The farm record data utilized in this report were obtained from the Iowa Farm Business Association. 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 mid-size to large, commercial 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% 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% of all custom hire income received, divided by crop acres. Depreciation is estimated at 10% of current value of the machinery. Interest is not included.

**Return on assets**—Net farm income, plus interest expense, minus value of operator and family labor, divided by total farm assets owned.

**Return on 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.
Iowa Farm Costs and Returns 2019-2023

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. Farms are grouped according to Total Value of Gross Sales, and the State Averages for 2023 and 2022 are calculated using the number of Iowa farms in each group as reported in the 2022 Census of Agriculture.

The average number of crop acres per farm increased by 11 acres to 587 acres in 2023, the second lowest mark since 2012. The average value of farm net worth decreased by $4,559 (-0.2%), driven by a larger increase in total farm liabilities ($119,987) than in total farm assets ($115,428). Consequently, the farm net worth per acre farmed decreased by 2% to $3,391.

The average accrual net farm income dropped by 78% to $64,583 in 2023, the lowest value since 2018, accumulating a reduction of $277,251 from the 2021 peak. The average value of farm production declined by 18% to $710,030 in 2023, driven mostly by a crop inventory value loss of $90,838.

Livestock returns per $100 feed fed increased by 21% to $188 in 2023, the highest value since 2014. The average sale price for corn declined by 2% to $6.27 in 2023, and the average corn yield was 214 bushels per acre (2% higher than in 2022). The average debt-to-asset ratio increased slightly to 0.23 in 2023, but remained below its long-term average. The average current asset-to-debt ratio, a relative measure of liquidity, declined from 6.87 in 2022 to 4.31 in 2023, but remained above its long-term average.

### Table 1. Comparison by Years.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net farm income, accrual</td>
<td>$64,583</td>
<td>$294,202</td>
<td>$341,834</td>
<td>$132,339</td>
<td>$77,946</td>
</tr>
<tr>
<td>Return to management</td>
<td>-54,147</td>
<td>181,005</td>
<td>232,912</td>
<td>25,327</td>
<td>-31,252</td>
</tr>
<tr>
<td>Net farm income, cash</td>
<td>141,484</td>
<td>206,891</td>
<td>153,383</td>
<td>134,119</td>
<td>85,097</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resources Used</th>
<th>2023</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres in crops</td>
<td>587</td>
<td>577</td>
<td>599</td>
<td>647</td>
<td>674</td>
</tr>
<tr>
<td>Labor months</td>
<td>21</td>
<td>19</td>
<td>20</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Livestock, feed, supplies</td>
<td>$762,448</td>
<td>$831,441</td>
<td>$746,988</td>
<td>$579,074</td>
<td>$600,110</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>499,392</td>
<td>443,804</td>
<td>429,761</td>
<td>446,602</td>
<td>472,898</td>
</tr>
<tr>
<td>Land and improvements</td>
<td>1,427,976</td>
<td>1,299,143</td>
<td>1,426,445</td>
<td>1,497,413</td>
<td>1,470,496</td>
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<tr>
<td>Total farm assets</td>
<td>$2,689,816</td>
<td>$2,574,388</td>
<td>$2,603,195</td>
<td>$2,523,089</td>
<td>$2,543,504</td>
</tr>
<tr>
<td>Farm net worth</td>
<td>$1,991,341</td>
<td>$1,995,900</td>
<td>$1,899,545</td>
<td>$1,803,078</td>
<td>$1,791,128</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Value of Farm Production</th>
<th>2023</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock income less feed, purchases for resale</td>
<td>$58,097</td>
<td>$59,320</td>
<td>$72,602</td>
<td>$34,389</td>
<td>$64,130</td>
</tr>
<tr>
<td>Crop production</td>
<td>622,649</td>
<td>638,567</td>
<td>491,399</td>
<td>418,614</td>
<td>472,898</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>120,122</td>
<td>95,762</td>
<td>121,544</td>
<td>193,776</td>
<td>127,320</td>
</tr>
<tr>
<td>Crop inventory gain or loss</td>
<td>-90,838</td>
<td>71,904</td>
<td>179,911</td>
<td>9,954</td>
<td>15,247</td>
</tr>
<tr>
<td>Value of farm production</td>
<td>$710,030</td>
<td>$865,552</td>
<td>$865,456</td>
<td>$656,733</td>
<td>$634,555</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cash Expenses</th>
<th>2023</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating</td>
<td>$372,481</td>
<td>$325,753</td>
<td>$279,820</td>
<td>$279,869</td>
<td>$301,941</td>
</tr>
<tr>
<td>Fixed</td>
<td>272,965</td>
<td>245,597</td>
<td>243,802</td>
<td>244,525</td>
<td>254,668</td>
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</table>

<table>
<thead>
<tr>
<th>Efficiency</th>
<th>2023</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn yield (bushels per acre)</td>
<td>214</td>
<td>210</td>
<td>218</td>
<td>189</td>
<td>199</td>
</tr>
<tr>
<td>Average sale price for corn, per bushel</td>
<td>$6.27</td>
<td>$6.42</td>
<td>$5.01</td>
<td>$3.44</td>
<td>$3.68</td>
</tr>
<tr>
<td>Crop value per acre</td>
<td>$1,006</td>
<td>$1,078</td>
<td>$777</td>
<td>$605</td>
<td>$606</td>
</tr>
<tr>
<td>Machinery cost per crop acre</td>
<td>$211</td>
<td>$196</td>
<td>$172</td>
<td>$149</td>
<td>$145</td>
</tr>
<tr>
<td>Livestock returns per $100 feed fed</td>
<td>$188</td>
<td>$155</td>
<td>$184</td>
<td>$122</td>
<td>$156</td>
</tr>
<tr>
<td>Gross revenue per person</td>
<td>$471,017</td>
<td>$558,975</td>
<td>$540,232</td>
<td>$435,641</td>
<td>$416,983</td>
</tr>
<tr>
<td>Gross revenue per $1 expense</td>
<td>$1.11</td>
<td>$1.45</td>
<td>$1.59</td>
<td>$1.21</td>
<td>$1.13</td>
</tr>
<tr>
<td>Gross revenue per $1 assets</td>
<td>$0.30</td>
<td>$0.36</td>
<td>$0.34</td>
<td>$0.28</td>
<td>$0.28</td>
</tr>
<tr>
<td>Return on assets (ROA)</td>
<td>2.1%</td>
<td>9.6%</td>
<td>11.5%</td>
<td>4.5%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Return on equity (ROE)</td>
<td>1.5%</td>
<td>11.2%</td>
<td>14.2%</td>
<td>4.6%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial</th>
<th>2023</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt-to-asset ratio</td>
<td>0.23</td>
<td>0.19</td>
<td>0.23</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>Current asset-to-debt ratio</td>
<td>4.31</td>
<td>6.65</td>
<td>4.62</td>
<td>3.06</td>
<td>2.69</td>
</tr>
<tr>
<td>Farm net worth per acre farmed</td>
<td>$3,391</td>
<td>$3,462</td>
<td>$3,170</td>
<td>$2,786</td>
<td>$2,659</td>
</tr>
</tbody>
</table>
Assets and Liabilities

A breakdown of farm assets and liabilities by value of gross sales per farm is shown in Table 2. Total assets, total liabilities, and the total debt-to-asset ratio indicate that larger farms tend to utilize relatively more credit and be more leveraged than smaller farms. Total liabilities in 2023 were larger than in 2022 for all groups of farms. Total assets for farms with $100,000-$199,999 and $800,000 and above in gross sales increased in 2023, while total assets for farms with gross sales in the range of $200,000-$799,999 declined. Net worth increased only for the group of smaller farms, driven mostly by increases in the land and improvements category. A major challenge in comparing Table 2 results across years is that the farms included in each of the groups vary through time. Despite lower working capital across all categories in 2023 compared to 2022, liquidity measures suggest that all groups were well-positioned to cover short-term liabilities with short-term assets in December 2023.

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

<table>
<thead>
<tr>
<th>Farm Assets</th>
<th>Average</th>
<th>$100,000 to $199,999</th>
<th>$200,000 to $399,999</th>
<th>$400,000 to $799,999</th>
<th>$800,000 and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeding livestock</td>
<td>$149,819</td>
<td>$9,622</td>
<td>$4,195</td>
<td>$24,610</td>
<td>$411,548</td>
</tr>
<tr>
<td>Crop inventory</td>
<td>451,201</td>
<td>107,781</td>
<td>195,695</td>
<td>352,971</td>
<td>886,083</td>
</tr>
<tr>
<td>Cash</td>
<td>48,601</td>
<td>13,184</td>
<td>31,022</td>
<td>67,615</td>
<td>68,387</td>
</tr>
<tr>
<td>Supplies, prepaid expenses, other¹</td>
<td>112,826</td>
<td>20,758</td>
<td>47,744</td>
<td>86,530</td>
<td>226,995</td>
</tr>
<tr>
<td>Total short-term assets</td>
<td>$762,448</td>
<td>$151,345</td>
<td>$278,656</td>
<td>$531,726</td>
<td>$1,593,013</td>
</tr>
<tr>
<td>Breeding livestock</td>
<td>$33,916</td>
<td>$11,706</td>
<td>$7,746</td>
<td>$16,835</td>
<td>$75,764</td>
</tr>
<tr>
<td>Machinery, equipment</td>
<td>457,836</td>
<td>86,053</td>
<td>170,316</td>
<td>319,951</td>
<td>956,752</td>
</tr>
<tr>
<td>Other intermediate assets²</td>
<td>7,640</td>
<td>7,735</td>
<td>10,775</td>
<td>4,105</td>
<td>7,685</td>
</tr>
<tr>
<td>Total intermediate assets</td>
<td>499,392</td>
<td>$105,494</td>
<td>$188,836</td>
<td>$340,891</td>
<td>$1,040,201</td>
</tr>
<tr>
<td>Land and improvements</td>
<td>$1,427,976</td>
<td>$784,506</td>
<td>$778,011</td>
<td>$1,370,185</td>
<td>$2,280,883</td>
</tr>
<tr>
<td>Total assets</td>
<td>$2,689,816</td>
<td>$1,041,345</td>
<td>$1,245,503</td>
<td>$2,242,802</td>
<td>$4,914,097</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Farm Liabilities</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating notes, accounts payable</td>
<td>$206,569</td>
<td>$36,503</td>
<td>$44,808</td>
<td>$118,055</td>
</tr>
<tr>
<td>Intermediate and long-term due</td>
<td>4,413</td>
<td>0</td>
<td>3,369</td>
<td>2,580</td>
</tr>
<tr>
<td>Other short-term debt³</td>
<td>423</td>
<td>0</td>
<td>0</td>
<td>340</td>
</tr>
<tr>
<td>Total short-term debt</td>
<td>$211,405</td>
<td>$36,503</td>
<td>$48,178</td>
<td>$120,976</td>
</tr>
<tr>
<td>Intermediate-term debt</td>
<td>$289,563</td>
<td>$19,726</td>
<td>$105,889</td>
<td>$193,159</td>
</tr>
<tr>
<td>Long-term debt</td>
<td>$197,507</td>
<td>$113,201</td>
<td>$93,246</td>
<td>$217,959</td>
</tr>
<tr>
<td>Total liabilities</td>
<td>$698,475</td>
<td>$169,430</td>
<td>$247,313</td>
<td>$532,094</td>
</tr>
</tbody>
</table>

| Farm Net Worth                       | $1,991,341    | $871,916             | $998,191             | $1,710,708          | $3,495,571         |
| Net worth change from last year      | -$4,559       | $379,674             | -$150,730            | -$168,821           | -$10,378           |
| Working capital                      | $551,043      | $114,842             | $230,478             | $410,750            | $1,110,707         |
| Current asset-to-debt ratio          | 4.31          | 4.15                 | 5.78                 | 4.40                | 3.30               |
| Working capital per $1 of gross revenue | $0.67       | $0.70                | $0.81                | $0.75               | $0.49              |
| Total debt-to-asset ratio            | 0.23          | 0.16                 | 0.20                 | 0.24                | 0.29               |
| Total crop acres farmed              | 587           | 149                  | 276                  | 474                 | 1,124              |
| Months of labor used                 | 21            | 7                    | 10                   | 14                  | 40                 |
| Farm net worth per acre farmed       | $3,391        | $5,869               | $3,615               | $3,610              | $3,109             |

¹ Purchased feed, accounts receivable, hedging accounts, sealed grain, investment in growing crops, short-term loans.
² Capital leases, investment in cooperatives.
³ Labor related liabilities, accrued interest, taxes payable, and other current liabilities.
Income and Expenses

A summary of operating and fixed cash expenses by value of gross sales per farm is shown in Table 3. Crop expenses include seed, fertilizer, pesticides, and other expenses related to crop production. The average farm generated a net farm cash flow of $170,944 for replacement of capital assets, expansion, savings, living expenses, and income taxes. Such amount was 19% or $39,500 lower than in the previous year, driven mainly by higher crop and livestock expenses and lower crop sales. Only livestock sales and government payments generated higher cash income ($42,852 and $26,933, respectively) in 2023 than in the previous year. On average, farms increased their level of net operating debt (loans received minus loans repaid) by $29,460 in 2023, after a year of only minor increases in net operating debt ($3,552) in 2022. Average interest expense increased by $8,656 in 2023, more than offsetting the $7,761 decline observed in 2022.

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

<table>
<thead>
<tr>
<th>Total Value of Gross Sales</th>
<th>$100,000 to $199,999</th>
<th>$200,000 to $399,999</th>
<th>$400,000 to $799,999</th>
<th>$800,000 and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock sales</td>
<td>$312,748</td>
<td>$18,837</td>
<td>$4,400</td>
<td>$37,162</td>
</tr>
<tr>
<td>Corn sales</td>
<td>351,043</td>
<td>84,608</td>
<td>156,710</td>
<td>277,253</td>
</tr>
<tr>
<td>Soybean sales</td>
<td>199,995</td>
<td>41,655</td>
<td>101,400</td>
<td>171,082</td>
</tr>
<tr>
<td>Other crop sales</td>
<td>14,110</td>
<td>874</td>
<td>7,525</td>
<td>11,505</td>
</tr>
<tr>
<td>Other cash income</td>
<td>127,397</td>
<td>19,649</td>
<td>42,153</td>
<td>90,954</td>
</tr>
<tr>
<td><strong>Total Cash Income</strong></td>
<td>$1,005,292</td>
<td>$165,624</td>
<td>$312,187</td>
<td>$587,956</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machinery and equipment repairs</td>
<td>$34,686</td>
<td>$9,135</td>
<td>$17,183</td>
<td>$25,342</td>
</tr>
<tr>
<td>Fuel and oil</td>
<td>23,822</td>
<td>5,387</td>
<td>6,983</td>
<td>15,676</td>
</tr>
<tr>
<td>Machine hire</td>
<td>21,442</td>
<td>6,020</td>
<td>14,328</td>
<td>13,972</td>
</tr>
<tr>
<td>Auto and truck expense</td>
<td>6,141</td>
<td>2,390</td>
<td>3,652</td>
<td>5,240</td>
</tr>
<tr>
<td>Utilities</td>
<td>9,469</td>
<td>3,535</td>
<td>4,207</td>
<td>6,919</td>
</tr>
<tr>
<td>Labor hired</td>
<td>22,574</td>
<td>176</td>
<td>683</td>
<td>9,886</td>
</tr>
<tr>
<td>Livestock expense</td>
<td>35,719</td>
<td>1,949</td>
<td>574</td>
<td>4,388</td>
</tr>
<tr>
<td>Crop expense</td>
<td>211,970</td>
<td>51,541</td>
<td>101,979</td>
<td>167,798</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>6,658</td>
<td>612</td>
<td>2,367</td>
<td>4,972</td>
</tr>
<tr>
<td><strong>Total cash operating expense</strong></td>
<td>$372,481</td>
<td>$80,744</td>
<td>$151,955</td>
<td>$254,193</td>
</tr>
<tr>
<td>Cash rent</td>
<td>$108,508</td>
<td>$12,491</td>
<td>$36,339</td>
<td>$67,509</td>
</tr>
<tr>
<td>Property taxes</td>
<td>9,301</td>
<td>4,702</td>
<td>5,754</td>
<td>9,668</td>
</tr>
<tr>
<td>Insurance</td>
<td>29,093</td>
<td>7,976</td>
<td>12,403</td>
<td>21,822</td>
</tr>
<tr>
<td>Building repairs</td>
<td>10,453</td>
<td>4,184</td>
<td>3,529</td>
<td>6,352</td>
</tr>
<tr>
<td>Interest</td>
<td>31,005</td>
<td>6,772</td>
<td>9,331</td>
<td>21,099</td>
</tr>
<tr>
<td>Other overhead expenses</td>
<td>16,774</td>
<td>2,893</td>
<td>5,399</td>
<td>16,597</td>
</tr>
<tr>
<td><strong>Total cash fixed expense</strong></td>
<td>$205,134</td>
<td>$39,018</td>
<td>$72,755</td>
<td>$143,047</td>
</tr>
<tr>
<td>Feed purchased</td>
<td>$157,325</td>
<td>$8,163</td>
<td>$2,669</td>
<td>$25,079</td>
</tr>
<tr>
<td>Livestock purchased</td>
<td>128,867</td>
<td>1,046</td>
<td>614</td>
<td>15,340</td>
</tr>
<tr>
<td><strong>Total Cash Expenses</strong></td>
<td>$863,808</td>
<td>$128,970</td>
<td>$227,994</td>
<td>$437,658</td>
</tr>
<tr>
<td><strong>Cash Net Farm Income</strong></td>
<td>$141,484</td>
<td>$36,654</td>
<td>$84,194</td>
<td>$150,297</td>
</tr>
<tr>
<td>Loans received minus loans repaid</td>
<td>$29,460</td>
<td>$1,679</td>
<td>$8,146</td>
<td>$29,652</td>
</tr>
<tr>
<td><strong>Net Farm Cash Flow</strong></td>
<td>$170,944</td>
<td>$38,333</td>
<td>$92,340</td>
<td>$179,949</td>
</tr>
</tbody>
</table>
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 2023 accrual net farm income ranged from an average of $21,231 among the smallest farms to an average of $114,034 among the largest farms, and averaged $64,583 across all farms. The latter was 78% lower than in 2022, driven by a 226% drop in crop inventory values (-$162,742). Return to management, obtained after subtracting a return to unpaid labor and equity capital invested, was negative for all groups and averaged -$54,147 across all farms in 2023. It was the first year with negative returns after a three-year run of positive net returns. The operating expense ratio for the average Iowa farm increased by 18 percentage points in 2023 to 79%, and the net farm income ratio decreased by 21 percentage points to 9%.

Table 4. Summary of Accrual Income and Expenses by Size of Farm.1

<table>
<thead>
<tr>
<th>Total Value of Gross Sales</th>
<th>$100,000 to $199,999</th>
<th>$200,000 to $399,999</th>
<th>$400,000 to $799,999</th>
<th>$800,000 and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total cash income</td>
<td>$1,005,292</td>
<td>$165,624</td>
<td>$312,187</td>
<td>$587,956</td>
</tr>
<tr>
<td>Change in crop inventory</td>
<td>-90,838</td>
<td>-13,125</td>
<td>-31,594</td>
<td>-58,557</td>
</tr>
<tr>
<td>Change in livestock inventory</td>
<td>24,476</td>
<td>6,092</td>
<td>3,846</td>
<td>6,062</td>
</tr>
<tr>
<td>Feed credits, change in other inventories</td>
<td>57,292</td>
<td>4,814</td>
<td>1,779</td>
<td>9,818</td>
</tr>
<tr>
<td><strong>Total accrual income (gross revenue)</strong></td>
<td><strong>$996,222</strong></td>
<td><strong>$163,405</strong></td>
<td><strong>$286,218</strong></td>
<td><strong>$545,279</strong></td>
</tr>
<tr>
<td>Total cash expenses</td>
<td>$863,808</td>
<td>$128,970</td>
<td>$227,994</td>
<td>$437,658</td>
</tr>
<tr>
<td>Depreciation</td>
<td>67,831</td>
<td>13,204</td>
<td>24,513</td>
<td>48,538</td>
</tr>
<tr>
<td><strong>Total accrual expenses</strong></td>
<td><strong>$931,639</strong></td>
<td><strong>$142,174</strong></td>
<td><strong>$252,507</strong></td>
<td><strong>$486,197</strong></td>
</tr>
<tr>
<td><strong>Accrual net farm income</strong></td>
<td><strong>$64,583</strong></td>
<td><strong>$21,231</strong></td>
<td><strong>$33,711</strong></td>
<td><strong>$59,082</strong></td>
</tr>
<tr>
<td>Charge for unpaid labor</td>
<td>27,371</td>
<td>18,125</td>
<td>23,929</td>
<td>27,937</td>
</tr>
<tr>
<td>Charge for equity capital (4%)</td>
<td>91,358</td>
<td>38,981</td>
<td>55,095</td>
<td>78,554</td>
</tr>
<tr>
<td><strong>Return to Management</strong></td>
<td><strong>-$54,147</strong></td>
<td><strong>-$35,875</strong></td>
<td><strong>-$45,312</strong></td>
<td><strong>-$74,930</strong></td>
</tr>
</tbody>
</table>

Allocation of Gross Revenue

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>79%</th>
<th>75%</th>
<th>76%</th>
<th>76%</th>
<th>86%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating expense</td>
<td></td>
<td>3%</td>
<td>4%</td>
<td>3%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Interest expense</td>
<td></td>
<td>8%</td>
<td>8%</td>
<td>9%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Depreciation expense</td>
<td></td>
<td>9%</td>
<td>13%</td>
<td>12%</td>
<td>11%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Net farm income</strong></td>
<td></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
</tbody>
</table>

The value of all crops and livestock produced on the farm is shown in Table 5. The value of farm production decreased by 18% or $155,522, driven mainly by changes in crop inventory values, followed by a lower value of crop production, and a slightly lower net value of livestock production, to an average of $710,030 in 2023.

Table 5. Value of Farm Production by Size of Farm.2

<table>
<thead>
<tr>
<th>Total Value of Gross Sales</th>
<th>$100,000 to $199,999</th>
<th>$200,000 to $399,999</th>
<th>$400,000 to $799,999</th>
<th>$800,000 and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of livestock production</td>
<td>$344,290</td>
<td>$25,095</td>
<td>$8,501</td>
<td>$48,729</td>
</tr>
<tr>
<td>Less purchase for resale</td>
<td>128,867</td>
<td>1,046</td>
<td>614</td>
<td>15,340</td>
</tr>
<tr>
<td>Less purchased feed fed</td>
<td>157,325</td>
<td>8,163</td>
<td>2,669</td>
<td>25,079</td>
</tr>
<tr>
<td><strong>Net value of livestock production</strong></td>
<td><strong>58,097</strong></td>
<td><strong>15,886</strong></td>
<td><strong>5,218</strong></td>
<td><strong>8,309</strong></td>
</tr>
<tr>
<td>Value of crop production (incl. feed credits)</td>
<td>622,649</td>
<td>131,952</td>
<td>267,414</td>
<td>469,951</td>
</tr>
<tr>
<td>Miscellaneous income</td>
<td>120,122</td>
<td>19,484</td>
<td>41,988</td>
<td>85,155</td>
</tr>
<tr>
<td><strong>Crop inventory change</strong></td>
<td><strong>-$90,838</strong></td>
<td><strong>-$13,125</strong></td>
<td><strong>-$31,594</strong></td>
<td><strong>-$58,557</strong></td>
</tr>
<tr>
<td><strong>Value of Farm Production</strong></td>
<td><strong>$710,030</strong></td>
<td><strong>$154,197</strong></td>
<td><strong>$282,935</strong></td>
<td><strong>$504,859</strong></td>
</tr>
</tbody>
</table>

1 Accrual net farm income = value of farm production - total cash fixed expense - total cash operating expense - depreciation.

2 Value of farm production = gross revenue - livestock purchase for resale - purchased feed fed.
Efficiency Factors

Selected efficiency factors are shown in Table 6 for the four farm size groups. Gross revenue per person and per dollar of assets tend to increase with farm size, while gross revenue per dollar of expense tends to decline with farm size. The rates of return on equity and assets averaged 1.5% and 2.1%, respectively, across all farm groups and marked the lowest returns since 2017. The average interest rate on debt across all farms was 4.2% in 2023, 0.4% higher than in 2022.

Table 6. Overall Efficiency Factors by Size of Farm.

<table>
<thead>
<tr>
<th>Total Value of Gross Sales</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$100,000 to $199,999</td>
<td>$200,000 to $399,999</td>
<td>$400,000 to $799,999</td>
<td>$800,000 and above</td>
</tr>
<tr>
<td>Crops</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres in crops</td>
<td>587</td>
<td>149</td>
<td>276</td>
<td>474</td>
</tr>
<tr>
<td>Crop value per acre</td>
<td>$1,006</td>
<td>$888</td>
<td>$968</td>
<td>$992</td>
</tr>
<tr>
<td>Crop acres per person</td>
<td>333</td>
<td>242</td>
<td>331</td>
<td>402</td>
</tr>
<tr>
<td>Machinery cost per crop acre</td>
<td>$211</td>
<td>$214</td>
<td>$249</td>
<td>$191</td>
</tr>
<tr>
<td>Machinery investment per crop acre</td>
<td>$598</td>
<td>$464</td>
<td>$698</td>
<td>$592</td>
</tr>
<tr>
<td>Livestock</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock returns per $100 feed fed</td>
<td>$188</td>
<td>$191</td>
<td>$256</td>
<td>$165</td>
</tr>
<tr>
<td>Financial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross revenue per person</td>
<td>$471,017</td>
<td>$265,880</td>
<td>$343,462</td>
<td>$462,661</td>
</tr>
<tr>
<td>Gross revenue per $1 expense</td>
<td>$1.11</td>
<td>$1.15</td>
<td>$1.13</td>
<td>$1.12</td>
</tr>
<tr>
<td>Gross revenue per $1 assets</td>
<td>$0.30</td>
<td>$0.16</td>
<td>$0.23</td>
<td>$0.24</td>
</tr>
<tr>
<td>Value of farm production per $1 assets</td>
<td>$0.24</td>
<td>$0.15</td>
<td>$0.23</td>
<td>$0.23</td>
</tr>
<tr>
<td>Return on assets (ROA)</td>
<td>2.1%</td>
<td>0.9%</td>
<td>1.5%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Return on equity (ROE)</td>
<td>1.5%</td>
<td>0.4%</td>
<td>1.0%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Operating profit margin ratio (as % of gross revenue)</td>
<td>7.1%</td>
<td>6.0%</td>
<td>6.7%</td>
<td>9.6%</td>
</tr>
<tr>
<td>Operating profit margin ratio (as % of revenue)</td>
<td>8.6%</td>
<td>6.4%</td>
<td>6.8%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Average interest rate on debt</td>
<td>4.2%</td>
<td>4.0%</td>
<td>3.8%</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

(1/(Accrual net farm income + interest - unpaid labor) / gross revenue.

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 of similar sizes. The high-third group was the one with the fewest crop acres per person, the lowest machinery cost and investment per acre, and the highest gross revenue per dollar of expense and per dollar of assets, and its return to management averaged $143,854 in 2023. This group also had the lowest net worth per acre farmed across the three groups.

The middle-third group had the lowest gross revenue, the lowest total expenses, the lowest area in crop production, the highest machinery cost and investment per crop acre, and the highest livestock returns per $100 of feed fed, and its return to management averaged - $53,863. The lowest-third group had the largest area in crops, the largest loss in other income and inventory, and the highest total expenses, and its return to management averaged - $280,138. However, their net worth per acre was the highest among the three groups, and their debt-to-asset ratio was the lowest.
## High-, Middle-, and Low-profit Farms

Table 7. Comparison of High-, Middle-, and Low-profit Farms, Ranked by Return to Management.¹/²

<table>
<thead>
<tr>
<th></th>
<th>High Third</th>
<th>Middle Third</th>
<th>Low Third</th>
<th>Your Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Farm Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop sales</td>
<td>$709,006</td>
<td>$577,308</td>
<td>$1,091,941</td>
<td></td>
</tr>
<tr>
<td>Livestock sales</td>
<td>565,871</td>
<td>174,166</td>
<td>857,030</td>
<td></td>
</tr>
<tr>
<td>Other income and inventory</td>
<td>296,445</td>
<td>7,029</td>
<td>-65,952</td>
<td></td>
</tr>
<tr>
<td>Feed credits</td>
<td>73,198</td>
<td>37,094</td>
<td>174,335</td>
<td></td>
</tr>
<tr>
<td><strong>Gross revenue</strong></td>
<td>$1,644,520</td>
<td>$795,598</td>
<td>$2,057,355</td>
<td></td>
</tr>
<tr>
<td>Operating expenses</td>
<td>$500,764</td>
<td>$345,114</td>
<td>$761,531</td>
<td></td>
</tr>
<tr>
<td>Fixed expenses (incl. depreciation)</td>
<td>382,773</td>
<td>244,009</td>
<td>568,485</td>
<td></td>
</tr>
<tr>
<td>Feed purchased</td>
<td>200,071</td>
<td>92,714</td>
<td>492,972</td>
<td></td>
</tr>
<tr>
<td>Livestock purchased</td>
<td>291,228</td>
<td>60,456</td>
<td>298,422</td>
<td></td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td>$1,374,835</td>
<td>$742,293</td>
<td>$2,121,410</td>
<td></td>
</tr>
<tr>
<td>Accrual net farm income</td>
<td>$269,685</td>
<td>$53,305</td>
<td>-$64,055</td>
<td></td>
</tr>
<tr>
<td>Operator and family labor charge</td>
<td>$29,423</td>
<td>$27,634</td>
<td>$35,811</td>
<td></td>
</tr>
<tr>
<td>Charge for equity capital</td>
<td>96,408</td>
<td>79,534</td>
<td>180,273</td>
<td></td>
</tr>
<tr>
<td><strong>Return to management</strong></td>
<td>$143,854</td>
<td>-$53,863</td>
<td>-$280,138</td>
<td></td>
</tr>
<tr>
<td><strong>Crops</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres in crops</td>
<td>764</td>
<td>579</td>
<td>1,116</td>
<td></td>
</tr>
<tr>
<td>Crop value per acre</td>
<td>$1,024</td>
<td>$1,061</td>
<td>$1,135</td>
<td></td>
</tr>
<tr>
<td>Crop acres per person</td>
<td>311</td>
<td>342</td>
<td>379</td>
<td></td>
</tr>
<tr>
<td>Machinery cost per crop acre</td>
<td>$182</td>
<td>$217</td>
<td>$204</td>
<td></td>
</tr>
<tr>
<td>Machinery investment per crop acre</td>
<td>$503</td>
<td>$667</td>
<td>$639</td>
<td></td>
</tr>
<tr>
<td><strong>Livestock</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock returns per $100 feed fed</td>
<td>$170</td>
<td>$179</td>
<td>$143</td>
<td></td>
</tr>
<tr>
<td><strong>Value of Farm Production</strong></td>
<td>$1,153,222</td>
<td>$642,428</td>
<td>$1,265,961</td>
<td></td>
</tr>
<tr>
<td><strong>Financial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross revenue per person</td>
<td>$670,268</td>
<td>$470,213</td>
<td>$698,404</td>
<td></td>
</tr>
<tr>
<td>Gross revenue per $1 expense</td>
<td>$1.20</td>
<td>$1.07</td>
<td>$0.97</td>
<td></td>
</tr>
<tr>
<td>Gross revenue per $1 assets</td>
<td>$0.51</td>
<td>$0.33</td>
<td>$0.39</td>
<td></td>
</tr>
<tr>
<td>Value of farm production per $1 assets</td>
<td>$0.36</td>
<td>$0.27</td>
<td>$0.24</td>
<td></td>
</tr>
<tr>
<td>Return on assets (ROA)</td>
<td>8.8%</td>
<td>2.2%</td>
<td>-0.7%</td>
<td></td>
</tr>
<tr>
<td>Return on equity (ROE)</td>
<td>10.8%</td>
<td>1.5%</td>
<td>-2.5%</td>
<td></td>
</tr>
<tr>
<td>Operating profit margin ratio (as % of gross revenue)¹/²</td>
<td>0.17</td>
<td>0.07</td>
<td>-0.02</td>
<td></td>
</tr>
<tr>
<td>Operating profit margin ratio (as % of value of farm production)</td>
<td>0.25</td>
<td>0.08</td>
<td>-0.03</td>
<td></td>
</tr>
<tr>
<td>Debt-to-asset ratio</td>
<td>0.31</td>
<td>0.27</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>Net worth per acre farmed</td>
<td>$2,921</td>
<td>$3,000</td>
<td>$3,567</td>
<td></td>
</tr>
<tr>
<td><strong>Allocation of Value of Gross Revenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating expense</td>
<td>75%</td>
<td>82%</td>
<td>93%</td>
<td></td>
</tr>
<tr>
<td>Interest expense</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Depreciation expense</td>
<td>6%</td>
<td>8%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Net farm income</td>
<td>16%</td>
<td>7%</td>
<td>-3%</td>
<td></td>
</tr>
</tbody>
</table>

¹/² Values have not been adjusted for size of business.
Details of crop production income and expenses per acre are summarized in Table 8. 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% 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. The selling price for corn exceeded its total economic cost by $0.80 per bushel, but the selling price for soybeans was lower than its total economic cost by $0.99 per bushel. Each bushel of corn and soybeans contributed, on average, $2.06 and $3.41 to the net cash flow of the operation.

Table 8. Crop Production.

<table>
<thead>
<tr>
<th></th>
<th>All Corn</th>
<th>Soybean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total operator acres per crop</td>
<td>477</td>
<td>383</td>
</tr>
<tr>
<td>Yield, bushels per acre</td>
<td>214</td>
<td>62</td>
</tr>
<tr>
<td>Selling price per bushel</td>
<td>$6.27</td>
<td>$13.80</td>
</tr>
<tr>
<td>Crop value per acre</td>
<td>$1,344</td>
<td>$855</td>
</tr>
</tbody>
</table>

**Crop Expenses per Acre**

<table>
<thead>
<tr>
<th></th>
<th>All Corn</th>
<th>Soybean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed</td>
<td>$124.98</td>
<td>$64.36</td>
</tr>
<tr>
<td>Fertilizer and lime</td>
<td>225.52</td>
<td>58.08</td>
</tr>
<tr>
<td>Herbicide</td>
<td>65.37</td>
<td>75.64</td>
</tr>
<tr>
<td>Insecticide</td>
<td>11.96</td>
<td>10.43</td>
</tr>
<tr>
<td>Drying and storage</td>
<td>13.82</td>
<td>2.50</td>
</tr>
<tr>
<td>Machinery, fuel, repairs, machine hire</td>
<td>126.34</td>
<td>117.91</td>
</tr>
<tr>
<td>Utilities</td>
<td>10.79</td>
<td>9.70</td>
</tr>
<tr>
<td>Insurance</td>
<td>44.04</td>
<td>41.03</td>
</tr>
<tr>
<td>Hired labor</td>
<td>14.11</td>
<td>12.21</td>
</tr>
<tr>
<td>Interest</td>
<td>37.13</td>
<td>32.86</td>
</tr>
<tr>
<td>Cash rent</td>
<td>174.22</td>
<td>170.59</td>
</tr>
<tr>
<td>Property taxes and building repairs</td>
<td>27.31</td>
<td>25.93</td>
</tr>
<tr>
<td>Other crop expenses</td>
<td>27.07</td>
<td>23.00</td>
</tr>
<tr>
<td><strong>Total cash crop expenses per acre</strong></td>
<td><strong>$902.65</strong></td>
<td><strong>$644.21</strong></td>
</tr>
<tr>
<td>Machinery depreciation</td>
<td>$74.49</td>
<td>$74.76</td>
</tr>
<tr>
<td>Building depreciation</td>
<td>18.97</td>
<td>17.43</td>
</tr>
<tr>
<td>Charge for equity capital</td>
<td>133.05</td>
<td>136.02</td>
</tr>
<tr>
<td>Unpaid labor value</td>
<td>44.51</td>
<td>43.81</td>
</tr>
<tr>
<td><strong>Total economic cost per acre</strong></td>
<td><strong>$1,173.68</strong></td>
<td><strong>$916.24</strong></td>
</tr>
<tr>
<td><strong>Total economic cost per bushel</strong></td>
<td><strong>$5.48</strong></td>
<td><strong>$14.79</strong></td>
</tr>
<tr>
<td><strong>Total cash flow needed per acre</strong></td>
<td><strong>$902.65</strong></td>
<td><strong>$644.21</strong></td>
</tr>
<tr>
<td><strong>Total cash flow needed per bushel</strong></td>
<td><strong>$4.21</strong></td>
<td><strong>$10.40</strong></td>
</tr>
</tbody>
</table>
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, and in 2023 it was 16% higher than its 10-year average. The average corn yield of 214 bushels was 2% higher than in 2022 and 5% higher than the 10-year average. The rate of return to owned assets averaged 2.1% in 2023, or 1.9 percentage points below the 10-year average.


<table>
<thead>
<tr>
<th>Year</th>
<th>Livestock Income per $100 Feed Fed</th>
<th>Corn Yield Bushels per Acre</th>
<th>Value of Farm Production per $1 Expense</th>
<th>Crop Value per Acre</th>
<th>Percent Return to Owned Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>$223</td>
<td>184</td>
<td>$1.20</td>
<td>$667</td>
<td>2.5%</td>
</tr>
<tr>
<td>2015&lt;sup&gt;1&lt;/sup&gt;</td>
<td>133</td>
<td>200</td>
<td>1.09</td>
<td>588</td>
<td>1.1%</td>
</tr>
<tr>
<td>2016</td>
<td>117</td>
<td>209</td>
<td>1.12</td>
<td>635</td>
<td>1.7%</td>
</tr>
<tr>
<td>2017&lt;sup&gt;2&lt;/sup&gt;</td>
<td>179</td>
<td>214</td>
<td>1.08</td>
<td>604</td>
<td>1.5%</td>
</tr>
<tr>
<td>2018</td>
<td>161</td>
<td>201</td>
<td>1.12</td>
<td>617</td>
<td>2.2%</td>
</tr>
<tr>
<td>2019</td>
<td>158</td>
<td>199</td>
<td>1.13</td>
<td>606</td>
<td>2.7%</td>
</tr>
<tr>
<td>2020</td>
<td>122</td>
<td>189</td>
<td>1.21</td>
<td>605</td>
<td>4.5%</td>
</tr>
<tr>
<td>2021</td>
<td>184</td>
<td>218</td>
<td>1.59</td>
<td>777</td>
<td>11.5%</td>
</tr>
<tr>
<td>2022&lt;sup&gt;3&lt;/sup&gt;</td>
<td>155</td>
<td>210</td>
<td>1.45</td>
<td>1,078</td>
<td>9.6%</td>
</tr>
<tr>
<td>2023</td>
<td>188</td>
<td>214</td>
<td>1.11</td>
<td>1,006</td>
<td>2.1%</td>
</tr>
<tr>
<td>10-year average</td>
<td>$162</td>
<td>204</td>
<td>$1.21</td>
<td>$718</td>
<td>3.9%</td>
</tr>
</tbody>
</table>

<sup>1</sup> Revised with additional farm data.
<sup>2</sup> Revised using weights from the 2017 Census of Agriculture.
<sup>3</sup> Revised using weights from the 2022 Census of Agriculture.

Percent Return to Owned Assets

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