Estimating Past Farm Real Estate Values with Limited Information

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An estimate of farm real estate value at a past time is sometimes needed, usually for tax purposes. The data with which to begin are sales records either of the real estate in question or of similar real estate. But even if such data are not available, estimates may still be made.

Published localized estimates of farm real estate value don't exist for Missouri. However, the Economic Research Service of the United States Department of Agriculture has over the years collected and published state average data that can be used for developing necessary estimates. These data are published in the series, Farm Real Estate Market Developments (FREMD) available free from ERS, USDA, Washington D.C. 20250.

Table 1 is read straightforward. On the average, farm real estate in Missouri was estimated to be worth $64 in 1950. One way of estimating the value of a particular piece of farm real estate is to assess how it compared to the average for the state. If the land in question is good Missouri river bottom land then the probability is high it was worth more than the average $64 per acre. There are no published figures to guide us in how substantial an adjustment is appropriate.

If the date for which estimates are to be made is after 1911, approximations of average value can also be derived from an index series published by FREMD (Table 2).

If we know that in 1972 the farm real estate in question was worth $385 per acre we can solve for its value in any year. Of course we must assume that this real estate's value behaved as did the average in Missouri.

$$\frac{\text{Index for year value is known}}{\text{Value/acre for year in which value is known}} = \frac{\text{Index for year in which value is sought}}{X = \text{Value/acre for year in which value is sought}}$$

$$\frac{50.3 \text{ From Table 2 (1972)}}{\$385 \text{ Known independently (1972)}} = \frac{10.5 \text{ From Table 2 (1912)}}{X = \text{Estimate sought (1912)}}$$

We can solve this equation for X.

$$(50.3)(X) = (385)(10.5)$$
$$50.3X = 4042.5$$
$$X = \$80.37$$

This produces an estimate of $80 per acre for the real estate in 1912.

Table 1. Average Farm Real Estate Value (Land and Buildings) per Acre, Missouri, 1912-1981*

Year		Year	
1912	$ 53	1947	$ 59
1913	54	1948	60
1914	56	1949	64
1915	55	1950	64
1916	58	1951	75
1917	61	1952	85
1918	66	1953	82
1919	72	1954	79
1920	88	1955	82
1921	83	1956	87
1922	71	1957	94
1923	69	1958	102
1924	63	1959	110
1925	61	1960	115
1926	57	1961	120
1927	55	1962	127
1928	54	1963	132
1929	54	1964	145
1930	53	1965	155
1931	46	1966	168
1932	39	1967	186
1933	32	1968	200
1934	33	1969	217
1935	33	1970	224
1936	34	1971	236
1937	34	1972	261
1938	33	1973	294
1939	31	1974	384
1940	32	1975	396
1941	32	1976	456
1942	35	1977	548
1943	39	1978	641
1944	43	1979	726
1945	48	1980	878
1946	53	1981**	941

*As of March 1 before 1976 and of February1 in 1976 and later.
**Preliminary Estimate.
Source: Farm Real Estate Market Developments and Farm Real Estate Historical Series Data: 1850-1970, ESS, USDA.

Another approach is to compare a known value to corresponding average values in Missouri and make an estimate of an earlier relationship on that basis.

Value/acre for year in which value is known	Average Mo. per acre value for year in	= Y =	Value per acre of farm for year in
Average per acre value of Mo. for year in which value is known	which farm value is sought		which value is sought.

$$\frac{\$385 \text{ known independently (1972)}}{\$261 \text{ from Table 1 (1972)}} \quad \frac{\$53 \text{ from Table 1}}{1912} = Y$$

We can solve this equation for Y

$$Y = (1.475)(53) = \$78.18$$

Note that the $78.18 estimate differs from the earlier $80.37 estimate. The reasons are rounding error and the fact Tables 1 and Tables 2 are each derived by a different procedure. Even so, the procedures used here allow reasonable "ball park" estimates.

If the assumption that the value of the farm real estate in question behaved as did the average in Missouri can't be used, the adjustments considered to be appropriate can be made. In making adjustments, take care to recognize that many things change value. The hard surfacing of a road, a change in school district, the location of a new closer road, the use of nearby land—all these and more can influence value.

Because the tables do not go beyond 1981, the method outlined here requires access to current issues of FREMD if values of the real estate are known only for later than 1981.

There are many situations in which the methods outlined here don't have the necessary precision. If this is the case an explicit appraisal may be necessary. For information on farm appraisal see UMC Guide 405 "Farm Real Estate Appraising."

Table 2. Index of Average Farm Real Estate Value per Acre, Missouri, 1912-81* (1977=100).

Year	Index	Year	Index
1912	10.5	1947	12.2
1913	10.9	1948	12.5
1914	11.2	1949	13.4
1915	11.0	1950	13.5
1916	11.7	1951	15.7
1917	12.4	1952	17.6
1918	13.5	1953	17.7
1919	14.8	1954	16.7
1920	18.1	1955	17.4
1921	16.9	1956	18.0
1922	14.4	1957	19.1
1923	13.8	1958	20.4
1924	12.7	1959	21.8
1925	12.1	1960	22.3
1926	11.3	1961	22.8
1927	10.7	1962	24.0
1928	10.4	1963	24.8
1929	10.3	1964	26.9
1930	10.0	1965	28.7
1931	8.6	1966	31.5
1932	7.2	1967	35.2
1933	5.9	1968	38.2
1934	6.2	1969	42.0
1935	6.3	1970	43.6
1936	6.4	1971	45.8
1937	6.6	1972	50.3
1938	6.4	1973	56.2
1939	6.3	1974	72.8
1940	6.4	1975	75.2
1941	6.5	1976	84.8
1942	7.2	1977	100
1943	8.0	1978	114.6
1944	8.9	1979	127.3
1945	9.9	1980	153.9
1946	11.1	1981**	164.9

*As of March 1 before 1976 and of February 1 in 1976 and later.
**Preliminary Estimate.
Source: Farm Real Estate Market Developments.

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