366
Crop acres share rented Total pasture acres	4 –
Percent crop acres owned	40 %

Table 6 Farm Income Statement 2009 MI Swine (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	9
Cash Farm Income Beans, Navy Corn Hay, Mixed	16,484 86,253 233
Soybeans Straw Sugar Beets	44,270 590 29,854
Wheat, Winter Miscellaneous crop income Beef Finishing	15,058 7 888
Dairy Finishing Hogs, Farrow To Finish, Raised Ho Hogs, Feeder Pig Prod, Feeder Pig	212 272,872 25,642
Hogs, Finish Feeder Pigs Hogs, Weaning to Finish Cull breeding livestock	215,928 96,844 13,217
Misc. livestock income Direct & CC govt payments Other government payments	353 757 10,466
Custom work income Patronage dividends, cash Insurance income Other farm income Gross Cash Farm Income	21,473 4,895 18,046 13,818 888,160

Farm Income Statement (Continued) 2009 MI Swine

	Avg. Of All Farms
Number of farms	9
Cash Farm Expense	
Seed	41,144
Fertilizer	41,642
Crop chemicals	20,889
Crop insurance	6,784
Drying expense	10,723
Storage	89
Irrigation energy	49
Crop packaging and supplies	204
Crop marketing	3,531
Crop miscellaneous	3,499
Feeder livestock purchase	104,091
Purchased feed	323,360
Breeding fees	3,116
Veterinary	18,887
Supplies	2,260
Livestock marketing	10,038
Interest	43,871
Packaging and supplies	389
Fuel & oil	23,352
Repairs	25,663
Repair, machinery	1,387
Custom hire	46,367
Repair, buildings	121
Hired labor	38,971
Land rent	31,327
Machinery leases	25,329
Building leases	4,125
Real estate taxes	10,297
Farm insurance	11,781
Utilities	30,846
Dues & professional fees	3,513
Miscellaneous	16,242
Total cash expense	903,887
Net cash farm income	-15,728
Inventory Changes	
Prepaids and supplies	3,194
Accounts receivable	-9,178
Hedging accounts	1,856
Other current assets	888
Crops and feed	-19,401
Market livestock	19,975
Breeding livestock	-3,049
Other assets	0
Accounts payable	-33,759
Accrued interest	4,707
	•

Total inventory change Net operating profit	-34,767 -50,494
Depreciation	
Machinery and equipment	-24,278
Titled vehicles	534
Buildings and improvements	-14,920
Total depreciation	-38,664
Net farm income from operations Gain or loss on capital sales	-89,158 -
Net farm income	-89,158

Table 7 Inventory Changes

2009 MI Swine

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

	Avg. Of All Farms
Number of farms	9
Net cash farm income	-15,728
Crops and Feed Ending inventory Beginning inventory Inventory change	207,772 227,173 -19,401
Market Livestock Ending inventory Beginning inventory Inventory change	214,241 194,266 19,975
Accts Receivable Ending inventory Beginning inventory Inventory change	10,104 19,282 -9,178
Prepaid Expenses and Supplies Ending inventory Beginning inventory Inventory change	37,714 34,520 3,194
Hedging Activities Ending inventory Withdrawals Beginning inventory Deposits Gain or loss	2,667 1,300 2,111 - 1,856
Other Current Assets Ending inventory Beginning inventory Inventory change	5,348 4,460 888
Breeding Livestock Ending inventory Capital sales Beginning inventory Capital purchases Depreciation, capital adjust	49,082 3,004 51,050 4,085 -3,049
Other Capital Assets Ending inventory Capital sales Beginning inventory Capital purchases Depreciation, capital adjust	27,784 395 27,111 1,068 0
Accounts Payable Beginning inventory Ending inventory Inventory change	18,105 51,864 -33,759
Accrued Interest Beginning inventory Ending inventory Inventory change	10,030 5,323 4,707
Total inventory change	-34,767
Net operating profit	-50,494

Table 8 Depreciation 2009 MI Swine

	Avg. Of All Farms
Number of farms	9
Net operating profit	-50,494
Machinery and Equipment Ending inventory Capital sales Beginning inventory Capital purchases Depreciation, capital adjust.	117,583 164 125,034 16,991 -24,278
Titled Vehicles Ending inventory Capital sales Beginning inventory Capital purchases Depreciation, capital adjust.	8,683 1,444 3,856 5,738 534
Buildings and Improvements Ending inventory Capital sales Beginning inventory Capital purchases Depreciation, capital adjust.	77,273 - 84,629 7,564 -14,920
Total depreciation, capital adj.	-38,664
Net farm income from operations Gain or loss on capital sales	-89,158 -
Net farm income	-89,158

Profitability Measures 2009 MI Swine

	Avg. Of All Farms
Number of farms	9
Profitability (assets valued at cost) Net farm income from operations Rate of return on assets Rate of return on equity Operating profit margin Asset turnover rate	-89,158 -6.9 % -42.7 % -17.0 % 40.8 %
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	39,164 26,689 -76,682 1,105,212 -115,847 271,209 450,911
	Avg. Of All Farms
Number of farms	9
Profitability (assets valued at marke Net farm income from operations Rate of return on assets Rate of return on equity Operating profit margin Asset turnover rate	t) -115,942 -5.2 % -12.5 % -22.9 % 22.8 %
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	39,164 26,689 -103,467 1,977,826 -142,631 1,143,823 450,911

Table 10 Liquidity & Repayment Capacity Measures 2009 MI Swine (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	9
Liquidity Current ratio Working capital Working capital to gross inc	1.92 248,339 28.3 %
Current assets Current liabilities Gross revenues (accrual)	517,694 269,354 878,363
Repayment capacity Net farm income from operations Depreciation Personal income Family living/owner withdrawals Payments on personal debt Income taxes paid Interest on term debt Capital debt repayment capacity	-89,158 38,664 9,112 -32,315 - 28,082 -45,615
Scheduled term debt payments Capital debt repayment margin	-70,744 -116,358
Cash replacement allowance Replacement margin	-17,990 -134,349
Term debt coverage ratio Replacement coverage ratio	-0.64 -0.51

Table 11 Balance Sheet at Cost Values 2009 MI Swine (Farms Sorted By Rate of Return on Assets - Mkt)

Avg. Of All Farms

9

Number of farms	3	9
	Beginning	Ending
Assets Current Farm Assets Cash and checking balance Prepaid expenses & supplies Growing crops Accounts receivable Hedging accounts Crops held for sale or feed Crops under government loan Market livestock held for sale	27,695 34,520 4,460 19,282 2,111 227,173 0 194,266	10,104 2,667 207,772 0 214,241
Other current assets Total current farm assets	0 509,507	
Intermediate Farm Assets Breeding livestock Machinery and equipment Titled vehicles Other intermediate assets Total intermediate farm assets	51,050 125,034 3,856 24,905 204,845	117,583 8,683 25,578
Long Term Farm Assets Farm land Buildings and improvements Other long-term assets Total long-term farm assets Total Farm Assets	84,629 2,205 392,404	
Total Nonfarm Assets Total Assets		62,165 1,165,833
Liabilities Current Farm Liabilities Accrued interest Accounts payable Current notes Government crop loans Principal due on term debt Total current farm liabilities	10,030 18,105 181,244 0 42,661 252,040	51,864 177,912 0 34,255
Total intermediate farm liabs Total long term farm liabilities Total farm liabilities	182,122 346,976 781,138	107,725 509,789 886,868
Total nonfarm liabilities Total liabilities	11,912 793,050	10,244 897,111
Net worth (farm and nonfarm) Net worth change Percent net worth change	370,772	268,722 -102,051 -28 %
Ratio Analysis Current farm liabilities / assets Intermediate farm liab. / assets Long term farm liab. / assets Total debt to asset ratio	49 % 89 % 88 % 68 %	52 % 54 % 132 % 77 %

Balance Sheet at Market Values 2009 MI Swine

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

Avq. Of All Farms

Number	οf	farme	

q Beginning Ending Assets Current Farm Assets Cash and checking balance 27,695 39,848 Prepaid expenses & supplies 37,714 34.520 Growing crops 4,460 5,348 Accounts receivable 19,282 10,104 Hedging accounts 2,111 2,667 Crops held for sale or feed 227,173 207,772 Crops under government loan Ω Ω Market livestock held for sale 194,266 214,241 Other current assets Ω Ω 517,694 Total current farm assets 509,507 Intermediate Farm Assets Breeding livestock 50,872 48,904 Machinery and equipment 339,029 335,228 Titled vehicles 2,556 8,444 24,905 Other intermediate assets 25.578 Total intermediate farm assets 417,362 418,154 Long Term Farm Assets Farm land 783,130 796,479 215,598 Buildings and improvements 225,320 Other long-term assets 57,443 14,965 Total long-term farm assets 1,065,893 1,027,042 Total Farm Assets 1,992,763 1,962,890 Total Nonfarm Assets 231,161 237,653 Total Assets 2,223,924 2,200,543 Liabilities Current Farm Liabilities 10,030 Accrued interest 5,323 Accounts payable 18,105 51,864 Current notes 181,244 177,912 Government crop loans 0 Ω 42.661 34,255 Principal due on term debt Total current farm liabilities 252,040 269,354 Total intermediate farm liabs 182,122 107,725 Total long term farm liabilities 346,976 509,789 Total farm liabilities 781,138 886,868 11.912 10.244 Total nonfarm liabilities Total liabs excluding deferreds 793,050 897,111 Total deferred liabilities Ω Ω Total liabilities 793,050 897,111 Retained earnings 370,772 268,722 1,060,101 1,034,710 Market valuation equity Net worth (farm and nonfarm) 1,430,873 1,303,431 Net worth excluding deferreds 1,430,873 1,303,431 Net worth change -127,442 Percent net worth change -9 % Ratio Analysis Current farm liabilities / assets 49 % 52 % Intermediate farm liab. / assets 44 % 26 % Long term farm liab. / assets 33 % 50 % Total debt to asset ratio 36 % 41 %

Debt to assets excl deferreds

41 %

36 %

Statement Of Cash Flows 2009 MI Swine

	Avg. Of All Farms
Number of farms	9
Beginning cash (farm & nonfarm)	27,920
Cash Provided By Operating Activities Gross cash farm income Total cash farm expense Net cash from hedging transactions Cash provided by operating	888,160 -903,887 1,300 -14,427
Cash Provided By 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 provided by investing	3,004 164 - - 395 4,222 -4,085 -16,991 -5,738 - -7,564 -1,068 - -27,660
Cash Provided By Financing Activities Money borrowed Principal payments Personal income Family living/owner withdrawals Income and social security tax Capital contributions Capital distributions Dividends paid Cash gifts and inheritances Gifts given Other cash flows Cash provided by financing Net change in cash balance	490,463 -413,785 9,112 -32,315 6,860 -6,095 - 54,240 12,153
<pre>Ending cash (farm & nonfarm)</pre>	40,073

Table 14 Financial Standards Measures 2009 MI Swine (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	9
Liquidity Current ratio Working capital Working capital to gross inc	1.92 248,339 28.3 %
Solvency (market) Farm debt to asset ratio Farm equity to asset ratio Farm debt to equity ratio	45 % 55 % 0.82
Profitability (cost) Rate of return on farm assets Rate of return on farm equity Operating profit margin Net farm income EBIDTA	-6.9 % -42.7 % -17.0 % -89,158 -11,330
Repayment Capacity Capital debt repayment capacity Capital debt repayment margin Replacement margin Term debt coverage ratio Replacement coverage ratio	-45,615 -116,358 -134,349 -0.64 -0.51
Efficiency Asset turnover rate (cost) Operating expense ratio Depreciation expense ratio Interest expense ratio Net farm income ratio	40.8 % 101.3 % 4.4 % 5.0 % -10.2 %

Table 15 Operator and Labor Information 2009 MI Swine (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of All Farms
Number of farms	9
Operator Information Average number of operators Average age of operators Average number of years farming	1.6 43.3 21.4
Results Per Operator Working capital Total assets (market) Total liabilities Net worth (market) Net worth excl deferred liabs	159,647 1,414,635 576,714 837,920 837,920
Gross farm income Total farm expense Net farm income from operations	564,662 621,978 -57,316
Net nonfarm income Family living & tax withdrawals	5,858 20,774
Total acres owned Total crop acres Crop acres owned Crop acres cash rented Crop acres share rented Total pasture acres	139.0 394.0 156.2 235.3 2.5
Labor Analysis Number of farms Total unpaid labor hours Total hired labor hours Total labor hours per farm Unpaid hours per operator Value of farm production / hour Net farm income / unpaid hour Average hourly hired labor wage	8 3,228 3,610 6,838 1,986 70.01 -34.69 12.10
Partnerships & LLCs Number of farms Number of operators Owner withdrawals per farm Withdrawals per operator	6 1.8 - -

Table 16 Financial Summary 2009 MI Swine (Farms Sorted By Rate of Return on Assets - Mkt)

	Avg. Of
	All Farms
Number of farms	9
Number of farms	9
Income Statement	
Gross cash farm income	888,160
Total cash farm expense	903,887
Net cash farm income Inventory change	-15,728 -34,767
Depreciation	-38,664
Net farm income from operations	-89,158
Gain or loss on capital sales	-
Average net farm income	-89,158
Median net farm income	-73,002
Profitability (cost)	
Rate of return on assets	-6.9 %
Rate of return on equity	-42.7 %
Operating profit margin	-17.0 %
Asset turnover rate	40.8 %
Profitability (market)	
Rate of return on assets	-5.2 %
Rate of return on equity	-12.5 %
Operating profit margin	-22.9 %
Asset turnover rate	22.8 %
Liquidity & Repayment (end of year)	
Current assets	517,694
Current liabilities	269,354
Current ratio	1.92
Working capital	248,339
Working capital to gross inc Term debt coverage ratio	28.3 % -0.64
Replacement coverage ratio	-0.51
nopiacomeno coverage racio	0.51
Solvency (end of year at cost)	_
Number of farms	9
Total farm assets Total farm liabilities	1,103,668
Total assets	1,165,833
Total liabilities	897,111
Net worth	268,722
Net worth change	-102,051
Farm debt to asset ratio	80 %
Total debt to asset ratio	77 %
Solvency (end of year at market) Number of farms	9
Total farm assets	1,962,890
Total farm liabilities	886,868
Total assets	2,200,543
Total liabilities	897,111
Net worth	1,303,431
Net worth change	-127,442 45 %
Farm debt to asset ratio Total debt to asset ratio	41 %
Nonfarm Information	11 0
Net nonfarm income	9,112
Crop Acres	01.0
Total acres owned	216 613
Total crop acres Total crop acres owned	243
Total crop acres cash rented	366
Total crop acres share rer	
-	