2006 Outlook for Indiana Farmland Values and Cash Rent

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Indiana land values

Current situation
The June 2005 Purdue Land Value Survey reported that land values in the state continued their upward push. State wide, top land had an estimated value of $3,556 per acre, average land had an estimated value of $2,945 per acre and poor land had an estimated value of $2,367 per acre. This was an increase of 8.5%, 9.4%, and 11.1% above 2004 values for top, average, and poor land, respectively.

As always, there are differences across the state. For six state regions, Figure 1 presents the annual percentage change in land values. This year there were double-digit increases reported in all regions except the Southeast. The highest estimated land value continues to be top land in the Central region.

On a statewide basis, transition land (land moving out of production agriculture) also increased in value. In June 2005, the average value for transition land was $8,207 per acre, 8.5% more than the value reported in 2004.

To gain a perspective on the forces influencing Indiana's farmland market, survey participants were asked to assess the strength of 11 factors thought to influence farmland values. These factors included:

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<th>1. Current net farm income</th>
<th>2. Expected growth in returns</th>
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<td>3. Crop prices &amp; outlook</td>
<td>4. Livestock prices &amp; outlook</td>
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<td>5. Current &amp; expected interest rates</td>
<td>6. Returns on competing investments</td>
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<td>7. U.S. agricultural export sales</td>
<td>8. U.S. inflation/deflation rate</td>
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<td>11. Current U.S. agricultural policy</td>
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Respondents were asked to use a scale from -5 to +5 to indicate the strength of influence each item has on current farmland values. If the item had a major negative influence, it would be given a minus 5. If the item had a small negative influence, it would be given a minus 1. Positive

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1 Long term average corn yields are used as a measure of land quality. The estimated average long-term corn yield for top, average, and poor quality land was 169, 139, and 108 bu. per acre, respectively.

2 Additional detail on the regional difference in land values can be found in “Indiana Farmland Values & Cash Rent Jump Upward,” Purdue Agricultural Economics Report, Purdue University, August 2005, pages 1-6.
influences were assessed in the same way, except positive weights were used. An average for each item was calculated. The results for 2003, 2004 and 2005 are presented in Figure 2. This figure illustrates how with the passage of time can alter how these influences are perceived to be shaping the land market.

In 2004 all of the influences were positive. Some of the strongest influences in 2004 were related to price and income factors. This was quite a contrast to 2003 when many of these factors were negative influences in the market.

This year, all the influences remained positive. However, the income and price influences were not considered as strong. The two strongest influences in 2005 were the supply of land on the market (9) and the cash liquidity of buyers (10). These two factors have consistently increased in importance over the past three years. The return on competing investments (6) was also an important factor. This influence was slightly more important than in 2004, but not as important as in 2003.

The other influence that has seen big adjustments across time is interest rates. In 2003, interest rates were viewed as one of the dominate influences in the market. In 2003, long-term interest rates had just come through a period of declines as is illustrated in Figure 3. It has been expected that long-term interest rates would increase, but there has been little change in long-term interest rates since the first

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3 Interest rates are the average fixed interest rate on long-term real estate loans report by banks in the Seventh (Chicago) Federal Reserve District. This district includes all of Iowa and parts of Illinois, Wisconsin, Michigan, & Indiana. Source: Agricultural Finance Data Book, Board of Governor of the Federal Reserve System, Washington, DC. <http://www.federalreserve.gov/releases/e15>
quarter of 2003. At the current time, the influence of interest rates on farmland values is similar to that of the inflation rate (8), current net farm income (1), expected growth in returns (2), and livestock prices and outlook (4).

Outlook

The supply of land for sale continues to be limited. Eighty-four percent of the respondents to the 2005 survey indicated that the amount of land on the market was the same or less when compared to last year. The demand for land continues to be strong. When compared to interest last year, over 50% of the respondent to this year’s survey indicted increased buying interest among nonfarm investors, farmers, and rural residents.

The sale of farmland for development purposes with the reinvestment of proceeds back into farm real estate continues to be an important influence on Indiana’s farmland market. These buyers have cash to spend and a time period by which a replacement property must be purchased or capital gains taxes will need to be paid on the sale. The time requirement associated with these transactions leads many of these buyers to be aggressive bidders.

The federal budget deficit continues to be large. Efforts to reduce federal spending in order to reduce the size of the federal deficit have resulted in some reductions to the federal agriculture budget. So far, these reductions have not resulted in any reduction in funds flowing to the commodity programs. However, some policy analysts think that there will be more reductions in the future and these reductions may result in fewer funds for commodity programs. If such a change occurs, this would have a negative influence on the Indiana farmland market.

The economy is expanding. The Federal Reserve continues to increase the federal funds rate and short-term rates have increased, raising the interest rate on production loans. The expected increase in long-term interest rates has not occurred but increases in long-term interest rates are still expected. Data on fixed long-term interest rates for farm real estate loans in 2005 is not yet available, but it is expected that these rates will be have a trend similar 30-year conventional home mortgages. From 1972 to the present, the lowest rate on these mortgages was 5.23%. This occurred in June 2003. By June 2004, the mortgage rate reached a high of 6.29%. By June 2005, this mortgage rate had declined to 5.58%

When higher long-term interest rates occur, they will cause buyers to bid less for the future income generated by a land purchase. As the cost of borrowed money increases, this will also dampen the demand for rural residences and subdivisions. While rising long-term interest rates will have a negative influence on farm land values, interest rates will be increasing from historic lows. The other factors in our list above will also influence future farmland values. Thus rising interest rates may slow the increase in farmland values but unless there is a sharp rise, rising interest rates are not likely cause a decrease in farmland values.

When 2005 Purdue Land Value survey respondents were asked to project farmland values for December 2005, farmland values for the state as a whole were expected to be 1.4% to 1.6% higher. Respondents were also asked to project farmland values five years from now. Seventy-four percent of the respondents expected farmland values to be higher, 12% of the respondents expected farmland values to be the same, and 14% expected farmland values to be lower. For those expecting an increase, the average expected increase was 10.4%. For those expecting a decrease over the next five years, the average decline was 11%. Combining all estimates for the next five years provided an average increase of 6.8%. This increase would translate into an annual compounded increase of 1.3%, a very modest increase given our experience of the past few years.

For the year ahead, it is expected that the rate of increase in land values will slow but not stop. Farmland values for the year ahead are expected to increase between 4% and 6% for the year. However, if one is considering a farmland investment, it is important to remember buying farmland is a long-term investment. Prudent planning requires investigating if there is a sufficient
cushion to allow the business to withstand unexpected events that reduce net revenue. It is also important to remember that farmland is an illiquid investment. Selling a tract that should not have been purchased can often take longer than anticipated.

**Indiana Cash Rents**

**Current situation**

Based on the 2005 Purdue Land Value Survey, state-wide cash rents in 2005 averaged $154 per acre for top land, $126 per acre for average land, and $99 per acre for poor land. These increases were $3 to $4 per acre or 2.7% to 3.3% more than those reported in 2004.

As with farmland values there are differences by area of the state (Figure 4). All areas of the state reported increases in cash rent. The southern part of the state exhibited the strongest increases in cash rent, increasing 4.2% to 6.9%.

Both land values and cash rents continue to increase in Indiana. Land values continue to increase more rapidly than cash rents. As a result, the value-rent multiple, a measure similar to the price earnings ratio in stocks, continues to rise. For 2005, this value was 23.4 for average farmland. Given this value, the gross cash rent is 4.3% of the current farmland value.

A longer view of this value for average Indiana farmland is presented in Figure 5. For the 1976 to 2005 period, this value has averaged 17. The value has exceeded the average since 1996. Since 2002, we have exceeded the previous high of 20.6 set in 1979. The current value of 23.4 is more than two standard deviations above the mean. Since 99% of the observations are within two standard deviations of the mean, values this high indicate that the market is willing to capitalize current earnings at a much lower rate than is typical. This also means that purchasers of land in the current market should not expect cash rents representing 6% of the land value. In the current market, annual income, the cash rent, is contributing a smaller part of the farmland value.

**Estimated return to land and outlook**

To estimate the return that might be received from crop production in 2006, a corn and soybean rotation budget was prepared (Table 1). The corn and soybean prices used were developed using closing future price quotes for August 12, 2005. The estimated harvest price for corn, $2.30, was assumed to be $0.25 less than the close for the December 2006 contract. The estimated harvest price for soybeans, $5.97 was assumed to be $0.30 less than the close for the November 2006 contract.

Given the estimated prices, there is not expected to be a loan deficiency payment (LDP). While the direct payment is attributed to corn or soybeans, these payments will not change if the
rotation is changed\textsuperscript{4}. When accounting for revenue from the market and federal price support program, the total gross revenue averages about $306 per rotation acre.

Production costs are based on Purdue Extension Publication ID-166, 2005 Purdue Crop Guide. These costs were adjusted to reflect continued increases in the price of fertilizer, seed, and fuel inputs. Compared to 2005 estimates, the production costs of corn were increased 11.1\% and soybeans were increased 12.2\%. The soybean estimates do not include the cost of treating for Asian Rust.

Table 1. Estimated 2006 return for a corn-soybean rotation on average land - harvest prices.

<table>
<thead>
<tr>
<th></th>
<th>Corn</th>
<th>Beans</th>
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<tbody>
<tr>
<td>Projected harvest time price</td>
<td>$2.30</td>
<td>$5.97</td>
</tr>
<tr>
<td>Yield</td>
<td>146.5</td>
<td>46</td>
</tr>
<tr>
<td>Market revenue</td>
<td>$336.95</td>
<td>$274.62</td>
</tr>
<tr>
<td>LDP Payment</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Direct government payment</td>
<td>$26.30</td>
<td>$13.84</td>
</tr>
<tr>
<td>CCP government payment</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Gross revenue</td>
<td>$363.25</td>
<td>$288.46</td>
</tr>
<tr>
<td>Variable production cost</td>
<td>$205.00</td>
<td>$128.00</td>
</tr>
<tr>
<td><strong>50-50 rotation</strong></td>
<td><strong>$159.36</strong></td>
<td><strong>$160.46</strong></td>
</tr>
</tbody>
</table>

Machinery overhead $52.10
Drier overhead $7.20
Operator labor $39.00

Return to land $61.06
Return after rent $(71.95)

There are many things that will change between now and the time that rents for next year are determined. However, the limited supply of rental land and the desire by many farmers to expand will continue to make the rental market extremely competitive. Over the past two years, the input costs of fuel, fertilizer, and seed have increased significantly. At this point in the growing season, it seems that the threat of Asian Soybean Rust has been avoided. While the exact impact of this disease on production costs and yield will vary from year to year, it has increased the uncertainty associated with soybean production. As such, one would expect the market to provide a larger contribution margin for soybean production. One way to increase the return for risk taking is to bid a little aggressively in the rental market. The competition in this market will make using such a strategy difficult; however, tighter margins are likely to slow the increase in cash rent. For the year ahead, cash rents are expected to move 0.5\% to 1.0\% higher.

\textsuperscript{4} Additional assumptions used in estimating the direct government payment for corn include: direct payment yield - 110 bu. per acre and direct payment rate - $0.28 per bu. Additional assumptions used in estimating the direct government payments for soybeans include: direct payment yield - 37 bu. per acre and direct payment rate - $0.44 per bu.
Figure 1. Percentage change in land values, June 2004 to June 2005, Purdue Land Value Survey
Figure 4. Percentage change in cash rents, June 2004 to June 2005, Purdue Land Value Survey