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Staff Paper

1998 Michigan Preliminary Cash Grain Business Analysis for Farms South of I-96

by
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1998 MICHIGAN PRELIMINARY CASH GRAIN BUSINESS ANALYSIS FOR FARMS SOUTH OF I-96

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13 pages

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A common observation during the autumn of 1998 was that the growing season had been more favorable south of I-96 than it was to the north. This highway bisects Michigan from roughly Detroit to Muskegon. The following tables are presented for this southern portion of Michigan indicating what farmers in the Telfarm accounting system achieved in terms of crop yields and financial returns during 1998. It is hoped later reports will show what cash grain farms in the area north of I-96 achieved.

These tables were developed using the Finansum software from the University of Minnesota. The format is nearly identical to that used for individual farms using Finpack's Finan to do their 1998 year end business analysis. A farm was included if 50 % or more of gross sales came from a combination of corn, soybeans, wheat, oats and barley.

The 26 farms averaged together in this report came from the following Michigan counties. Berrien, 2; Eaton, 4; Hillsdale, 3; Ingham, 3; Jackson, 2; Allegan, 3; Monroe, 4; St. Clair, 1; St. Joseph, 1; Van Buren, 1; and Washtenaw, 2. My thanks for early analyses submitted by Roger Betz, Van Varner, Vincent Greiner, Paul Marks and Ned Birkey plus the MSUE agents who worked with them.

The included farms were not randomly selected. The standard deviations, a measure of dispersion around the means published in the tables, are probably high. The farms were among the better managed cash grain farms in Michigan.

This paper is also at <http://pilot.msu.edu/user/nott/>

CROP PRODUCTION AND MARKETING SUMMARY, 1998
Preliminary 1998 Cash Grain South of I-96
(Farms sorted by Net Farm Income)

	Average Of All Farms	Average Of Low 30%	Average Of High 30%
	-----	-----	-----
Number of Farms	26	8	8
ACREAGE SUMMARY			
Total Crop Acres	1012	606	1827
Crop Acres Owned	380	236	639
Crop Acres Cash Rented	612	370	1123
Crop Acres Share Rented	20	-	65
Total Pasture Acres	-	-	-
AVERAGE PRICE RECEIVED (Cash Sales Only)			
Corn per bu.	2.35	2.32	2.47
Soybeans per bu.	6.30	6.10	6.44
Wheat, Winter per bu.	2.43	-	2.16
AVERAGE YIELD PER ACRE			
Soybeans (bu.)	48.76	43.59	49.41
Corn (bu.)	141.66	125.37	145.37
Wheat, Winter (bu.)	56.27	-	54.01
Corn, Seed (bu.)	220.00	-	-
Hay, Alfalfa (ton)	4.37	-	-
Haylage, Alfalfa (ton)	5.00	-	-
Corn Silage (ton)	17.94	-	-

FARM INCOME STATEMENT, 1998
Preliminary 1998 Cash Grain South of I-96
(Farms sorted by Net Farm Income)

	Average Of All Farms	Average Of Low 30%	Average Of High 30%
Number of Farms	26	8	8
CASH FARM INCOME			
Corn	105616	64232	156366
Corn Silage	507	-	1649
Alfalfa Hay	930	2078	-
Mixed Hay	1531	44	2079
Soybeans	97056	55602	188262
Straw	514	286	496
Winter Wheat	11356	3285	19307
Other crops	2001	151	-
Beef Calves	1810	-	91
Finish Beef Calves	10464	1254	24411
Finish Yrlg Steers	1582	2276	-
Dairy Heifers (for sale)	2687	-	-
Dairy Replacement Heifers	1923	-	6249
Raised Hogs	7126	23158	-
Finish Feeder Pigs	903	1264	-
Other livestock income	1092	-	2460
Deficiency payments	1927	-	-
Other government payments	36656	23086	60494
Custom work income	33692	29939	75206
Patronage dividends, cash	291	14	840
Insurance income	1945	527	5663
Other farm income	8234	2471	19584
Gross Cash Farm Income	329843	209667	563159

FARM INCOME STATEMENT, 1998 (Continued)

Preliminary 1998 Cash Grain South of I-96

(Farms sorted by Net Farm Income)

	Average Of All Farms	Average Of Low 30%	Average Of High 30%
	26	8	8
Number of Farms	26	8	8
CASH FARM EXPENSE			
Seed	18461	11621	31149
Fertilizer	41964	19460	80430
Crop chemicals	31180	10841	67709
Crop insurance	4693	2589	10695
Drying fuel	2649	2063	3798
Irrigation energy	264	858	-
Crop marketing	1392	2856	1
Crop miscellaneous	2319	4216	1942
Feeder livestock purchase	8360	2116	15312
Purchased feed	4524	8893	3529
Breeding fees	149	295	16
Veterinary	866	1394	595
Livestock supplies	1349	3052	291
Livestock leases	222	722	-
Grazing fees	556	1809	-
Livestock marketing	177	252	120
Interest	21863	20945	33498
Fuel & oil	7096	3021	13554
Repairs	18142	18056	25115
Custom hire	14926	3797	35704
Hired labor	18575	14097	38076
Land rent	45985	20626	80080
Machinery & bldg leases	14999	4739	32409
Real estate taxes	6008	4889	7495
Farm insurance	6281	6020	9354
Utilities	5561	4066	6116
Dues & professional fees	1158	461	2546
Hedging account deposits	-75	-	-244
Miscellaneous	8356	6346	14038
Total cash expense	288001	180101	513329
Net cash farm income	41840	29566	49830
INVENTORY CHANGES			
Crops and feed	21173	-12310	88427
Market livestock	-2209	-8669	5518
Accounts receivable	-3338	3108	-10291
Prepaid expenses and supplies	2338	-8142	15066
Accounts payable	1871	1531	5332
Total inventory change	19835	-24482	104051
Net operating profit	61676	5084	153881
DEPRECIATION AND OTHER CAPITAL ADJUSTMENTS			
Breeding livestock	-529	-1706	-371
Machinery and equipment	-21854	-16361	-28201
Buildings and improvements	-5024	-5229	-10106
Other farm capital	680	-14	654
Total depr. and other capital adj	-26726	-23310	-38024
Net farm income	34950	-18226	115858

INVENTORY CHANGES, 1998
Preliminary 1998 Cash Grain South of I-96
(Farms sorted by Net Farm Income)

	Average Of All Farms	Average Of Low 30%	Average Of High 30%
Number of Farms	26	8	8
Net cash farm income	41840	29566	49830
CROPS AND FEED			
Ending inventory	162997	83958	245098
Beginning inventory	141824	96268	156671
Inventory change	21173	-12310	88427
MARKET LIVESTOCK			
Ending inventory	14918	4718	27636
Beginning inventory	17126	13387	22118
Inventory change	-2209	-8669	5518
ACCTS RECEIVABLE & OTHER CURRENT ASSETS			
Ending inventory	14327	12266	22215
Beginning inventory	17665	9158	32506
Inventory change	-3338	3108	-10291
PREPAID EXPENSES AND SUPPLIES			
Ending inventory	28510	8611	72261
Beginning inventory	26172	16753	57195
Inventory change	2338	-8142	15066
ACCOUNTS PAYABLE			
Beginning inventory	13843	16627	20231
Ending inventory	11972	15096	14899
Inventory change	1871	1531	5332
Total inventory change	19835	-24482	104051
Net operating profit	61676	5084	153881

DEPRECIATION AND OTHER CAPITAL ADJUSTMENTS, 1998
Preliminary 1998 Cash Grain South of I-96
(Farms sorted by Net Farm Income)

	Average Of All Farms	Average Of Low 30%	Average Of High 30%
Number of Farms	26	8	8
Net operating profit	61676	5084	153881
BREEDING LIVESTOCK			
Ending inventory	2874	-	275
Capital sales	842	1902	182
Beginning inventory	4022	3608	538
Capital purchases	222	-	291
Depreciation, capital adj.	-529	-1706	-371
MACHINERY AND EQUIPMENT			
Ending inventory	72505	61768	95281
Capital sales	2400	1432	3142
Beginning inventory	72340	58545	97334
Capital purchases	24419	21015	29290
Depreciation, capital adj.	-21854	-16361	-28201
BUILDINGS AND IMPROVEMENTS			
Ending inventory	39454	28563	58162
Capital sales	73	-	-
Beginning inventory	40910	31711	59351
Capital purchases	3641	2081	8917
Depreciation, capital adj.	-5024	-5229	-10106
OTHER CAPITAL ASSETS			
Ending inventory	56674	22708	122019
Capital sales	16160	6400	39650
Beginning inventory	60355	29113	122736
Capital purchases	11798	10	38280
Depreciation, capital adj.	680	-14	654
Total depreciation, capital adj.	-26726	-23310	-38024
Net farm income	34950	-18226	115858

PROFITABILITY AND LIQUIDITY ANALYSIS, 1998
Preliminary 1998 Cash Grain South of I-96
(Farms sorted by Net Farm Income)

	Avg. Of All Farms	Avg. Of Low 30 %	Avg. Of High 30 %	Avg. Of All Farms	Avg. Of Low 30 %	Avg. Of High 30 %
Number of Farms	26	8	8	26	8	8
PROFITABILITY	----- Cost -----			----- Market -----		
Net farm income	34950	-18226	115858	55689	11728	115453
Labor and management earnings	15294	-31094	94575	13761	-19109	65899
Rate of return on assets	3.4 %	-4.4 %	10.5 %	4.2 %	1.0 %	6.9 %
Rate of return on equity	0.3 %	-19.5 %	18.6 %	3.1 %	-2.3 %	8.0 %
Operating profit margin	6.9 %	-12.1 %	15.9 %	13.1 %	4.6 %	15.8 %
Asset turnover rate	49.5 %	36.4 %	66.1 %	31.6 %	22.6 %	43.4 %
Interest on farm net worth	19656	12868	21282	41928	30837	49554
Farm interest expense	21946	20232	33445	21946	20232	33445
Value of operator lbr and mgmt.	34078	23645	49738	34078	23645	49738
Return on farm assets	22817	-21639	99565	43557	8315	99160
Average farm assets	670976	492655	950081	1049490	792148	1445053
Return on farm equity	872	-41871	66120	21611	-11916	65715
Average farm equity	327600	214464	354707	698799	513958	825905
Value of farm production	332055	179081	627600	332055	179081	627600

	Average Of All Farms	Average Of Low 30 %	Average Of High 30 %
Number of Farms	26	8	8
LIQUIDITY (Cash)			
Net cash farm income	41840	29566	49830
Net nonfarm income	16704	18841	3212
Family living and taxes	37688	25730	48224
Real estate principal payments	9936	8286	10433
Cash available for interm. debt	10921	14391	-5614
Average intermediate debt	107164	73225	196917
Years to turnover interm. debt	9.8	5.1	**
Expense as a % of income	87 %	86 %	91 %
Interest as a % of income	7 %	10 %	6 %
LIQUIDITY (Accrual)			
Total accrual farm income	345468	191796	646812
Total accrual farm expense	283792	186712	492931
Net accrual operating income	61676	5084	153881
Net nonfarm income	16704	18841	3212
Family living and taxes	37688	25730	48224
Real estate principal payments	9936	8286	10433
Available for intermediate debt	30756	-10091	98437
Average intermediate debt	107164	73225	196917
Years to turnover interm. debt	3.5	**	2.0
Expense as a % of income	82 %	97 %	76 %
Interest as a % of income	6 %	11 %	5 %

** Income insufficient to meet debt servicing requirements

BALANCE SHEET AT COST VALUES, 1998
Preliminary 1998 Cash Grain South of I-96
(Farms sorted by Net Farm Income)

Number of Farms	Average Of All Farms		Average Of Low 30 %		Average Of High 30 %	
	26		8		8	
	Beginning	Ending	Beginning	Ending	Beginning	Ending
ASSETS						
Current Farm Assets						
Cash and checking balance	2246	25722	6167	8730	280	71070
Prepaid expenses & supplies	26172	28510	16753	8611	57195	72261
Growing crops	9446	6526	3568	3616	19334	10274
Accounts receivable	4830	4094	2226	5275	5520	3268
Hedging accounts	-	-	-	-	-	-
Crops held for sale or feed	140787	161321	96268	83583	156671	245098
Crops under government loan	1037	1676	-	375	0	0
Market livestock held for sale	17126	14918	13387	4718	22118	27636
Other current assets	3389	3707	3364	3375	7652	8674
Total current farm assets	205034	246474	141733	118282	268770	438279
Intermediate Farm Assets						
Breeding livestock	4022	2874	3608	-	538	275
Machinery and equipment	72340	72505	58545	61768	97334	95281
Other intermediate assets	58824	55332	27908	21526	122343	121635
Total intermediate farm assets	135186	130711	90061	83294	220214	217191
Long-Term Farm Assets						
Farm land	251349	289962	246328	242953	295715	341703
Buildings and improvements	40910	39454	31711	28563	59351	58162
Other long-term assets	1531	1342	1205	1182	392	384
Total long-term farm assets	293790	330758	279243	272697	355458	400249
Total Farm Assets	634010	707943	511037	474273	844442	1055720
Total Nonfarm Assets	162255	176645	106853	119568	212193	243964
Total Assets	796265	884588	617890	593841	1056635	1299684
LIABILITIES						
Current Farm Liabilities						
Accrued interest	5554	5636	11474	10761	2068	2015
Accounts payable	8289	6336	5153	4336	18163	12885
Current notes	66458	113016	48803	52159	134706	285095
Government crop loans	0	1572	-	339	0	0
Principal due on term debt	34048	38177	24842	27852	54405	61244
Total current farm liabilities	114352	164741	90285	95459	209343	361238
Intermediate Farm Liabilities	86604	76104	57250	52533	159571	141797
Long-term Farm Liabilities	117828	127122	137003	123851	158830	159969
Total Farm Liabilities	318785	367967	284537	271844	527745	663004
Total Nonfarm Liabilities	20483	18384	7315	10461	24199	15201
Total Liabilities	339268	386351	291853	282305	551944	678205
Net Worth (farm and nonfarm)	456997	498237	326037	311536	504692	621479
Net Worth Change		41240		-14501		116788
RATIO ANALYSIS						
Current Farm Liabilities / Assets	56 %	67 %	64 %	81 %	78 %	82 %
Curr. & Interm Farm Liab / Assets	59 %	64 %	64 %	73 %	75 %	77 %
Long Term Farm Liab. / Assets	40 %	38 %	49 %	45 %	45 %	40 %
Total Liabilities / Assets	43 %	44 %	47 %	48 %	52 %	52 %

BALANCE SHEET AT MARKET VALUES, 1998
Preliminary 1998 Cash Grain South of I-96
(Farms sorted by Net Farm Income)

Number of Farms	Average Of All Farms		Average Of Low 30 %		Average Of High 30 %	
	26		8		8	
	Beginning	Ending	Beginning	Ending	Beginning	Ending
ASSETS						
Current Farm Assets						
Cash and checking balance	2246	25722	6167	8730	280	71070
Prepaid expenses & supplies	26172	28510	16753	8611	57195	72261
Growing crops	9446	6526	3568	3616	19334	10274
Accounts receivable	4830	4094	2226	5275	5520	3268
Hedging accounts	-	-	-	-	-	-
Crops held for sale or feed	140787	161321	96268	83583	156671	245098
Crops under government loan	1037	1676	-	375	0	0
Market livestock held for sale	17126	14918	13387	4718	22118	27636
Other current assets	3389	3707	3364	3375	7652	8674
Total current farm assets	205034	246474	141733	118282	268770	438279
Intermediate Farm Assets						
Breeding livestock	4026	2885	3608	-	538	275
Machinery and equipment	218443	217868	169293	170391	287106	273728
Other intermediate assets	58824	55332	27908	21526	122343	121635
Total intermediate farm assets	281293	276085	200809	191917	409987	395638
Long-Term Farm Assets						
Farm land	434436	488614	399819	419987	585422	641196
Buildings and improvements	79524	84646	51988	57375	73955	76082
Other long-term assets	1531	1342	1205	1182	392	384
Total long-term farm assets	515491	574602	453011	478544	659769	717662
Total Farm Assets	1001818	1097161	795553	788743	1338526	1551579
Total Nonfarm Assets	210922	241266	173278	186612	270068	351441
Total Assets	1212740	1338427	968831	975355	1608594	1903020
LIABILITIES						
Current Farm Liabilities						
Accrued interest	5554	5636	11474	10761	2068	2015
Accounts payable	8289	6336	5153	4336	18163	12885
Current notes	66458	113016	48803	52159	134706	285095
Government crop loans	0	1572	-	339	0	0
Principal due on term debt	34048	38177	24842	27852	54405	61244
Total current farm liabilities	114352	164741	90285	95459	209343	361238
Intermediate Farm Liabilities	86604	76104	57250	52533	159571	141797
Long-term Farm Liabilities	117828	127122	137003	123851	158830	159969
Total Farm Liabilities	318785	367967	284537	271844	527745	663004
Total Nonfarm Liabilities	20483	18384	7315	10461	24199	15201
Total Deferred Liabilities	6979	7650	-	-	22683	24863
Total Liabilities	346247	394001	291853	282305	574627	703068
Net Worth (farm and nonfarm)	866493	944426	676978	693050	1033967	1199952
Net Worth Change		77933		16072		165985
RATIO ANALYSIS						
Current Farm Liabilities / Assets	56 %	67 %	64 %	81 %	78 %	82 %
Curr. & Interm Farm Liab. / Assets	41 %	46 %	43 %	48 %	54 %	60 %
Long Term Farm Liabilities / Assets	23 %	22 %	30 %	26 %	24 %	22 %
Total Liabilities / Assets	29 %	29 %	30 %	29 %	36 %	37 %

STATEMENT OF CASH FLOWS, 1998
Preliminary 1998 Cash Grain South of I-96
(Farms sorted by Net Farm Income)

	Average Of All Farms	Average Of Low 30%	Average Of High 30%
Number of Farms	26	8	8
(a) Beginning cash balance (farm & nonfarm)	5178	12764	280
CASH FROM OPERATING ACTIVITIES			
Gross cash farm income	329842	209667	563159
Net nonfarm income (+)	16704	18841	3212
Total cash farm expense (-)	288001	180101	513329
Apparent family living expense (-)	33078	24021	38148
Income and social security tax (-)	4610	1710	10076
(b) Cash from operations (=)	20857	22677	4818
CASH FROM INVESTING ACTIVITIES			
Sale of breeding livestock	842	1902	182
Sale of machinery & equipment (+)	2400	1432	3142
Sale of farm land (+)	2233	7256	-
Sale of farm buildings (+)	73	-	-
Sale of other farm assets (+)	16160	6400	39650
Sale of nonfarm assets (+)	5371	78	-
Purchase of breeding livestock (-)	222	-	291
Purchase of machinery & equip. (-)	24419	21015	29290
Purchase of farm land (-)	39079	-	44127
Purchase of farm buildings (-)	3641	2081	8917
Purchase of other farm assets (-)	11798	10	38280
Purchase of nonfarm assets (-)	2899	100	0
(c) Cash from investing activities (=)	-54981	-6138	-77931
CASH FROM FINANCING ACTIVITIES			
Money borrowed	212471	104591	459131
Cash gifts and inheritances (+)	28820	1006	11153
Principal payments (-)	161599	115329	318568
Dividends paid (-)	-	-	-
Gifts given (-)	21412	1538	7813
(d) Cash from financing activities (=)	58280	-11269	143903
(e) Net change in cash balance (b+c+d)	24156	5270	70790
Ending cash balance (farm & nonfarm)	29334	18033	71070

FINANCIAL GUIDELINES MEASURES, 1998
Preliminary 1998 Cash Grain South of I-96
(Farms sorted by Net Farm Income)

	Average For All Farms		Average For Low 30 %		Average For High 30 %	
	-----		-----		-----	
Number of Farms	26		8		8	
LIQUIDITY	Beginning	Ending	Beginning	Ending	Beginning	Ending
Current ratio	1.79	1.50	1.57	1.24	1.28	1.21
Working capital	90682	81733	51448	22823	59427	77042
SOLVENCY (Market)	Beginning	Ending	Beginning	Ending	Beginning	Ending
Farm debt to asset ratio	33 %	34 %	36 %	34 %	41 %	44 %
Farm equity to asset ratio	67 %	66 %	64 %	66 %	59 %	56 %
Farm debt to equity ratio	48 %	52 %	56 %	53 %	70 %	79 %
PROFITABILITY	Cost	Market	Cost	Market	Cost	Market
Rate of return on farm assets	3.4 %	4.2 %	-4.4 %	1.0 %	10.5 %	6.9 %
Rate of return on farm equity	0.3 %	3.1 %	-19.5 %	-2.3 %	18.6 %	8.0 %
Operating profit margin	6.9 %	13.1 %	-12.1 %	4.6 %	15.9 %	15.8 %
Net farm income	34950	55689	-18226	11728	115858	115453
REPAYMENT CAPACITY	Cash	Accrual	Cash	Accrual	Cash	Accrual
Term debt coverage ratio	71 %	112 %	93 %	36 %	27 %	180 %
Capital replacement margin	-14001	5834	-3126	-27608	-49587	54464
EFFICIENCY						
Asset turnover rate (market)	31.6 %		22.6 %		43.4 %	
Operating expense ratio	75.8 %		86.8 %		71.0 %	
Depreciation expense ratio	7.7 %		12.2 %		5.9 %	
Interest expense ratio	6.4 %		10.5 %		5.2 %	
Net farm income ratio	10.1 %		-9.5 %		17.9 %	

LABOR ANALYSIS

	Average For All Farms	Average For Low 30 %	Average For High 30 %
	-----	-----	-----
Number of Farms	26	8	8
Total unpaid labor hours	2616	2095	3408
Total hired labor hours	1562	1210	3066
Total labor hours per farm	4178	3305	6474
Value of farm production / hour	79.47	54.18	96.95
Net farm income / unpaid hour	13.36	-8.70	34.00

OPERATOR INFORMATION & NONFARM SUMMARY, 1998
Preliminary 1998 Cash Grain South of I-96
(Farms sorted by Net Farm Income)

	Average Of All Farms	Average Of Low 30%	Average Of High 30%
Number of Farms	26	8	8
OPERATOR INFORMATION			
Average number of operators	1.3	1.1	1.4
Average age of operators	51.2	54.9	45.4
Average number of years farming	28.8	31.7	22.6
NONFARM INCOME			
Nonfarm wages & salary	7347	16280	-
Nonfarm business income	2541	-	2843
Nonfarm rental income	4974	759	-600
Nonfarm interest income	639	634	844
Nonfarm cash dividends	89	11	-
Tax refunds	147	275	124
Nontaxable nonfarm income	-	-	-
Gifts and inheritances	28820	1006	11153
Other nonfarm income	967	882	-
Total nonfarm income	45524	19847	14364

	Average For All Farms Beginning	Ending
NONFARM ASSETS (Mkt)		
Checking & savings	2932	3612
Stocks & bonds	15491	16674
Other current assets	1191	1353
Furniture & appliances	8000	8692
Nonfarm vehicles	8392	7623
Cash value of life ins.	10589	11888
Retirement accounts	25772	30047
Other intermediate assets	66640	74269
Nonfarm real estate	58002	67425
Other long term assets	13912	19682
Total nonfarm assets	210922	241266