Kansas Agricultural Land Rental Rates

Mykel Taylor
Department of Agricultural Economics

Clay Center, KS
January 11, 2016

Returns to Farming

Source: KS Farm Management Association

Cash Rents

Source: USDA-NASS

Rentals and Net Farm Income

Returns to Farming

Source: KS Farm Management Association

Updated: Returns to Farming

Source: KS Farm Management Association

- Survey results tend to lag market due to
  - Survey reflect average rents paid (masks quality differences)
  - Doesn’t consider when the rental rates were negotiated
  - May include non-market activities
- Are there alternatives to the USDA-KASS survey?
Projected Rental Rates

• Another way to obtain an estimate of cash rental rates for cropland
  – Budgeting approach that reflects expected returns to farming
  – Marginal rental rate versus average rental rate

• Calculate crop share revenues based on long-term profit expectation

• Crop share revenues
  – Used predicted crop share % obtained by budgets using current inputs costs and production practices
  – County-level yields from a 20 year trend
  – Expected cash prices from futures and local basis

• Biggest different between 2014 and 2016 cash rent projections...

Projected Rental Rates

• Expected crop prices dropped significantly between 2014 and 2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Harvest Futures Prices ($/bu)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wheat</td>
</tr>
<tr>
<td>2014</td>
<td>$7.02</td>
</tr>
<tr>
<td>2015</td>
<td>6.09</td>
</tr>
<tr>
<td>2016</td>
<td>5.46</td>
</tr>
<tr>
<td>$ change</td>
<td>-1.56</td>
</tr>
</tbody>
</table>

Note: Prices are the average price of harvest futures contracts in preceding November

Projected Rental Rates

• What do they represent?
• Budgeting approach with expected prices and county yields gives an estimate of
  – What a representative farmer could afford to pay

• Ignores
  – Working capital (carry over from previous years)
  – Debt obligations and other cash outlays
  – Profits from owned land being reallocated

Non-Irrigated Rental Rates

<table>
<thead>
<tr>
<th>Region</th>
<th>2014 KSU ($/ac)</th>
<th>2015 KSU ($/ac)</th>
<th>2016 KSU ($/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest</td>
<td>70.90</td>
<td>38.75</td>
<td>19.59</td>
</tr>
<tr>
<td>West Central</td>
<td>65.51</td>
<td>30.18</td>
<td>13.08</td>
</tr>
<tr>
<td>Southwest</td>
<td>57.29</td>
<td>22.03</td>
<td>7.38</td>
</tr>
<tr>
<td>North Central</td>
<td>102.55</td>
<td>69.31</td>
<td>37.26</td>
</tr>
<tr>
<td>Central</td>
<td>86.27</td>
<td>53.79</td>
<td>26.73</td>
</tr>
<tr>
<td>South Central</td>
<td>69.29</td>
<td>42.61</td>
<td>19.38</td>
</tr>
<tr>
<td>Northeast</td>
<td>167.65</td>
<td>119.50</td>
<td>78.24</td>
</tr>
<tr>
<td>East Central</td>
<td>103.84</td>
<td>63.84</td>
<td>34.80</td>
</tr>
<tr>
<td>Southeast</td>
<td>55.83</td>
<td>31.64</td>
<td>9.99</td>
</tr>
</tbody>
</table>

Source: Taylor, 2015

2016 values are not final!
Non-Irrigated Rental Rates

<table>
<thead>
<tr>
<th>NC District</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay</td>
<td>94.60</td>
<td>115.80</td>
<td>79.90</td>
<td>43.60</td>
</tr>
<tr>
<td>Cloud</td>
<td>89.20</td>
<td>108.80</td>
<td>75.10</td>
<td>41.30</td>
</tr>
<tr>
<td>Jewell</td>
<td>92.40</td>
<td>109.10</td>
<td>75.40</td>
<td>41.60</td>
</tr>
<tr>
<td>Mitchell</td>
<td>87.30</td>
<td>105.40</td>
<td>72.80</td>
<td>40.10</td>
</tr>
<tr>
<td>Osborne</td>
<td>76.90</td>
<td>86.00</td>
<td>59.50</td>
<td>32.90</td>
</tr>
<tr>
<td>Ottawa</td>
<td>74.70</td>
<td>92.50</td>
<td>63.70</td>
<td>34.90</td>
</tr>
<tr>
<td>Phillips</td>
<td>77.70</td>
<td>84.00</td>
<td>57.90</td>
<td>32.10</td>
</tr>
<tr>
<td>Republic</td>
<td>95.50</td>
<td>115.60</td>
<td>79.50</td>
<td>43.70</td>
</tr>
<tr>
<td>Rooks</td>
<td>66.80</td>
<td>66.20</td>
<td>45.70</td>
<td>25.30</td>
</tr>
<tr>
<td>Smith</td>
<td>87.20</td>
<td>98.60</td>
<td>68.10</td>
<td>37.60</td>
</tr>
<tr>
<td>Washington</td>
<td>102.30</td>
<td>123.00</td>
<td>84.80</td>
<td>46.40</td>
</tr>
<tr>
<td>Average</td>
<td>$85.87</td>
<td>$100.45</td>
<td>$69.31</td>
<td>$38.20</td>
</tr>
</tbody>
</table>

Returns to Land

- Has every farmer dropped their cash rents for 2016?
  - Answer: No, but they are starting to...
- What is keeping the adjustment from occurring quickly?

- Residual cash from better revenue years will allow farmers to be competitive a little longer
  - Neighbors with more carry-over cash will keep bids high
  - But adjustments will occur if commodity prices remain low
- Contracts length in Kansas averages 3 to 5 years
  - Farmers are locked in for the short run
  - Adjustments will be made as the contracts are renewed

Returns to Land

- Projected non-irrigated cash rents for Clay County:

Rents and Net Farm Income

- Pasture rents are at historic levels
  - Jump in rent driven by high cattle prices

Pasture Rental Rates
Pasture Rental Rates

- Different way to approach pasture rent questions
  - Start with assumption that not all pasture is created equal
  - Gain flexibility from changing range conditions and market prices
  - Give landowners and tenants a way to estimate the value of good pasture

Pasture Resources

- A new pasture lease pricing tool is available at
  - [www.AgManager.info](http://www.AgManager.info)
  - Collaborative effort with NRCS
- Contact information
  - Mykel Taylor: mtaylor@ksu.edu
  - Robin Reid: robinreid@ksu.edu

PROPERTY TAX OUTLOOK

- Defined as the eight year average of eight year average of returns to landlord
  - This eight year average is then capitalized at the statute-defined capitalization rate (11-12%)
  - Process places a weight on middle years of the eight year window
  - Designed to have a more smoothing effect on tax values
    - Removes variability in annual changes in returns
- Landlord net return comprised of last 15 years of returns to the landlord

Non-irrigated Single Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Landlord Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>$0</td>
</tr>
<tr>
<td>2000</td>
<td>$10</td>
</tr>
<tr>
<td>2001</td>
<td>$20</td>
</tr>
<tr>
<td>2002</td>
<td>$30</td>
</tr>
<tr>
<td>2003</td>
<td>$40</td>
</tr>
<tr>
<td>2004</td>
<td>$50</td>
</tr>
<tr>
<td>2005</td>
<td>$60</td>
</tr>
</tbody>
</table>

Source: Featherstone, 2015

Property Tax Computation

- Eight-year average of an eight-year average

Source: Featherstone, 2015
Property Tax Computation

Eight-year average of an eight-year average

Source: Featherstone, 2015

Impact of Moving Forward

Source: Featherstone, 2015

Property Tax Issues

- Look for more information on this coming soon
  - Webinar with Dr. Allen Featherstone
  - Additional materials with county-level estimates

Kansas Agricultural Land Values and Rental Rates

Mykel Taylor

www.AgManager.info
mtaylor@ksu.edu

Online Resources

- 2014 Kansas Agricultural Land Values
  http://www.agmanager.info/farmmgmt/land/county/CountyValues_April_2015.pdf

- 2014/15 Rental Rates for Non-Irrigated Cropland

- 2014/15 Rental Rates for Irrigated Cropland
Kansas Agricultural Land Values
Mykel Taylor
Department of Agricultural Economics

Ag Profitability Conference
Colby, KS
January 6, 2016

2015 Cropland Values

Legend
- U.S. Average: $39.7
- 2015: $36.9
- 2014: $31.0
- 2013: $27.9
- 2012: $24.9
- 2011: $22.0
- 2010: $19.6
- 2009: $17.4
- 2008: $15.7
- 2007: $12.9
- 2006: $11.1

2015 Pasture Values

Legend
- U.S. Average: $4.3
- 2015: $4.0
- 2014: $3.4
- 2013: $3.0
- 2012: $3.0
- 2011: $3.0
- 2010: $3.0
- 2009: $3.0
- 2008: $2.9
- 2007: $2.9
- 2006: $2.9

Kansas Land Values

Rent-to-Land Value Ratio

Source: USDA-NASS

Source: USDA-NASS
MARKET-BASED LAND VALUES

• Source for market transaction data
  – Property Valuation Department, Topeka
• 2010-2014 and 2015 (Q1-Q2) sales data
  – STR location
  – Acres in sale
  – Mixture of irrigated, non-irrigated and pasture
  – Soil types found on parcel
  – 20-year average rainfall by section
  – Enrollment in government set-asides
  – Value of improvements

KANSAS LAND VALUES

PVD Sales Data 2010-14

<table>
<thead>
<tr>
<th>2014</th>
<th>Average</th>
<th>All Years</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres in Sale, 2014</td>
<td>229.7</td>
<td>Acres in Sale</td>
<td>156.3</td>
</tr>
<tr>
<td>CRP Contracts, 2014</td>
<td>1.80%</td>
<td>CRP Contracts</td>
<td>1.50%</td>
</tr>
<tr>
<td>Sales Per County, 2014</td>
<td>15.0</td>
<td>Sales Per County</td>
<td>136.9</td>
</tr>
<tr>
<td>All Years</td>
<td></td>
<td>Total Sales Transactions: 8,743</td>
<td>Total Sales Transactions: 14,374</td>
</tr>
<tr>
<td>2014</td>
<td>17.8%</td>
<td>2015 Q1-Q2</td>
<td>10.2%</td>
</tr>
<tr>
<td>2013</td>
<td>16.1%</td>
<td>2014</td>
<td>15.7%</td>
</tr>
<tr>
<td>2012</td>
<td>19.3%</td>
<td>2013</td>
<td>16.0%</td>
</tr>
<tr>
<td>2011</td>
<td>20.5%</td>
<td>2012</td>
<td>17.0%</td>
</tr>
<tr>
<td>2010</td>
<td>26.3%</td>
<td>2011</td>
<td>17.6%</td>
</tr>
</tbody>
</table>

PVD Sales Data 2010-15 (Q1-2)

<table>
<thead>
<tr>
<th>2015 Q1-Q2</th>
<th>Average</th>
<th>% of All Transactions</th>
<th>2015 Q1-Q2</th>
<th>Average</th>
<th>% of All Transactions</th>
<th>2015 Q1-Q2</th>
<th>Average</th>
<th>% of All Transactions</th>
<th>2015 Q1-Q2</th>
<th>Average</th>
<th>% of All Transactions</th>
</tr>
</thead>
</table>

PVD Sales Data 2014 & 2015 Q1-2

<table>
<thead>
<tr>
<th>2014</th>
<th>Average $/ac</th>
<th>% of All Transactions</th>
<th>2014 USDA-NASS $/ac</th>
<th>2014 Data Sample Average $/ac</th>
<th>2015 USDA-NASS $/ac</th>
</tr>
</thead>
</table>

Land Model

<table>
<thead>
<tr>
<th>Land Type</th>
<th>2014 Data Sample Average $/ac</th>
<th>2014 USDA-NASS $/ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Irrigated</td>
<td>$2,833</td>
<td>$2,150</td>
</tr>
<tr>
<td>Irrigated</td>
<td>$3,478</td>
<td>$3,280</td>
</tr>
<tr>
<td>Pasture</td>
<td>$1,991</td>
<td>$1,300</td>
</tr>
<tr>
<td>Non-Irrigated</td>
<td>$2,833</td>
<td>$2,150</td>
</tr>
<tr>
<td>Irrigated</td>
<td>$3,478</td>
<td>$3,280</td>
</tr>
<tr>
<td>Pasture</td>
<td>$1,991</td>
<td>$1,300</td>
</tr>
</tbody>
</table>

• Use of a regression model to estimate land values
  – Alternative to summary statistics (average, range)
  – Accounts for variability in land found in sample
LAND MODEL RESULTS

Source: Taylor, 2015

Non-Irrigated Cropland

Irrigated Cropland

Pasture Land

Source: Taylor, 2015
Land Value Trends

- Non-Irrigated Cropland
- State Average

Land Model Results

- Non-Irrigated Cropland
- State Average

Land Price Expectations

- Actual land sales are not falling off as quickly or dramatically as we expected
- Lender’s surveys and USDA surveys indicated an expectations of lower land values
- Not showing up in the data. Why?
  - Slowdown hasn’t happened yet
  - I can’t measure no-sales

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-Irrigated</th>
<th>Irrigated</th>
<th>Pasture</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>19%</td>
<td>33%</td>
<td>13%</td>
</tr>
<tr>
<td>2011-12</td>
<td>24%</td>
<td>34%</td>
<td>16%</td>
</tr>
<tr>
<td>2012-13</td>
<td>19%</td>
<td>1%</td>
<td>15%</td>
</tr>
<tr>
<td>2013-14</td>
<td>6%</td>
<td>9%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Source: Taylor, 2015
Based on an estimated model for Kansas land values, the one-year multiplier for net farm income per acre was 1.50
- The long-run multiplier is 21.71 or an implied capitalization rate of 4.61%
- At the projected net farm income per acre of $53...
  - Projected long-run Kansas land price is $1,151 a decline of 43.3%
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