

2013 Kansas County-Level Land Values for Cropland and Pasture

May 2014 (available at www.AgManager.info)

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The value of Kansas cropland and pasture land has been changing rapidly over the past several years. As a result, many people are interested in current estimates of the value of an average parcel of ground for their specific locations. Currently, the Kansas Agricultural Statistics Service (KAS) reports only state average values for irrigated, non-irrigated, and pasture land. These values are based upon an annual survey of agricultural producers and landowners asking for their estimate of the market value of cropland and pasture land they own or operate. Historically, the survey was conducted such that values could be reported at the crop reporting district (CRD) level, of which there are nine in the state. While many people want values at a more disaggregated level than the CRD (e.g., county-level), this historical information did allow regional values and trends to be identified. Unfortunately, the CRD-level estimates reported by KAS were discontinued in 2009 and thus, no official government-reported data exist of regional values.

In an effort to maintain information at the CRD-level, Dhuyvetter and Taylor have used historical relationships between the CRD and state averages to generate an estimate of CRD values from the currently reported KAS state-level estimate (see MF-1100 available at: <http://www.agmanager.info/farmmgmt/fmg/land>). While this allows current regional values to be calculated, there are several potential problems with this method (referred to as KAS/KSU) of estimating land values. First, if the price relationship between CRDs has changed in recent years, relative to the past, the estimates will no longer accurately reflect current market conditions. Second, the source data for these estimates is a survey of people's opinions, which may not be highly attuned to the current land market. For example, the KAS data have typically lagged behind estimates based on market data, suggesting that changes in land values are moving faster than people not actively engaged in the land markets realize.

The current growth in land values and the many business and personal decisions affected by these values warrants more extensive analysis to obtain estimates that are less aggregated than either the state or CRD-level values available. To this end, sales transaction data were obtained

from the Kansas Property Valuation Department (PVD).¹ These data reflect agricultural land sales in Kansas from 2010 through 2013. To obtain estimates that reflect land sold for agricultural purposes in an “arm’s length” transaction, some observations were removed from the original dataset.² The sales data used in the analysis were limited to bare land (undeveloped) parcels of at least 40 acres in size. These filtered data were used in a regression analysis to estimate county-specific land (non-irrigated, irrigated, and pasture) values, referred to as PVD/KSU. The land-value model used characteristics of the parcels sold to determine impacts on price. Characteristics such as parcel size, soil quality rating, percent of pasture and cropland within a parcel, and when a parcel was sold were all used to estimate county-level land values.

The county-level estimates and the average for each of the CRD’s are shown in Table 1, where the CRD average is a simple average of the counties that fall within the region. Table 2 provides a comparison between the CRD values using the KAS/KSU data (based on surveys) and the estimates using PVD land sales data (PVD/KSU). In all but one case (Southeast region for pasture), the survey-based estimates are lower than the market-based estimates. For non-irrigated cropland, the analysis using PVD transactions data estimates a state-level average value of \$2,814/acre, 40.7% higher than the 2013 KAS reported value of \$2,000/acre. Across the nine CRD regions, the differences range from 2.6% higher than KAS values in the East Central CRD to 79.0% higher in the Northwest CRD.

Irrigated cropland values for all CRDs are calculated by KSU based on KAS statewide survey responses and historical relationships. Using actual land sales data, however, fewer county-level estimates are made from the PVD data. For statistical accuracy of the county-level estimates, a minimum number of land sales must be observed in a county. Counties with less than 10 observed sales of irrigated land are not presented in the table. As a result, irrigated land values at the CRD level are only reported for the three Western regions and the South Central region. When compared to the KAS survey estimates, the 2013 land value estimates using PVD data range from 18.0% higher for the Southwest region to 96.7% higher in the West Central region.

Pasture values are similarly understated by the survey method, with the transactions data estimate of \$1,636/acre for the state average. This estimate is 30.9% higher than the KAS

¹ The authors would like to thank Leah Tsoodle (Kansas State University) and Mike Dahlman (Property Valuation Department) for their assistance with data collection.

² “Arm’s length” refers to land sold through typical market channels and does not include intra-family transactions, court-ordered sales, or other transactions that may keep the sale from being considered a market-based transaction.

reported value for pasture in 2013. Regional differences in the PVD estimates range from 0.2% below KAS survey estimates in the Southeast region to 93.1% higher than KAS pasture value estimate for the Northwest CRD.

Figure 1 shows KAS values versus the PVD/KSU estimated values for pasture, non-irrigated, and irrigated land for 2010-2013. As previously stated, the KAS survey values have consistently lagged the sales data. Pasture values have ranged from approximately 20 to 40 percent higher, non-irrigated values have been 30 to 35 percent higher, and irrigated values have ranged from 70 to over 90 percent higher.

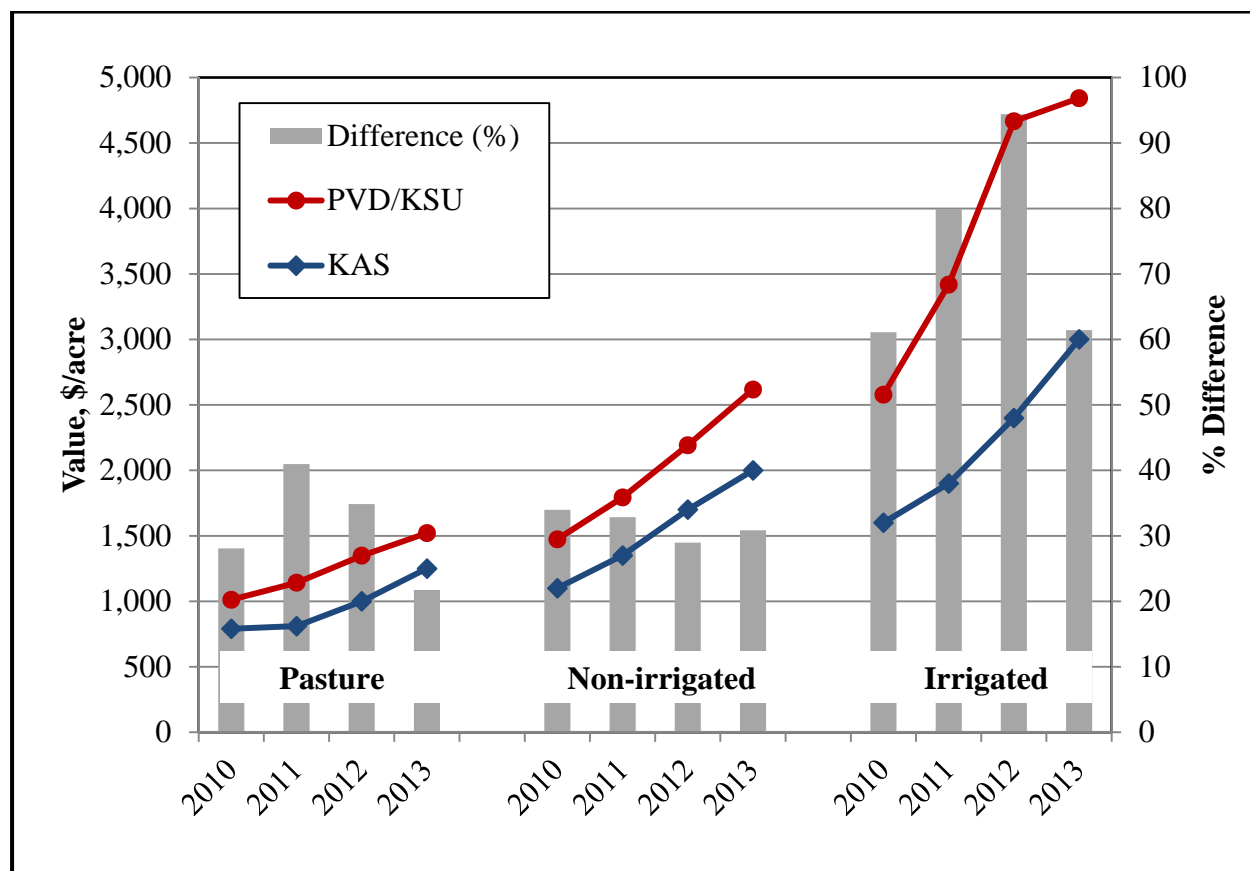


Figure 1. Average Kansas Land Values and Percent Differences Between KAS Estimates and PVD/KSU Estimates (2010 – 2013)

Table 1. Estimated Agricultural Land Values for 2013 using PVD Land Sales Data

CRD	County	Non-Irrigated,	Irrigated,	Pasture,	CRD	County	Non-Irrigated,	Irrigated,	Pasture,	CRD	County	Non-Irrigated,	Irrigated,	Pasture,		
		\$/ac	\$/ac	\$/ac			\$/ac	\$/ac	\$/ac			\$/ac	\$/ac			
Northwest	Cheyenne	1,842	--	1,071	North	Clay	4,314	--	2,508	Northeast	Atchison	4,843	--	2,815		
	Decatur	2,252	--	1,309		Central	Cloud	4,073	--		2,368	Brown	6,003	--	3,490	
	Graham	1,511	--	878			Jewell	3,172	--		1,844	Doniphan	5,916	--	3,439	
	Norton	2,300	--	1,337			Mitchell	2,286	--		1,329	Jackson	3,805	--	2,212	
	Rawlins	2,104	--	1,223			Osborne	2,252	--		1,309	Jefferson	4,319	--	2,511	
	Sheridan	2,612	--	1,519			Ottawa	2,546	--		1,480	Leavenworth	5,368	--	3,121	
	Sherman	1,894	4,184	1,101			Phillips	1,579	--		918	Marshall	4,831	--	2,808	
	Thomas	2,867	6,333	1,667			Republic	4,564	--		2,653	Nemaha	4,900	--	2,849	
				Rooks	1,600		--	930	Pottawatomie	3,476	--	2,021				
				Smith	2,448	--	1,423	Riley	5,486	--	3,190					
				Washington	3,829	--	2,226	Wyandotte	--	--	--					
	Average:	2,173	5,258	1,263		Average:	2,969	1,726		Average:	4,895	2,846				
West	Gove	1,519	--	883	Central	Barton	2,574	--	1,497	East	Anderson	2,897	--	1,684		
Central	Greeley	1,935	--	1,125		Dickinson	3,385	--	1,968	Central	Chase	2,292	--	1,332		
	Lane	1,993	--	1,158		Ellis	2,683	--	1,560	Coffey	2,871	--	1,669			
	Logan	1,840	--	1,070		Ellsworth	1,631	--	948	Douglas	6,520	--	3,790			
	Ness	1,696	--	986		Lincoln	2,203	--	1,281	Franklin	4,057	--	2,359			
	Scott	2,553	--	1,484		Marian	3,229	--	1,877	Geary	2,415	--	1,404			
	Trego	1,697	--	987		McPherson	3,238	--	1,883	Johnson	--	--	--			
	Wallace	1,565	--	910		Rice	2,610	--	1,517	Linn	3,247	--	1,888			
	Wichita	2,269	5,012	1,319		Rush	1,584	--	921	Lyon	2,860	--	1,663			
				Russell		2,208	--	1,284	Miami	7,975	--	4,636				
				Saline		4,150	--	2,413	Morris	2,586	--	1,503				
									Osage	3,185	--	1,852				
									Shawnee	4,625	--	2,689				
									Wabaunsee	3,375	--	1,962				
	Average:	1,896	5,012	1,102		Average:	2,682	1,559		Average:	3,762	2,187				
Southwest	Clark	1,840	--	1,070	South	Barber	3,178	--	1,848	Southeast	Allen	3,181	--	1,849		
	Finney	1,545	3,413	898	Central	Comanche	2,342	--	1,361		Bourbon	2,799	--	1,627		
	Ford	2,160	4,770	1,256		Edwards	2,412	5,328	1,402		Butler	3,880	--	2,256		
	Grant	1,200	2,651	698		Harper	2,905	--	1,689		Chautauqua	2,605	--	1,514		
	Gray	1,662	3,671	966		Harvey	3,466	7,656	2,015		Cherokee	3,020	--	1,756		
	Hamilton	1,155	--	672		Kingman	2,491	--	1,448		Cowley	2,559	--	1,488		
	Haskell	1,465	3,235	852		Kiowa	2,009	--	1,168		Crawford	2,455	--	1,427		
	Hodgeman	1,396	--	812		Pawnee	2,244	4,957	1,305		Elk	2,504	--	1,455		
	Kearny	1,191	--	693		Pratt	2,079	4,592	1,209		Greenwood	2,977	--	1,731		
	Meade	1,458	3,220	848		Reno	2,653	--	1,542		Labette	3,016	--	1,753		
	Morton	1,016	2,245	591		Sedgwick	4,502	--	2,617		Montgomery	2,622	--	1,524		
	Seward	1,437	3,173	835		Stafford	2,172	--	1,263		Neosho	2,859	--	1,662		
	Stanton	927	2,048	539		Sumner	2,632	--	1,530		Wilson	2,625	--	1,526		
	Stevens	1,083	2,392	630							Woodson	2,924	--	1,700		
		Average:	1,395	3,082		811		Average:	2,699		5,633	1,569		Average:	2,859	1,662

Note: Missing estimates for land value are due to insufficient observations of land sales.

Table 2. Comparison of CRD Average KAS/K-State Land Values and PVD Land Sales Data Estimates for 2013

	Crop Reporting District									State
	Northwest	West Central	Southwest	North Central	Central	South Central	Northeast	East Central	Southeast	
Non-Irrigated										
KAS/KSU	1,214	1,245	1,224	1,940	2,212	2,080	3,318	3,665	2,405	2,000
PVD/KSU	2,173	1,896	1,395	2,969	2,682	2,699	4,895	3,762	2,859	2,814
Difference, \$/ac	959	651	171	1,029	470	619	1,577	97	454	814
Difference, %	79.0	52.3	14.0	53.1	21.2	29.8	47.5	2.6	18.9	40.7
Irrigated										
KAS/KSU	2,917	2,548	2,685	3,074	3,288	4,104	5,679	4,610	3,192	3,000
PVD/KSU	5,258	5,012	3,082	--	--	5,633	--	--	--	4,746
Difference, \$/ac	2,341	2,464	397	--	--	1,529	--	--	--	1,746
Difference, %	80.3	96.7	14.8	--	--	37.3	--	--	--	58.2
Pasture										
KAS/KSU	654	701	562	1,027	1,177	1,157	1,882	2,079	1,665	1,250
PVD/KSU	1,263	1,102	811	1,726	1,559	1,569	2,846	2,187	1,662	1,636
Difference, \$/ac	609	401	249	699	382	412	964	108	-3	386
Difference, %	93.1	57.3	44.4	68.1	32.4	35.6	51.2	5.2	-0.2	30.9

Note: Source of KAS/KSU CRD-level values is MF-1100 available at: <http://www.agmanager.info/farmmgmt/fmg/land>