

# Farmland

## IN PERSPECTIVE

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### GLAUB FARM MANAGEMENT

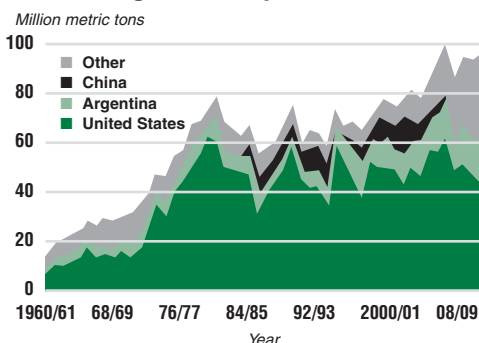
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## Changes in leading world exporters of corn

Historically, the United States has been the world's largest producer and exporter of corn. China has brought uncertainty to world corn trade, swinging from being the second-largest exporter in some years to occasionally importing significant quantities, according to the Economic Research Service of the U.S. Department of Agriculture.

Argentina, the second-largest corn exporter in most years, benefits from being in the Southern Hemisphere. Its farmers plant after the size of the U.S. corn crop is known, providing a quick, market-oriented supply response to short U.S. crops. Several countries, including Brazil, Ukraine, Romania, and South Africa, have had significant corn exports when crops were large or international prices attractive.

### Leading world exporters of corn



Source: USDA, Foreign Agricultural Service, Production, Supply, and Distribution (PS&D) Database.

## Does Today's Farmland Market Make Sense?

By Bruce J. Sherrick

Professor of Ag and Applied Finance • University of Illinois

Farmland markets in the majority of the crop producing regions of the United States have experienced exceptional price increases during the past two years. Recent record-breaking prices follow a decade or more during which returns from crop production have been seen as highly favorable relative to other competing financial investments and compared to commercial real estate as well.

To put this in perspective, farmland values were reported to be up more than 25% from Oct. 2010 to Oct. 2011, according to the 7th Federal Reserve district which covers much of the Corn Belt. Roughly 18% increases for much of the same area for 2011 were reported by USDA sources. Similar trends were found by the Illinois Society of Farmland Managers and Rural Appraisers in their annual survey.

Farmland has experienced near double digit growth for a decade running, except in 2009, and has generated 3–4% in annual income as well. This impressive upward price movement during a period of relatively stagnant but volatile financial markets has led many to question the sustainability of the current prices and whether a correction might be in the offing.

More than a year ago, Sheila Bair, Chairperson of the Federal Deposit Insurance Corporation (FDIC), used the term “bubble” in comments about farm asset values. This set off a chain of related investigations by farm lenders, policy makers, and researchers. The FDIC and the Chicago Fed hosted conferences with cautionary titles of “Don't Bet the Farm: Assessing the Boom in U.S. Farmland” and “Rising farmland values: Causes and cautions.” Noted Yale economist Robert Shiller has indicated that farmland is his dark horse candidate for a “bubble,” leading many to again question the rationality of the farmland market.

On the flip side, incomes from crop production continue to be extremely strong. News regarding demand for commodities has been generally routine-to-good. Comparable alternative financial investments are difficult to find in many cases. In addition, institutional interest and efforts by other savvy investors in the asset class have continued to be strong.

The performance of farmland as an asset class has been documented in numerous places. Farmland investments can be fairly summarized as having low systematic risk and high relative returns while providing good diversification and

Continued on page 2

purchase-power hedging benefits. Moreover, access to constructive agricultural credit remains, and ag lenders have very healthy balance sheets. Ag lenders have not, in general, been "chasing" farmland values upward during this period of growth with fixed loan-to-value lending practices, as some could have been described as doing in the 1980s. And, interest rates are at historically low levels and appear to be likely to remain so for some time into the future. Finally, crop insurance usage has expanded considerably and is considered by most to be an essential risk mitigation tool that significantly reduces downside income risk and allows producers to bid more efficiently for control through rental markets.

So, does the land market "make sense"?

This simple question remains central to policymakers, investors, farmers and landowners alike. Consider the simple framework for evaluating the "correct" value of an asset. The correct value relates the return the asset generates – income and capital gains – to the amount an investor is willing to pay, a direct income capitalization argument. The idea can be summarized as value = income/(effective capitalization rate). There are nuanced arguments about the growth rate, the permanence of the income, the duration of the income and appropriate risk adjusted discount or "cap" rate to use, but in general, this model helps us to understand the forces driving the farmland market.

On the income side, corn prices averaged approximately \$2.40 per bushel until the mid 2000s, but since

then have varied around a higher level. University of Illinois professors Darrel Good and Scott Irwin argue, and convincingly so, that a new planning price of around \$4.60 per bushel makes more sense in the current environment. Farm incomes have increased at roughly the same pace as commodity prices. Cash rents have increased as well but, actually, not quite as quickly as incomes, demonstrating a lag in rental rate adjustments.

In terms of the appropriate capitalization rate, farmland is a long-lived asset, viewed as non-depreciable, and carries relatively low risk. The duration of a typical farmland investment increases its sensitivity to interest rates more so than with shorter-lived assets. In Figure 1, farmland cash returns are divided by market value and compared to the 10-year constant maturity Treasury rate – perhaps a reasonable proxy for the capitalization rate – but, at minimum, an easily interpreted and constant reference to an easily understood instrument. Importantly, while the scale changes somewhat by location, the nature of the picture is unchanged regardless of which state's data is used in the Corn Belt and beyond.

The only notable divergence occurs in the mid 1980s during the period of the "farm crisis." Recall earlier arguments that could be summarized as *rents reflect expected income potential*, though perhaps more smoothly and with some lag. In this vein, the current rent-to-income-to-value relationships do not suggest any "bubble" features in the market.

Converting the recent income stream to an implied fair capitalized value can also be done and provides a very similar story. Figure 2 compares the USDA average value

to capitalized USDA estimates of rental rates over the same period. Again what seems most striking is the similarity between actual and implied values through all time periods except the 1980s.

Before concluding that only continued prosperity lies ahead, though, it is important to appreciate the importance of the elevated risk of capitalization rate change that is contained in the relationships shown in Figure 2.

To appreciate this issue, consider the final picture, Figure 3. It relates the "fair" value of an income-generating asset to its income and capitalization rate. The left-hand axis summarizes what we have generally found to hold in farmland markets – for example, a parcel that generates \$400 of income at a 4% capitalization rate (see the dark green line) would be expected to have a value of roughly \$10,000 – fully consistent with current Midwest land markets. Likewise, lower income results in lower value.

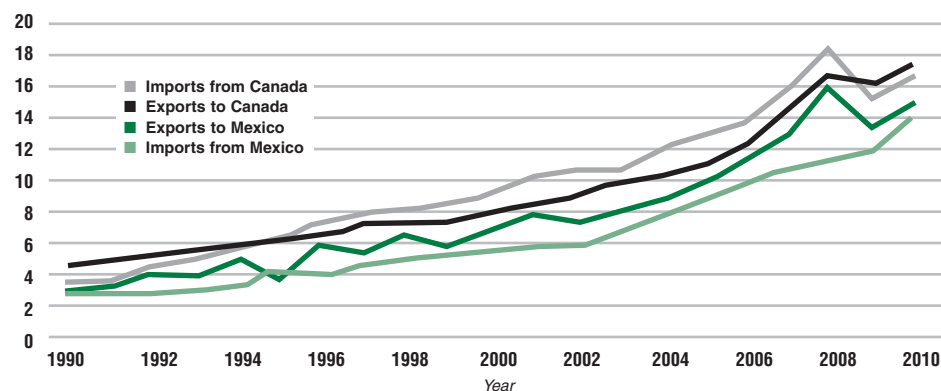
The right-hand axis gives the sensitivity of the values to capitalization rate changes. The dotted line shows the sensitivity – in percentage of value – that would be expected to result from 1% changes in the capitalization rate, starting at the capitalization rate on the horizontal axis. Importantly, at the current low capitalization rates, the impact of an interest rate increase is far greater than if capitalization rates were at higher levels.

Since the financial crisis of 2008, the interest rate markets could be characterized as having a "liquidity puddle" at the short end of the yield curve with resulting interest rates near zero, and implied cap rates that are very low by historic standards. It is unclear how the

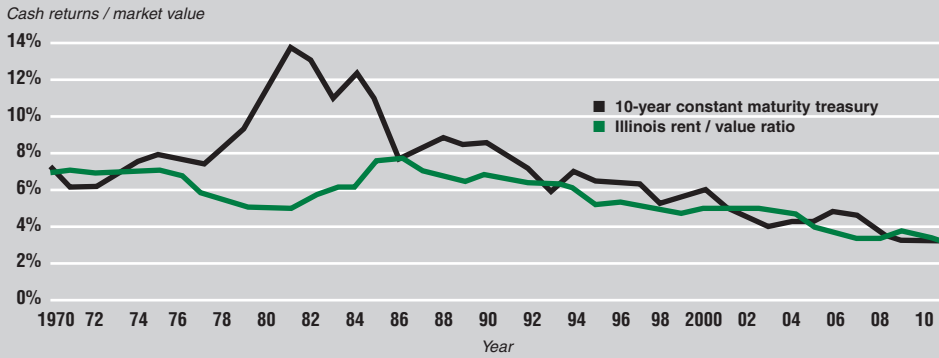
## Since NAFTA's implementation in 1994, U.S. agricultural trade with Canada and Mexico has flourished

NAFTA - North American Free Trade Agreement.  
Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Census Bureau, Foreign Trade Statistics, as cited by USDA, Foreign Agricultural Service. *Global Agricultural Trade System*.

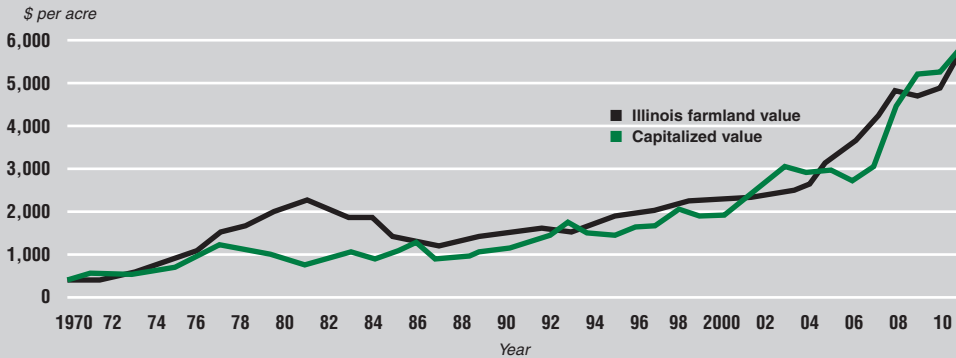
Billions of U.S. dollars



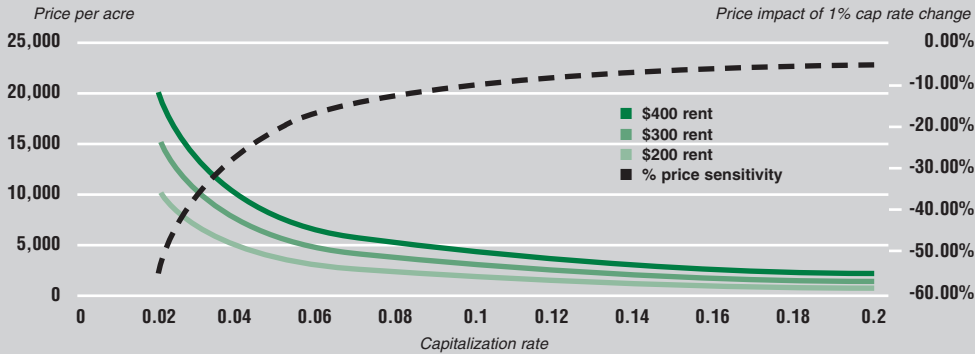
**FIGURE 1: Illinois farmland rent / value**



**FIGURE 2: Comparison of Illinois farmland value and capitalized value**



**FIGURE 3: Farmland value as compared to income and capitalization rates**



**CAPITALIZATION RATE = required rate of return reflecting risk-adjusted costs of capital in an investment. The inverse of the cap rate is analogous to a Price/Earnings ratio or the price today per dollar of permanent income.**

future performance of the economy will evolve, but it is hard to imagine any scenario that does not involve interest rates eventually increasing and, with them, the capitalization rates for farmland.

A couple of other observations are relevant at this point. Unlike many of the factors surrounding the ag crisis of the 1980s, a capitalization rate shock would be an economy-wide event and not specific to the agricultural sector. On the other hand, the current tone surrounding the Farm Bill debate recognizes the recently favorable farm income performance and could result in some fundamental changes to the commodity support programs that could eventually impact long-term farm income prospects. Rental markets continue to increasingly be cash relationships. The implied tie to and increased sensitivity because of interest rate market ties should not be overlooked. Finally, the world commodity markets can experience great shocks. These could fundamentally revise income expectations for U.S. farmers.

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Sherrick teaches graduate courses, has appeared frequently on lists of teachers ranked as excellent and has received outstanding teaching awards. Sherrick conducts academic research and helped create [www.farmdoc.illinois.edu](http://www.farmdoc.illinois.edu), the award-winning, agricultural decision making support program online at the University of Illinois.

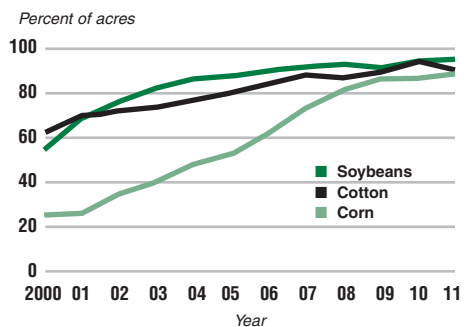
## GE crops now mainstream

Genetically engineered (GE) crops were introduced in 1996 and have been widely adopted by producers. GE crops include herbicide-tolerant (HT) crops and insect-resistant (Bt) crops. HT crops were developed to survive specific herbicides, particularly glyphosate, that previously would have destroyed the crop along with the targeted weeds. Insect-resistant crops contain the gene from the soil bacterium *Bacillus thuringiensis* (Bt) that produces a protein toxic to specific insects, protecting the plant from insect damage.

Based on survey data from the U.S. Department of Agriculture, GE crops accounted for 94% of U.S. soybean acreage, 90% of U.S. cotton acreage, and 88% of U.S. corn acreage in 2011.

According to the USDA Economic Research Service (ERS) research, U.S. farmers are realizing economic benefits from adopting GE crops, including lower pesticide costs, savings in management time, and, in many cases, higher yields through reduced losses to pests.

## Adoption of genetically engineered crops has increased dramatically since their introduction in 1996



Source: USDA, Economic Research Service. Adoption of Genetically Engineered Crops available at: [www.ers.usda.gov/data/biotechcrops/](http://www.ers.usda.gov/data/biotechcrops/)

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### Selling or Buying?

Land prices continue to be strong throughout the Mississippi Delta Region. Currently there are several strong drivers pushing land prices upward. Current land drivers are limited supply of quality farmland, low interest rates, higher farm revenue, and lack of alternative investments.

As professional farm asset managers, we are prepared to handle the complexity of land acquisition and liquidation. We will be there to guide you through the transaction process and ensure you receive the best deal possible.

Contact us for a no obligation discussion about how we can serve you during your land acquisition or liquidation.



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The American Society of Farm Managers and Rural Appraisers awards the titles of ACCREDITED FARM MANAGER and ACCREDITED RURAL APPRAISER to those members who have had years of experience, are technically trained, have passed rigid examinations, and subscribe to a high code of ethics.