The Main Street Economist
Regional and rural analysis

2009 | Federal Reserve Bank of Kansas City

Will High Farmland Values Hold?

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Farmland values have skyrocketed in recent years. From 2004 to 2008, booming farm incomes, driven by strong export and ethanol demand, teamed up with robust nonfarm demand to fuel a 60 percent rise in U.S. farmland values. At the same time, demand for residential development and recreational use pushed up the value of farmland transitioning out of agriculture. Overall, the surge in values was the sharpest appreciation since the 1970s, when a Russian grain deal sparked a farm boom that was quickly capitalized into record land values.

The recent recession cut farm incomes and also cooled residential and recreational demand for farmland. Near the end of 2008, farmland values edged downward and since then have held relatively steady. Still, concerns remain about the future path of farmland values. Volatility has invaded agricultural commodity markets, and the prospects of higher capitalization rates are all too real, raising uneasy comparisons to the 1980s. Are today's farmland values another bubble getting ready to burst?

This article analyzes the recent trends in farmland values and examines the factors that will shape future values. First, the article discusses the sharp run-up in farmland values and the sudden cooling-off during the recession. Next, it examines the key effects of residential and recreational demand on farmland values. Finally, it describes how two factors—profitability from crop production and changes in capitalization rates—could influence future values. The article concludes that, despite current volatility in farmland markets, a collapse in farmland values like the one seen in the 1980s is unlikely.

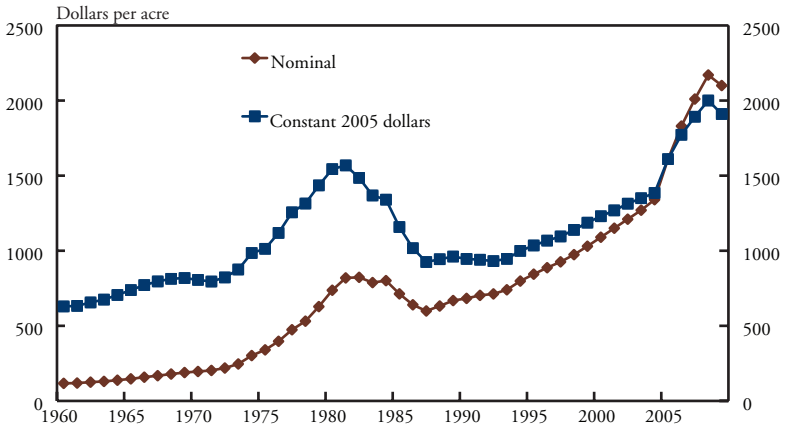
The Farmland Boom Eases

Over the past few years, farmland values have risen at their fastest pace since the 1970s, posting double-digit annual gains. Farmland values appear to have crested in the third quarter of 2008 as values edged down during the fourth quarter. Since then, farmland values have generally stabilized, staying slightly below the peak levels of 2008.

U.S. farm real estate values generally rose steadily over the last two decades. Even after adjusting for inflation, farmland values appreciated 2 to 3 percent annually from the mid-1990s until 2004. Then, in 2005, farmland values jumped a record 20 percent and stayed robust through 2008, rising almost 10 percent each year (Chart 1). Fueling these strong value gains were nonfarm demands for residential and recreational use, along with above-average farm incomes (Henderson).

The recession slowed farmland value gains beginning in the fourth quarter of 2008. As 2009 began, the U.S. Department of Agriculture (USDA) reported average U.S. farm real estate values were down 3.2 percent from the year before—the first nominal decline in values since 1987.[1] Meanwhile, national cropland values fell 4 percent

Chart 1
U.S. Farm Real Estate Values



Source: USDA, January 1 data

from the previous year, and pasture land values dipped 1.8 percent. Still, average values for both types of agricultural acreage stayed well above 2008 levels.

Though most states reported a pullback in farmland values, USDA reported noticeable regional variation. Not surprisingly, some of the most dramatic value declines for farmland came in the Southeast, where drought hurt 2008 crop yields. In contrast, the Plains states of Kansas and Nebraska enjoyed bumper harvests that year, putting them among the few states that posted moderate increases in farmland values.[2]

After declining near the end of 2008, farmland values appear to have stabilized. In 2009, Federal Reserve surveys in the Chicago, Dallas and Kansas City districts reported little fluctuation in values that were down modestly from the highs posted in 2008. In the Minneapolis district, cropland values generally held steady, but ranchland values moved lower, due primarily to financial stress on dairy operations. In the Richmond district, as drought conditions eased, farmland values moved higher, recapturing some of the previous year's losses.

Weaker demand for nonfarm uses, including residential development and hunting and other recreational activities, combined with lower farm incomes, contributed to the softer farmland values. The recession and collapse in the housing market reduced demand for residential use. Moreover, lower incomes and reduced wealth contributed to weaker recreational demand for farmland. Further, agricultural commodity prices declined at the end of 2008, causing farm incomes to fall from their 2008 highs, which also weighed on farmland values. The biggest land value declines emerged from land used for nonfarm uses. For example, in 2009 the prices for Indiana land for recreational use and land transitioning out of agriculture dropped 12.6 percent and 6.9 percent, respectively, compared to 1.2 percent declines for land remaining in agriculture.

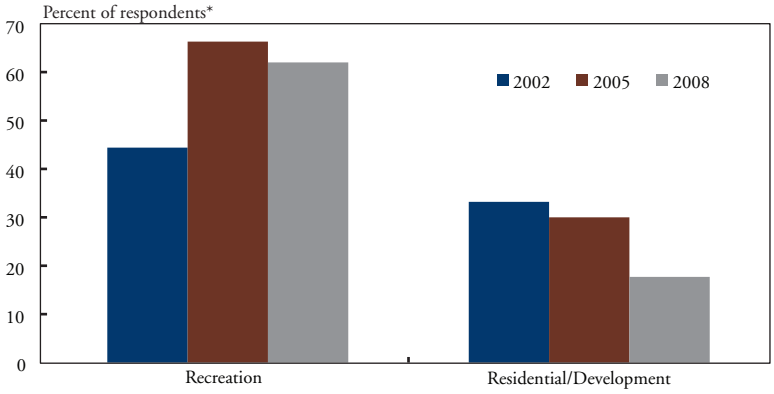
As demand weakened, however, the limited supply of farms for sale helped support farmland values. Bankers responding to regional Federal Reserve surveys noted fewer farms for sale. Chicago survey respondents added that the size of the parcels for sale had also declined. Kansas City respondents reported that with fewer farms on the market, auction sales were brisk and sales prices often exceeded expectations. Several contacts remarked that farm owners were reluctant to sell because investment options offering a better rate of return were limited. And, in contrast to the 1980s, low farm debt levels in 2009 have led to few, if any, forced farm sales as farm incomes declined.

The Recession Trims Nonfarm Demand

Leading up to the recession, rising farmland values coincided with the housing boom and surging numbers of land purchases and leases for wildlife recreation. Amid the housing boom from 2002 to 2007, the amount of land in farms declined by 16 million acres, according to the Census of Agriculture. Land transitioning out of farmland, especially near urban centers, often sets market prices in the local area. For example, in Indiana, land transitioning out of agriculture sold for almost $8,800 per acre, compared to an average of $4,188 for land remaining in agriculture (Dobbins and Cook). The Census Bureau also indicates that, from 1996 to 2006, U.S. spending on land purchases and leases for wildlife recreation rose from $5.5 to $8.9 billion as farmland with amenities for hunting and fishing have a special appeal to outdoor enthusiasts.[3] The recession trimmed these sources of demand for nonfarm uses, cooling the gains in farmland values. Going forward, the economic recovery will shape nonfarm use and farmland values.

Since home construction plunged in 2007, few developers have been expanding their real estate holdings. According to the Federal Reserve Bank of Kansas City's *Survey of Tenth District Agricultural Credit Conditions*, fewer developers are buying farmland for residential development (Chart 2). The survey also confirmed that, with weakening economic conditions, interest in farmland for recreations such as hunting, fishing and wildlife watching has dampened.

Chart 2
Reasons for Farmland Purchases by Non-Farmers (Tenth Federal Reserve District)



Source: Federal Reserve Bank of Kansas City
*Respondents were asked the most common reasons for farmland purchases by individuals other than farmers. Respondents could choose more than one response, and therefore percentages will not sum to 100.

With the recovery under way, the future of nonfarm demand for farm real estate is still unknown. The nation's economy started to grow in the third quarter of 2008, but Federal Reserve forecasts suggest that gains in home construction and consumer spending could be limited. In November of this year, the Federal Reserve projected U.S. GDP growth to rebound in 2010, within a range of 2.5 to 3.5 percent.[4] This range is well below traditional rebounds one year after a recession.

Private-sector forecasts suggest that gains in residential investment will be modest, perhaps limiting gains in residential demand for farmland. By the end of 2009, housing markets appeared to be forming a bottom. A tax credit for first-time homebuyers has helped spark a rise in existing home sales, especially at the lower end of the market, thus stabilizing building activity. However, concerns remain about the sustainability of a resurgent housing market. Consensus forecasts suggest that housing starts may only edge up in 2010 (Blue Chip), even though the tax credit programs for first-time homebuyers was extended into next year. Thus, housing markets may not be strong enough to support higher farmland values.

The recovery may also lack the strength to spur recreational demand for farmland. Federal Reserve projections in November 2009 suggested that unemployment rates could remain high in 2010 even with strong economic growth. With elevated unemployment levels, consensus forecasts also show consumer spending rising 1.8 percent next year (Blue Chip)—well below traditional gains following recessions. Weaker consumer spending could manifest itself in less spending on recreational activities associated with farmland.

Farm Incomes Underpin Land Values

Farm incomes typically play an important role in shaping farmland values. But with the rebound in nonfarm demand potentially modest, farm incomes may become an even more important factor in the farmland value equation. After accounting for less than two-thirds of farmland purchases in Iowa in 2005, farmers bought almost 75 percent of the Iowa farmland sold in 2009 (Duffy). The strength in farm incomes, especially for crop producers, and the capitalization of these returns will combine to determine farmland values in the near term.

Cropland values, as well as agricultural demand for farmland, rise and fall with changes in crop returns. Robust gains in cropland values since 2006 coincided with strong returns to crop production. According to USDA, cash rents for cropland rose sharply in recent years, contributing to higher land values. However, weaker farm incomes in 2009 have slowed the growth in cash rents.

The rise and subsequent fall in crop profitability have increased the amount of uncertainty surrounding agricultural profits and cropland markets. To analyze future profits, this analysis uses three alternative scenarios for 2010 market returns on corn and wheat production. The three scenarios are high, base and low price projections made by the Food and Agricultural

Policy Research Institute (FAPRI). FAPRI estimated the average crop price using 500 different demand and supply conditions. They defined the base price as the average of all price outcomes. The lower bound for each price scenario was the price just above the bottom 10 percent of outcomes, while the upper bound was just below the top 10 percent of outcomes. In the analysis, the base corn price was roughly $4 per bushel, the lower bound was $3.30 per bushel, and the upper bound was $5 per bushel. The base wheat price was roughly $5.50 per bushel, the lower bound was $4.30 per bushel, and the upper bound was $6.80 per bushel. In all cases, USDA costs of production and yield projections for 2010 were held constant. Production costs were expected to rise 9 percent in 2010, driven by higher seed, fertilizer and fuel prices.

The alternative scenarios indicate that returns to crop production are likely to hold in 2010, supporting existing cropland values. In the base scenario, returns to corn and wheat production remain near 2009 levels and well above 2006 levels (Chart 3). The high price scenario indicates there is a 10 percent chance that market returns could jump more than 50 percent, which would support even higher land values. While lower cash returns are possible, the low price scenario indicates that market returns should remain above 2006 levels.

Capitalization Rates and Land Values

In addition to being shaped by cash returns, farmland values are also influenced by capitalization rates. According to net present value (NPV) theory, farmland values are based on the capitalization of expected future returns, appropriately discounted by a capitalization rate, which reflects the investor's required rate of return.

Capitalization rates fluctuate over time, changing with shifts in such factors as returns available on alternative investments, market risks and expected inflation. When market risks rise, capitalization rates tend to rise as investors require a higher return on investment to offset higher risks. Similarly, as inflation increases, investors require a higher rate of return to compensate them for being paid in future dollars, which have less purchasing power. For similar reasons, capitalization rates tend to fluctuate with returns available on alternative investments. With higher returns available elsewhere, capitalization rates also rise as investors demand a higher return to compensate for the opportunity cost of investing in other assets.

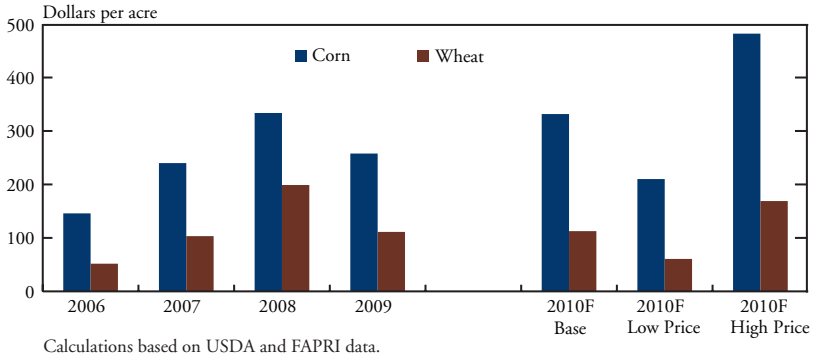
Assuming that the stream of future returns remains constant, land values can be determined using a straightforward formula:

Land values = cash returns / capitalization rate (1)

Therefore, following theory, lower capitalization rates lead to higher land values and vice versa.

Capitalization rates for farmland appear to have trended downward in recent years. For example, from 2004 to 2008, the ratio of cash rents to land values, a proxy for capitalization rates, declined from 5.0 to 3.5 percent. And according to the formula in equation 1, lower capitalization rates also contributed to higher farmland values.

Chart 3
Net returns to corn production (market returns minus variable costs)



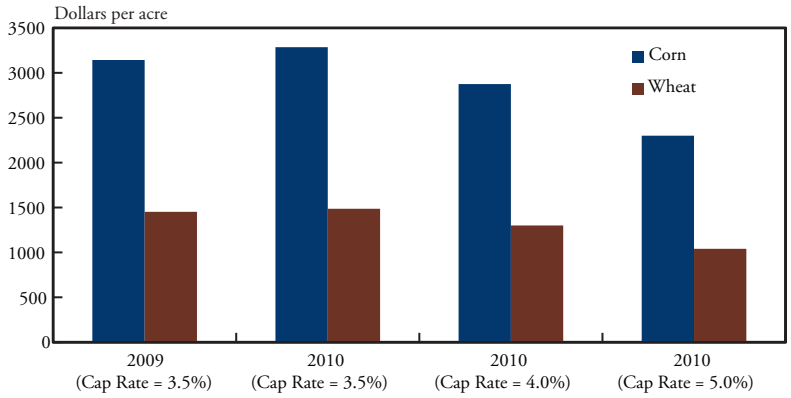
Calculations based on USDA and FAPRI data.

However, it appears that capitalization rates are beginning to rise. By January 2009, the ratio of national cash rents to land values edged up to roughly 4.0 percent. A rise in capitalization rates that pushes the rent-to-value ratio up to 5.0 percent could reduce capitalized values by roughly 20 percent (Chart 4). Still, such a drop would be well below the sharp 40 percent declines of the 1980s.

Looking ahead, capitalization rates could edge up further, but a significant increase does not appear in prospect as market risks, inflation and returns on alternative investments remain limited. Despite rising, market risks to agriculture appear to be low as the

Chart 4

Capitalized land values based on cash rental rates for corn and wheat production



Calculations based on USDA data assuming cash rental rates of $114 per acre for corn production in 2010 and $111 per acre for 2009.
Cash rental rates for wheat production were $50 per acre for 2009 and $52 per acre in 2010.

delinquency and charge-off rates on agricultural loans remain below their historical average.[5] While anecdotal reports indicate that inflation expectations are on the rise as some investors buy land as a hedge against inflation, surveys of professional forecasters indicate that inflation expectations remain anchored at 2.5 percent.[6] And a slow-paced recovery could limit returns on investment alternatives. A limited rise in capitalization rates could help underpin farmland values.

In sum, the sharp rise in farmland values in recent years and greater volatility in agricultural markets has increased the uncertainty and risks in farmland markets. After declining during the recession, the prospect of resurgent nonfarm residential and recreational demand in the pending recovery appears to be limited. As a result, trends in future farmland values appear to rest on farm income prospects and fluctuations in capitalization rates. Near-term projections suggest that returns to crop production may be strong enough to support recent cropland value gains. While the volatility in agricultural markets has raised concerns about future farmland values, current projections suggest little risk of a sharp collapse in farmland values in the near term.

Endnotes

[1]National and state level land values as of January 1, 2009, were obtained from "Land Values and Cash Rents – 2009 Summary." National Agricultural Statistics Service (NASS), USDA, August 2009. *http://usda.mannlib.cornell.edu/usda/current/AgriLandVa/AgriLandVa-08-04-2009.pdf.*

[2]As with the USDA findings, quarterly agricultural credit surveys conducted by the Federal Reserve reported the sharp run-up in farmland values followed by declines in 2008. The Federal Reserve surveys are available at *www.kansascityfed.org/agcrsurv/agcremain.html.*

[3]For comparison purposes, according to the Economic Research Service, USDA, the net rent received by nonoperator landlords averaged $8.6 billion annually from 2004 to 2009. According to the Census of Agriculture, farmers reported earning $565 million in 2007 from agri-tourism and recreation services, up from $202 million in 2002.

[4]Minutes of the Federal Open Market Committee, Federal Reserve System, November 3-4, 2009. *http://www.federalreserve.gov/monetarypolicy/files/fomcminutes20091104.pdf.*

[5]Charge-off and delinquency rates on agricultural loans and leases at commercial banks are available from the Federal Reserve Board of Governors: *http://www.federalreserve.gov/releases/chargeoff/.*

[6] Inflation expectations obtained from the Survey of Professional Forecasters, Federal Reserve Bank of Philadelphia. *http://www.phil.frb.org/research-and-data/real-time-center/survey-of-professional-forecasters/.*

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