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Understanding recent trends in Midwest farmland leasing

by David B. Oppedahl, business economist

On November 27, 2012, the Chicago Fed hosted a conference to examine recent trends in farmland leasing and their impacts on agricultural lending. Experts gathered to analyze various kinds of farmland rental arrangements, different sources of income from farmland, and shifting relationships between farmland owners and farm operators—all within the context of large and rapid rises in cash rental rates for Midwest farmland that lag the jumps in value of the land itself.

Materials presented at the conference, Farmland Leases: Tales, Types and Trends, are available at www.chicagofed.org/webpages/events/2012/agriculture_conference.cfm.

Conference presenters looked at global and domestic factors that have contributed to large and rapid rises in rental rates for agricultural land—such as the year-over-year increase of 17% recorded in 2012 for the Seventh Federal Reserve District.[1] Moreover, there was a consensus among conference participants that higher crop prices have spurred changes in rental arrangements, including requiring renters to make additional payments, typically based on crop prices and yields. Such changes are partly due to the fact that increases in farmland rental rates continue to lag gains in farmland values. Speakers noted that even with cash rents moving up fast, agricultural producers renting farmland have strong balance sheets in general and sufficient risk-management tools to weather future volatility.

Factors affecting modern U.S. farming

In the keynote address, Murray Wise, of Murray Wise Associates LLC, characterized U.S. agriculture as a highly efficient industry that helps feed a growing world population, as evidenced by dramatic changes in food production and demand during the past two centuries. The proportion of farmers in the U.S. population fell from 80% in 1800 to under 2% in 2000. Meanwhile, global food demand has spiked up as the world's population has increased tremendously since the early nineteenth century. This dynamic has resulted today in the tightest domestic stocks of key agricultural products, such as corn and soybeans, in nearly four decades, as U.S. exports of farm products have grown exponentially.

To illustrate how a booming world populace can benefit the U.S. farming industry, Wise discussed the recent experiences of China. Per capita income growth in China over the past few years has led to large increases in household savings as well as caloric consumption. Yet, despite higher farm output, China's agricultural sector remains fragmented, with millions of small farms unable to fulfill the nation's vast demand for more calories and better nutrition. To meet the surging demand for food, China has imported extraordinary amounts of agricultural products—including, most notably, soybeans, but also corn, hay, almonds, and cotton. U.S. agricultural exports to China have expanded dramatically over the past three decades. Meanwhile, Midwest agriculture has benefited from higher demand for food and elevated crop prices as seen in soaring farmland values, with most of the land buyers being farmers. Farmland has outperformed other classes of assets in recent

decades, drawing the attention of institutional investors. Nearly half (or more, depending on the time horizon) of the total returns on agricultural investments were from the income generated from the properties, with the rest from the appreciation of asset values.[2] The demand to lease farmland has been intense, resulting in much higher bids at 2012 auctions for cash rentals. Wise offered these details as some of the signs that U.S. agriculture faces an exciting future.

The dynamics of farmland leasing will continue to evolve and contribute to the strength of the agricultural sector in the future.

David B. Oppedahl, Federal Reserve Bank of Chicago, covered the primary reasons for leasing farmland—a widespread practice in the Midwest. Farmland owners, who often do not live on the land, receive income from leases made to practicing farmers. Rental income is mostly derived from the productivity of the land for crops and pasture, although energy production or recreational uses (such as hunting) may generate income as well. The Seventh District's farmland rental income is stronger than the U.S. average because its farmland is generally of a higher quality than that of other regions. Modern crop farming relies on economies of scale, based on leasing arrangements, to generate profits; and the cash flow of farming enterprises involves balancing leasing costs with expected revenues. Farmland rental rates are affected by many factors, including higher crop prices in recent years, productivity, location, interest rates, and government assistance programs. Moreover, there is a lagging relationship between cash rental rates and farmland values for purchases: After adjusting for inflation, Seventh District farmland values had already risen in 2007 above their previous high of 1979; however, cash rents in real terms had just approached in 2012 the high levels last seen in the early 1980s.

Types of farmland leases

Jim Farrell, Farmers National Company, outlined the evolution of farmland leasing—from an earlier era, when crop shares were the dominant form, to today, when cash rental arrangements are most prominent. The rise of larger farms with multiple landlords, complex recordkeeping requirements, large equipment needs, and less labor per acre has driven the shift toward cash renting. Farrell presented the distribution of farms under management by the Farmers National Company (one of the nation's largest firms servicing farmland owners): 44% were on cash rental arrangements, 36% were on a crop share basis, and 20% were on custom or blended arrangements. The returns from farmland vary depending on the arrangements of the lease. A particular attraction for owners who rent their land for cash payments is the insulation from the risks posed by potentially volatile production costs and crop prices. However, to gain from the higher crop prices of recent years, farmland owners have increasingly used cash leases with bonus payments to the owners when certain crop price and output conditions are met. In contrast to traditional cash rents, crop share arrangements require landlords to bear greater production and crop price risks, since landlords share in the costs of farming inputs and payment comes in the form of a portion of the crops (typically 50% in the Midwest). Another alternative is a custom farming approach—under which landlords assume all the production and crop price risks, by incurring all the input expenses and hiring the farm operators, but then gain all the rewards. Many farmland investors find custom farming an attractive avenue, since it offers the best possible returns. Blends of various types of leases have become more popular as farmland owners and operators attempt to tailor the risk and reward profiles for their particular interests. Farrell emphasized that increases in farmland values influence rents and that both land values and rental rates look to move higher in 2013 based on strong demand and potential profits.

Todd Kuethe, U.S. Department of Agriculture (USDA), provided more details about farmland leases based on the USDA's annual *Agricultural Resource Management Survey* (ARMS). The 2011 survey indicated that farmers owned 59% of the acres they operated, while they leased 35% with cash payments and 6% on a crop share basis. Farmers in the Seventh District owned 49% of the acres in production, while they leased 38% of them under cash rental arrangements and 13% on a sharecropping basis.[3] Large commercial farms tended to lease farmland more than intermediate and small farms, especially in the Seventh District. In 2010, special questions about lease relationships and landlord characteristics were asked in ARMS. Based on the findings from those questions, Kuethe reported that commercial farms across the nation were paying much more in cash rents than other categories of farms in 2010. In addition, commercial farms had more leases than other types of farms. In the Seventh District, commercial farms averaged over four leases per farm, while other types averaged less than one lease per farm. Also, in the Seventh District, cash leases were written down most frequently for commercial farms. Less than a tenth of landlords had an active role in managing farms in both the Seventh District and the nation.

Regional trends in farmland leasing

Next, Gary Schnitkey, University of Illinois at Urbana–Champaign, explored leasing trends in Illinois. Schnitkey said that farm data from the Illinois Farm Business Farm Management Association show that cash rentals account for 55% of the acres farmed in the state; the data also reveal that Illinois has a larger proportion of crop share rents (27%) than found nationwide. Cash rental agreements tend to be for one year, with fewer longer-term leases being granted than in the past. Another trend for cash rents is to require a single upfront payment, instead of one payment in the fall and another in the spring. Leases increasingly have requirements for soil testing or fertilizer applications to diminish concerns about depleting the soil of nutrients. Cash rental payments have increased dramatically in Illinois in recent years,

although there was a wide range of amounts, even for acreages of similar soil types. Since farm operators' returns have exceeded traditional levels in recent years, some landlords increasingly receive bonuses on top of fixed cash payments. Under variable cash rental arrangements, bonus payments to landlords are based on a percentage of crop revenues, which more frequently include crop insurance payouts. Schnitkey expressed some concern that cash rents may overshoot returns on farming investment when these returns move back to their typical levels.

Discussing farmland trends in a state with a different mix of agriculture, Arlin Brannstrom, University of Wisconsin–Madison, said that cash rental rates have risen in line with farmland values in Wisconsin. The importance of the dairy industry to Wisconsin (which hosts 12,000 operating dairy farms) means that the state's agricultural dynamics are different from those of Illinois and other neighboring states. For example, dairy farming involves significant costs of manure management and higher demand for pasture. Moreover, compared with Illinois, Wisconsin has a lower percentage of farmland suitable for continuous row crops. These factors dampen the impact of rising corn and soybean prices that Wisconsin's neighbors have benefited from, and amplify the variability of cash rents for farmland in Wisconsin.

Brent Gloy, Purdue University, emphasized that agriculture has periods of boom and bust. With farmland values now booming, the question arises whether cash rents will catch up. As a share of farm revenue, cash rents averaged 35% in Indiana over the past two decades; but in the past five years, they were under this level. According to a survey of farmers and landowners conducted by Purdue University in the spring of 2012, there was a wide range of cash rents that respondents were willing to pay to farm a representative plot of ground (80 acres), as well as a vast spectrum of land values that they cited for that acreage. With 25% of respondents willing to bid $300 per acre or more to farm this field, demand was plentiful enough to propel cash rents higher. Expectations drive both farmland values and the willingness to rent farmland, Gloy explained. So, the survey results reflected respondents' expectations that corn prices would average $5.41 per bushel over the next five years, with 25% of them projecting corn prices would average $6 or above per bushel. With cash rents rising in response to improving farm incomes and with expectations for continued upward movement in place, Gloy warned of the considerable risks that these conditions may present, given the difficulty in predicting agricultural outcomes. He recommended careful monitoring of farm operations and risk exposures to detect early signs of stress amid volatility.

Implications for agricultural lending

These thoughts were expanded on in a panel discussion with experts in farm lending. Dave Armstrong, Greenstone Farm Credit Services, illustrated how profitability drives rents for farmland with examples from Michigan. While Michigan's profits from corn and soybeans were strong in 2012, its profits from sugar beets, apples, and tart cherries were even stronger. Armstrong said that as an agricultural lender, he focuses on a farm's overall profit margin while viewing farmland rent as just another item among the many operating costs. By locking in input costs early, a farm can generate higher returns while managing volatility. Armstrong said he pays close attention to the liquidity of his customers, though it has not been a concern recently because many farmers are flush with cash and interest rates are low.

Leslie S. Miller, Iowa State Savings Bank, offered the point of view of a community banker in the Seventh District. Bankers perform leasing analyses to ascertain the strength of farmers' plans, accounting for cash flow, ability to control and manage risk, and the fairness of leases, among other factors. Fast-rising cash rents have led to concerns about the ability of farm operations to cover their costs, especially when crop prices move lower. And concerns about increases in other costs (such as for fertilizer) complicate matters further. Miller said that banks encourage their agricultural borrowers to lock in input costs to help manage risk, even by seeking longer terms for leases. In contrast to farmland purchases, farmland leasing allows for expansion of operations without accumulating long-term debt. Leasing also allows for control of more assets with less capital than purchasing does. And leases have less of an impact on borrowing limits than purchases do. Finally, Miller emphasized that risks to farming operations grow rapidly as leverage increases.

Providing the perspective of a bank regulator, Jeffrey A. Jensen, Federal Reserve Bank of Chicago, emphasized the key issue of survivability—of both agricultural enterprises and lending institutions. The basic principles of sound risk management for farm lending are laid out in one of the Federal Reserve Board's 2011 Supervision and Regulation Letters (No. SR 11-14).[4] Traditional lenders to agriculture tend to follow these principles, but there is concern about the practices of other lenders. The quality of loans depends on their cash flow more than their underlying assets, so the degree of detail in writing loans is very important. Lenders need to account for the role that landlord–tenant relationships play in leasing, since some farm operators may expand too much by counting on leases that may

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later vanish. Jensen said that the future of agriculture looks bright, yet warned participants to remain careful of the risks of farming.

Farmland leasing for energy production

One session was devoted to the potential for leasing farmland in order to produce energy—from wind and fossil fuels. Justin Schneider, Indiana Farm Bureau, addressed the ramp-up in wind energy leasing of the past decade. Drivers for wind power development include energy independence, state requirements for renewable electricity, costs of other energy, environmental regulations, and a federal production tax credit. The Midwest has seen a multitude of wind towers and turbines pop up, but the growth of wind energy has slowed. Both leases and easements play roles in siting wind towers, but both should have legal reviews before contracts are signed. Contract conditions, including the scope and terms of land use, need to be carefully analyzed because they may affect farming activities, such as aerial spraying and fencing upkeep. Compensation from wind energy leasing varies with land values, lease duration, property tax impacts, and future uses of the land. Fixed payments offer stability, but royalty payments possibly provide more reward to offset greater risks for the landowner.

Shale gas and oil leasing—a phenomenon that has started to enter the Midwest—was the focus of the talk by Ross H. Pifer, Pennsylvania State University. Leases for fossil fuel extraction and production differ from typical agricultural leases in that the lands may be depleted of an asset when the leases expire. Shale formations in Pennsylvania have been rapidly accessed using hydraulic fracturing and horizontal drilling. Shale formations exist under large parts of the Midwest, so leasing for shale gas and oil exploration is likely to grow in other parts of the region, particularly in Indiana and Michigan. Leasing for shale gas and oil acts as a market, with prices shifting as technologies and other variables change. Both leasing terms and surface protection are significant issues. Access to information is vital for landowners, who can benefit from legal counsel and collective action. Moreover, storage rights and rights of way for pipelines should be covered under separate leases for additional compensation. The lessons learned in Pennsylvania can help Midwest landowners get better deals with energy developers.

Conclusion

Higher agricultural profits in recent years have spurred cash rents to rise, although not as quickly as farmland values. And rising rents have played a role in changing the mix of lease types. The dynamics of farmland leasing will continue to evolve and contribute to the strength of the agricultural sector in the future. Moreover, sound risk-management practices in the face of escalating cash rents will be vital for both farm operations and the financial institutions that serve farmers.

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[1] The Seventh Federal Reserve District comprises all of Iowa and most of Illinois, Indiana, Michigan, and Wisconsin. For details on the leasing of Seventh District farmland, see David B. Oppedahl, 2012, *AgLetter*, Federal Reserve Bank of Chicago, No. 1956, May, available at www.chicagofed.org/digital_assets/publications/agletter/2010_2014/may_2012.pdf.

[2] Presenter's calculations based on returns published in the National Council of Real Estate Investment Fiduciaries (NCREIF) Farmland Index, available for purchase at www.ncreif.org/farmland-returns.aspx.

[3] Author's calculations based on data from USDA, ARMS (which did not explicitly account for custom or blended arrangements). ARMS details are available at www.ers.usda.gov/data-products/arms-farm-financial-and-crop-production-practices.aspx.

[4] See www.federalreserve.gov/bankinforeg/srletters/sr1114.htm.