2007 Missouri Agricultural Use Values

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Testimony to the Missouri State Tax Commission
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Agenda

- Research on a new formula
  - Many different ideas examined
    - Historically-based
    - Future-based
    - Thanks to all involved

- Economic data used in the formula
  - Grades 1-4
  - Grades 5-7

- Remaining issues
FAPRI - MU Land Use Values, By Grade

2007 Compared to 2005
Grades 1-4 14.7% Increase
Grades 5-7 2.2% Decline

Dollars per acre

<table>
<thead>
<tr>
<th>Year</th>
<th>Grade 1 Land</th>
<th>Grade 2 Land</th>
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Recommendations

- Move to a net income per acre calculation instead of cash rents
- Include all government payments except ad hoc and disaster
- In calculating the 2007 use value include an estimate 2007/2008 crop year
- Move to an interest rate that is easier to update
- Move to a 10-year moving historical average to calculate crop grade use values (grades 1-4)
- Use a 15-year moving historical average for pasture-based grades (grades 5-7)
- No change in relationships between grades 1-4 and grades 5-7
Theoretical Use Value

- Future stream of returns discounted to today’s dollars

- Use Value = \( \sum (\frac{NR_t}{(1 + r_t)^t}) \)

- If net return and discount rate are assumed constant, it collapses to \( UV = \frac{NR}{r} \)

- **THERE IS NO “RIGHT” FORMULA**
Corn Expenses Versus Market Receipts

Dollars per acre


Variable Expenses
Overhead Expenses
Market Receipts
Beef Cow Expenses Versus Market Receipts

Dollars per cow


Total Expenses  Market Receipts
2007 Missouri Planted Acres (thousand acres)

- Corn: 3,400
- Soybeans: 4,600
- Wheat: 1,050
- Sorghum: 110
- Cotton: 390
- Rice: 180

Legend:
- Corn
- Soybeans
- Wheat
- Sorghum
- Cotton
- Rice
Agriculture Real Estate Loan Rate, 10th Fed. Reserve

Interest Rate

10-year Moving Average
Interest Rates Are Important
Assume Crop Return is $50
Growth in Weighted Average Grades 1-4, 1997 - 2007

- Interest Rates Frozen at 1997: $502 in 2007
Change in Weighted Average Grades 1-4 Use Values

- Crop Returns
- Interest Rate
- Total Change
FAPRI - MU Land Use Values, By Grade

2007 Compared to 2005
Grades 1-4 14.7% Increase
Grades 5-7 2.2% Decline

Dollars per acre

1996 1999 2002 2005
Grade 1 Land
Grade 2 Land
Grade 3 Land
Grade 4 Land
Grade 5 Land
Grade 6 Land
Grade 7 Land
FAPRI - MU Versus State Tax Commission, Grade 1

Dollars per acre

1996 1999 2002 2005

FAPRI - MU
State Tax Commission
<table>
<thead>
<tr>
<th>Missouri Agricultural Use Values</th>
<th>1999</th>
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<tr>
<td>Missouri Cropland Returns ($ per Planted Acre)</td>
<td>(8.42)</td>
<td>27.49</td>
<td>29.21</td>
<td>44.90</td>
<td>76.98</td>
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<td>Missouri Cattle Returns ($ per Pasture Acre)</td>
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Summary

- Current moving average returns suggest increases in grades 1-4 and a decline in grades 5-7.
- These recommendations are based on historical data, no guarantee that matches the future.
- Interest rates remain a key driver in the long run calculation of agricultural use values.
- Questions?