

June 4, 2004**FEFO 04-10****FARMLAND PRICES, NET RENTS AND INTEREST RATES SINCE 1970**

Farmland prices in central Illinois have increased about 6% per year since the late 1980s. In this article, we examine whether increases in net returns or decreases in interest rates since the late 1980s provide the economic basis for increasing farmland prices. This analysis may shed light on the future direction of farmland prices.

This examination is accomplished by first calculating capitalized values for central Illinois farmland based on yearly net rents and interest rates. These capitalized values are then compared to actual farmland prices to see how closely prices follow values. Capitalized values equal to actual prices indicate that farmland is fairly valued based on current levels of net rents and interest rates. Farmland is overvalued when actual prices are above capitalized values. Conversely, farmland is undervalued when actual prices are below capitalized values.

The following sections report on farmland prices, net returns, and interest rates used to calculate capitalized prices. Capitalized prices and a summary are then given.

Central Illinois Farmland Prices

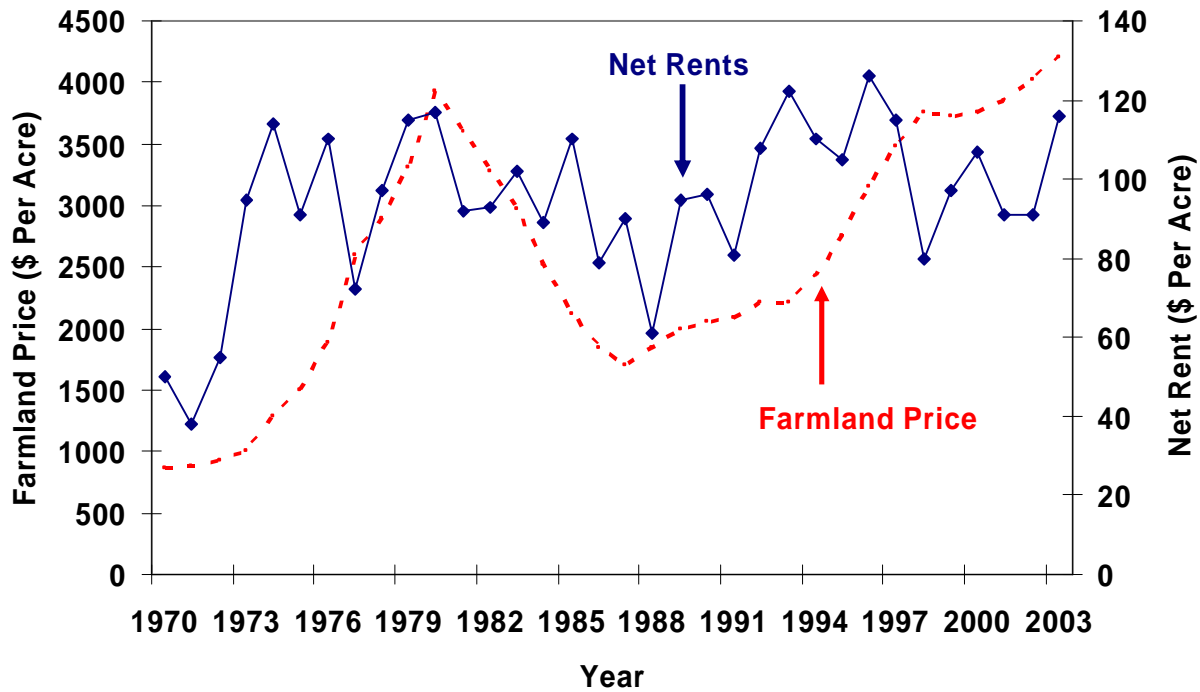
Farmland prices are estimated based on index numbers produced by the U.S. Department of Agriculture. This index is for the entire state of Illinois and was used to estimate central Illinois prices. As shown in Figure 1, farmland prices between 1970 through 1980 generally trended upwards, reaching a peak of \$3,932 per acre in 1980 (see Figure 1). From this high, prices declined substantially reaching a low of \$1,706 in 1987. From 1987 onward, farmland prices increased an average of 5.8 percent per year. In 2003, farmland prices averaged \$4,203 per acre in central Illinois.

Net Rents for Central Illinois

Net rents to central Illinois farmland were estimated from Illinois Farm Business Farm Management (FBFM) Association record data. This measure represents a return to farmland for share-rent landowners. It does not reflect returns to cash rent farmland. All land ownership costs including property taxes were subtracted from gross returns to arrive at net rents. Because all ownership costs are subtracted, net rents are below gross cash rents.

Between 1970 through 2003, net rents averaged \$94 per acre. Since 1975, net rents have been variable but have not shown significant trends up or down (see Figure 1). The 2003 rent of \$116 per acre was the third highest during the period, only being surpassed by the net rent in 1993 (\$123 per acre) and in 1996 (\$126 per acre). Given current commodity prices, the net rent in 2004 is likely to be substantially above average.

Figure 1. Farmland Prices and Net Rents on High Quality Farmland in Central Illinois, 1970-2003.



Net rent as a percent of farmland price have decreased since the late 1980s because of increasing farmland prices. This percent represents a cash return to farmland and is conceptually similar to dividends rate of returns on stocks. Between 1990 and 1994, the percent averaged 4.7% (see Table 1). During the second half of the 1990s, the percent averaged 3.1%. Since 2000, the percent averaged 2.6%.

Interest Rates

Generally, interest rate reductions cause farmland ownership costs to decrease. Therefore, interest rate decreases may cause increases in farmland prices and, conversely, interest rate increases may cause reductions in farmland prices. Changes in interest rates are examined using rates on 10-year constant-maturity U.S. treasury notes (see Figure 2).

From 1971 through 1981, interest rates exhibited an increasing trend, reaching a high of 13.9% in 1981. Interest rates were high throughout the early 1980s, the period in which farmland prices fell dramatically. Since the mid 1980s, interest rates have trended downward, reaching a rate of 4.0% in 2003.

Table 1. Net Rents, Prices, and Net Rents Divided by Prices for Central Illinois Farmland, 1970 through 2003.

Period	Net Rents	Prices	Net Rents Divided by Prices
	---- \$/acre ----		
1970 - 1974	\$70	\$995	7.1%
1975 - 1979	\$97	\$2,437	4.0%
1980 - 1984	\$99	\$3,264	3.0%
1985 - 1989	\$87	\$2,001	4.4%
1990 - 1994	\$103	\$2,199	4.7%
1995 - 1999	\$105	\$3,375	3.1%
2000 - 2003	\$101	\$3,958	2.6%

Figure 2. Yields on 10-Year Treasury Bills.

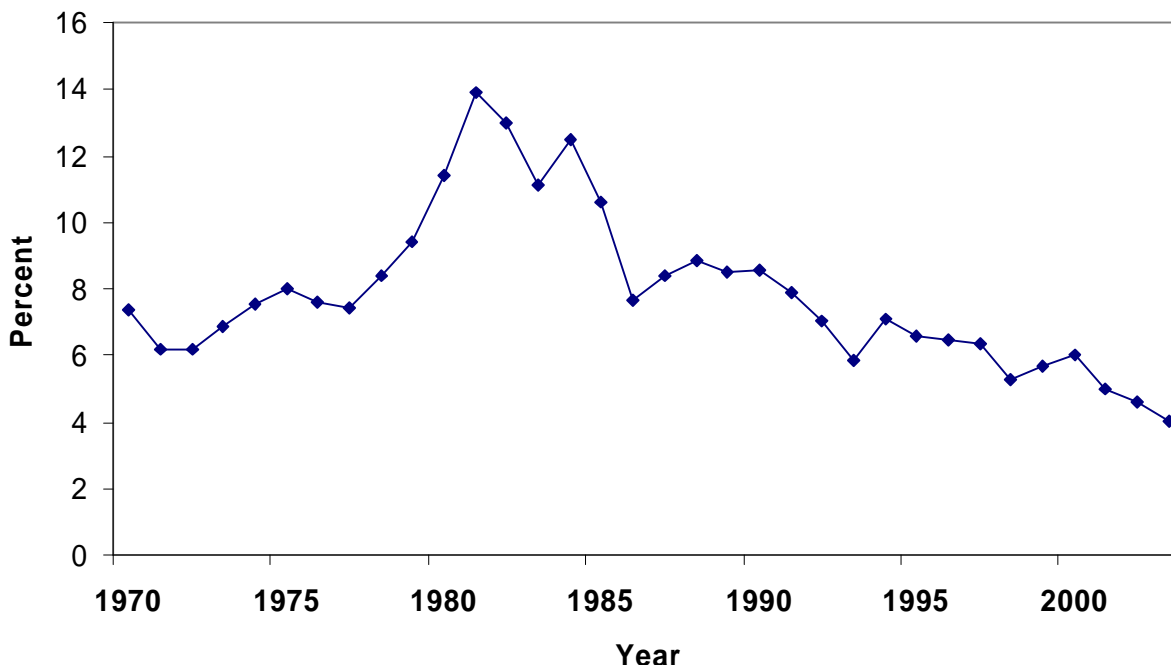


Table 2. Prices and Capitalized Values for Central Illinois Farmland, 1970 through 2003.

Period	Actual Price	Capitalized Value ¹	Difference ²
	----- \$ per acre -----		
1970 - 1974	\$995	\$1,016	-\$21
1975 - 1979	\$2,437	\$1,186	\$1,251
1980 - 1984	\$3,264	\$807	\$2,457
1985 - 1989	\$1,896	\$989	\$907
1990 - 1994	\$2,199	\$1,465	\$735
1995 - 1999	\$3,375	\$1,721	\$1,654
2000 - 2003	\$3,958	\$2,113	\$1,844

¹ Net return divided by interest rate.

² Equals actual price minus capitalized price.

Capitalized Values

To examine the joint impacts of net rents and interest rates, capitalized values were computed for each year from 1970 through 2003. A capitalized value equals the net rent divided by the interest rate. They represent the value of farmland given that the future net rents and interest rates remain at their current years' levels.

Capitalized values averaged \$807 for the years between 1980 through 1984 (see Table 2). Since that time, capitalized values have increased. Between 2000 and 2003, capitalized values averaged \$2,113. This suggests that farmland prices should have increased since the 1980s if prices follow capitalized values.

Prices, however, have increased at a faster rate than capitalized values. Between 1990 through 1994, the actual price was \$735 higher than the capitalized value. The difference has increased to \$1,844 for the 2000 through 2003 time period. The average for the 2000 through 2003, however, is not as large as that for the 1980 through 1984 time period when farmland prices declined. During this period, actual prices averaged \$2,457 above the capitalized values.

Summary

In this article, movements in central Illinois farmland prices are examined for the period from 1970 through 2003. Farmland prices have increased since the late 1980s. Capitalized values suggest that stable net rents and decreasing interest rates should have caused farmland prices to increase since the late 1980s. However, farmland prices have increased faster than rates suggested by capitalized values. From a historical perspective, farmland prices in 2000 through 2003 may be overvalued compared to the period in the late 1980s and early 1990s. Differences between actual prices and capitalized values have not reached levels seen during the early 1980s when farmland prices declined dramatically.

Whether farmland prices will continue to increase in the future is open to question. A continuing strong farmland market is suggested by increases in cash rents, development of farmland into commercial property, existence of favorable tax treatments for real estate exchanges, current high prices for agricultural commodities, and financial strength of farmers. Currently, however, net rents are close to historically high levels and interest rates are at historically low levels. It is highly likely that sometime in the future net rents to farmland will decrease and interest rates will increase. When this occurs, factors that have led to increasing cash rents could be mitigated.

Acknowledgements

The author acknowledges that data used in this study comes from the local Farm Business Farm Management (FBFM) Associations across the State of Illinois. Without their cooperation, information as comprehensive and accurate as this would not be available for educational purposes. FBFM, which consists of 6,000 plus farmers and 62 professional field staff, is a not-for-profit organization available to all farm operators in Illinois. FBFM field staff provides on-farm counsel with computerized recordkeeping, farm financial management, business entity planning and income tax management. For more information, please contact the State FBFM Office located at the University of Illinois Department of Agricultural and Consumer Economics at 217-333-5511 or visit the FBFM website at www.fbfm.org.

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