

2. Kansas Ag Land Values Update

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Mykel Taylor joined the Department of Agricultural Economics as an Assistant Professor in 2011. Her research and extension programs are focused in the areas of crop marketing and farm management. She grew up on a cattle ranch in Montana and attended Montana State University majoring in Agribusiness Management. Her PhD in Economics is from North Carolina State University. Mykel has worked in extension positions at both Kansas State University and Washington State University. Some of her current research areas include measuring basis risk for commodity grains, understanding the implications of food safety and country of origin labeling on meat demand, and estimating land values for crop and pasture land in Kansas.

Abstract/Summary

This presentation covers recent information on the land market in Kansas, trends in rental rates, and discusses where land values and rental rates might be headed in the near future.

Kansas Agricultural Land Values

Mykel Taylor

Department of Agricultural Economics

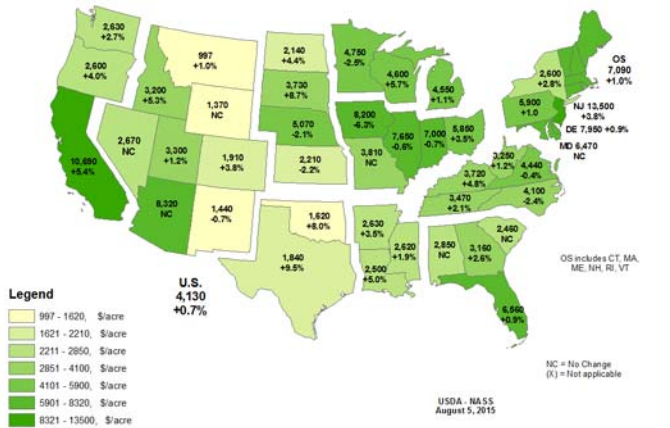
Risk and Profit Conference
Manhattan, KS
August 20-21, 2015



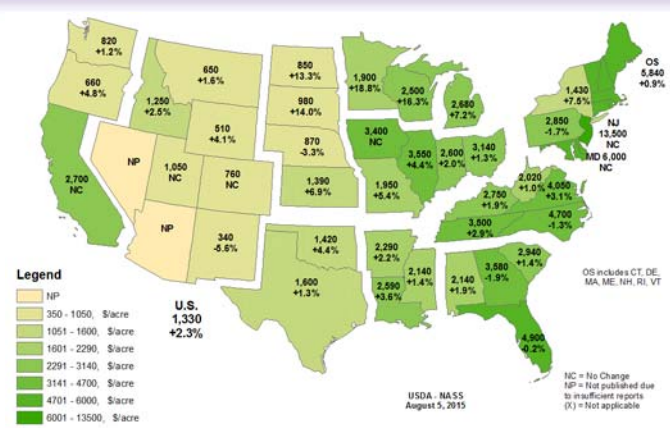
AG LAND VALUE SURVEYS



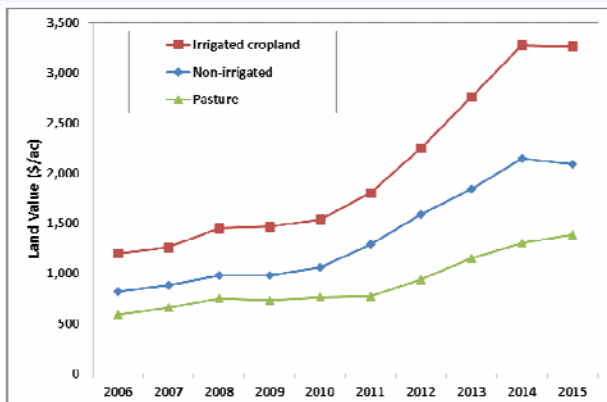
2015 Cropland Values



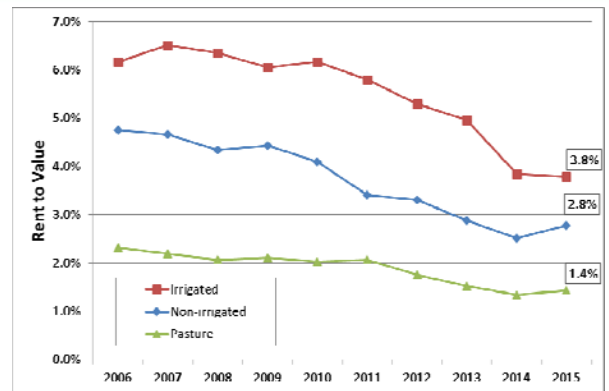
2015 Pasture Values



Kansas Land Values



Rent-to-Land Value Ratio



MARKET-BASED LAND VALUES



- Source for market transaction data
 - Property Valuation Department, Topeka
- 2010-14 sales data
 - County location
 - Acres in sale
 - Mixture of irrigated, non-irrigated and pasture
 - Soil types found on parcel
 - Enrollment in government set-asides
 - Value of improvements



PVD Sales Data

- Data were ‘cleaned’ to remove outliers
 - Removed parcels under 40 acres
 - Bare land sales only (no houses)
 - Arm’s length sales only
- Other aspects of data
 - Wyandotte and Johnson counties not in dataset
 - Soil type data used to create a productivity measure (AUM capacity)



PVD Sales Data 2010-14

2014	Average
Acres in Sale, 2014	229.7
CRP Contracts, 2014	1.80%
Sales Per County, 2014	15.0
All Years	
Total Sales Transactions:	8,743
2014	17.8%
2013	16.1%
2012	19.3%
2011	20.5%
2010	26.3%



PVD Sales Data 2014

Land Type	Average \$/ac	% of All Transactions
Non-Irrigated	\$2,833	54.7%
Irrigated	\$3,478	4.9%
Pasture	\$1,991	40.4%
All Cropland and Pasture	\$2,524	100%



Land Model

Land Type	2014 Data Sample Average \$/ac	2014 USDA-NASS \$/ac
Non-Irrigated	\$2,833	\$2,150
Irrigated	\$3,478	\$3,280
Pasture	\$1,991	\$1,300

- Use of a regression model to estimate land values
 - Alternative to summary statistics (average, range)
 - Accounts for variability in land found in sample



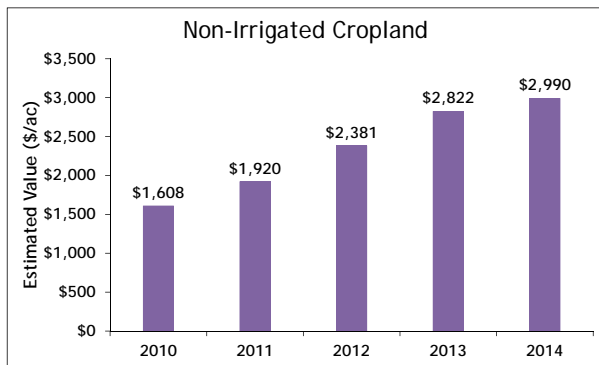
- Allows specification of unique characteristics of land parcels
 - Location (rain fall, taxes, proximity to development)
 - Parcel size, size squared
 - Productivity by soil type (AUM)
 - Land type (dryland, irrigated, pasture)
 - When the sale occurs (year, quarter)
 - CRP enrollment



LAND MODEL RESULTS



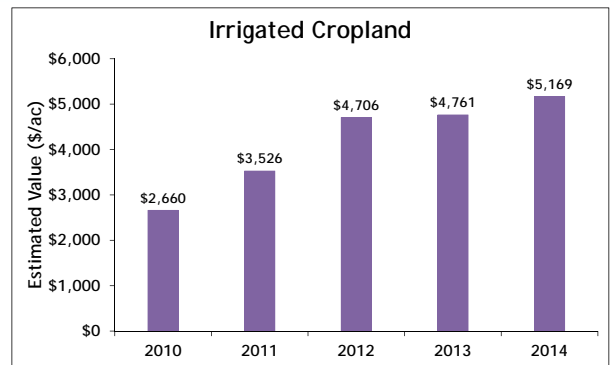
Land Model Results



Source: Taylor, 2015



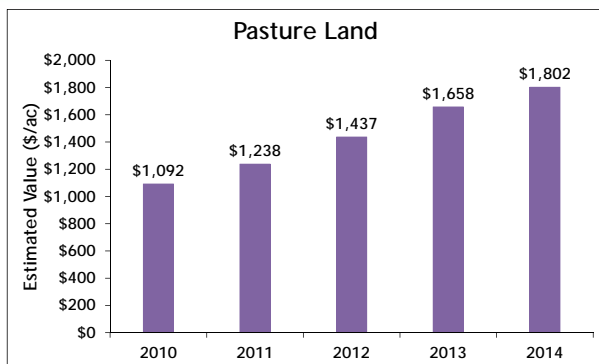
Land Model Results



Source: Taylor, 2015



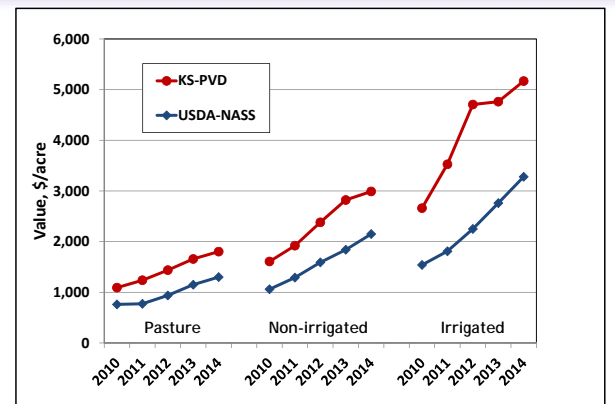
Land Model Results



Source: Taylor, 2015

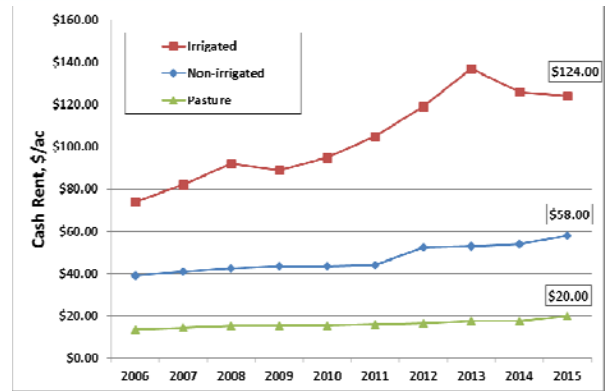
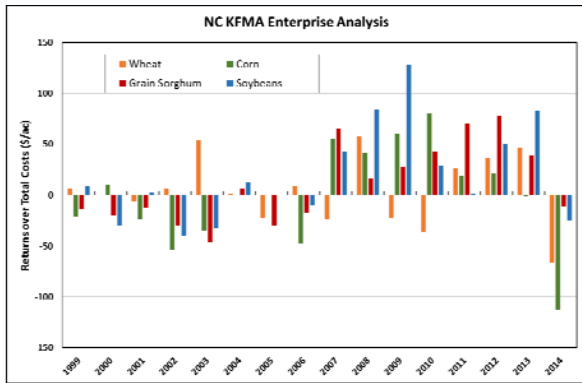


Land Model Results



Source: Taylor, 2015





- 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?



- 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 and apply a risk premium



- 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
 - Adjust expected revenues down by 15% risk premium
- Biggest different between 2014 and 2015 cash rent projections...



- Expected crop prices dropped significantly between 2014 and 2015

Year	Expected Prices (\$/bu)			
	Wheat	Corn	Soybeans	Grain Sorghum
2014	6.61	4.60	10.70	4.35
2015	5.79	4.09	9.30	3.94
\$ change	-0.82	-0.51	-1.40	-0.41

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



Non-Irrigated Rental Rates

Region	2014 KSU (\$/ac)	2015 KSU (\$/ac)	Change in Rent (%)
Northwest	70.90	38.75	-45.3
West Central	65.51	30.18	-53.9
Southwest	57.29	22.03	-61.5
North Central	102.55	69.31	-32.4
Central	86.27	53.79	-37.6
South Central	69.29	42.61	-38.5
Northeast	167.65	119.50	-28.7
East Central	103.84	63.84	-38.5
Southeast	55.83	31.64	-43.3

Source: Taylor, 2015



Irrigated Rental Rates

Region	2014 KSU (\$/ac)	2015 KSU (\$/ac)	Change in Rent (%)
Northwest	179.13	112.75	-37.1
West Central	141.00	81.00	-42.6
Southwest	139.54	71.62	-48.7
North Central	239.88	167.13	-30.3
Central	183.20	114.20	-37.7
South Central	147.64	77.45	-47.5

Note: Estimated values reflect tenant-owned pivot
Source: Taylor and Tsoodle, 2015



Returns to Land

- Has every farmer dropped their cash rents for 2015?
- Answer: no



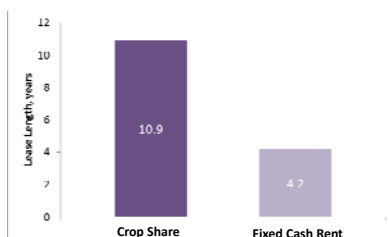
Returns to Land

- 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



Returns to Land

- 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



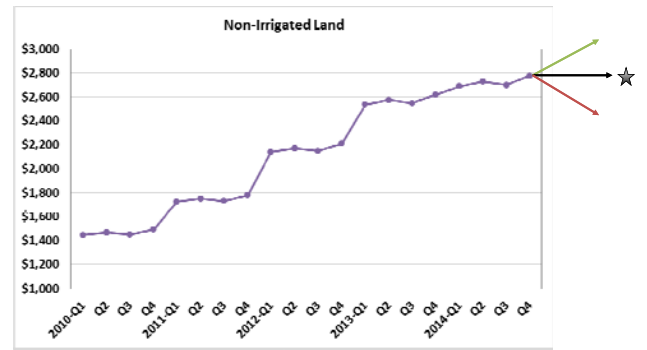
Source: KS Farm Management Association



SUMMARY LAND VALUES & RENTS



- Land values are up for 2014, but rate of growth has slowed for all land types
- Appears to be reflecting 2014 net farm income and expected income for 2015
- Are we headed for a big drop in land values?
 - Not likely, due to continued low interest rates
 - Would also need a large increase in supply of land on market to see a repeat of 80's decline in values



Kansas Agricultural Land Values

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- 2014 Kansas Agricultural Land Values
http://www.agmanager.info/farmmgmt/land/county/CountyValues_April_2015.pdf
- 2014/15 Rental Rates for Non-Irrigated Cropland
[http://www.agmanager.info/farmmgmt/land/county/CountyNon-irrigatedRents\(Jan2015\).pdf](http://www.agmanager.info/farmmgmt/land/county/CountyNon-irrigatedRents(Jan2015).pdf)
- 2014/15 Rental Rates for Irrigated Cropland
http://www.agmanager.info/farmmgmt/land/county/CountyIrrigatedRents_Feb-2015.pdf



LAND RESOURCES



- New mapping program from UM
- Business Environmental Risk Management
– <http://ims.missouri.edu/berm/>



BERM
Business Environmental Risk Management
Information for Managing the Effect of Agriculture on the Environment

BERM Analysis Area Selection
Select your location, then click the **Make Map** button to proceed.

SELECT LOCATION CATEGORY:

Country
Township/Range/Section
Zip Code

Select a County:
Adair

Make Map

For more information contact: Ray Massey at the Commercial Agriculture Program
This website hosted by the Center for Applied Research and Environmental Systems (CARES)

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Center for Applied Research and Environmental Systems
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Center for Applied Research and Environmental Systems

Welcome to the Farm Management Planning Tools and Data Access Site

To access data and reports for your farm, use the **Go** tool to move to a farm, then use the **Go** tool to draw a farm boundary. Click **Go** to generate reports or retrieve data.

LINKLAND.ORG
ADL Site
BERM
For more information, visit [Resources for Decision Management Planning](#)



Select farm

BERM
Business Environmental Risk Management
BERM Analysis Report

Demographic Summary

Analysis Area: 1,775 Acres
Legal Description (Central Section): Sec. 15, T30N, R27W, 5th P.U.
Latitude/Longitude (Center of Map): 37° 42' 7.3" N 97° 53' 34.5" W
County(N): Cedar
Latitude/Longitude (Corner): 37° 42' 2" N 97° 53' 24" W

Hydrologic Summary

Streams: Total Stream (ft): 45,983.4
Perennial (ft): 0.0
Intermittent (ft): 0.0
Canal or Ditch (ft): 0.0
Other Stream (ft): 45,983.4

Rivers, Ponds and Lakes: Total Water Area: 49.4
River Area: 44.2
Pond / Lake Area: 5.3
Swamp Area: 0.0
Other Water Area: 0.0

Wetlands: Inland Forested Wetland: 65.4
Inland Herbaceous Wetland: 6.0

USDA-NRCS 12-Digit Hydrologic Units: 76102
HU Name: Cedar Creek
On Farm Acreage: 1,897.2
Total HU Acreage: 21,939

10290180005 Cedar Creek
10290180004 Adair Creek
79.7
24,541

Environmental Concerns Summary

Population Within 1 Mile: Total Persons: 655
Persons per Square Mile: 10.8

Community Sites Within 1 Mile: Incorporated Areas: 0
Parks (Public Land): 1
Schools: 0
Embellment Churches: 0
1/Management Conservation Area: 0

Wells Within 1 Mile: Public Wells: 0
Private Wells: 5

2006 303(d) List Impaired Water Bodies in Analysis Area 12-Digit Hydrologic Unit: 2006 303(d) List Impaired Water Bodies in the evaluation area hydrologic units. No 303(d) listed water bodies in the evaluation area hydrologic units.

303 (d) List Impaired Water Bodies in Downstream 12-Digit Hydrologic Unit: Water Body: Pollutant: Source: Priority: TMDL: Approved: No 303(d) listed water bodies in downstream hydrologic units.

Restricted Pesticide Use Areas and Species: Species: Location: Restricted Pesticides: Restrictions: None

Karst Features: Karst Features: Acreage in Karst Prone Soils



Floodplain
(The available data for floodplain features is incomplete. Click for data availability map)
Areas in 100-Year Floodplain: 0.0
Additional Areas in 500-Year Floodplain: 0.0
Areas in Excluded Areas: 0.0
Warning: The entire analysis area is outside floodplain mapping area.

Critical Watersheds
Public Water Supply: None
Outstanding National Resource Waters: Henry Co. PWSID #2 - Truman Reservoir

Slope Classification

Slope Category	Description	Acres	Percent of Area
0% to 2% Slope	Prime Farm Land, Suitable for Land Application	618.0	34.8 %
3% to 4% Slope	Suitable Farm Land, Suitable for Land Application	568.4	32.0 %
6% to 10% Slope	Marginal for Land Application	426.1	23.9 %
10% to 15% Slope	Land Application of Nutrients not Allowed	123.3	6.9 %
15% or Greater Slope	Unsuitable for Agriculture	57.6	3.2 %

Soils

Map Unit	Name	Acres	Percent of Area	Hydrologic Group (Comment)
4000A	Barren silt loam, 2 to 3 percent slopes	54.7	3.1%	C
4000B	Barren silt loam, 1 to 3 percent slopes	1.6	0.1%	C
7000B	Bona gravelly silt loam, 3 to 8 percent slopes	187.3	9.4%	B
7000C	Bona gravelly silt loam, 8 to 15 percent slopes	23.6	1.3%	B
7170A	Clayey fine sandy loam, 0 to 2 percent slopes, frequently flooded	0.0	0.0%	B
7005A	Clayey gravelly loam, 3 to 20 percent slopes, very stony	15.9	0.9%	C
7005D	Clayey gravelly loam, 8 to 15 percent slopes	17.1	1.0%	C
7005E	Clayey silt loam, 2 to 5 percent slopes	117.3	6.6%	C
7009D	Courtois silt loam, 2 to 5 percent slopes	52.8	3.0%	C
7009E	Courtois gravelly silt loam, 3 to 8 percent slopes	128.5	7.2%	C

Legend

- MoDOT Roadway and Highways, 2007
- Interstate
- U.S. Highway
- State National Highway
- State Labeled Highway
- Private Road
- Road or Street
- County Boundaries, 2000
- Incorporated Areas, 2000
- City
- Town
- Village
- Census Designated Place
- Other

2000 High Resolution Aerial Photos (MARC)
2007-2009 (Spring) High Resolution Aerial Photos
2010 Aerial Photos (NAIP)
2013 Aerial Photos (NAIP)
2006 High Resolution Aerial Photos

Wind Rose (Apr. - Sep.)
Springfield, MO - Regional Airport
Location Map

