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Staff Paper

Comparison of Michigan Farmland Returns to Nonfarm Investments

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Agricultural land prices increased for almost 50 years until the agricultural financial crisis in the 1980's halted the upward movement in values. From 1981 to 1987, Michigan farmland prices decreased 37 percent. How does the return to farmland compare to the yield from nonfarm investments in the last 10 years? Is agricultural land a good investment? The purpose of this article is an evaluation of investment returns from Michigan farmland for the owners, and a comparison of the returns over time with competing long-term nonfarm investments.

15 pages

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Comparison of Michigan Farmland Returns to Nonfarm Investments

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The financial goal of an investor is to increase wealth over time. Money is investment in financial instruments to earn the highest possible return consistent with the

risk that the investor is willing to take. Since farmland is a long-term commitment of funds, nonfarm investments are chosen for the comparison that also have a longer time period such as bonds and stocks. For that reason, savings accounts and other short-term instruments are not compared with land.

Investments compared

U.S. Treasury bonds are long-term securities issued by the U.S. Government to finance the government's debt. Federal government securities are sold as bills, notes, and bonds. The principal difference between bills, notes and bonds lies in the period of time prior to maturity of the instrument. Bills mature in one year or less and are sold at a discount from the face value, with the difference representing interest income. Notes have maturities ranging from two to 10 years. Bonds mature ten years or more from the time of issue. Both notes and bonds pay a fixed interest rate that is payable semiannually. The 10-year and 30-year maturity bonds are quoted in the comparison.

There are no safer investments than U.S. government securities. The United States government has not defaulted on its payments and has the taxing authority to insure adequate revenue to make interest payments. They are highly liquid and readily marketable investment vehicles prior to maturity. Before maturity, the selling price of the security could be above or below the face value of the bond due to current market interest rates.

Since U.S. Treasury securities are safe, yields are slightly lower than high grade corporate bonds, ranging from one-third of a point (one point of interest) to two points

lower. Usually, interest rates for federal government securities are higher for longer maturities, so bonds have higher rates than notes, and notes have higher rates than bills.

Municipal bonds are debt obligations of a state or local government entity. The funds may support general governmental needs or special projects such as water, sewer or road improvements. Issuance of bonds must be approved by referendum or by an electoral body of the governmental unit. Public purpose bonds issued by state and local governments are exempt from federal income taxes and most from state and local income taxes, at least in the state of issue. Therefore, the return from public purposes municipal bonds must be adjusted for income taxes to be comparable to other investments. The returns from high grades of municipal bonds are used in the study.

Corporate bonds are long-term written promises to pay the amount borrowed by the corporation in a set period of time at a fixed and specified rate of interest. A corporate bond is a debt instrument or a loan made by buyers of the bond to the corporation. The investment is redeemed for the face value of the bond at the maturity date.

The quality of the bond depends upon the overall credit position of the company, the ability of the corporation to pay principal and interest, the pledge of assets as security against the loan, and a number of other business factors. These factors are analyzed by professional analysts and financial ratings are published which indicate the relative safety of corporate bonds. One of these rating agencies is Moody's, a corporation that

specializes in judging the credit worthiness of corporate and government units issuing debt securities.

Investment grade bonds are rated by Moody's in four rating categories: Aaa, Aa, A, and Baa with Aaa being the highest quality rating. Although there are quality ratings lower than Baa, these categories are considered below "investment grade" and not considered in the analysis. The Aaa and Baa quality corporate bonds are used in the comparison.

Common stocks are equity investments, whereby, purchasers can participate in the ownership of "for-profit" corporations. As owners of shares of common stock of a corporation, the investor may receive income as yearly dividends paid by the corporation from its earnings and appreciation (or loss) in the value of the shares as investors trade the securities over the time period that the shares are owned.

Common stock in corporations represents the greatest risk for investors since its dividend and liquidation rights are junior or subordinate to preferred equities and debt securities issued by the organization. However, once the senior securities are provided for with its promised payments, the residual earnings are applied for the full benefit of the common stockholders.

Returns to common stock can be high or low depending on the financial success of the organization. Because the future performance of the company accrues to the common stockholders, it has the potential in good times to be a good hedge against inflation. The Standard & Poor's 500 stock index is used in the analysis and is composed of 500

companies in various industry groups in the United States. The returns for common stocks are dividends and capital gains.

Michigan farmland is an equity investment that provides an annual cash income from rent and capital gain (or loss) from the change in the value of the property over the time period that it is owned. Net cash rent on Michigan cropland is the annual cash rent paid to the owner, less property taxes.

Sources of data

The data on agricultural farmland rents and prices are taken from “Agricultural Resources -- Agricultural Land Values and Markets,” AR-31, Economic Research Service, U.S. Department of Agriculture, June 1993 and earlier reports. More recent data are from “Updates on Agricultural Resources and Environmental Indicators, Number 6, Economic Research Service, National Resources and Environment Division, U.S. Department of Agriculture, July 1996 and earlier reports. The statistics on nonfarm investments are published in the “Economic Report of the President,” Transmitted to the Congress, February 1996.

Time period for the analysis

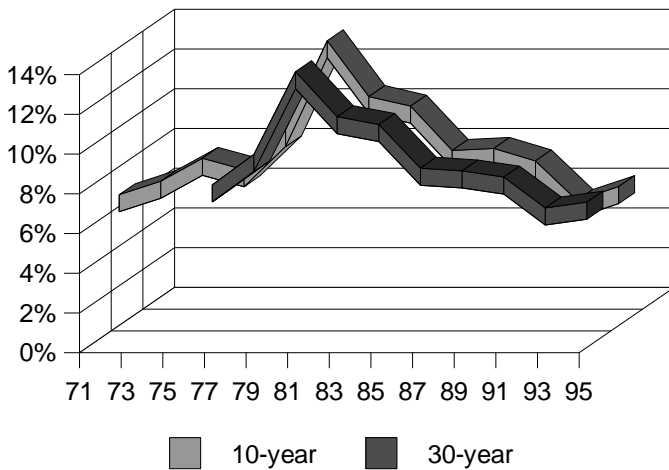
The most recent 25-year (1971-1995) time period is used for the analysis. The time period is of sufficient length to include various general business and agricultural price cycles. The early part of the time period for the general economy witnessed relative stability with the latter 1970's and early 1980's experiencing inflationary, high interest rates, and turbulent economic times. Growth in the general economy was prevalent in the

latter part of 1980's and after the recession of the early 1990's. The agricultural economy was strong in the 1970's, but was very depressed starting in the early 1980's. Since the middle 1980's, agriculture has been in a recovery period, and has been very strong the last few years.

Returns to U.S. Treasury bonds

The interest return on U.S.

Figure 1. U.S. Treasury Bonds
10-year and 30-year interest rates (1971-95)



Treasury bonds increased from a 6 percent rate in 1971, peaked at about 14 percent in 1981 and has dropped to the 6-7 percent range for the last few years (Figure 1).

The 30-year bond was not issued prior to 1977. Since its introduction, the interest rate on 30-year bonds is usually

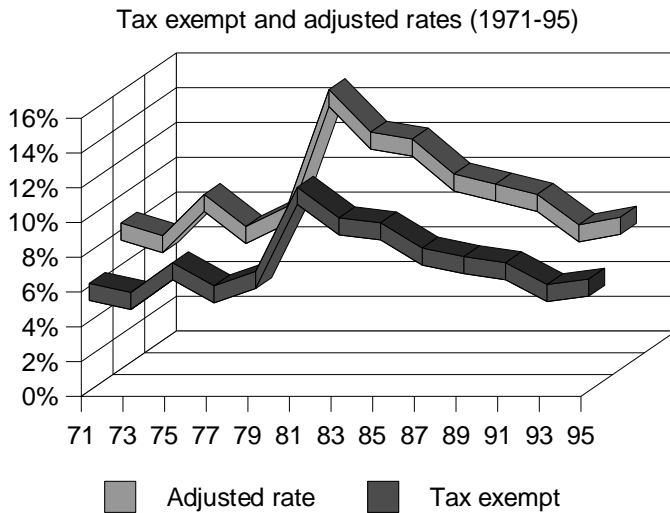
higher than the 10-year bond due to slightly higher risk for a longer term financial instrument.

The average interest return for the 25-year period from 1971 to 1995 is 8.7 percent for the 10-year bond and 9.3 percent for the 19-year period of the 30-year bond. The average interest rate for the 10-year period from 1986 to 1995 is 7.9 percent for the 30-year bond and 7.6 percent for the 10-year bond. Since U.S. Treasury securities are the safest of all bonds, the interest rates are generally lower than other taxable bonds.

Municipal bonds

Comparison of the returns to municipal bonds with other taxable instruments

Figure 2. Returns to Municipal Bonds



requires an adjustment of the municipal interest rates for the tax exempt nature of the bonds. The trend data in Figure 2 shows the return to municipal bonds over the 25-years from 1971 to 1995 for the published tax exempt rate and the rate adjusted upward by an assumed 28 percent income tax rate.

The tax exempt rate averages 6.8 percent for the 10-year period 1986 to 1995 and 7.3 percent for the 25-years from 1971 to 1995. If these rates are adjusted for an assumed 28 percent income tax rate, the before tax rate is 9.5 percent for the last 10-years and 10.1 percent for the 25-year period. Tax exempt municipal bond interest rates are 89 percent of the 10-year U.S. Treasury rates for the last 10-year period and 84 percent of the 10-year bonds for the 25-year period from 1971 to 1995.

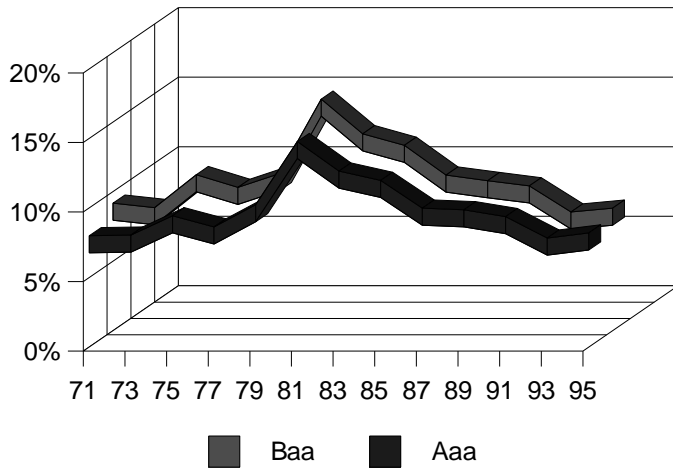
Corporate bonds

The interest returns on corporate bonds shows a similar upward movement in rates until 1981 and decreases to the 7-8 percent range in the last few years (Figure 3).

Corporate bond rates are higher than U.S. Treasury bonds due to greater risk factors of

Figure 3. Returns to Corporate Bonds

Aaa and Baa rated (1971-95)



higher default on the securities.

Corporate bond rates are higher than municipal bond rates, but are about the same level if the municipal bond returns are adjusted for income taxes.

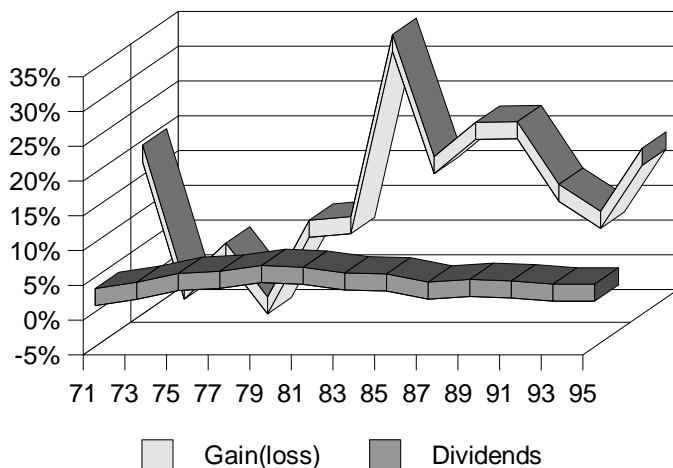
The lower quality corporate bonds, rated Baa, have interest rates consistently higher than the better

quality issues rated Aaa. The average interest rates for the 10-year period 1986 to 1995 are 8.6 percent for the Aaa rated bonds and 9.6 percent for the Baa rated bonds. The 25-year average rates are 9.5 percent for the Aaa rated bonds and 10.7 percent for the Baa rated corporate bonds.

Common stock

Figure 4. Returns to Common Stocks

Capital Gain (Loss) and Dividends (1971-95)



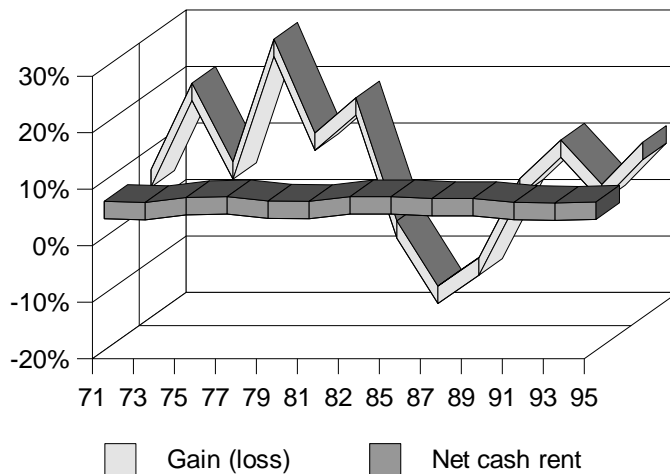
The dividend return to the S & P 500 stock index is in the two to 5 percent ranges during the 25 years from 1971 to 1995 and averages 3.9 percent (Figure 4). Since common stocks are equity instruments, the annual gain in the asset value of 8.5 percent can be combined with

dividend yields to arrive at a total return of 12.4 percent. The annual change in asset value of the S & P stock index ranged from a loss of 23 percent in 1974 to a gain of 34 percent in 1984. The capital gain for common stocks during the last 10 years has been very high, but the dividend yield has been lower. The dividend rate averages 3.2 percent for the period 1986 to 1995 and the capital gain averages 11.7 percent for a total return of 14.9 percent, the highest of all investments sited.

Michigan farmland

The net cash rental income to Michigan farmland is in the four to 6 percent ranges during the period and averages 5.1 percent over the 25-year period 1971 to 1995 (Figure 5). In addition to rent returns, agricultural land fluctuates in market prices, so a capital

Figure 5. Returns to Michigan Farmland
Capital Gain (Loss) and Net Rents (1971-95)



gain or loss must be added to the equity investment to arrive at the total returns. The capital gain over the period is 5.8 percent for a total return of 11 percent. The change in the asset value of farmland from year to year ranged from a negative 16 percent in 1984 to a 28 percent increase in 1977.

The capital losses in farmland occurred in the early 1980's which dropped the price 37 percent from 1981 to 1987. The last 10-years from 1986 to 1995 shows a 1.9

percent capital gain in the value of the property and combined with a 5 percent net cash income from rents results in a total return over the period of 6.9 percent.

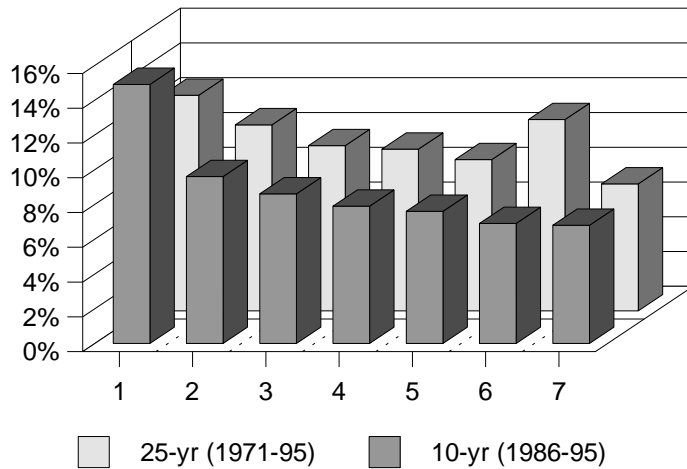
Comparison of investment returns

Figure 6 summarizes the 25-year, 1971-1995, and the 10-year, 1986-1995, annual average returns for the investments. The numbers for the financial instruments shown in

Figure 6 are as follows:

Figure 6. Returns to Investments

25-year and 10-year



1 = S & P 500 common stocks

2 = Corporate bonds (Baa rating)

3 = Corporate bonds (Aaa rating)

4 = 30-year U.S. Treasury bonds

5 = 10-year U.S. Treasury bonds

6 = Michigan farmland

7 = Municipal bonds (high grade)

The investments are listed in the order of highest to lowest average returns over the 10-year period. The S & P 500 common stock index is the only investment where the 10-year return is greater than the 25-year period. The 25-year order of investment returns from highest to lowest would be the same as the 10-year, except Michigan farmland would rank second from the highest, slightly lower than common stocks, rather than near the lowest return. Michigan farmland was a good investment prior to the 1980's, but suffered large capital gain losses in the early 1980's.

Common stocks were a poor investment prior to the 1980's, but have had excellent returns since that time period. This data shows that common stocks were weak when Michigan farmland returns were strong, and common stock returns were strong when Michigan farmland returns were weak.

U.S. Treasury bonds, municipal bonds, and corporate bonds displayed increasing returns during the high inflationary period prior of the late 1970's and early 1980's, but declining rates since 1981. The interest rates are lowest for U.S. Treasury bonds. The municipal rates are listed as the lowest returns of all investments because the rates quoted are after tax rates, while other returns are before income taxes. If municipal bond rates are adjusted for an assumed 28 percent income tax rate, the before tax return is between the rates paid for Aaa and Baa corporate bonds.

Implications for farm managers

The time period when equity investments such as land and common stocks are purchased and liquidated are critical factors to consider when evaluating potential returns from the investment. If agricultural land was purchased near its peak in value of 1981 and liquidated in 1987, overall returns would be negative. Without the five-year depression in Michigan farmland values, land is a good investment compared to the alternatives, but the down periods of return must be accepted with the good years. Therefore, land is a good investment only during certain periods of time in the last 25-years.

Likewise, historical time periods could be selected for purchases and sales of stocks to show the best and worst periods for owning these investments. Agricultural land is not a poor investment, especially if land is a long-term investment. The timing of the purchase, and the price to be paid considering the expected outlook for returns and when the land is purchased, is a more critical question than if land should be purchased.

Agricultural land is a geographically located investment depending on local supply and demand factors for the property. Land prices can vary greatly from one geographic area to another. The location specific nature of the land market may result in equal quality land being sold for different prices and generating different cash rents at different locations in the state or in the country. The demand for land can vary widely in price depending on its nonagricultural demand factors for housing, industrial or other nonfarm uses as well as the net return potential from farming.

The location specific characteristics of farmland are not present in most nonfarm investments. U.S. Treasury, municipal and corporate bonds or common stocks sell for approximately the same price and pay a similar return regardless where the investor purchases the investment. Local market demand factors do not influence the prices for the investments or the returns achieved. In some cases, the high transaction costs, indivisibility and thin markets for land in local areas may help to explain the higher returns for farmland. But farmland investments cannot be traded like nonfarm investments.

Planning pointers

Agricultural land is an excellent investment over a long time period compared to nonfarm alternatives. The specific location and area characteristics, however, make land less liquid than other investments and results in higher transaction and management costs for dealing with the property. The timing of the purchase and sale of land, like common stocks, is a more critical factor in returns than is the case with debt instruments such as U.S. Treasury, municipal and corporate bonds. Land as an investment needs a long-term planning horizon for it to be profitable and competitive with other alternatives. Land as an investment complements the objectives of family farmers to control a resource and generate income for the business.

The point in time that any farm manager should purchase land depends on many financial characteristics of the business, expectation of net returns to land, land prices in a geographic location, and the potential returns from nonfarm investments. If the outlook for land returns are questionable, but the outlook is more optimistic for common stocks or other investments, leasing land for the business and purchasing those investments may be a good short-term investment strategy. Farm managers should evaluate the income potential for land investments, and economic conditions in agriculture, and nonfarm investment returns in determining when is the best time to purchase land for the business.

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