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Research and Extension

Land Values of Kansas Cropland and Pasture

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LAND MARKETS

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Land Markets

- Why land?
 - Interest rates are LOW and are expected to stay that way for the near-term
 - If you are holding cash...
 - Savings rates
 - If you want to borrow...
 - Lock in a fixed rate at 4-5%
- Land as an investment
 - 5-7% cash return on irrigated cropland
 - 3-5% cash return on non-irrigated cropland
 - 1-3% cash return on pasture

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Cash Returns to Farm Land

Source: Kansas Agricultural Statistics and K-State

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Changing Land Values

- But land appreciates...
 - Even if annual cash return is near 0%, you still have an asset that typically appreciates over time

Source	Price Change (2011-2012)	
	Non-Irrigated Cropland	Pasture
KC Fed	29.2%	26.0%
KS Ag Stats	25.9%	17.3%
K-State	25.0%	14.8%
Average:	26.7%	19.4%

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KANSAS AG LAND VALUES

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K-STATE Research and Extension Kansas Land Values

- Where do we get information on land values?
- KS Ag Stats Service
 - Annual survey series
 - Dropped CRD-level data for land values in 2010
 - Added county-level data for cash rents in 2009

USDA News Release

KANSAS FARMER RECEIVES VALUE AND EMPLOYMENT BOOST

WYCK, Ok., August 2, 2013 - Kansas's farm and ranch value, a barometer of the value of the land and buildings on the farm, increased 23.4% in 2013, according to USDA's National Agricultural Statistics Service (NASS) report released today.

Cropland value averaged 17 percent higher for more than 12.5 million acres. Other cropland value averaged 22.1 percent higher for 2.5 million acres. Pasture and woodland value averaged 17.0 percent higher for 5.5 million acres.

Cash and paid for landbank in 2013 for cropland also increased from last year. Reported cropland cash averaged 12.7 percent, an increase of 1.8 percentage points over 2012. Reported cropland cash and paid for landbank averaged 22.1 percent, an increase of 1.8 percentage points over 2012.

County-level averages of 2013 cash were paid for landbank will be released on September 4 and will be available through NASS Quick Facts. Quick Facts is located at www.nass.usda.gov.

Access the National performance for the website at: <http://www.nass.usda.gov/landvalues/landvalues2013.pdf>

Did not publish a report in 2013 – reported state averages and provided a link to NASS website.

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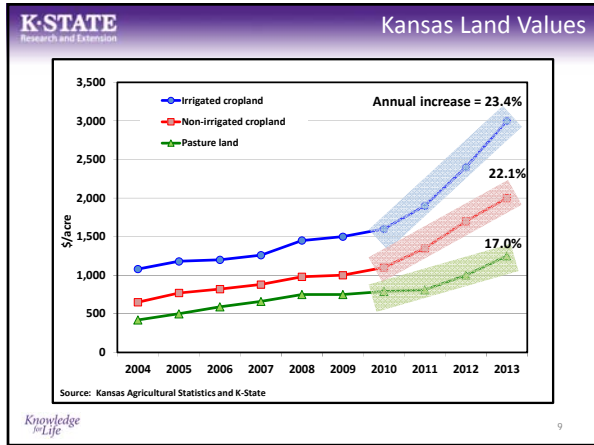
K-STATE Research and Extension Kansas Land Values

- KSU report (MF-1100)
 - Simply a repackaging of KAS data (show more history)
 - Report estimates of CRD-level land values beginning in 2011
 - Likely will discontinue this factsheet in the future (replace with other information)

Kansas Land Prices and Cash Rental Rates

Report includes tables of most recent 20 years of land values and cash rents by CRD.

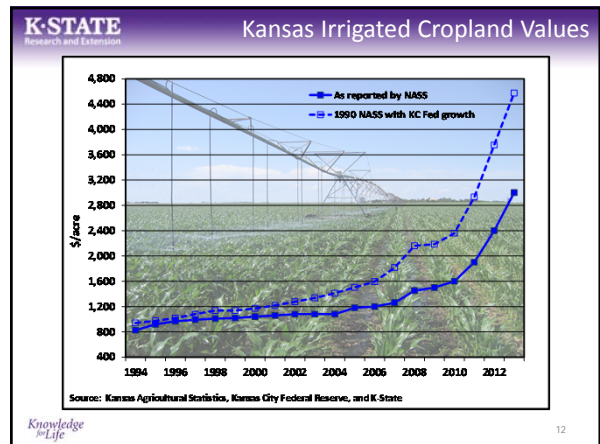
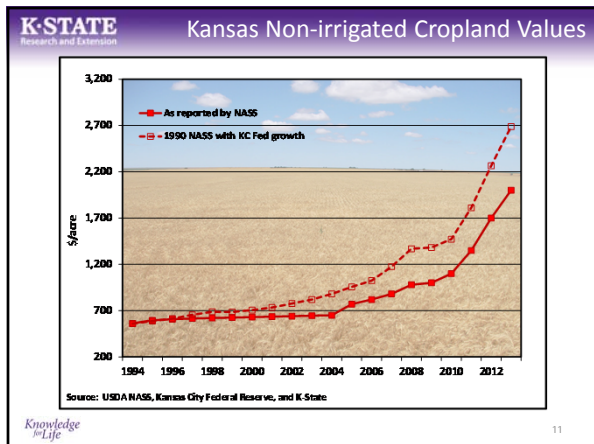
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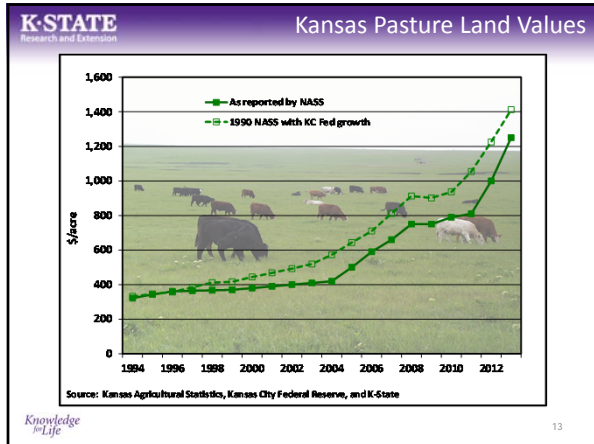


K-STATE Research and Extension High Plains Land Values

- Where do we get information on land values?
- KC Federal Reserve
 - Quarterly survey of bankers
 - 10th District includes CO, KS, NE, OK, WY and parts of NM and MO
 - Report percent change from previous year by land type


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- ### K-STATE Research and Extension Kansas Land Values
- Potential problems with these data
 - Surveys ask for an opinion (read: guess)
 - NOT a market-based estimate
 - Don't know the spread, only the average
 - Funding for KAS is declining
 - Can we add to the available information and improve our estimates of land value trends?

K-STATE Research and Extension Kansas Land Values and Cash Rents



Paper first published in March 2013
MAJOR change from what was reported in this paper previously

1. KAS survey data for land values and cash rents (same as in the past) and
2. KSU estimates of county-level land values and rents (**new stuff**)

KSU estimates of both land values and rents are significantly higher than KAS reported values

January 2013 available at www.kafarmgmt.edu
 Manuscript: K-State Ag Economics, 1780 S. 103rd, Manhattan, KS 66505
 Email: chandler@ksae.ksu.edu, 1780s103@ksae.ksu.edu
 Department of Agricultural Economics, Kansas State University

- ### K-STATE Research and Extension Kansas Land Values
- Source for market transaction data
 - Property Valuation Department, Topeka
 - 2010-12 sales data
 - County location
 - Acres in sale
 - Mixture of irrigated, non-irrigated and pasture
 - Soil types found on parcel
 - Well depth, acre-feet per acre
 - Enrollment in government set-asides
 - Value of improvements

- ### K-STATE Research and Extension PVD Sales Data
- Data were 'cleaned' to remove outliers
 - Removed sales with 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)

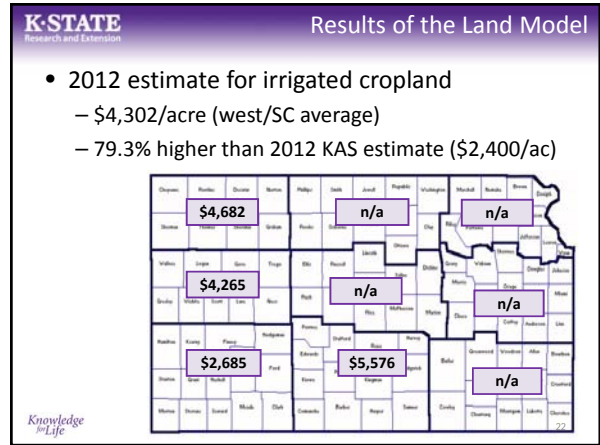
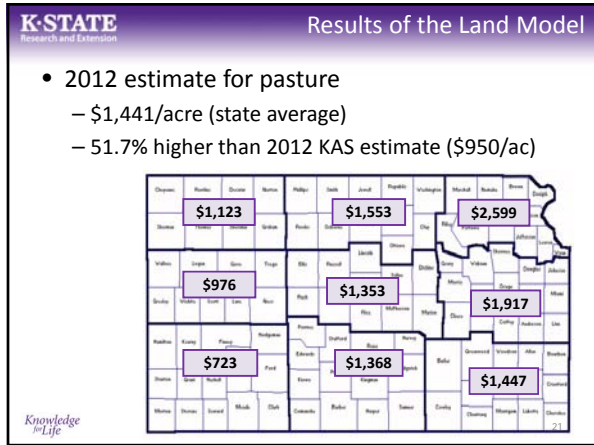
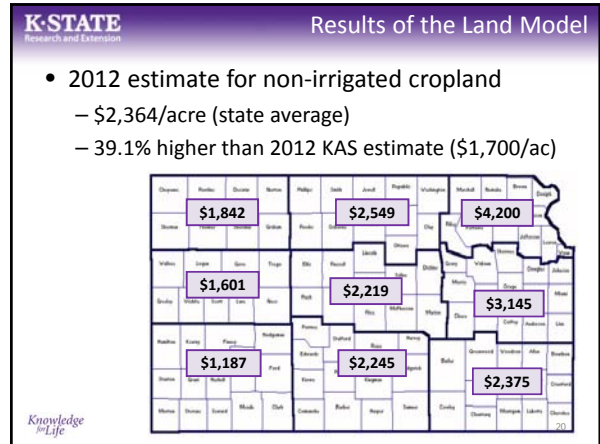
K-STATE Research and Extension PVD Sale Data 2010-12

	Average
Acres in Sale	229
CRP Acres	1.8%
Sales Per County	56
Total Sales Transactions:	
2012	39.8%
2011	30.9%
2010	29.3%

K-STATE Research and Extension PVD Sale Data 2010-12

Land Type	Average \$/ac	% of All Transactions
Non-Irrigated	\$1,734	55.4%
Irrigated	\$2,465	5.8%
Native Grass Pasture	\$1,325	33.5%
Tame Grass Pasture	\$1,765	5.1%
All Cropland and Pasture	\$1,638	100%

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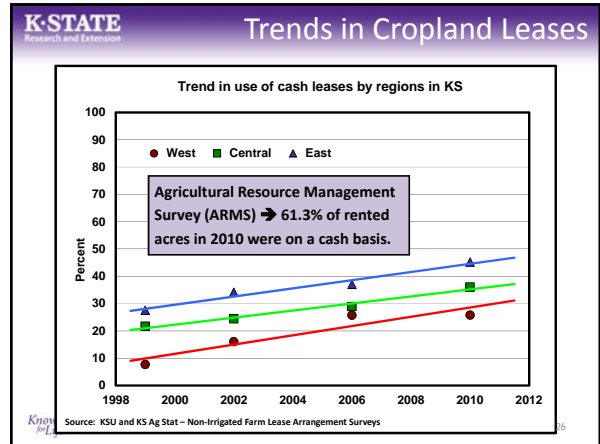
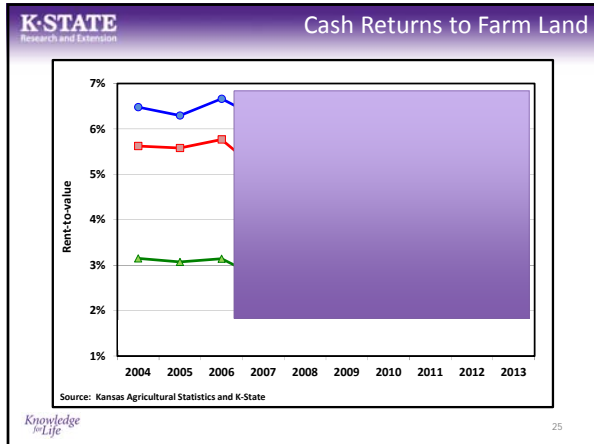
AG LAND RENTAL RATES

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K-STATE Research and Extension Land Markets

- Land as an investment
 - Historic cash returns-to-values have been 5-7%
- But that has been changing over the last 5 years...

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Types of Leases in KS

Region	Cash	Share	Other
Northwest	35.2%	54.6%	10.2%
West Central	21.3	58.5	20.2
Southwest	20.8	76.1	3.1
North Central	41.3	54.8	3.9
Central	32.8	53.8	13.4
South Central	34.0	63.0	3.0
Northeast	48.7	42.4	8.9
East Central	50.9	39.6	9.5
Southeast	35.9	58.2	5.9
State	35.7	55.7	8.6

Source: Schlegel and Tsoodle -- 2010 KAS/KSU survey

- ### Trends in Cropland Leases
- Why are we seeing an upward trend in the use of cash rent leases?
 - Risk aversion
 - Crop insurance can reduce the risk exposure of producers
 - Landowners looking for guaranteed income (elderly)
 - Transaction costs
 - Landowners geographically and generationally removed
 - Producers managing multiple leases/landowners

Types of Leases in KS

Region	Cash	Share	Other
Northwest	35.2%	54.6%	10.2%
West Central	21.3	58.5	20.2
Southwest	20.8	76.1	3.1
North Central	41.3	54.8	3.9
Central	32.8	53.8	13.4
South Central	34.0	63.0	3.0
Northeast	48.7	42.4	8.9
East Central	50.9	39.6	9.5
Southeast	35.9	58.2	5.9
State	35.7	55.7	8.6


Source: Schlegel and Tsoodle -- 2010 KAS/KSU survey

WHERE TO FIND CASH RENTAL RATES FOR KANSAS?

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Rental Rates

- Kansas Ag Statistics
 - Rental rates for non-irrigated, irrigated, and pasture by CRD
- KSU report (MF-1100)
 - Repackaging of KAS data with longer history



Factsheet includes tables of most recent 20 years of land values and cash rents by CRD.

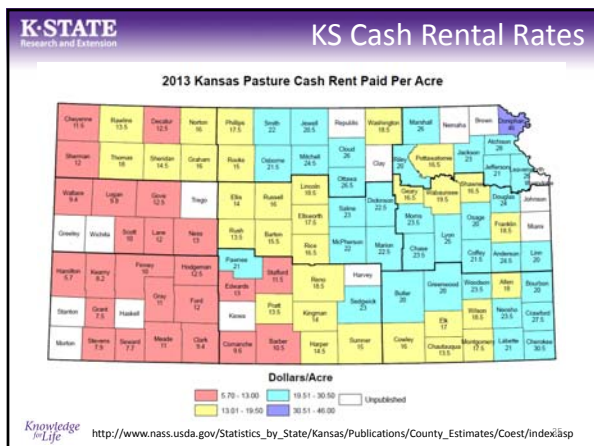
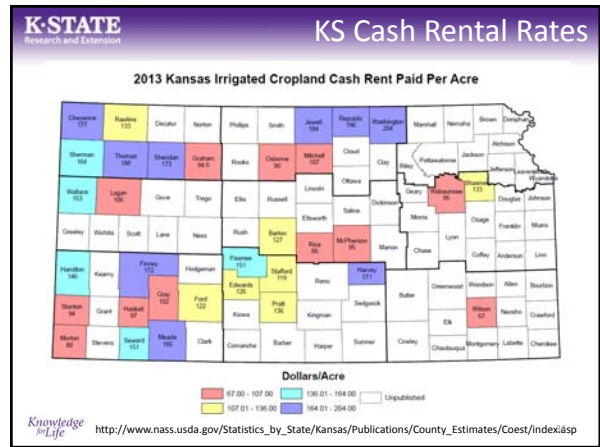
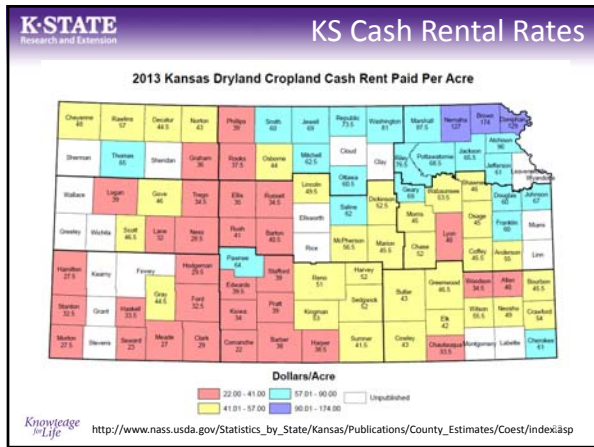
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Rental Rates

- Kansas Ag Statistics surveys
 - Asks what they are actually paying to rent land
 - Recently required by law to publish at county level (CRP rates)
 - KAS publishes only the average rental rate, but can mask a lot of variability
- What people pay can reflect many things
 - Multi-year fixed rate leases
 - Differences in productivity of land and tenant
 - “Relationship” benefits for landowner

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HOW CAN WE CALCULATE RENTAL RATES?

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- 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

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- Crop share revenues
 - Used predicted crop share % obtained by budgets using current inputs costs and production practices
 - Crop mix (including fallow) was used at county level
 - County-level yields from a 20 year trend
 - Expected cash prices from futures and local basis
- To obtain a cash rent equivalent...
 - Adjust down the expected crop share returns to reflect less risk by the landowner
 - Used 15% to reflect high volatility in current commodity markets

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NON-IRRIGATED RENTAL RATES

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K-STATE Research and Extension 2014 Non-Irrigated Rental Rates

- Predicted crop shares
 - Based on a net crop share (no input sharing)

Region	Crop Share (%)
Northwest	36.3
Southwest	33.0
North Central	39.5
South Central	37.7
Northeast	44.4
Southeast	27.5

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Region	2013 KAS (\$/ac)	2014 KSU-Lease (\$/ac)	Ratio(%)
Northwest	45.94	57.11	24.3
West Central	38.33	46.42	21.1
Southwest	31.75	35.81	12.8
North Central	59.36	100.45	69.2
Central	46.36	80.62	73.9
South Central	43.35	65.36	50.8
Northeast	88.45	171.22	93.6
East Central	53.64	101.28	88.8
Southeast	46.32	61.14	32.0

http://www.agmanager.info/farmmg/land/lease/default.asp
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- Differences between KAS survey and KSU-Lease estimates. Why?
- Cash rent estimates use expected prices
 - Can and do change as we move forward
 - Rents will adjust to reflect these differences
- Tend to have longer-term leases in Kansas
 - Multi-year leases cause rental rates to be 'sticky'

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Length of Cropland Leases

State	Share	Cash	All
Iowa (2007)	18.1	9.5	11.4
Kansas (2010)	n/a	n/a	18.6
Oklahoma (2010-2011)	17.0	14.0	15.3

Sources: IA – Duffy, et al.; KS – Schlegel and Tsoodle; OK – Doye and Sahs

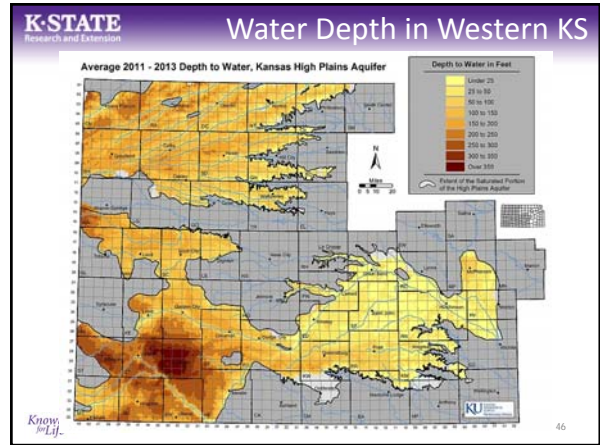
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IRRIGATED RENTAL RATES

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- ### Irrigated Rental Rates
- Same process as non-irrigated
 - Budgeting approach
 - Expected prices and yield trends
 - Extra information needed for irrigated rental rates
 - Pumping costs: fuel prices, depth to water
 - Ownership of irrigation equipment
- Knowledge for Life*



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Irrigated Rental Rates

Region	Avg. Well Depth (ft.)
Northwest	232
West Central	188
Southwest	359
North Central	81
Central	89
South Central	95

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Irrigated Rental Rates

Region	Landlord Ownership (%)		
	Well, Pump & Gearhead	Power Unit	Sprinkler System
Northwest	96.1	56.8	68.8
West Central	95.7	14.8	48.2
Southwest	86.9	11.8	26.5
North Central	96.5	69.6	73.6
Central	86.4	72.5	71.2
South Central	90.3	50.6	49.0
State Average	91.2	46.0	56.2

Source: KS – Schlegel and Tsoodle

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K-STATE Research and Extension **2014 Irrigated Rental Rates**

- Predicted crop shares
 - Based on a net crop share (no input sharing) and no government payments to landowner

Region	Crop Share (%)	
	Tenant Owns Pivot	Landowner Owns Pivot
Northwest	30.5	35.5
Southwest	24.2	30.7
North Central	43.1	49.0
South Central	27.8	33.8

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K-STATE Research and Extension **2014 Irrigated Rental Rates**

Region	2013 KAS (\$/ac)	KSU-Lease (\$/ac)	
		Tenant-Owned Pivot	Landowner-Owned Pivot
Northwest	154.92	179.13	208.25
West Central	129.50	141.00	170.43
Southwest	127.67	139.54	177.00
North Central	156.20	239.88	273.13
Central	102.67	183.20	214.00
South Central	140.60	147.64	179.09
State Average	\$135.26	\$171.73	\$203.65

<http://www.agmanager.info/farmmgmt/land/lease/default.asp>

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RENTAL RATE CALCULATION DEMO

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Situation...

You have a chance to rent 150 tillable acres of non-irrigated crop land (or you could be a landowner looking to lease it to someone else) and you want to identify what reasonable rental terms might be.

You also have the following information:

- 1) The expected crop mix (acres) is the following: wheat=70 acres, followed by double crop soybeans=30, corn=20, soybeans=40, and sorghum=20 (plant 180 ac per year). Level of tillage varies by crop in the rotation.
- 2) Machinery costs are assumed to be 120% of average custom rates.
- 3) 75% of miscellaneous costs are provided by operator and 25% by landowner – all other cost splits are negotiable

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KSU-Lease.xls example...

Most budget information for costs of dryland crops has been pre-entered, we need to do the following:

- 1) Complete the budgets (enter acres, yields, prices, land cost) and examine profit potential (make sure calculated values for planted and tillable acres are correct)
- 2) Identify what an equitable crop share arrangement would be
- 3) Identify an appropriate cash rent – think about implied risk premium
- 4) Examine potential terms for a flexible cash rent

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TABLE 4. Alternative Yield and Price Scenarios (minimum of one must be entered)

Yield scenarios to consider					
	Wht.R	Corn	SB	Milo	SB-DC
Used in analysis above	N/A	N/A	N/A	N/A	N/A
Other	???	???	???	???	???
County average (2004-2011)	40	87	29	73	15
KFMA trend-adjusted projection	47	89	30	77	17
FM guides low	40	70	25	70	15
FM guides average	50	90	35	90	20
FM guides high	60	110	45	110	35
Price scenarios to consider					
	Wht.R	Corn	SB	Milo	SB-DC
Used in analysis above	N/A	N/A	N/A	N/A	N/A
Other	???	???	???	???	???
Forward contract	\$5.68	\$4.08	\$10.09	\$3.88	\$10.09
3-year average	\$7.10	\$6.13	\$12.27	\$6.09	\$12.27
Futures + 3-yr basis	\$6.95	\$4.74	\$10.92	\$4.54	\$10.92
Other1 -- avg/low	\$6.00	\$4.00	\$10.50	\$3.50	\$10.50
Other2 -- avg/high	\$6.50	\$4.50	\$11.50	\$4.30	\$11.50

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Rental Rate Demonstration

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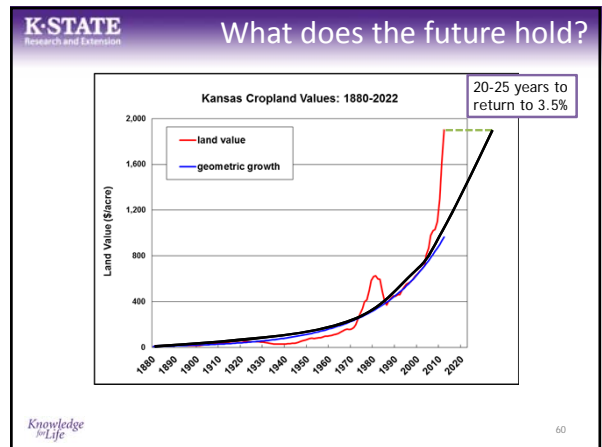
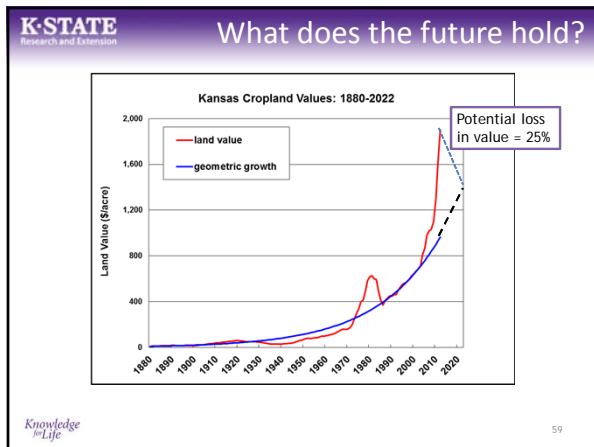
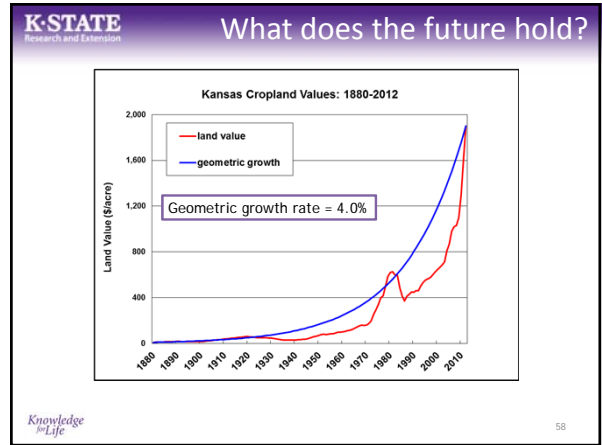
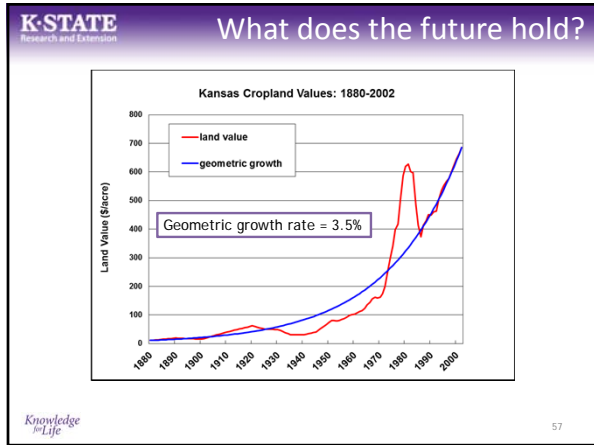
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WHERE ARE WE HEADED?

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ONLINE RESOURCES

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Online Resources

AgManager.info
Providing Information and Tools
For The Competitive Business
From the K-State Department of Agricultural
Economics

Recipient of AAEA Outstanding Electronic Media
Education Award

View AgManager.info
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Recent Updates

Grain Market Outlook for 2014, Presented in
Glasgow, AZ
January 2, 2014 by Mike Wagner

Future-Based Price Forecasts for Direct Fuel
January 2, 2014 by Mike Wagner

Updated Crop Basis Tool
January 2, 2014 by Mike Wagner

Crop Basis Maps
January 2, 2014 by Mike Wagner

The Outlook for Feedgrain, Wheat and Soybean
Markets in 2014
November 19, 2013 by Mike Wagner

Seasonal Cattle and Grain Price Spreadsheet
(Excel)
November 21, 2013 by Mike Wagner

Grain Outlook Panel Program
November 19, 2013 by Mike Wagner

Livestock and Hay Charts
November 19, 2013 by Mike Wagner

Livestock Outlook Panel Program
November 19, 2013 by Mike Wagner

Cattle Finishing Historical and Projected Returns
November 19, 2013 by Mike Wagner

2013-2014 Kansas County Level Non-irrigated
Cash Rents – REVISIT
November 19, 2013 by Mike Wagner

WASDE Check Analysis Spreadsheet
November 19, 2013 by Mike Wagner

World Grain Supply and Demand Estimates
(WASDE)
November 19, 2013 by Mike Wagner

© The Cattle Market

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Online Resources

Home / Farm Management

Land & Leasing
Machinery
Finance & Business Planning
Farm Management
Guides
Farm Income
KFSM / HR, and Links
Papers, Reports, and Documents
LEAS, Farm Management, Charts, and ITT Initiatives

Farm Management: Leasing

- Land Rental Rates
- Leasing Plans
- Lease Decision-Making Tools
- Land Leasing Forms
- Renting Land

Land Rental Rates

Title	Author	Bulletin/Date	PDF
2013-2014 Kansas County Level Non-irrigated Cash Rents	Mykel Taylor	December, 2013 (updated)	Download
2012 Kansas County Level Land Values and Cash Rents	Mykel Taylor	March, 2013 (updated)	Download
2012 Kansas County Level Land Values and Cash Rents	Mykel Taylor	February, 2013	Download
2011 Kansas County Level Land Values and Cash Rents	Mykel Taylor	October, 2011	Download
2010 Kansas County Level Land Values and Cash Rents	Mykel Taylor	September, 2010 – Revised Oct, 2011	Download
2009 Kansas County Level Land Values and Cash Rents	Mykel Taylor	September, 2009 – Revised Oct, 2011	Download
2008 Kansas County Level Land Values and Cash Rents	Mykel Taylor	August, 2008 – Revised Oct, 2011	Download

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Agricultural Land Values in a Rapidly Changing Market

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AgManager.info

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Resources

- 2014 Kansas Land Values and Rental Rates
 - By Mykel Taylor and Kevin Dhuyvetter
 - [http://www.agmanager.info/farmmgmt/land/county/County-Non-irrigatedRents\(Dec2013\).pdf](http://www.agmanager.info/farmmgmt/land/county/County-Non-irrigatedRents(Dec2013).pdf)
- Land buying and leasing information and decision-making tools
 - <http://www.agmanager.info/farmmgmt/land>
- KS Land Prices and Cash Rental Prices
 - KAS data with 20-year history
 - <http://www.ksre.ksu.edu/bookstore/pubs/mf1100.pdf>

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