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Comparing the stock market and Iowa land values: A question of timing

by Mike Duffy, extension economist, 515-294-6160, mduffy@iastate.edu

This article is an update of earlier versions on the same topic. The purpose of the article is to examine this question: Which is a better investment—the stock market or farmland?

Iowa farmland values have shown yearly increases for 11 of the past 12 years. The values remain at record high levels where they have been for the past nine years. Based on the Iowa State University Farmland Value Survey, the 2011 estimated average farmland value in Iowa was $6,708 per acre. This was an increase of 32.5 percent from the 2010 estimate. In 2011, Iowa land values set two more records previously set in the 1970s. The 32.5 percent increase is the largest yearly percentage increase for Iowa land values. In the prior record, set in 1973, land values increased 31.7 percent. The 2011 value also set a record for the inflation adjusted values. The previous record had been set in 1979. Since 2006, the estimated average value of Iowa land has more than doubled, going from $3,204 to $6,708 per acre.

The composite value of the stock market, as measured by the Standard & Poor's Index (S&P) average, has started recovering from the disastrous 2008 year. Even though the S&P lost 34 percent of its value between 2000 and 2008, its overall record has been impressive since 1990. Stock values rose from 328.75 in 1990 to a December 2011 close of 1,255.20, an increase of nearly 300 percent in spite of the decline in 2008.

To determine which option provided the better investment, this article compares and contrasts the returns to farmland and the stock market since 1960. It also discusses some of the important factors to consider over the next few years.

Background

The returns to land or stock shares are composed of two parts. The first is capital gains or the increase in value. Obviously, this also could be a capital loss if values decrease. The second component is yearly returns.

Owning land has an unavoidable annual ownership cost not associated with stocks. Property taxes must be paid and should be included in a comparison of owning stocks or farmland. Additionally, if farmland is held as an investment and not by an owner-operator, there could be a professional farm manager involved and the fee for this service would have to be considered. There is also a need for some maintenance and insurance with farmland not associated with owning stocks.

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Handbook updates

For those of you subscribing to the handbook, the following new update is included.

Historic County Cropland Rental Rates – C2-11 (10 pages)

Please add this file to your handbook and remove the out-of-date material.

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Inside . . .

IOWA STATE UNIVERSITY
Extension and Outreach

Ag Decision Maker is compiled by extension ag economists
Ann Johanns, aholste@iastate.edu
extension program specialist

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The data used for this analysis comes from various sources. The Iowa average land values come from the yearly Iowa State University Extension and Outreach publication FM 1825. The average farmland rental rate was obtained from USDA/Economic Research Service (ERS) in the Land Use, Value and Management briefing room. The average land tax per acre is calculated using data from ERS farm income data. Taxes per acre were calculated as the real estate taxes paid divided by the total number of acres.

The Standard & Poor's averages and yearly dividends from 1960 to 2011 were taken from the website (http:www.econ.yale.edu/~shiller) of Dr. Robert J. Shiller at Yale University. The value used is the December close of each year.

A few assumptions are necessary to determine which provides the better investment. It is assumed $1,000 is invested in each alternative at the end of the year. The amount of land or stock purchased will depend on the existing value. For example, in 1960 the average farmland value in Iowa was $261 per acre. So, for $1,000, 3.83 acres could have been purchased.

A second assumption is that all the net land rent or the dividend earned in any year will be reinvested in the land or the stock market. This will increase the number of units held. To continue the example above, average Iowa farmland rent in 1961 was $17.10 per acre. Average taxes in 1961 were $3.79 per acre. Using a 7 percent of gross rent management fee and a 6 percent of gross rent charge for insurance and maintenance, the net return per acre in 1961 was $11.08.

The net rent in 1961 represented a 4.25 percent return. For the $1,000 investment, this would be a return of $42.50. In 1961, the average land value had remained unchanged at $261 per acre. If the entire return were invested back into land, .16 acres could have been purchased. So, at the end of 1961, the investor would have 3.99 acres worth $1,042. This process is repeated each year in the analysis.

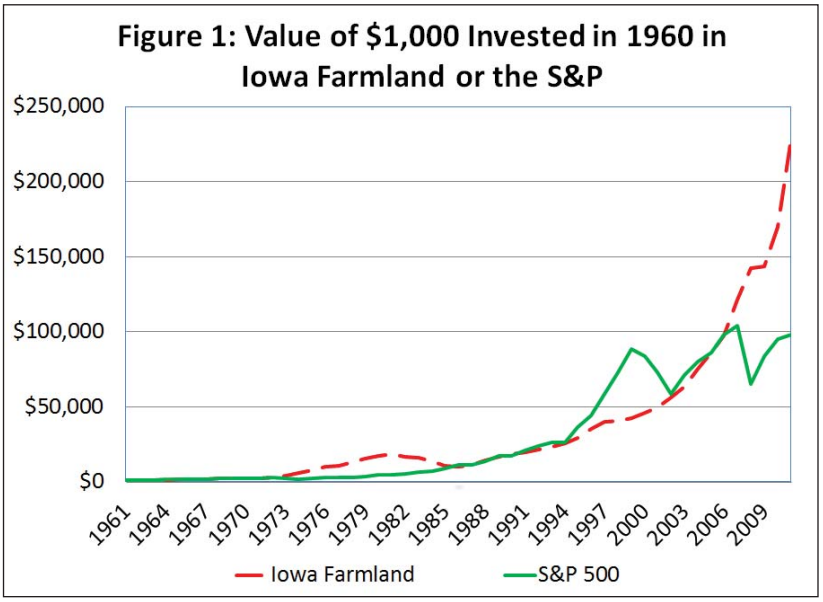
Land taxes, a management fee, insurance and maintenance are the only ownership costs considered for land. There is no ownership cost assumed for stocks. No transactions costs or other costs are considered in this analysis.

The annual percentage changes since 1960 in the S&P and Iowa land values reflect considerable yearly variation in both investments. Land values changed an average of 7.3 percent with a standard deviation of 12.4 percent. Yearly percentage change for land ranged from a negative 30.1 percent to a positive 32.5 percent. The Standard & Poor's yearly closing value showed an average percentage change of 7.6 percent with a standard deviation of 16.5 percent. The yearly percentage change in the S&P ranged from a negative 40.7 percent to a positive 35.0 percent.

The yearly return to land after taxes, management fee, insurance and maintenance has averaged 4.5 percent of land values since 1960. The standard deviation of the yearly return to land has been 1.1 percent. The maximum yearly return was 7.9 percent, while the low was 2.5 percent. The S&P yearly dividend has averaged 3.1 percent of the S&P closing level from 1960 to 2011. The standard deviation was 1.2 percent, the maximum yearly return was 5.4 percent, and the lowest yearly return was 1.2 percent over the same time period.

Analysis

Figure 1 shows the return to $1,000 invested in 1960. At that time, $1,000 would have purchased 3.83 acres or 17.6 shares of the S&P. Using the assumptions above, an investor at the end of 2011 would have 34.20 acres worth approximately $229,396, or they would have 78.25 shares of the Standard & Poor's, worth approximately $98,225. In other words, the value of the S&P investment would be only 43 percent of the value of the land investment.



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There have been periods since 1960 when the returns to the stock market have been higher. However, for the most part, land has shown higher returns over the past 50 years. It is interesting to note the recent dramatic swings in the S&P, as shown in Figure 1.

Figure 2 shows what would have happened if the $1,000 investment in land or the S&P had been made in 1970. At that time, $1,000 would purchase 2.39 acres or 11.1 shares of the S&P. By 2011, the land investment would have been worth $93,324, while the S&P investment would have been worth $45,745. An investment made in the S&P in 1970 would be only 49 percent of the value of an investment in land.

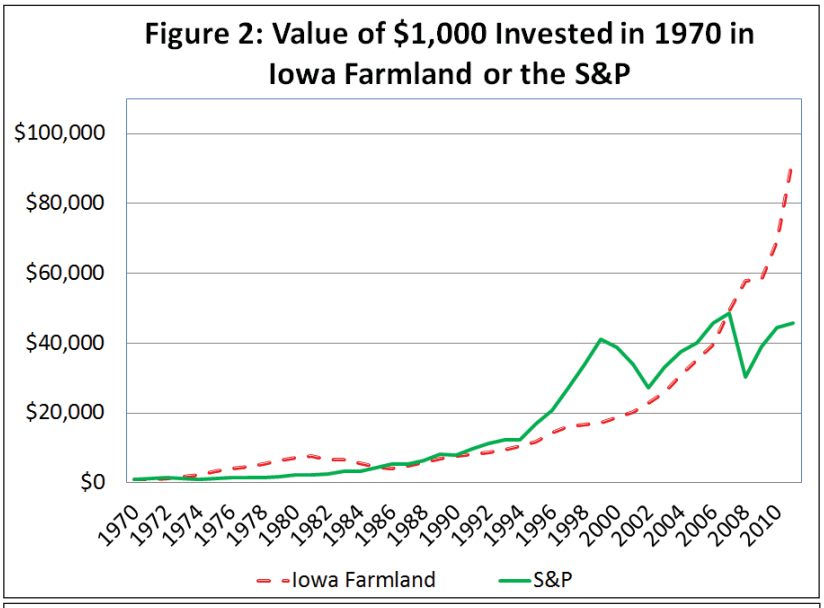

Figure 3 presents the results of a $1,000 investment had it been made in 1980, near the previous peak in Iowa land values. In 1980, the $1,000 investment in land would have purchased only .48 acres of land or 7.49 shares of the S&P. By 2011, the land investment would have been worth $13,274, while the S&P investment would have been worth $20,353. The land investment would only be 65 percent of the stock market investment.

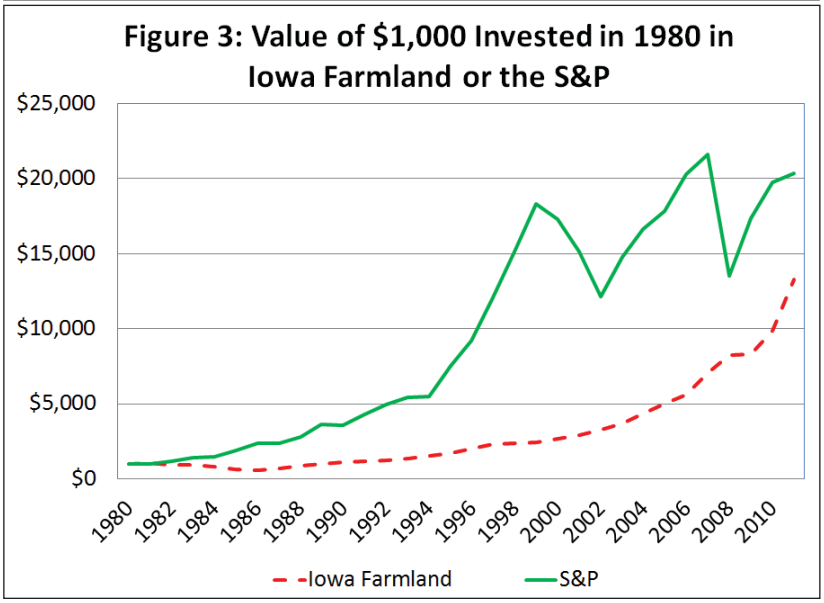

Figure 4 shows a comparison of the returns in 2011 based on the year of the initial investment. This figure presents the returns to Iowa farmland as a percent of the returns to the S&P. If the value is above 100 percent, then the farmland would have a higher value; conversely, if the value is below 100 percent, then the S&P would have a higher value for an investment made in that year.

Figure 4 shows that the timing of the investment makes a difference in which appears to be a better investment. Land would have been the better investment in all years except the period from 1974 to 1984. This period coincides with the rise in land values during the 1970s. Land values in Iowa began their rapid rise in 1973 and peaked in 1981.

Figure 4 raises an interesting question regarding the situation we are currently experiencing. The last time the stock market appeared to be a better value was the last time the land market was booming. What will this chart look like in 20 years relative to today?

The Chicago Federal Reserve bank reported that land values in Iowa increased 4 percent in the first quarter of 2012. If we assume that increase and use the S&P values as of March 2012, Figure 4 would show a slight negative for purchasing land relative to the stock market in 2012.

Conclusions

Which is the better investment, Iowa farmland or the stock market, is a complicated question and one for which there is no one best answer. Several factors need to be considered when trying to answer this question and several assumptions have to be made.

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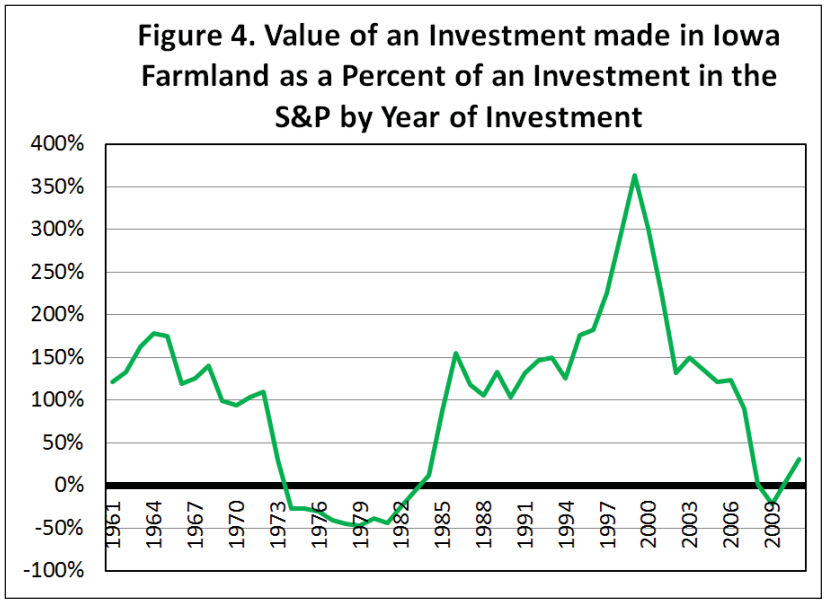
In this article, real estate taxes, a management fee, insurance and maintenance were subtracted from the return to land. These were the only ownership costs assumed for land. There would be other costs that would vary with the individual circumstances.

This study also assumed there would be no transaction costs. There would be costs associated with either the purchase of land or the purchase of stocks.

Finally, this study assumed average performance for land values, rents and the stock market. Deviations from average performance would produce different results.



The majority of land is purchased by existing farmers. They purchase the land for a variety of reasons that may or may not fit with traditional investment theory. In spite of this, land, over the long run, has produced competitive, if not superior, returns compared to the stock market.

What will happen to the value of farmland over the next several years? The future is hard to predict, but in this case it is especially difficult. There are several factors that will have an immediate impact on land values and other longer-term factors that will determine the future performance of land.

The value of land is determined by its income earning potential. For the most part, in Iowa, that means the returns to corn and/or soybeans. Returns will be influenced by a number of factors over the next several years. Oil prices, ethanol prices, crop yields, costs of production, economic recovery, alternative biomass sources, and a host of other major issues will have an influence on the price of land.

Another uncertainty in the land market is the changing landowner demographics. In 1982, 12 percent of the farmland in Iowa was owned by someone older than 75. By 2007, this percentage had more than doubled to 28 percent. In 2007, over half, 55 percent, of the farmland in Iowa was owned by someone over the age of 65. How this land will be transferred from one generation to the next is not entirely clear at this time. It appears that the majority of it will be passed on to children, usually in equal shares. This means there will be more landowners and more out of state owners. Whether they will they want to continue to own the land or sell it is unknown. Too much land being offered for sale is not a problem at this time, but it could become one if the next generation doesn't want to hold on to the land.

The performance of the stock market for the next few years is also not clear. The U.S. stock market will be impacted by what happens in the European Union and China, as well as other places in the world. We are no longer insulated from the economic conditions throughout the world.

The imbalance of trade is another area of uncertainty with respect to possible impacts on the U.S. economy and the performance of the stock and land markets.

A complete discussion of factors that could influence the land or stock market is beyond the scope of this article. There is considerable uncertainty as one looks ahead. While uncertainty about the future is not new, there is a level of concern for both the land market and the stock market.

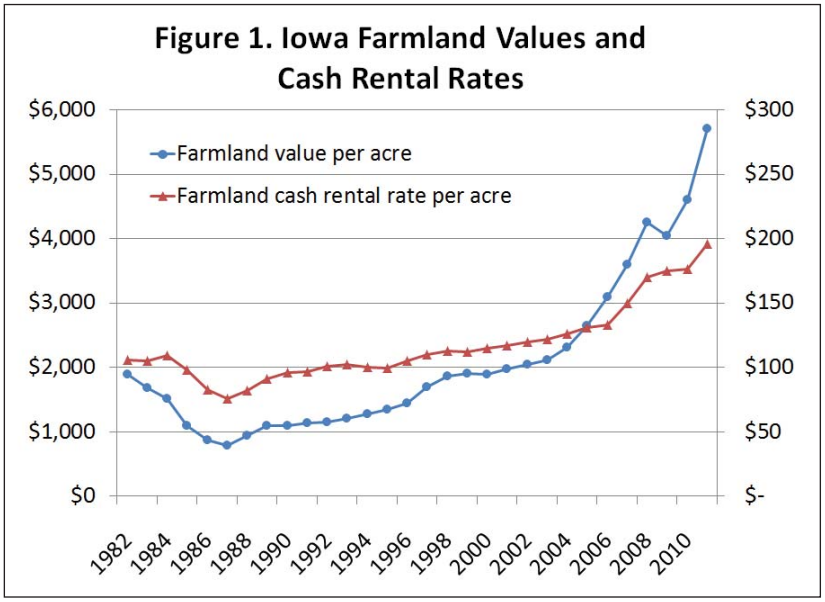
Land and the stock market are different types of investments and assets. This simple comparison was based strictly on averages. There are a number of individual stocks that perform better than the S&P. But there are some that don't perform as well. Anyone contemplating which is a better investment needs to know their goals.

Land's performance relative to the stock market over the past few years has been spectacular. Will this trend continue? Time will tell. Which is the better investment? As the old saying goes, timing is everything in the success of a rain dance.

Iowa farmland values and cash rental rates

by William Edwards, extension economist, 515-294-6161, wedwards@iastate.edu

Perhaps no topic generates as much interest in rural areas as the value of Iowa farmland. A close second would be rental rates for farmland in Iowa. Survey results, auction values and trends are all watched closely and reported in detail.



Profit margins

Cash rental rates basically react to the profit margins available from producing Iowa's major crops, that is, revenue minus costs. The revenue side of the equation is the product of yields and prices, plus any additional income such as commodity program payments and crop insurance indemnities. The cost side includes seed, fertilizer, pesticides, machinery, labor and other inputs. When the difference between revenue and costs expands or diminishes, rents eventually follow suit. Because most cash rents are set in advance, they reflect renters' and owners' expectations about profit margins, which in turn are highly influenced by results in the most recent crop years.

Land values are influenced by the same variables as cash rents, but because a land purchase is a longer-term commitment than a rental contract, values reflect longer-term expectations about revenue and costs. In addition, interest rates and expected returns in other types of investments affect what buyers are willing to pay and sellers are willing to accept in a land transaction, but have less impact on rental bids. Potential future uses of land for development or recreation also affect land purchase values in certain locations, but have little impact on annual rents.

Recent trends

In the past three decades, Iowa farmland values and rents have experienced a decline, a period of gradual increases, and a period of rapid increases, as shown in Figure 1. The data shown in Figure 1 are from the USDA National Agricultural Statistics Services (NASS) annual survey of farmers and represent January 1 values each year. Both land values and cash rental rates reported are for all cropland, not just land planted to corn and soybeans. The NASS values tend to be slightly lower than the values reported in the Iowa State University surveys, but they follow the same general trend.

The trend lines in Figure 1 indicate that land values have been increasing faster than cash rental rates during the past decade. Only a small percentage of farmland changes hands each year, but the sale prices are generally public knowledge and quickly influence the public perception of land values. Cash rents, on the other hand, may not be adjusted every year for changing economic conditions for a variety reasons. Landowners may not become aware of changes in prices or costs as quickly as tenants, some lease contracts may be for multiple years, gratitude for long-term land stewardship or extra services may make owners reluctant to increase rental rates, and rental rates are not public information. Thus, the average rent paid each year may lag behind the level of rents that are newly negotiated in any given year when crop margins are either increasing or decreasing.

Figure 2 shows the ratio of cash rents to land values in Iowa since 1982. It peaked at nearly 10 percent in 1987, and has dropped below 4 percent the past two years. Note that it is not an actual net return because ownership costs, such as real estate taxes, have not been subtracted from the cash rent received.

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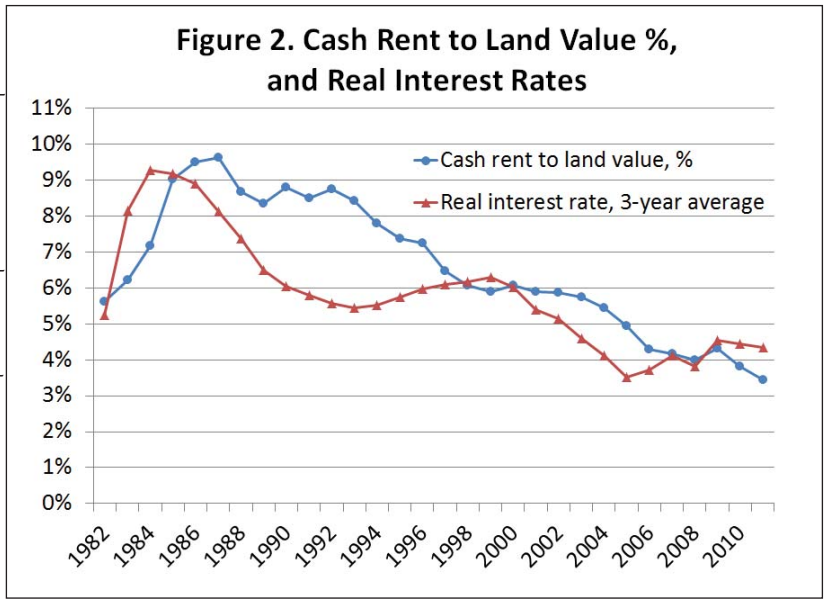
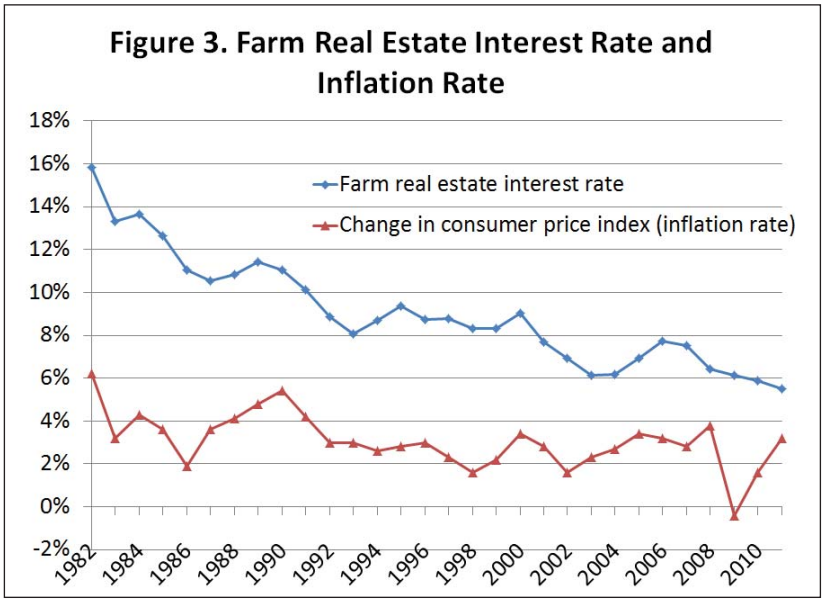
Interest rates

The role of interest rates on land values and rents must also be considered. The U.S. Federal Reserve System made a decision to raise interest rates and tighten credit in the early 1980s to reduce inflation in the economy. Ever since then both interest rates and the general rate of inflation have been on a gradual downward path. Figure 3 compares the annual changes in the consumer price index (inflation rate) estimated by the U.S. Department of Commerce to the three-year average interest rate for farm real estate loans as reported by the Chicago Federal Reserve Bank. Although both rates have followed a similar trend, the gap between them has been narrowing. The difference is known as the real interest rate, that is, the cost of borrowing net of inflation. As shown in Figure 2, it has followed the same general path as the rent-to-value ratio, especially since 1997.





The explanation is that buyers will bid up the price of income-producing assets, such as farmland, until their expected rate of cash return is near the real cost of borrowing. Rates of return on alternative investments, such as certificates of deposit, are lower than returns to farmland (they carry less risk), but also follow the same trend. To put it another way, farmland investors are willing to accept a rent-to-value ratio of less than 4 percent today because alternative investments with similar degrees of risk are not returning any higher rates.

To summarize, cash rental rates have not been rising as fast as land values partly due to "sticky" rents that have not responded quickly to higher profit margins, but a general decline in real interest rates has also had a major role in pushing down rent-to-value ratios. Until interest rates increase we cannot expect rent-to-value ratios to return to levels seen in the 1980s and 1990s.

Updates, continued from page 1

Current Profitability

The following tools have been updated on www.extension.iastate.edu/agdm/info/outlook.html.

Corn Profitability – A1-85
Soybean Profitability – A1-86
Iowa Cash Corn and Soybean Prices – A2-11
Season Average Price Calculator – A2-15
Ethanol Profitability – D1-10
Biodiesel Profitability – D1-15