

# 2014 Iowa Farm Costs and Returns

*Ag Decision Maker*

File C1-10

The farm record data utilized in this report were obtained from the Iowa Farm Business Association annual summary. The average of all farms in each table represents a weighted average of the values for each size group listed. Weighting factors are based on the number of farms in each size group in the state, as computed from the most recent Census of Agriculture. Only farms with sales of \$100,000 or more were counted in making the weighting. Thus, overall averages should be representative of full-time Iowa farms.

All records were kept on the accrual, or inventory, basis. On rented farms, only operator income and expenses were recorded. Data for ending assets and liabilities represent those of the operator only, and do not include the value of rented land.

## Definition of Terms Used

**Net farm income, cash** - total sales and other cash income minus cash expenses, including purchases of livestock and feed. Does not include principal borrowed or repaid, sales and purchases of capital assets or nonfarm income and expenses.

**Net farm income, accrual** - cash net income adjusted for inventory changes and accrued expenses. Represents a return to unpaid labor, net worth (equity), management and profit.

**Value of farm production** - value of crops produced (at market price), livestock production (net of feed and purchased livestock), inventory value gain or loss and miscellaneous income. This measures the total production per farm.

**Management return** - accrual net farm income less 4 percent interest on value of equity (net worth) and wages for operator and family labor. The wage rate used for operator labor was \$2,500 per month.

**Inventory value gain or loss** - change in value of crops or livestock sold due to differences in opening inventory price and final sale price.

**Livestock returns per \$100 feed fed** - value of livestock production minus livestock purchases, divided by value of feed fed, multiplied by 100.

**Machinery cost per crop acre** - total of machinery repairs, fuel, custom machine hire, utilities, machinery depreciation and auto expense, less 75 percent of all custom hire income received, divided by crop acres. Depreciation is estimated at 10 percent of current value of the machinery. Interest is not included.

**Return to owned assets** - net farm income, plus interest expense, minus value of operator and family labor, divided by total farm assets owned.

**Return to equity** - net farm income minus value of operator and family labor, divided by net worth.

**Operating profit margin ratio** - net farm income, plus interest expense, minus value of operator and family labor, divided by value of farm production.

**Working capital** - current assets minus current liabilities.



The data for this report were collected by Iowa Farm Business Association consultants and compiled by Iowa State University Extension and Outreach.

FM 1789 Revised January 2016

## Iowa Farm Costs and Returns 2010-2014

The following summary is intended to provide a general picture of costs and returns to well-managed, full-time Iowa farms. The values presented are averages; however, results vary widely from one farm to the next.

Although the reported farm net worth was higher in 2014 than in 2013, the net worth per acre farmed declined by \$76, since the size of the average farm increased by 30 acres. Investments in land and improvements, and machinery and equipment continued to increase for the third consecutive year. The accrual net farm income increased by \$27,582 to \$99,177 in 2014, driven by higher livestock income. That income level is the second lowest since 2007. Livestock returns per \$100 feed fed increased by 54 percent to \$223 in 2014; while crop value per acre declined by 19 percent to \$667 due to substantially lower crop prices. The debt-to-asset ratio increased for a second consecutive year in 2014 to 0.19. The current asset-to-debt ratio, a measure of liquidity, declined to 3.52 in 2014, its lowest level since 2007.

**Table 1. Comparison by Years**

	2014	2013	2012 <sup>1/</sup>	2011	2010
<b>Financial Returns</b>					
Net farm income-accrual	\$99,177	\$71,595	\$243,072	\$187,340	\$140,991
Return to management	-8,922	-32,564	147,071	121,457	76,655
Net farm income-cash	143,158	184,949	214,411	127,737	128,642
<b>Resources Used</b>					
Acres per farm	692	662	631	530	600
Labor months	17	16	15	13	15
Livestock, feed, supplies	\$644,624	\$608,170	\$645,734	\$444,517	\$443,654
Machinery and equipment	452,453	409,991	343,356	242,080	259,174
Land and improvement	1,271,960	1,190,214	1,088,910	825,666	830,453
Total farm assets	\$2,369,037	\$2,208,375	\$2,078,000	\$1,512,264	\$1,533,281
Farm net worth	\$1,843,316	\$1,765,312	\$1,690,684	\$1,131,715	\$1,238,211
<b>Sources of Income</b>					
Livestock income less feed	\$108,778	\$39,073	\$13,277	\$24,869	\$27,782
Crop production	486,806	562,763	577,676	370,467	371,089
Miscellaneous	60,255	43,046	39,626	29,606	28,768
Crop inventory gain or loss	-27,271	-92,610	42,487	66,217	31,362
Value of farm production	\$628,569	\$552,272	\$673,066	\$491,158	\$459,001
<b>Expenses</b>					
Operating	\$294,344	\$273,314	\$268,190	\$189,062	\$193,473
Fixed	232,310	210,532	186,105	129,392	135,752
<b>Efficiency</b>					
Corn yield (bu. per acre)	184	169	149	172	174
Average sale price for corn, per bushel	\$4.32	\$6.35	\$6.45	\$5.58	\$3.69
Crop value per acre	\$667	\$821	\$882	\$671	\$584
Machinery cost per crop acre	\$139	\$150	\$149	\$135	\$118
Livestock returns per \$100 feed fed	\$223	\$145	\$102	\$135	\$149
Value of farm production per person	\$466,608	\$453,197	\$588,093	\$447,424	\$397,576
Value of farm production per \$1 expense	\$1.20	\$1.19	\$1.68	\$1.71	\$1.52
Value of farm production per \$1 assets	\$0.24	\$0.23	\$0.31	\$0.30	\$0.28
% return to owned assets (ROA)	2.5%	2.2%	10.6%	10.6%	7.6%
% return to equity capital (ROI)	2.4%	1.8%	11.8%	11.8%	8.1%
<b>Financial</b>					
Debt-to-asset ratio	0.19	0.17	0.16	0.16	0.17
Current asset-to-debt ratio	3.52	4.92	7.08	5.51	4.69
Farm net worth per acre farmed	\$2,805	\$2,881	\$2,765	\$2,681	\$2,142

<sup>1/</sup> Revised using weights from the 2012 Census of Agriculture.

## Assets and Liabilities

A breakdown of farm assets and liabilities by value of gross sales per farm is shown in Table 2. Both assets and liabilities increase with farm size. The total debt-to-asset ratio tends to increase with farm size, indicating that larger farms utilized relatively more credit. Only the largest farms experienced growth in their net worth from last year. Relative measures of liquidity suggest that smaller farms were better positioned to cover short term liabilities than larger farms.

**Table 2. Assets and Liabilities by Size of Farm, End of Year Values**

	Average	Total Value of Gross Sales			
		\$100,000 to \$199,999	\$200,000 to \$399,999	\$400,000 to \$799,999	\$800,000 and above
<b>Farm Assets</b>					
Feeding livestock	\$139,087	\$6,506	\$15,126	\$23,575	\$431,243
Corn	211,995	53,125	115,592	214,715	390,591
Soybeans	108,224	30,854	69,568	110,179	187,548
Other feed	11,097	3,014	6,474	6,726	23,998
Supplies, prepaid expenses	174,220	56,344	96,577	179,723	308,824
Total short-term assets	\$644,624	\$149,843	\$303,337	\$534,918	\$1,342,204
Breeding livestock	\$35,584	\$11,706	\$22,563	\$27,037	\$69,226
Machinery, equipment	416,869	92,969	223,028	425,473	775,924
Total intermediate assets	\$452,453	\$104,675	\$245,591	\$452,510	\$845,150
Land and improvements	\$1,271,960	\$588,530	\$749,423	\$1,219,866	\$2,189,765
Total assets	\$2,369,037	\$843,048	\$1,298,351	\$2,207,294	\$4,377,119
<b>Farm Liabilities</b>					
Operating notes, accounts payable	\$192,982	\$31,820	\$76,991	\$130,352	\$448,515
Intermediate and long-term due	7,483	1,545	4,372	5,947	15,210
FSA marketing loans	6,885	1,319	4,879	6,594	12,318
Total short-term debt	\$207,350	\$34,684	\$86,242	\$142,892	\$476,043
Intermediate-term debt	\$69,069	\$4,373	\$32,965	\$61,540	\$146,869
Long-term debt	\$249,302	\$26,345	\$137,089	\$218,033	\$511,776
Total liabilities	\$525,721	\$65,402	\$256,296	\$422,466	\$1,134,688
<b>Farm Net Worth</b>					
Net worth change from last year	\$42,194	-\$2,283	-\$672	-\$2,336	\$146,494
Working capital	\$437,274	\$115,159	\$217,095	\$392,026	\$866,161
Current asset-to-debt ratio	3.52	4.32	3.52	3.74	2.82
Working capital per \$1 of gross revenue	\$0.69	\$0.85	\$0.74	\$0.72	\$0.44
Total debt-to-asset ratio	0.19	0.08	0.20	0.19	0.26
Total crop acres farmed	692	196	433	716	1,200
Months of labor used	17	8	12	15	29
Farm net worth per acre farmed	\$2,805	\$3,968	\$2,407	\$2,494	\$2,702

## Income and Expenses

A summary of operating and fixed expenses by size of farm is shown in Table 3. All expenses increase with farm size. Crop expenses include seed, fertilizer, pesticides and other expenses related to crop production. The average farm had about \$208,000 in cash available for replacement of capital assets, expansion, savings, living expenses and income taxes. That is \$20,000 less than in 2013.

**Table 3. Summary of Cash Income and Expenses by Size of Farm**

	Average	Total Value of Gross Sales			
		\$100,000 to \$199,999	\$200,000 to \$399,999	\$400,000 to \$799,999	\$800,000 and above
<b>Income</b>					
Livestock sales	\$296,733	\$8,862	\$21,854	\$38,760	\$942,420
Crop sales	394,924	98,501	238,425	425,876	684,903
Other cash income	113,754	20,849	44,506	103,069	240,234
<b>Total cash income</b>	<b>\$805,411</b>	<b>\$128,212</b>	<b>\$304,785</b>	<b>\$567,705</b>	<b>\$1,867,557</b>
<b>Expenses</b>					
Machinery and equipment repairs	\$24,245	\$6,275	\$13,136	\$22,954	\$46,058
Fuel and oil	23,350	4,770	11,899	21,086	46,710
Machine hire	12,733	4,026	7,997	12,460	22,433
Auto and truck expense	5,867	1,707	3,815	7,653	8,598
Utilities	8,591	2,390	4,629	8,015	16,345
Labor hired	19,340	1,119	3,282	12,576	50,462
Livestock expense	20,393	605	1,891	3,883	63,342
Crop expense	161,418	41,458	92,525	162,776	293,564
Miscellaneous	18,408	2,844	4,588	11,436	46,152
<b>Total cash operating expense</b>	<b>\$294,344</b>	<b>\$65,194</b>	<b>\$143,762</b>	<b>\$262,839</b>	<b>\$593,664</b>
Cash rent	\$109,986	\$23,447	\$45,895	\$101,545	\$226,087
Property taxes	7,655	3,865	5,288	7,519	12,153
Insurance	22,511	6,685	12,913	21,234	41,690
Building repairs	7,996	1,791	3,638	7,333	16,171
Interest	22,263	3,323	11,442	17,283	47,751
<b>Total cash fixed expense</b>	<b>\$170,411</b>	<b>\$39,111</b>	<b>\$79,176</b>	<b>\$154,914</b>	<b>\$343,852</b>
Feed purchased	\$69,273	\$1,396	\$5,057	\$9,282	\$220,255
Livestock purchased	128,225	987	5,910	7,936	419,952
<b>Total cash expenses</b>	<b>\$662,253</b>	<b>\$106,688</b>	<b>\$233,905</b>	<b>\$434,972</b>	<b>\$1,577,723</b>
<b>Cash net farm income</b>	<b>\$143,158</b>	<b>\$21,524</b>	<b>\$70,880</b>	<b>\$132,733</b>	<b>\$289,834</b>
Loans received minus loans repaid	\$41,679	\$6,649	\$5,507	\$23,750	\$110,469
<b>Net farm cash flow</b>	<b>\$184,837</b>	<b>\$28,173</b>	<b>\$76,387</b>	<b>\$156,483</b>	<b>\$400,303</b>
Nonfarm income	\$23,121	\$28,752	\$23,864	\$17,808	\$23,769
<b>Net cash available</b>	<b>\$207,958</b>	<b>\$56,925</b>	<b>\$100,251</b>	<b>\$174,291</b>	<b>\$424,072</b>

A more accurate measure of net farm income is achieved by netting out changes in the values of beginning and ending inventories, subtracting a depreciation charge for farm assets and including accrued income and expenses. A summary of income and expenses using accrual accounting is shown in Table 4. The average accrual net farm income ranged from \$16,389 for the smallest farms to \$225,516 for the largest. Return to management, after subtracting a return to unpaid labor and equity capital invested, was negative for all but the largest farm size and averaged -\$8,922.

**Table 4. Summary of Accrual Income and Expenses by Size of Farm**

	Average	Total Value of Gross Sales			
		\$100,000 to \$199,999	\$200,000 to \$399,999	\$400,000 to \$799,999	\$800,000 and above
<b>Income</b>					
Total cash income	\$805,411	\$128,212	\$304,785	\$567,705	\$1,867,557
Accrued income	58,662	13,321	1,454	-10,926	198,294
Change in crop and livestock inventories	-40,744	-5,586	-13,078	-13,189	-111,003
<b>Total accrual income (gross revenue)</b>	<b>\$823,329</b>	<b>\$135,947</b>	<b>\$293,161</b>	<b>\$543,590</b>	<b>\$1,954,848</b>
<b>Total cash expenses</b>					
Depreciation	\$662,253	\$106,688	\$233,905	\$434,972	\$1,577,723
<b>Total accrual expenses</b>	<b>\$724,152</b>	<b>\$119,558</b>	<b>\$264,332</b>	<b>\$494,237</b>	<b>\$1,699,332</b>
<b>Accrual net farm income</b>	<b>\$99,177</b>	<b>\$16,389</b>	<b>\$28,829</b>	<b>\$49,353</b>	<b>\$255,516</b>
Charge for unpaid labor	28,801	19,667	26,295	29,855	35,667
Charge for equity capital (4%)	79,298	36,835	45,017	78,057	136,080
<b>Return to management</b>	<b>-\$8,922</b>	<b>-\$40,113</b>	<b>-\$42,483</b>	<b>-\$58,559</b>	<b>\$83,769</b>

The value of all crops and livestock produced on the farm is shown in Table 5. Losses from declining crop prices after the beginning of the year are shown separately and averaged \$27,271. On average, 11 percent of the value of production was left as net farm income after all expenses were paid.

**Table 5. Value of Farm Production by Size of Farm**

	Average	Total Value of Gross Sales			
		\$100,000 to \$199,999	\$200,000 to \$399,999	\$400,000 to \$799,999	\$800,000 and above
Value of livestock production	\$226,880	\$12,385	\$25,524	\$38,797	\$701,313
Feed fed	118,102	4,802	10,260	18,084	370,575
Livestock production minus feed cost	108,778	7,583	15,264	20,713	330,738
Value of crop production	486,806	110,467	270,784	486,517	905,378
Miscellaneous income	60,255	9,657	18,790	51,836	134,684
Crop inventory and marketing loss	-27,271	7,696	-16,139	-31,315	-54,860
<b>Value of farm production</b>	<b>\$628,569</b>	<b>\$135,403</b>	<b>\$288,699</b>	<b>\$527,751</b>	<b>\$1,315,940</b>
<b>Allocation of gross revenue</b>					
Operating expense	77%	76%	76%	77%	78%
Interest expense	3%	2%	4%	3%	2%
Depreciation expense	9%	9%	10%	11%	6%
Net farm income	11%	12%	10%	9%	13%
	100%	100%	100%	100%	100%

## Efficiency Factors

Efficiency can be measured in many ways. Several efficiency factors are shown in Table 6 for the four farm size groups. The value of farm production per person increases with farm size, but value of production per dollar of expense was similar for all size groups. Return on equity averaged 2.4 percent, and return on owned assets averaged 2.5 percent, but the returns for smaller farms was null.

**Table 6. Overall Efficiency Factors by Size of Farm**

	Average	Total Value of Gross Sales			
		\$100,000 to \$199,999	\$200,000 to \$399,999	\$400,000 to \$799,999	\$800,000 and above
<b>Crops</b>					
Acres in crops	692	196	433	716	1,200
Crop value per acre	\$667	\$564	\$625	\$680	\$754
Crop acres per person	466	294	433	581	497
Machinery cost per crop acre	\$139	\$158	\$114	\$151	\$139
Machinery investment per crop acre	\$504	\$455	\$493	\$547	\$505
<b>Livestock</b>					
Livestock returns per \$100 feed fed	\$223	\$258	\$249	\$212	\$189
<b>Financial</b>					
Value of farm production per person	\$466,608	\$252,927	\$337,521	\$470,344	\$706,256
Value of farm production per \$1 expense	\$1.20	\$1.19	\$1.19	\$1.14	\$1.26
Value of farm production per \$1 assets	\$0.24	\$0.16	\$0.22	\$0.24	\$0.30
% return to owned assets (ROA)	2.5%	0.0%	1.1%	1.7%	6.1%
% return to equity capital (ROI)	2.4%	0.0%	0.3%	1.1%	6.8%
Operating profit margin ratio	9.2%	0.0%	5.0%	7.1%	20.3%
Average interest rate on debt	4.4%	5.1%	4.5%	4.1%	4.2%

## High-, Middle- and Low-profit Farms

Profits vary greatly among farms. In Table 7, farms were ranked by return to management and sorted into three groups. The high third group is the most livestock intensive group (highest livestock sales), while the low third group is the most crop intensive group (highest crop sales). The middle third group is characterized as having the smallest average number of acres in crop production and the highest livestock returns per \$100 feed fed. The low third group had the highest machinery investments per crop acre and the highest interest expense, averaging a negative return to management of \$144,569. However, its debt-to-asset ratio is the lowest among the three groups. The return to management was positive for the middle and the high third group: \$153,933 and \$193,676, respectively.

**Table 7. Comparison of High- and Low-profit Farms, Ranked by Return to Management <sup>1/</sup>**

	High Third	Middle Third	Low Third	Your Farm
<b>Farm Income</b>				
Crop sales	\$411,200	\$343,055	\$611,171	_____
Livestock sales	932,978	219,589	78,204	_____
Other income and inventory	336,558	66,590	64,477	_____
Accrued income	119,247	9,413	12,940	_____
Gross revenue	\$1,799,983	\$638,647	\$766,792	_____
<b>Operating expenses</b>				
Operating expenses	\$440,052	\$171,551	\$369,583	_____
Fixed expenses	291,891	173,670	334,647	_____
Feed purchased	336,505	26,734	31,432	_____
Livestock purchased	408,782	25,569	33,799	_____
Total expenses	\$1,477,230	\$397,524	\$769,461	_____
Accrual Net Farm Income	\$322,753	\$241,123	-\$2,669	_____
Operator and family labor charge	\$32,559	\$27,170	\$31,471	_____
Charge for equity capital	96,518	60,020	110,429	_____
Return to Management	\$193,676	\$153,933	-\$144,569	_____
<b>Crops</b>				
Acres in crops	1,219	607	1,004	_____
Crop value per acre	\$796	\$745	\$745	_____
Crop acres per person	563	516	709	_____
Machinery cost per crop acre	\$131	\$147	\$159	_____
Machinery investment per crop acre	\$435	\$512	\$592	_____
<b>Livestock</b>				
Livestock returns per \$100 feed fed	\$236	\$243	\$213	_____
<b>Financial</b>				
Value of farm production per person	\$623,594	\$405,736	\$504,831	_____
Value of farm production per \$1 expense	\$1.48	\$1.15	\$0.97	_____
Value of farm production per \$1 assets	0.33	0.26	0.22	_____
% return to owned assets	11.3%	4.0%	0.0%	_____
% return to equity	13.7%	3.8%	-0.7%	_____
Operating profit margin ratio	0.34	0.23	0.00	_____
Debt-to-asset ratio	0.27	0.21	0.21	_____
<b>Allocation of Value of Gross Revenue</b>				
Operating expense	75%	59%	86%	_____
Interest expense	2%	2%	4%	_____
Depreciation expense	5%	4%	11%	_____
Net farm income	18%	35%	0%	_____

<sup>1/</sup> Values have not been adjusted for size of business.

## Crop Production

Details of crop production income and expenses per acre are summarized in Table 8. Acres rented under a share lease are reduced to reflect only the tenant's share of total costs, so that expenses per acre are comparable to expenses on owned or cash rented acres.

Some expenses, such as cash rent, did not occur on all farms or on all acres, but are shown as the average cost over all acres. Total economic costs include a 4 percent opportunity cost charge for the farm net worth capital, a depreciation charge, and a charge for operator and family labor.

The numbers presented in Table 8 refer to simple, unweighted averages across all farms included in the Iowa Farm Business Association Summary Report. In previous years, Table 8 reported weighted averages.

**Table 8. Crop Production**

	All Corn	Soybeans	Alfalfa Hay	Oats <sup>1/</sup>
Acres, operator share	436	344	36	47
Yield, bushels or tons per acre	184	54	4	68
Selling price per bushel or ton	\$4.32	\$12.08	\$149.29	\$3.58
Crop value per acre	\$793	\$656	\$582	\$242
<b>Crop Expenses</b>				
Seed per acre	\$117.56	\$58.79	\$15.67	\$8.09
Fertilizer and lime	166.08	30.43	23.09	28.22
Herbicide	41.01	39.94	0.88	0.00
Insecticide	6.89	6.98	0.75	0.00
Drying and storage	20.12	1.88	0.06	0.00
Machinery, fuel, repairs, machine hire	81.20	72.68	78.10	64.58
Utilities	9.27	8.11	6.68	9.68
Insurance	40.44	36.81	17.62	38.41
Hired labor	13.54	11.75	17.52	6.92
Interest	28.62	24.14	19.39	17.63
Cash rent	165.38	156.55	71.52	112.94
Property taxes and building repairs	10.33	9.95	7.91	9.25
Other crop expenses	21.77	17.72	16.63	14.21
Total cash crop expenses	\$722.21	\$475.73	\$275.82	\$309.93
Machinery depreciation	\$62.33	\$57.65	\$39.48	\$59.88
Building depreciation	16.24	14.11	10.94	7.80
Charge for equity capital	103.84	101.42	75.31	61.97
Unpaid labor value	33.88	34.23	34.06	25.60
Total economic cost per acre	\$938.50	\$683.14	\$435.61	\$465.18
Total economic cost per bushel or ton	\$5.11	\$12.58	\$111.69	\$6.89
Total cash flow needed per acre	\$722.21	\$475.73	\$275.82	\$309.93
Total cash flow needed per bushel or ton	\$3.94	\$8.76	\$70.72	\$4.59

<sup>1/</sup> Figures based on reports from 7 farms.



## Trends

Table 9 illustrates trends in production and financial efficiency over the past 10 years. Livestock income per \$100 feed fed shows a cyclical pattern, but in 2014 it was 50 percent more than the 10-year average. The average corn yield of 184 was 7 percent higher than the 10-year average.

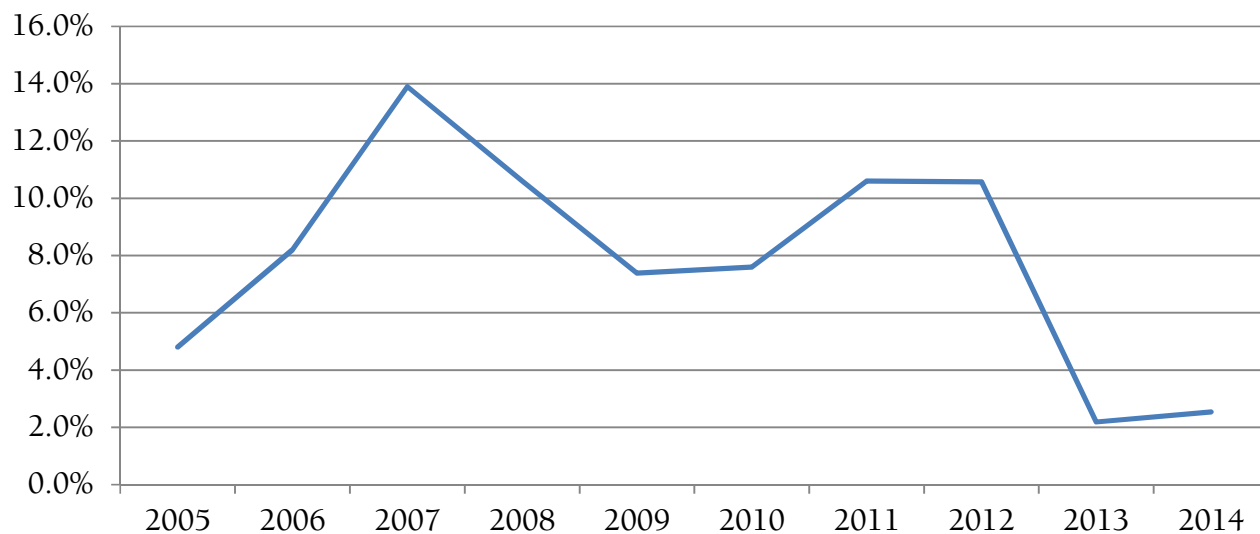
The value of farm production per dollar of expense, \$1.20 was the second lowest in the 10-year period, as was the percent return to owned assets at 2.5 percent.

**Table 9. Trends in Production and Financial Efficiency on Iowa Farms**

Year	Livestock Income per \$100 Feed Fed	Corn Yield Bushels per Acre	Value of Farm Production per \$1 Expense	Crop Value per Acre	Percent Return to Owned Assets
2005	\$203	165	\$1.27	\$335	4.8%
2006	178	166	1.47	454	8.2%
2007	147	171	1.57	576	13.9%
2008	124	179	1.39	541	10.6%
2009	118	183	1.43	562	7.4%
2010	149	174	1.52	584	7.6%
2011	135	172	1.71	671	10.6%
2012 <sup>1/</sup>	102	149	1.68	882	10.6%
2013	145	169	1.19	821	2.2%
2014	223	184	1.20	667	2.5%
10-year average	\$152	171	\$1.44	\$609	7.8%

<sup>1/</sup> Revised using weights from the 2012 Census of Agriculture.

### Percent Return to Owned Assets



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**. . . and justice for all**

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Issued in furtherance of Cooperative Extension work, Acts of May 8 and July 30, 1914, in cooperation with the U.S. Department of Agriculture. Cathann A. Kress, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

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