

Estimating Kansas Farmland Values Based on Historic Index Numbers

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Kansas farmland values have generally increased over time, with similar growth patterns occurring in surrounding states (Figure 1). A notable exception to the upward trend occurred during the 1980's when farmland values decreased by 40% between 1982 and 1987. However, this decrease during the 1980's followed a more than 200% increase in farmland values during the 1970's. Land values in Kansas did not return to the highest level observed in 1982 until twenty years later in 2001. While farmland values generally increased over time, the rate of change varies from year to year. Kansas farmland values have increased an average of 7.7% each year over last 15 years. Annual growth rates have ranged from a low of -7% in 2016 to a high of nearly 22% in 2012.

Historic farmland values are of interest to farmers, landowners, lenders, and policy makers. The index of Kansas farmland values (using land including buildings data) in Table 1 can be used to estimate farmland value for a given year using a known value for the farmland from another year. In other words, if the value of farmland is known in any year, a value can be estimated for any other year since 1950 with the farmland value index. A guide describing how to use the Kansas farmland value index numbers accompanies Table 1. Index numbers were calculated based upon the year 1982 (index value for 1982 equals 100), which was the year of highest farmland values in the 1980's.

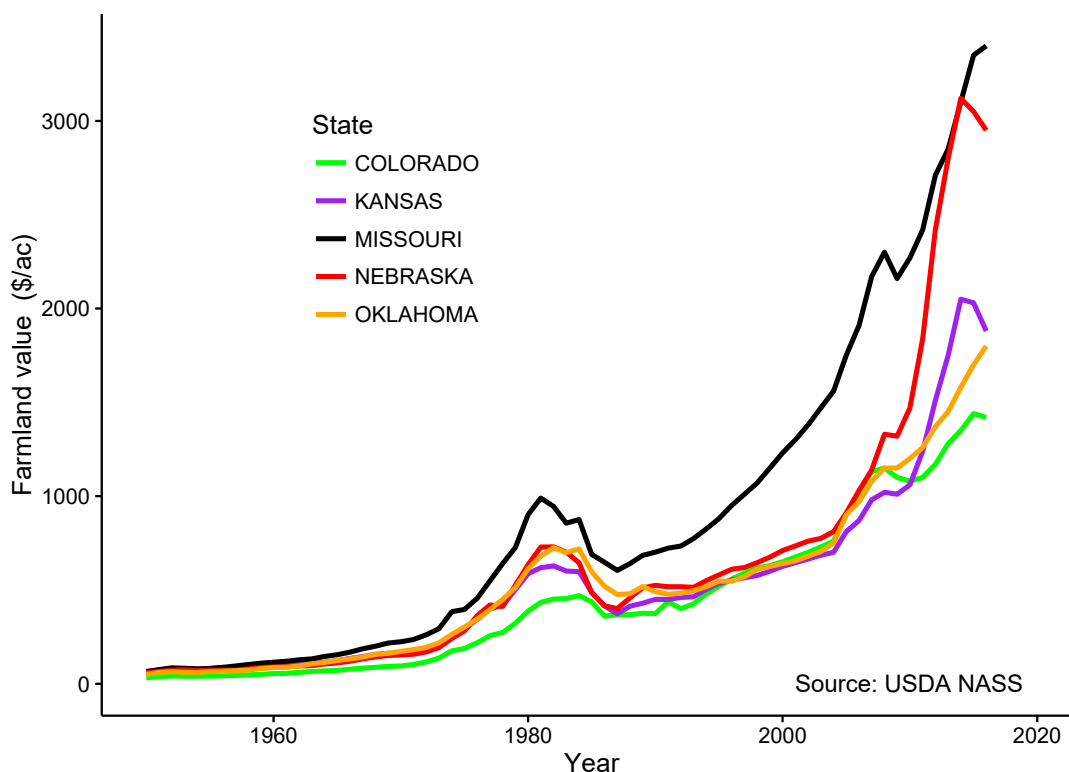


Figure 1. Kansas and bordering states farmland values, land including buildings, 1950 - 2016

Index numbers are based on nominal values and are not adjusted for inflation or purchasing power. Although index numbers are useful for estimating the value of Kansas farmland relative to another point in time, the index provides only a single piece of information to include in any decision making process.

Estimated farmland values do not substitute for land appraisals and may deviate from true market value for any number of reasons including land improvements, buildings and facilities, pressure from development and urban sprawl, mineral rights, and previous farm production management practices.

Resources:

USDA NASS. QuickStats. http://www.nass.usda.gov/Quick_Stats/

USDA NASS. Land Values 2016 Summary, August 2016 ISSN: 1949-1867 Available at:
<http://usda.mannlib.cornell.edu/usda/current/AgriLandVa/AgriLandVa-08-05-2016.pdf>

Previous annual reports from 1996 to 2016 available online at:
<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do;jsessionid=F154BA78C7C50C021C8CA924EDB72FD5?documentID=1446>

Table 1. Index of Kansas Farmland Values¹

Year	Index (1982 = 100)	Year	Index (1982 = 100)	Year	Index (1982 = 100)
1950	10.51	1973	31.69	1996	88.06
1951	11.62	1974	40.29	1997	89.97
1952	12.74	1975	47.13	1998	91.88
1953	12.90	1976	54.46	1999	95.54
1954	12.58	1977	63.38	2000	99.52
1955	12.90	1978	66.56	2001	102.71
1956	13.38	1979	79.78	2002	105.89
1957	13.85	1980	93.47	2003	109.08
1958	14.81	1981	98.57	2004	111.46
1959	15.61	1982	100.00	2005	128.98
1960	16.08	1983	95.70	2006	138.54
1961	16.24	1984	95.06	2007	156.05
1962	17.04	1985	77.71	2008	162.42
1963	17.83	1986	66.08	2009	160.83
1964	18.31	1987	59.39	2010	168.79
1965	19.59	1988	65.76	2011	197.45
1966	21.50	1989	68.31	2012	240.45
1967	22.93	1990	71.66	2013	278.66
1968	24.84	1991	71.50	2014	326.43
1969	25.80	1992	73.25	2015	323.25
1970	25.32	1993	73.73	2016	299.36
1971	25.80	1994	80.10		
1972	27.71	1995	85.19		

¹Index numbers, calculated from USDA sources including NASS and ERS, (1982 =100).

Using the Kansas Farmland Value Index

The index for farmland values can be used to estimate land value for a past year, or estimate the value of land in the current year, depending upon available information. If the value of farmland is known in any year, the value can be estimated for any other year since 1950 using the farmland value index.

Estimating farmland value for a past year

The farmland value for a past year can be estimated using the following formula:

$$(1) \text{ Farmland value from past year} = \text{Current farmland value} * \frac{\text{Index value from past year}}{\text{Index value for current year}}$$

Example 1: Land values in 2014 were \$2,000 per acre. What was the approximate value of this land in 1987? Using the table, the index values for 1987 and 2014 are 59.39 and 326.43, respectively.

$$\text{Estimated 1987 farmland value} = \$2,000 * \frac{59.39}{326.43}$$

The estimated value of the farmland in 1987 is \$364 per acre.

Estimating current farmland value based on the value in a past year

Current farmland values can be estimated using past values with the following formula:

$$(2) \text{ Current farmland value} = \text{Farmland value from past year} * \frac{\text{Index value for current year}}{\text{Index value from past year}}$$

Example 2: My relative paid \$225 per acre for land in 1969. What is the estimated value of this land today? Using the table, the index value for 1969 and 2014 are 25.80 and 326.43, respectively.

$$\text{Estimated 2014 farmland value} = \$225 * \frac{326.43}{25.80}$$

The estimated value of the farmland in 2014 is \$2,847 per acre.

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