Up, Down or Sideways: Where Are Indiana Farmland Values Headed?

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Purdue Farmland Value Survey Process

• Survey conducted annually since 1970
  – Rural Appraisers, Ag Lenders, Farm Managers, Farmers
• Ask for land values in
  – December ‘14, June ‘15, & December ’15
  – Responses for top, average, and poor quality land
• Ask for current cash rent
• Ask for long-term corn yield to gain productivity info.
# Indiana Farmland Values 2015 Survey Results

<table>
<thead>
<tr>
<th>Land Quality</th>
<th>Yield (Bu./A)</th>
<th>Value ($/A)</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>2014</strong></td>
<td><strong>2015</strong></td>
<td></td>
</tr>
<tr>
<td>Top</td>
<td>200</td>
<td>$9,765</td>
<td>$9,266</td>
</tr>
<tr>
<td>Average</td>
<td>169</td>
<td>$7,976</td>
<td>$7,672</td>
</tr>
<tr>
<td>Poor</td>
<td>138</td>
<td>$6,160</td>
<td>$5,863</td>
</tr>
</tbody>
</table>
Indiana Farmland Values
1970 – 2015, Average Quality Land

Year
Value per acre
0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000
Nominal Value
Inflation Adjusted Value (2015 $’s)
Indiana Cash Rent 2015 Survey Results

<table>
<thead>
<tr>
<th>Land Quality</th>
<th>Yield (Bu./A)</th>
<th>Value ($/A)</th>
<th>Percent Change</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>2014</td>
<td>2015</td>
</tr>
<tr>
<td>Top</td>
<td>200</td>
<td>$292</td>
<td>$285</td>
</tr>
<tr>
<td>Average</td>
<td>169</td>
<td>$232</td>
<td>$229</td>
</tr>
<tr>
<td>Poor</td>
<td>138</td>
<td>$179</td>
<td>$175</td>
</tr>
</tbody>
</table>
Regional Farmland Cash Rent Changes
Cash Rent for West Central Indiana

<table>
<thead>
<tr>
<th>Year</th>
<th>Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>150</td>
</tr>
<tr>
<td>2006</td>
<td>175</td>
</tr>
<tr>
<td>2007</td>
<td>200</td>
</tr>
<tr>
<td>2008</td>
<td>225</td>
</tr>
<tr>
<td>2009</td>
<td>250</td>
</tr>
<tr>
<td>2010</td>
<td>275</td>
</tr>
<tr>
<td>2011</td>
<td>300</td>
</tr>
<tr>
<td>2012</td>
<td>325</td>
</tr>
<tr>
<td>2013</td>
<td>350</td>
</tr>
<tr>
<td>2014</td>
<td>375</td>
</tr>
<tr>
<td>2015</td>
<td>400</td>
</tr>
<tr>
<td>2016</td>
<td>425</td>
</tr>
<tr>
<td>2017</td>
<td>450</td>
</tr>
<tr>
<td>2018</td>
<td>475</td>
</tr>
</tbody>
</table>
## 2015 Land Value Change

### Actual and Forecast

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Top</td>
<td>-4.4%</td>
<td>-4.2%</td>
</tr>
<tr>
<td>Average</td>
<td>-4.2%</td>
<td>-4.1%</td>
</tr>
<tr>
<td>Poor</td>
<td>-7.0%</td>
<td>-2.4%</td>
</tr>
</tbody>
</table>
Income – Value Link

\[
\text{Farmland Value} = \frac{\text{Farmland Income}}{\text{Discount Rate} \, (\%) - \text{Income Growth Rate} \, (\%)}
\]

Income = net return to farmland ownership

Discount rate = interest rate & risk premium

Growth rate = growth rate in farmland value
Land Value to Income Multiplier
1975-2015, Average Quality Land

Value/Rent Multiple

Year

-2 Standard Deviations

+ 2 Standard Deviations

Average = 20.0

2015 = 33.5
Cyclically Adjusted Price/Earnings and Price/Rent Ratios

• **Price/Earnings Ratios in the Stock Market**
  – Shiller uses a ten-year moving average for earnings (Price/Earnings10) to remove the effect of the economic cycle
  – Price and Earnings are expressed in inflation adjusted $’s

• **Price/Rent Ratios in the Farmland Market**
  – Use inflation adjusted farmland price in numerator
  – Use five-year or ten-year moving average of inflation adjusted rent in denominator
Farmland Price to Rent Ratios
West Central Indiana, 1960-2015

- Price to Current Rent
- Price to 5-Year Average Rent
- Price to 10-Year Average Rent
Survey Respondents View of Land Value Drivers
2013-2015

Average value

Influence

1. Rev. Inc.
2. Growth Ret.
3. Crop Prices
4. Livestock Prices
5. Interest
7. Exports
8. Inflation
9. Land Supply
10. Cash
11. Ag Policy

-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0 4.0

2013 2014 2015
5-Year Forecast By Survey Respondents

Where do you expect farmland prices to be in 5 years?

<table>
<thead>
<tr>
<th>Direction</th>
<th>% Respondents</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase</td>
<td>26%</td>
<td>9%</td>
</tr>
<tr>
<td>No change</td>
<td>26%</td>
<td>0%</td>
</tr>
<tr>
<td>Decrease</td>
<td>48%</td>
<td>-14%</td>
</tr>
<tr>
<td>Overall</td>
<td>100%</td>
<td>-5%</td>
</tr>
</tbody>
</table>
Five Year Change in Value

Source: USDA
5-Year Expected Average Values for Corn, Soybeans, Interest Rates & Inflation, By Survey Year
Historical and Projected Earnings per Acre for Corn and Soybeans in Indiana

- $300
- $250
- $200
- $150
- $100
- $50
- $0
- $50
- $100
- $150
- $200
- $250
- $300


Corn
Soybeans
Pressure on Cash Rents and Land Values

- **Cash Rents**
  - Decline in net return for corn and soybeans

- **Land Values**
  - Decline in cash rent
  - Increase in long-term interest rates
  - Increase in inflation
  - Increase in risk premium for the farming sector
  - Relatively high P/rent ratio
Summary

• Indiana farmland values declined 3.8% to 5.1% from June ‘14 to June ‘15
• Declines of 2.4% to 4.2% are expected in last half of 2015
• Over the next 5-years, respondents expect Indiana farmland values to decline 5%
• The Value-to-Income Multiple declined in 2015, the third time since 1992, but the Multiple still remains historically high at 33.5
Summary

• Livestock prices and interest rates were primary supporters of farmland values in 2015

• Negative influences were net income, the expected change in growth rate of returns and grain prices

• For the state, there were small declines in cash rent, ranging from a decline of 1.3% to 2.4%

• W. Central & Central regions of Indiana reported cash rent declines ranging from 2.8% to 5.1%
To read the full report
Visit Our Web Site by typing
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Join Us for our next Webinar on September 14, 2015
Crop Outlook following release of USDA’s September Crop Production & Supply/Demand Estimates