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# Negative Cash Rent Farmland Returns Since 2014 Reduced Farmer Net Incomes

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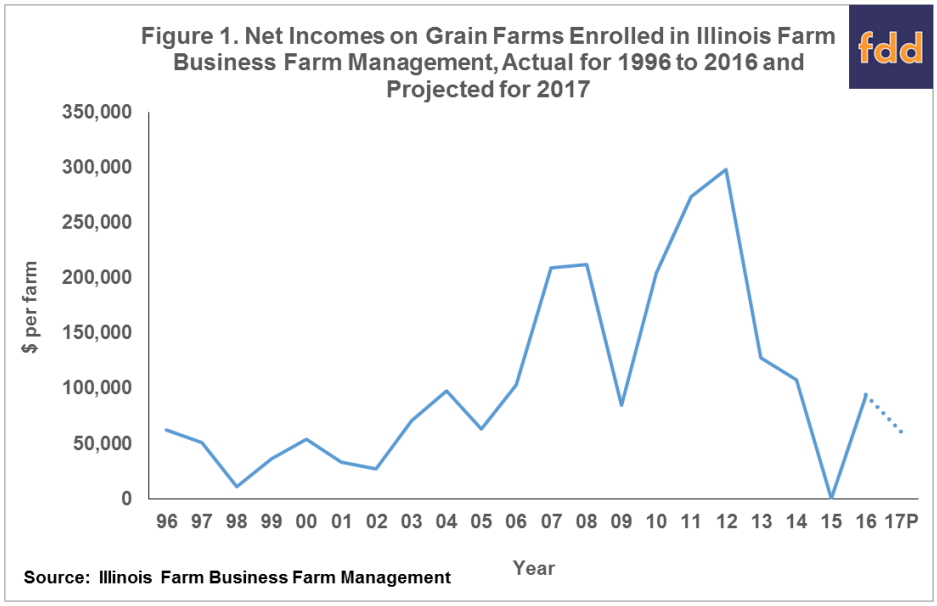
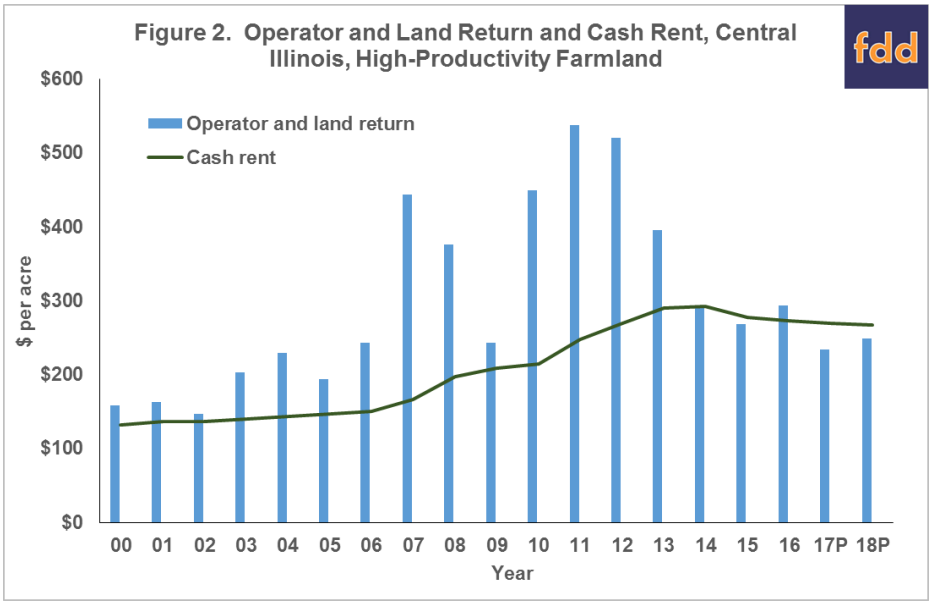
In recent years, many farmers have had positive incomes. However, cash rented farmland may not have been contributing to those positive net incomes. At average cash rent levels, cash rented farmland has reduced farmer net incomes in 2014 and 2015. Often, positive returns from owned and share rented farmland offset negative returns from cash rented farmland. Herein, returns to owned, share rented, and cash rented farmland are quantified after background information is presented.

## Background

Average net incomes on Illinois grain farms has fallen since setting an all-time high in 2012. Incomes have been lower since 2012, but average incomes have been positive in all years except 2015 (for more detail see *farmdoc daily*, August 15, 2017).

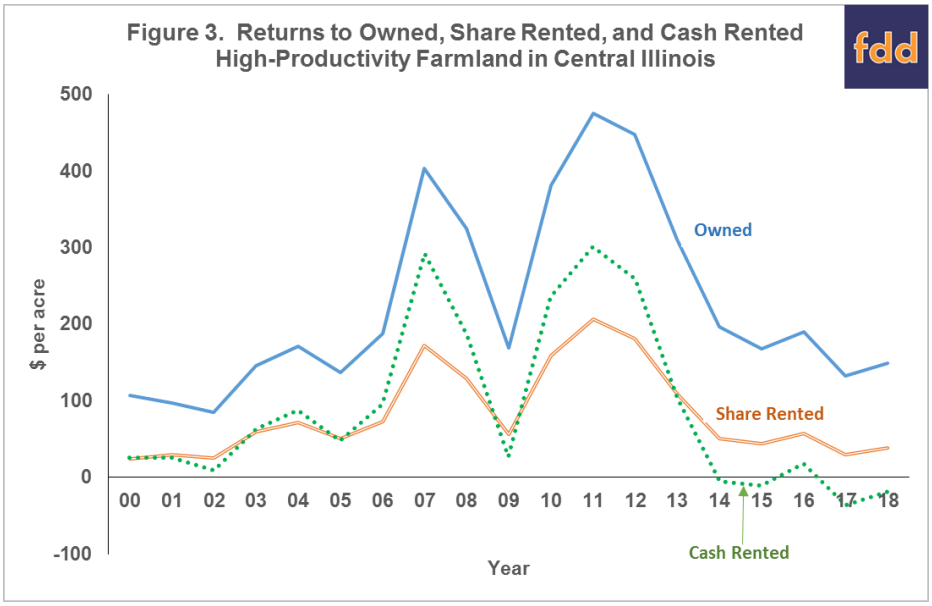


At the same time incomes have been positive in most years, farmers often have had negative returns on cash rented farmland. Figure 2 shows operator and land returns, which equal gross revenue minus non-land costs, and represent the return that can be split between the farmer and land owner. Cash rent is the payment to landowners when farmland is cash rented. If cash rent exceeds operator and farmland return, then the farmer is generating a negative return. As can be seen in Figure 2, cash rent exceeded operator and farmland returns in 2014 and 2015, generating negative returns to farmers. Moreover, farmer returns are projected negative in 2017 and 2018 (for more detail, see *farmdoc daily*, August 8, 2017).




**Returns to Owned, Share Rent, and Cash Rent Farmland**

The combination of positive net farm incomes and negative returns from cash rent farmland is possible because of positive return contributions from owned and share rented farmland, as is illustrated in Figure 3. Figure 3 shows returns from owned land, share-rented farmland, and cash rented farmland. The starting point for determining the returns shown in Figure 3 are operator and land returns (see Figure 2). From operator and land returns, the costs of controlling each type of farmland are subtracted. These costs are described in the next paragraphs with an example given using 2016 values (see Appendix Table 1 for all values from 2000 onward).



**Owned farmland**: Costs of controlling owned farmland include property taxes and interest costs. For high-quality farmland in central Illinois, property taxes are $53 per acre in 2016. Interest costs are estimated at $49 per acre. This $49 per acre will vary from farm-to-farm depending on the amount of debt remaining on the farmland. The $49 is based on a .20 debt-to-asset ratio, the average for those farms enrolled in Illinois Farm Business Farm Management (FBFM). Total owned land costs are $102 per acre ($53 of property tax + $49 interest cost). Operator and land return in 2016 is $291 per acre. The return to owned farmland is $189 per acre ($291 operator and land return - $102 of non-land costs)

**Share rented farmland**: Costs of controlling share rented farmland equal the land owners' share of revenue minus the land owners' share of direct costs. Most share rent leases in central Illinois are 50-50 in which the farmer and land owner share in 50% of the revenue and 50% of the direct costs. In 2016, these share rent costs to the farmer are $234 per acre. Subtracting the $234 per acre share rent costs from the $291 operator and land return results in a farmer return on share rented land of $57 per acre.

**Cash rent farmland**: The cost of controlling cash rented farmland is the cash rent. In 2016, the average cash rent for high-productivity farmland in central Illinois is $273 per acre. Subtracting the $273 per acre in cash rent from the $291 in operator and land returns results in a return to cash rent farmland of $18 per acre. Cash rents vary from farm-to-farm. Some cash rents are more than $50 per acre higher than the average. Obviously, the cash rent level will impact each farm's return from cash rented farmland.

Figure 3 shows resulting returns from owned, share rented and cash rented farmland from 2000 to projections for 2018. Note several items about these time series. First, the returns follow the same general trend. Returns from each land control method are impacted by the same overall farmland returns, as measured by operator and land returns. Returns for all three land types where higher during 2010, 2011, and 2012. Since 2012, operator and land returns have been lower than the 2010-2012 period.

Second, returns to cash rented and share rented farmland followed each other close from 2000 to 2005. During this period, land owners had roughly the same returns whether share renting or cash renting farmland, given that the cash rent was near average. Since 2006, farmland return on share rented and cash rented farmland have diverged. In most years from 2006 to 2012, farmer made less on share rental arrangements than on cash rental arrangements. During the 2002 to 2012 period, cash rents did not increase as much as operator and land returns. Since 2014, farmers have made less on cash rental arrangements than on share rental arrangements. Since 2013, average cash rents have not decreased as much as operator and land returns.

Third, farmer returns on cash rent farmland have been low or negative in each year since 2014. Farmer returns on average cash rents were -$5 per acre in 2014, -$11 in 2014, and $1 per acre in 2016. Projections are for a -$36 per acre return in 2017 and a -$18 per acre return in 2018.

**Net Incomes and Methods of Controlling Farmland**

Given the different returns, net income across farms will vary with the proportion of land controlled by each method. For farms enrolled in FBFM, averages are for 15% of the farmland to be owned, 45% to be share rented, and 40% to be cash rented.

The relative contributions of owned, share rent, and cash rent farmland are illustrated for a "typical" 1,500 acre farm given that the farm has the "average" portion of owned, share rented, and cash rented farmland (see Table 1). This farm would own 225 acres (1,500 total x 14% of farmland owned), share rent 675 acres (1,500 x 45% share rented), and cash rent 600 acres (1,500 total x 40% cash rented). Farms controlling land in different percentages will have different net incomes.

In 2016, returns were $189 per acre for owned farmland, $57 per acre for share rent farmland, and $17 per acre for cash rented farmland. Given the average acreage distribution, a 1,500 acre farm would have net income equal to $91,200 per acre, with $42,525 coming from owned farmland, $38,475 from share rented farmland, and $10,200 from cash rented farmland (see Table 1). The 40% of the acres that were cash rented only contributed 11% of the farm's net income ($10,200 cash rent contribution / $91,200 total net income).

**Table 1. Net Income Contribution of Owned, Share Rent, and Cash Rent Farmland on an 1,500 Acre Farm in 2016 and Projection for 2017**

| | Acres | | 2016 | | 2017P | |
|---|---|---|---|---|---|---|
| | Percent of Farm | 1,500 Acre Farm | Farmland Return | Net Income Contribution | Farmland Return | Net Income Contribution |
| | | acres | $/acre | $/farm | $/acre | $/farm |
| Owned | 15% | 225 | 189 | $42,525 | 132 | $29,700 |
| Share rent | 45% | 675 | 57 | $38,475 | 30 | $20,250 |
| Cash rent | 40% | 600 | 17 | $10,200 | -36 | ($21,600) |
| **Total** | | **1,500** | | **$91,200** | | **$28,350** |

In 2017, returns are projected at $132 per acre for owned farmland, $30 for share rent farmland, and -$36 per acre for cash rent farmland (see Table 1). Total income is projected at $28,350 per acre. Cash rent farmland is projected to reduce income by $21,600.

**Commentary**

Cash rented farmland at average cash rents reduced net income in 2014 and 2015. Cash rent farmland made a marginal contribution to income in 2016. Projections are for cash rents to reduce income in 2017 and 2018.

In years of negative returns to cash rented farmland, funds from other sources will be used to make all the payments on cash rent farmland. One source of those funds is owned and share rented farmland. In essence, farming of cash rented farmland is subsidized by returns from owned and share rented farmland.

For short periods, subsidizing cash rent farmland may have economic rationales, with one being that commodity prices may increase in the future. For example, returns to cash rented farmland would be positive if corn prices were above $4.00 per bushel and soybean prices above $10.00 per bushel. However, corn prices have not been above $4.00 per bushel for a sustained period of time since 2014 and currently are not projected to be above $4.00 per bushel in 2017 or 2018. If projections hold, corn prices will have remained below $4.00 per bushel for five years.

Illustrations above are for an average farm. Many farms have more of their acres cash rented than the average. Some farms also have higher than average cash rents. For these farms, there are less possibilities of using owned and share rent farmland to cover losses on cash rent farmland.

**References**

Schnitkey, G. "Forecast of 2017 Net Income on Grain Farms in Illinois." *farmdoc daily* (7):148, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, August 15, 2017.

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**Appendix Table 1. Operator and Land Returns and Control Costs for High-Productivity farmland in Central Illinois**

| Year | Operator and Land Return[1] | Property Tax[2] | Owned Land Interest Cost[2] | Owned Land Cost[3] | Share Rent Costs[4] | Cash Rent Costs[5] |
|---|---|---|---|---|---|---|
| | $/acre | $/acre | $/acre | $/acre | $/acre | $/acre |
| 2000 | 158 | 25 | 26 | 51 | 134 | 132 |
| 2001 | 163 | 33 | 33 | 66 | 133 | 137 |
| 2002 | 146 | 30 | 31 | 61 | 121 | 137 |
| 2003 | 203 | 28 | 29 | 57 | 144 | 140 |
| 2004 | 231 | 29 | 31 | 60 | 160 | 143 |
| 2005 | 195 | 27 | 31 | 58 | 145 | 147 |
| 2006 | 246 | 27 | 31 | 58 | 173 | 150 |
| 2007 | 458 | 25 | 30 | 55 | 286 | 166 |
| 2008 | 384 | 25 | 34 | 59 | 255 | 197 |
| 2009 | 236 | 29 | 38 | 67 | 180 | 209 |
| 2010 | 451 | 31 | 38 | 69 | 291 | 215 |
| 2011 | 549 | 35 | 40 | 75 | 343 | 248 |
| 2012 | 529 | 40 | 42 | 82 | 348 | 270 |
| 2013 | 393 | 40 | 43 | 83 | 284 | 290 |
| 2014 | 288 | 44 | 47 | 91 | 237 | 293 |
| 2015 | 267 | 49 | 50 | 99 | 222 | 278 |
| 2016 | 291 | 53 | 49 | 102 | 234 | 273 |
| 2017 | 234 | 54 | 47 | 101 | 204 | 270 |
| 2018 | 249 | 54 | 46 | 100 | 210 | 267 |

[1] Are taken from *Revenue and Costs for Corn, Soybeans, Wheat, and Double Crop Soybeans* in the management section of farmdoc. Corn and soybean returns are multiplied by the percent of acres in corn and soybeans to arrive at the average for both crops.

[2] Taken from Illinois FBFM publications.

[3] Sum of property tax and interest costs.

[4] Equals 50% of the gross revenue minus 50% of the direct costs.

[5] Average cash rent.