

# FARMLAND Insights

WINTER 2018 | Volume 1 | Issue 4

is brought to you by:

Goodwin & Associates Real Estate, L.L.C.

[www.bigfarms.com](http://www.bigfarms.com)

Mark Goodwin  
Doug Deininger

Real Estate Brokers

21036 S. States Lane • Shorewood, IL 60404

815-741-2226

## Farmland values and lease arrangements

By Bruce Sherrick, University of Illinois

Two of the most important concerns for landowners are the value of farmland and the terms of farmland leases. These closely related topics are particularly critical in light of the currently low commodity prices, increased uncertainty around trade and related issues, and the shadow of farm bill negotiations and market facilitation payment systems with completely uncertain prospects. This article identifies some of the most critical issues to consider in evaluating farmland investments and in structuring leases to control those assets.

The value of assets in the U.S. agricultural sector total to just over \$3 trillion, according to the Economic Research Service (ERS) of the U.S. Department of Agriculture (USDA). Of that amount, about \$2.5 trillion (83%) is represented by real estate. On a national basis, around 40% of all farm real estate is leased by the owner to an operator. The share of leased land is substantially higher for cropland than for pasture or permanent plantings, and in the Midwestern Corn Belt states, leasing arrangements occur on roughly 60% of the land farmed.

### Selected Balance Sheet Characteristics of U.S. Agricultural Sector

\$ millions, except ratios — source ERS-USDA

	2015	2017
<b>Farm Assets</b>	<b>2,909,653</b>	<b>3,074,869</b>
Real Estate	2,395,363	2,556,932
Non Real Estate	514,290	517,937
<b>Farm Debt</b>	<b>356,738</b>	<b>389,965</b>
Real Estate	208,769	242,418
Non Real Estate	147,969	147,547
<b>Equity</b>	<b>2,552,915</b>	<b>2,684,904</b>
<b>Selected Indicators</b>		
Debt/Equity	14.0%	14.5%
Debt/Assets	12.3%	12.7%
Real Estate/Equity	93.8%	95.2%
Real Estate/Assets	82.3%	83.2%
Real Estate Debt/Total Debt	58.5%	62.2%

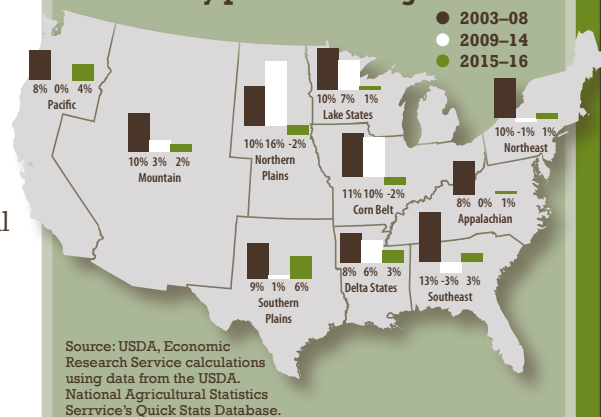
Over the recent few years, farm incomes have been substantially lower after peaking in many regions in 2012-13. Land values had a delayed and somewhat muted movement relative to farm-operator income, but rose dramatically especially after the housing crises, and then pulled back slightly and now seem to have stabilized, especially over much of the Midwest.

At a macro level, returns to farmland ownership have been very attractive over the long run, according to the National Council of Real Estate Investment Fiduciaries (NCREIF) and [www.farmdoc.illinois.edu](http://www.farmdoc.illinois.edu), a service of the University of Illinois. Concerns seem to be growing about the potential impact of world political events and trade issues, potential inflation and interest rate market movements, and of competitive responses in other regions of the world.

## Farmland appreciation slows

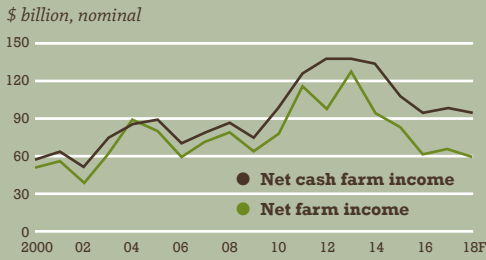
U.S. farm real estate values have been rising following the 1980s farm crisis. Beginning in the mid-2000s, higher farm incomes and lower interest rates contributed to rapid appreciation — reaching record high values in 2014-15 depending on location. Nationally, average per-acre farm real estate values more than doubled in real terms (adjusted for inflation), from \$1,483 in 2000 to \$3,060 in 2015, according to the Economic Research Service (ERS) of the U.S. Department of Agriculture (USDA). However, farmland appreciation slowed considerably from 2015 to 2016, with some regions experiencing small declines caused by falling commodity prices and net cash farm income.

### U.S. cropland appreciation varied by production region



Continued on page 2

### Net farm income and net cash farm income, 2000-18F



Note: F = forecast.  
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics. Data as of February 7, 2018.

Inflation-adjusted U.S. net cash farm income is forecast to decline \$14.6 billion (13.8%) from 2017 to \$19.5 billion, which would be the lowest real-dollar level since 2009, according to the Economic Research Service (ERS) of the U.S. Department of Agriculture (USDA). Net cash farm income encompasses cash receipts from farming as well as farm-related income, including government payments, minus cash expenses.

On the flip side, the strength of the dollar (and its potential decline), supply shock potential (stocks have built during a remarkable sequence of production years), and improving world diets provide a potentially strong thesis for the value of production assets in the long run.

How do we make sense of the current ups and downs, and what are some of the most important factors to consider looking forward? One way to analyze the issues is to consider factors influencing lease rates; impacting farmland values, to the extent they differ; and changing through time that might impact either.

### Lease Rates

Factors that influence lease values can be broken down into features of the land, the operator, and the lease itself, plus market conditions surrounding the land. First and foremost, the productivity of the land directly correlates with the value to the operator and thus to the value of the lease. Numerous studies show that cash rent can be reasonably accurately described by a simple regression against yield (or in its place, a soil productivity measure). A review of the study “Information for making 2019 cash rental decisions” by Professor Gary Schnitkey, University

of Illinois may be helpful. See <https://farmdocdaily.illinois.edu/2018/10/information-for-making-2019-cash-rental-decisions.html>.

“Farmability” based on ease of access, size, shape, slope, fraction tillable, and other obvious features do get translated to costs of lease. Drainage conditions (tile, and access to discharge) register in both yield potential and in field-day availability. And of course, characteristics of the operator – timeliness, reputation, and the proximity of their other operations to the land all influence a fair lease price.

### Lease Features

Features of the lease itself are far more complex to evaluate. Historically, the main choices were to use either a cash lease with typical terms of payment in two installments, or a share lease in which the landowner receives a fixed fraction of the crop after harvest. If interested in rents and land values in your location, see the National Agricultural Statistics Service (NASS) Cash Rent Survey at [https://www.nass.usda.gov/Surveys/Guide\\_to\\_NASS\\_Surveys/Cash\\_Rents\\_by\\_County](https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Cash_Rents_by_County).

However, in recent years, a multitude of additional types and features have arisen to better align the producers’ and owners’ interests and to provide a degree of risk sharing to both parties that may be advantageous. Many of these are termed flex cash leases and are essentially a fixed base payment with an additional payment in cases when the yield or revenue exceeds a predetermined level.

There have been numerous academic and ERS studies of the impacts of alternatives, and in the large, the total return to an owner can be expected to be similar over the long run, but the farmer has a smoothed income with lower payments in years with lower valued production and higher lease payments in years with higher valued production. This can be highly preferred by a landowner with a tenant who they wish to maintain through time and vice versa. The study “Comparing Net Returns for Alternative Leasing Arrangements” by Michael Langemeier at Purdue

University may be of helpful [www://farmdocdaily.illinois.edu/2018/10/comparing-net-returns-for-alternative-leasing-arrangements.html](http://www://farmdocdaily.illinois.edu/2018/10/comparing-net-returns-for-alternative-leasing-arrangements.html).

More subtly, a farmer may wish to construct a specific set of lease terms to better manage their crop insurance options as current Federal Crop Insurance Corporation (FCIC) rules allow combining of farmed crops under identical lease types with insurance options that are usually more favorable on enterprise wide coverage. Historically this led to farmers having a stronger interest in fixed cash rent, especially relative to share rent, but under tighter margins, consideration of flex cash leases with similar terms across all landlords is often highly preferred.

Another feature that is beginning to emerge in leases involves conditions related to conservation practices and sustainability efforts. See [https://www.farmdoc.illinois.edu/legal/pdfs/cash\\_farm\\_lease.pdf](https://www.farmdoc.illinois.edu/legal/pdfs/cash_farm_lease.pdf) for a reference lease.

Moreover, leases often require specific performance related to conditions in place in the event of termination including things such as replacement fertility, condition of access, and residue management. Investments and capital expenditure targeted toward improvement of the underlying asset value may not improve current profitability and, thus, tenants have limited motivations for installation and maintenance of tile, erosion control, edge-of-field nutrient-loss mitigation zones, and so forth, and more recently, in cover crop and residue and rotation practices that would lead to better soil health through time.

A few anecdotes and experimental cases have begun to surface in which the landowner allows a tenant to use their investment in conservation practices or soil health initiatives in lieu of a portion of current cash rental arrangements and, in some cases, in conjunction with a longer term lease. This type of novel offset could potentially have beneficial tax implications for both parties as well given the potential to delay realization of asset value increases and current expensing of investments in improvements in lieu of rent.

Finally, there is increasing interest by consumers in “knowing their food” and in selecting products that have specific or preferred production attributes. While far less common in row crop production areas, sustainable farming practices can substantially influence final product values (including, but not limited to organic certification, GMO free, bee friendly, local, natural, fresh, living wage, and other labels that trace to specific production practices).

To the extent that the verification of such activities requires specific production practices, these too are influencing lease terms and production activities.

### Farmland Values

Farmland values are determined through a highly complex set of factors and relationships to expected future income, all influenced by local conditions, local markets, and proximity to specific externalities. Unlike equity investments in publicly traded companies, where one can simply check current quotes instantly and without cost, and can buy or sell shares with low transactions costs, farmland markets are highly idiosyncratic, very thinly traded (about 1% per year at arm’s length), transactionally relatively expensive, and informationally inefficient.

That does not, however, mean that we cannot explain a large portion of the value and movements in value, and form an understanding of the factors that impact values and future value prospects. Helpful online tools for farmland indexing and farmland returns construction can be found at [www.farmdoc.illinois.edu](http://www.farmdoc.illinois.edu) including <https://farmdocdaily.illinois.edu/2018/08/setting-2019-cash-rents-with-price-uncertainty-due-to-trade-disputes.html>.

To understand a basic model for valuing farmland, consider an investment in an asset that always paid exactly \$1 per year forever, and for an investor with a 5% cost of capital. If that person put \$20 into a perpetual account paying 5%, it would return \$1/year, and thus that asset would be worth \$20 by the same logic. Farmland behaves remarkably similarly in that it can be (absent

other motivations for its possession) viewed as a perpetual income generating asset.

There are two primary modifications in that simple model that have proven useful for understanding farmland values. First, the growth in the income (or underlying asset value) and expectations about future potential changes in income are key to appreciate. Relative to current income, most farmers rationally expect increases over the long run. The second is in the variability of income and the cost of capital (equivalently, the rate of return on alternative investments of equal risk).

Together a simple and highly informative model emerges that relates the income, the growth rate in income, and the cost of capital controlling the asset. It is expressed as  $V = r/(i-g)$  where  $r$  is the annual return,  $i$  is the cost of capital and  $g$  is the growth rate in income expected in the future. The table to the right, tabulates these against an assumed growth rate in income of 1%. The difficulty is primarily in understanding  $r$  (or the long-run rental income) and  $i$  (the cost of capital or rate you could earn on alternative investments) and  $g$  (or the growth rate in income through time). Key among these is the owner’s view of the prospects for future growth in income. Omitted is a measure of risk or variability, but that can be safely subsumed in the factor  $i$ . As an example, if an investor required a 4% rate of return, expected income to increase at 1% per year, and currently collected \$250 in cash rent, the land would be expected to be valued at \$8,333 per acre. Other values correspond to other input conditions.

### Other Factors

And finally to the factors that are changing through time and that can have dramatic influence on the overall market conditions. First and foremost for many farmland investors and operators is the length of time and impact of the current trade dispute, in particular with China, on the prices of agricultural commodities. The current administration has proven to be difficult to predict, but ripples

have been put into the market, and it could have longer-term impacts, if the dispute is allowed to linger to the point of affecting longer term contracted shipping and trade.

### A Basic Model for Understanding Farmland Values

Discount Rate

	4.0%	4.5%	5.0%	5.5%
150	5,000	4,286	3,750	3,333
175	5,833	5,000	4,375	3,889
200	6,667	5,714	5,000	4,444
225	7,500	6,429	5,625	5,000
250	8,333	7,143	6,250	5,556
275	9,167	7,857	6,875	6,111
300	10,000	8,571	7,500	6,667
325	10,833	9,286	8,125	7,222
350	11,667	10,000	8,750	7,778
375	12,500	10,714	9,375	8,333
400	13,333	11,429	10,000	8,889

E(r) (\$/ac/year)

1% = g or growth rate of income

Secondly, the impact of prospects for higher interest rates (and thus higher required rates of return and cost of capital) are fairly likely. Offsetting these effects would be potential for income from commodities under higher inflationary periods to also increase. Historically, the value of farmland has been positively correlated with inflation, and cash incomes have been steadier than commodity prices through time, but it does seem that the environment in which these and farm bill related negotiations are occurring are at a relatively high level of uncertainty.

In any case, farmland markets and the leasing of farmland are modernizing and increasingly reflecting factors all the way from consumers to the impacts of growth in incomes around the world. This trend is the most certain to continue.



**Bruce J. Sherrick, Ph.D.**, is the Fruin Professor of Farmland Economics and Director of the TIAA Center for Farmland Research at the University of Illinois. Sherrick teaches ag-finance classes, has appeared frequently on lists of teachers ranked as excellent and has received outstanding teaching

awards. Sherrick 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.

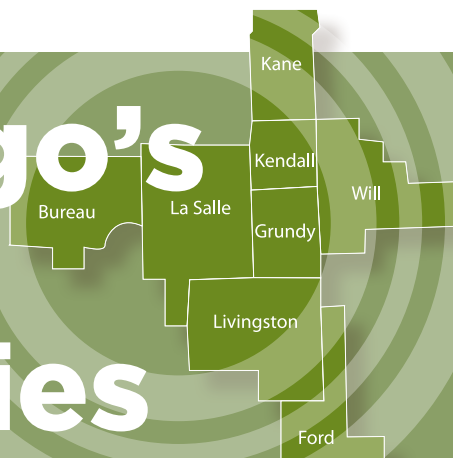
# FARMLAND *Insights*

Mark Goodwin & Associates Real Estate, L.L.C.  
21036 S. States Lane  
Shorewood, IL 60404

Prsrt. Std.  
U.S. Postage  
PAID  
Kankakee, IL  
Permit No. 135

**FORWARDING SERVICE REQUESTED**

## Chicago's Collar Counties



**Mark Goodwin**  
ALC, CCIM  
Managing Broker  
817-412-2263



**Doug Deininger**  
ALC  
815-439-0667

### That's where we specialize in farmland sales

- Experience Accredited Land Consultants who know the collar counties
- Experience the results of proven marketing activities: Far-reaching contacts online and off; Multiple Listing Services (MLS); extensive online marketing; personal emails, phone calls, and contacts
- Experience Goodwin & Associates

[www.bigfarms.com](http://www.bigfarms.com)

*Goodwin & Associates Real Estate, L.L.C.*

21036 S. States Lane • Shorewood, IL 60404 • Tel: 815-741-2226  
Email: [mgoodwin@bigfarms.com](mailto:mgoodwin@bigfarms.com) • Web: [www.bigfarms.com](http://www.bigfarms.com)



**GO GREEN...** Prefer to receive your *Farmland Insights* electronically? Email us at [dolly@bigfarms.com](mailto:dolly@bigfarms.com)

