Ag Decision Maker

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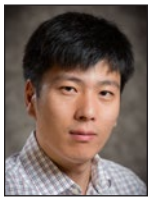


Comparing the stock market and Iowa land values: A question of timing

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This comparison of an investment in the stock market or Iowa farmland is an update of earlier versions.

The Iowa farmland market has seen four years with declines over the past five years due to lower commodity prices and higher interest rates. Based on the Iowa State University Farmland Value Survey, the 2018 Iowa land values have fallen 17% off the 2013 peak. However, despite these decreases, current Iowa farmland values are still almost three times more than the 2000 values, 66% higher than the 2009 values and 8% higher than the 2011 values.

The Standard & Poor Index (S&P) has experienced double digit changes since 2000. There have been eight years with double digit increases (2000, 2004, 2010, 2011, 2013, 2014, 2017, and 2018), as well as four years with double digit decreases (2001, 2002, 2008, and 2009).

To determine which option provided the better investment, we compare and contrast the returns to farmland and the stock market since 1950 as well as share 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 a fee for this service. There is also a need for maintenance and insurance with farmland not associated with owning stocks.

The data used for this analysis comes from various sources. The Iowa average land values and rental rates come from USDA National Agricultural Statistical Service (NASS) June Area Survey.

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Handbook updates

For those of you subscribing to the handbook, the following updates are included.

2019 Corn and Soybean Commodity Loan Rates– A1-34 (2 pages)

Lease Supplement for Obtaining Conservation Practices to Control Soil and Nutrient Loss – C2-08 (4 pages)

Please add these files 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 average land tax per acre is calculated using data from USDA Economic Research Service (ERS) State-Level Farm Income Statements data, www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/data-files-us-and-state-level-farm-income-and-wealth-statistics.aspx, from which taxes per acre were calculated as the yearly Iowa farm real estate taxes and fees paid divided by the total farmland acres for that year. The 2019 values are not available yet, so we assumed a 2% decline from 2018 land value and cash rent based on price forecasts from the 2019 Soil Management Land Valuation (SMLV) conference.

The value used for the stock market is the composite value of the S&P 500's Index (S&P) average in each June, and the June dividend value for each year is used. These data for 1950 to 2018 were obtained on Dr. Robert J. Shiller's website, www.econ.yale.edu/~shiller, a Nobel-winning economist at Yale University. The June 2019 stock price and dividend are not available, and we used the May 2019 S&P 500 index and March 2019 dividend as proxy.

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 before the analysis begins. The amount of land or stock purchased will depend on the existing value. For example, in 1950 the average farmland value in Iowa was $161 per acre. So, for $1,000, 6.21 acres could have been purchased shortly after June 1950.

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, the 6.21 acres bought in 1950 could charge rent at the current (1951) levels. The average Iowa farmland rent in 1951 was $12.37 per acre. Average farmland property taxes in 1951 were calculated to be $2.31 per acre. Subtracting taxes, a 7% of gross rent management fee and a 6% of gross rent charge for insurance and maintenance, the net return per acre in 1951 was $8.45.

The $1000 investment in 6.21 acres of Iowa farmland would generate a total of $52.47 in terms of net rent for the investor ($8.45 * 6.21 acres). In 1951, the average land value was $188 per acre. If the entire net return were invested back into land, .28 acres could have been purchased ($52.47/$188 = .28). So, at the end of 1951 the investor would have 6.49 acres worth $1,220 ($1,220 = (6.21+.28)*188). This process is repeated each year in the analysis.

The June 1950 S&P was $18.74. This means 53.36 shares could have been purchased for $1,000. The June 1951 dividend was $1.56 per share. This means an additional 4.11 shares and value of $1,233 at the end of 1951.

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 1950 in the S&P and Iowa land values reflect considerable yearly variation in both investments. The nominal Iowa land values changed an average of 6.4% with a standard deviation of 11%. Yearly percentage change for land ranged from a negative 28.1% to a positive 36.8%. Comparatively, the S&P's yearly closing value showed an average percentage change of 9.1% with a standard deviation of 15%. The yearly percentage change in the S&P ranged from a negative 40.0% to a positive 51.7%. Out of the 69 years from 1950 to 2018, Iowa land values saw an increase 56 times, while the S&P increased 50 times.

The yearly return to land after taxes, management fee, and insurance and maintenance has averaged 4.8% of land values since 1950. The standard deviation of the yearly return to land has been 1.2%. The maximum yearly return was 7.0% while the low was 2.1% in 2018. The S&P yearly June dividend has averaged 3.2% of the S&P closing level from 1950 to 2018. The standard deviation was 1.4%, the maximum yearly return was 7.2% and the lowest yearly return was 1.2% over the same time period.

Analysis

Figure 1 shows the return to $1,000 invested in 1950. At that time, $1,000 would have purchased 6.21 acres or 53.36 shares of the S&P. Using the assumptions discussed previously, an investor in June 2019 would have 149.14 acres worth $1,180,916. Alternatively, they would have 451.65 shares of the Standard & Poor worth $1,324,444. In other words, the value of the S&P investment would be 12.2% above the value of the land investment in 2019.

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Figure 1 reveals the ups and downs of the stock and land markets over a 70-year span. In particular, the S&P climbed on top following the 1980s farm crisis, but experienced significant dips in late 1990s - early 2000s due to the Asian financial crisis and the dotcom bubble. The significant uptake in the investment value for farmland 2004-2013 also clearly revealed the dramatic increase in Iowa land values since the mid-2000s. The past five years have witnessed the surge in the stock market alongside the recovery of the general economy, and the stagnant land market.

Figure 2 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 .54 acres of land or 8.73 shares of the S&P. By 2019, the land investment would have been worth $23,191 while the S&P investment would have been worth $67,463. The land investment would only be 34% of the stock market investment.

Similarly, Figure 3 presents the results of a $1,000 investment had it been made in 2010, following which the land market experienced significant increases until 2014 and then noticeable declines. Before 2014, the land investment would yield a slightly better return than the investment in the stock market. However, the Iowa land values decreased from $8,500 in 2014 to $8,080 in 2018 according to the USDA June Area Survey. Figure 3 confirmed the flat trajectory from 2014 to 2019 for the land investment while the stock investment paid off more.

Figure 4 shows a comparison of the values in 2019 based on investing in each individual year. This figure presents the returns to S&P as a percent of the returns to Iowa farmland. In other

Figure 1. Value in each year of $1,000 invested in 1950 in Iowa farmland or the S&P 500

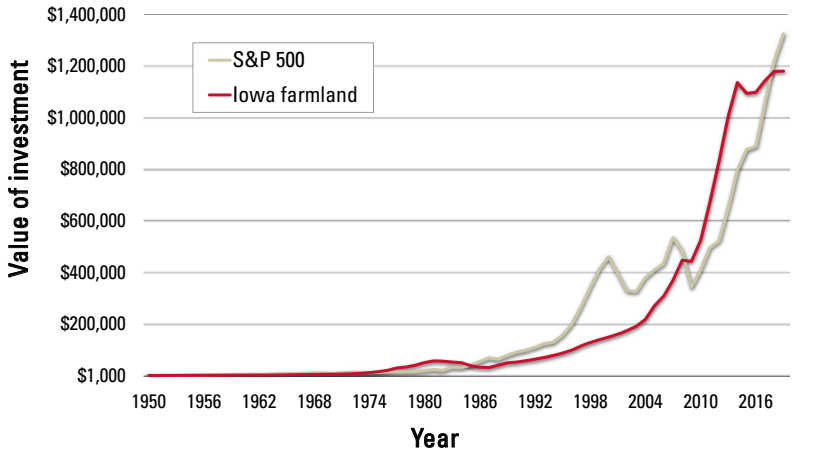


Figure 2. Value in each year of $1,000 invested in 1980 in Iowa farmland or the S&P 500

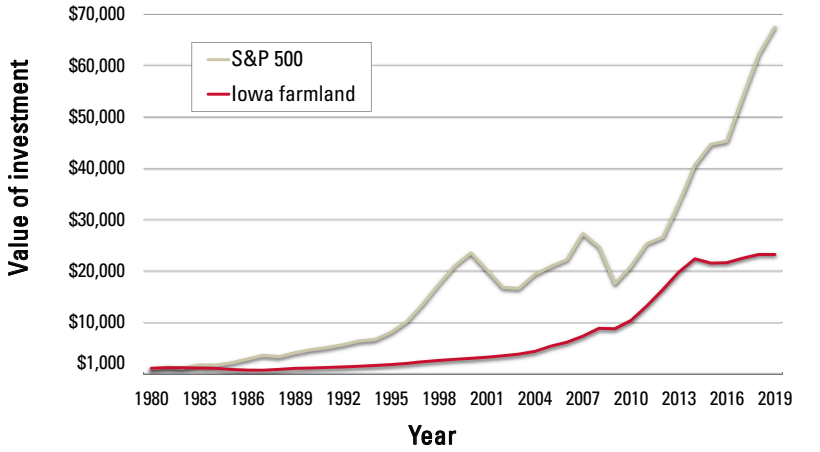
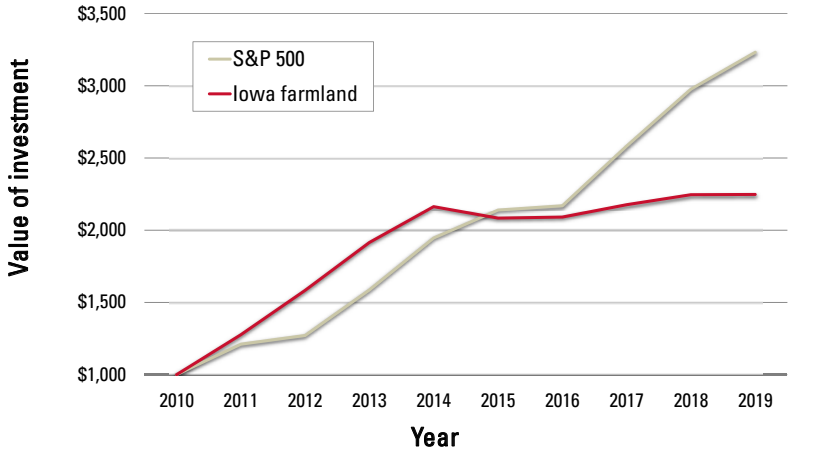


Figure 3. Value in each year of $1,000 invested in 2010 in Iowa farmland or the S&P 500



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words, the value for any year would be the present value of an investment in the S&P made in that year as a percent of an investment in farmland made that same year. In Figure 4 if the value is above 100% then the S&P would have a higher value; conversely, if the value is below 100%, then the farmland would have a higher value for funds invested 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 almost all years except the period from 1978 to 1984 and most recently 2009 to 2019. 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. Due to historically low interest rate and strong agricultural demand, Iowa farmland values have been at record-high levels since 2003. However, due to declining commodity prices and farm income, Iowa farmland values have decreased following the peak in 2013. As a result, for example, an investment in Iowa farmland in 2013 would not yield a better outcome than the S&P.

Figure 4. Return to an investment in the S&P 500 relative to an investment made in Iowa farmland by year of investment

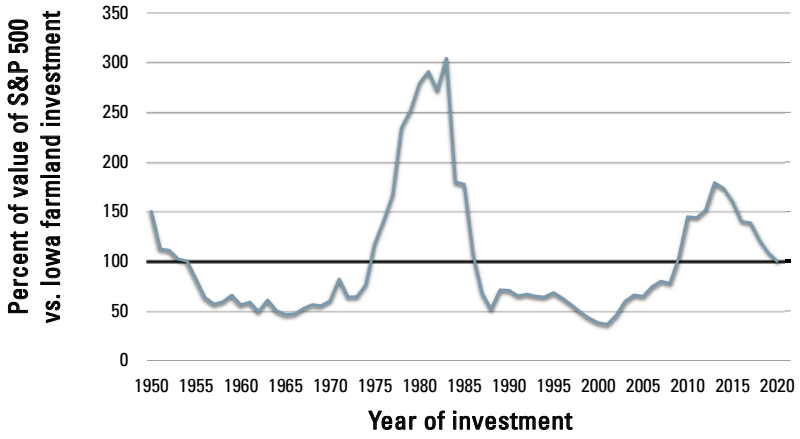
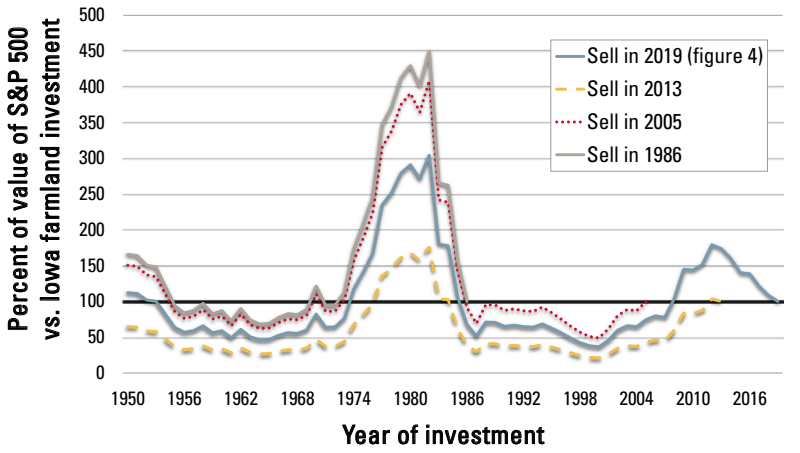


Figure 5. Return to an investment in the S&P 500 relative to an investment made in Iowa farmland by year of investment and year of selling that investment



While Figure 4 provides a useful perspective on the relative return of the value of the S&P and farmland investment, it assumes that you hold the asset until 2019 and then base the comparison on the terminal value of these assets in 2019. A further examination of Figure 1 shows that if you compared the value of the 1950 farmland and S&P investments in 2000, the S&P 500 would be viewed as a better alternative. In other words, the holding period matters for the relative performance of the farmland vs. S&P 500 investment. As a result, Figure 5 shows the percent of value of S&P 500 relative to farmland investment sold in 1986, 2005 and 2013 as opposed to 2019 as shown in Figure 4. In particular, the red (dotted) line shows that if you bought the farmland in 1980 right before the Farm Crisis and sold it in 2005 right before the farmland values really took off, the value of S&P 500 investment relative to the farmland investment would be more than four times. In contrast, the gold (dashed) line shows that if you bought the farmland in late 1990s and sold it in 2013, you will have a better return compared to holding S&P 500 stocks for the same period. Figure 5 reveals the volatility in the relative return of the two investments depending on when you buy and sell these assets.

Discussion and 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 transactions costs. There would be costs associated with either the purchase of land or the purchase of stocks.

Investing $1,000 in the stock market would not be difficult but investing only a $1,000 in the Iowa farmland market would be. Although the methodology employed here could be scaled up to any level of investment, it is simply not possible for the majority of people to find the wherewithal to purchase enough land for a viable farm operation or more likely, it is more difficult to find small enough farmland parcels for sale. We have run the analysis, assuming a $1 million initial investment amount, and the general insight remains the same.

The majority of farmland is purchased by existing farmers. They purchase the land for a variety of reasons that may or may not fit with traditional investment. The analysis presented here compares the value of an investment based on the value of the asset at that time. Many farmers don't intend to ever sell their land. The 2017 Iowa Farmland Ownership and Tenure Survey shows that half of the land in Iowa has been owned by the same owner for over two decades, and 29% of Iowa land is owned primarily for family or sentimental reasons. Gains in value are only recognized if the asset is sold.

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.

Consider land value equals income divided by interest rate. U.S. farm income is now one-half of the 2013 peak. Records from the Iowa Farm Business Association show that one-quarter of producers are experiencing liquidity crunches and low working capital. The heightened uncertainty for U.S.-China trade is another reason for the dampened commodity and land market outlook. However, most investors and farmers are optimistic about the longer-term commodity and farm income outlook, and many consider farmland to be a good long-term investment option.

Another factor in the land market is the amount of land available for purchase. The farmland market has always been a thin market with few farmland sales, but recently, the farmland market has been extremely tight—for five consecutive years, more respondents to the ISU Land Value Survey reported less sales in their county compared to the previous year. The limited farmland supply helped buoy market prices in many areas across the state and help explain why Iowa land values only dropped 17% with farm income cut in half since 2013. As a result, it is critical to watch whether farm income and the land market lead to landowners' growing interest in selling land, or more stressed sales from financially stressed producers.

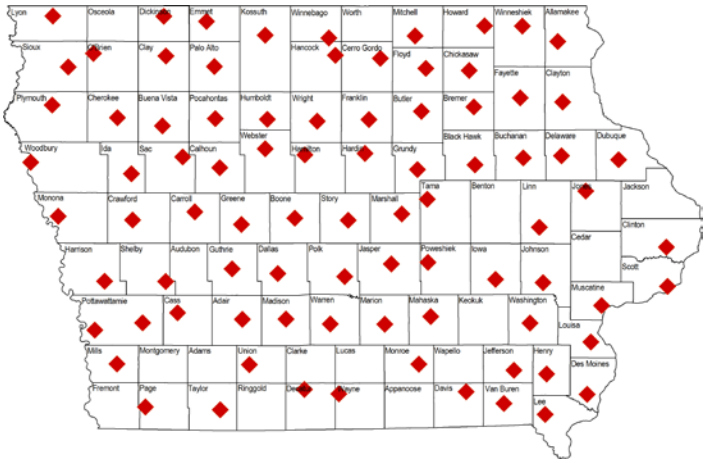
The performance of the stock market for the next few years is also not clear. The U.S. stock market will be impacted by what happens in the European Union and China, among other places in the world. We are not insulated from the economic conditions throughout the world, and U.S.-China trade war and ongoing tariff discussions with Mexico are good reminders of the globalized nature of the general and agricultural economy.

A complete discussion of all the factors that could influence the land or stock market is beyond the scope of this article. Suffice it to say there is considerable uncertainty as one looks ahead.

Land and the stock market are different types of investments and assets. This simple comparison was based strictly on averages. Deviations from average performance would produce different results. 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 until more recently. With the decline in farm income and a possible increase in interest rates, we might see farmland values continue to recede in the foreseeable future. In the meanwhile, the S&P market is also increasingly influenced by the global economy especially emerging markets like China, trade and world security. Will this trend continue and how will it change in the future? Time will tell. Which is the better investment? As the old saying goes, timing is everything in the success of a rain dance.

Statewide farmland leasing meetings address factors impacting 2020 leases



Iowa State University Extension and Outreach will host multiple farmland leasing meetings during July and August. The annual meetings address questions that land owners, tenants or other interested individuals have about leasing farmland.

Core components of the 2019 program include a discussion on implementing conservation practices in leases, land values and cash rent trends, 2018 Farm Bill decisions, the latest legal updates that impact farm leases and land ownership and communication between rental parties.

The three-hour workshop is designed to assist landowners, tenants and other agri-business professionals with current issues related to farmland ownership, management and leasing arrangements. Comments from past participants share the value of the materials provided and depth of information covered in the short program.

A 100-page workbook is compiled for the programs, with resources regarding land leasing agreements such as surveys, example lease agreements and termination forms, along with many other publications.

Attend a local leasing meeting

The leasing meetings being held across Iowa are facilitated by ISU Extension and Outreach farm management specialists. A listing of ISU Extension and Outreach county offices hosting meetings is available online with additional information available through the Ag Decision Maker website, www.extension.iastate.edu/agdm/info/meetings.html. For registration information, contact the local ISU Extension and Outreach county office.

Pre-registration is encouraged as an additional $5 fee may be added if registering less than two calendar days before the meeting date. The Ag Decision Maker leasing section, www.extension.iastate.edu/agdm/wdleasing.html, also provides useful materials for negotiating leases, information on various types of leases, lease forms and newly updated Decision Tools.

Updates, continued from page 1

Internet Updates

The following Decision Tools have been updated on www.extension.iastate.edu/agdm.

Comparison of Transaction Costs by Market Outlet – C1-55 (Decision Tool)

Computing a Grain Storage and Dryer Rental Rate – C2-24 (Decision Tool)

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