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## Weekly Farm Economics: Cash Rents Given Differing Price Levels

Gary Schnitkey

Department of Agricultural and Consumer Economics  
University of Illinois

October 16, 2012

*farmdoc daily* (2):200

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Recommended citation format: Schnitkey, G. "Cash Rents Given Differing Price Levels." *farmdoc daily* (2):200, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, October 16, 2012.

Permalink: <http://farmdocdaily.illinois.edu/2012/10/cash-rents-given-differing-pri.html>

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Corn and soybean prices have been high in recent years, leading to high farmland returns and increasing cash rents. In the following article, the ability to pay cash rent is examined under differing corn and soybean price scenarios that are likely to occur over the next several years. These price scenarios include 1) 2013 price estimates, 2) long-run price estimates, and 3) low price estimates. The 2013 price projections yield returns that can sustain high cash rents. Lower prices likely will lead to downward pressure on cash rents.

### Operator and Farmland Returns

Ability to pay cash rent is based on operator and farmland return, which equals gross revenue minus non-land costs. From operator and farmland return, the farmer and landowner receives their returns. Take, for example, an operator and farmland return of \$510 per acre. If the farmland is cash rented and the cash rent is set at \$325 per acre, the farmer will have a return of \$185 per acre (\$510 operator and farmland return – \$325 cash rent).

In Table 1, estimates of operator and farmland returns are shown for central Illinois farmland with high productivity, central Illinois farmland with low productivity, and southern Illinois. These regions are shown to represent the impact that yields have on operator and farmland returns. For the three regions, average corn yields are 194 bushels per acre for central Illinois farmland with high-productivity, 180 bushels per acre for central Illinois farmland for low-productivity, and 155 bushels per acre for southern Illinois. Note that non-land costs vary little across these yields. For example, non-land costs for corn-after-soybeans are \$510 per acre for central Illinois with high-productivity farmland, \$541 for central Illinois with low-productivity farmland, and \$493 per acre for southern Illinois. Hence, lower yields will result in lower operator and farmland returns, further leading to lower cash rents. In the following examples, operator and farmland returns are given for central Illinois farmland with high-productivity. Of the regions shown, this region has the highest yields of the regions shown, resulting in the highest operator and farmland returns and the highest cash rents.

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**Table 1. Operator and Farmland Returns for Differing Price Scenarios.**

| Corn Price    | Soybean Price  | Corn Yld Soybean Yld | Region                    |                          |                    |
|---------------|----------------|----------------------|---------------------------|--------------------------|--------------------|
|               |                |                      | Central-High <sup>1</sup> | Central-Low <sup>2</sup> | South <sup>3</sup> |
|               |                |                      | 194                       | 180                      | 155                |
|               |                |                      | 59                        | 55                       | 48                 |
| \$ per acre   |                |                      |                           |                          |                    |
| \$3.50        | \$8.50         |                      | 172                       | 123                      | 60                 |
| <b>\$4.50</b> | <b>\$10.50</b> |                      | <b>341</b>                | <b>280</b>               | <b>196</b>         |
| \$5.50        | \$12.50        |                      | 510                       | 437                      | 331                |

<sup>1</sup> Uses a corn-corn-soybeans rotation with a corn-after-soybean yield of 199 bushels per acre, corn-after-soybean yield of 189 bushels per acre and soybean yield of 59 bushels per acre. Non-land costs are \$510 per acre for corn-after-corn, \$525 per acre for corn-after-soybeans, and \$308 per acre for soybeans.

<sup>2</sup> Uses a corn-corn-soybeans rotation with a corn-after-soybean yield of 185 bushels per acre, corn-after-soybean yield of 175 bushels per acre and soybean yield of 55 bushels per acre. Non-land costs are \$525 per acre for corn-after-corn, \$541 per acre for corn-after-soybeans, and \$292 per acre for soybeans.

<sup>3</sup> Uses a corn-corn-soybeans rotation with a corn-after-soybean yield of 160 bushels per acre, corn-after-soybean yield of 150 bushels per acre and soybean yield of 48 bushels per acre. Non-land costs are \$493 per acre for corn-after-corn, \$509 per acre for corn-after-soybeans, and \$310 per acre for soybeans.

Three different price scenarios are shown in Table 1, representing likely price scenarios over the next five to ten years. The \$5.50 per bushel corn price and \$12.50 per bushel soybean price currently represent conservative price expectations based on 2013 harvest-time futures contracts. At these price levels, the operator and farmland return for the central Illinois farmland for high-productivity is \$510 per acre. This return level would support high cash rents. Take, for example, a \$325 per cash rent, close to the average cash rent in several central Illinois counties (see [here](#)). There will be many rents significantly higher than these averages. A \$325 per acre cash rent would result in a \$185 per acre to the farmer (\$185 farmer return = \$510 operator and farmland return – \$325 cash rent). Even cash rents in the \$400 range are estimated to provide positive returns to farmers.

The \$4.50 corn and \$10.50 soybean price represents estimates of average prices over the next five to ten years (see [here](#) for more detail). At these prices, operator and farmland return for central Illinois with high-productivity farmland is \$341 per acre, \$169 lower than the \$510 per acre return estimated using 2013 price expectations. A \$325 cash rent, results in a \$16 farmer return (\$16 = \$341 operator and farmland return – \$325 cash rent). The \$16 will not provide enough return for the farmer to cover implicit costs of unpaid labor and equity capital. If prices remain at these long-run levels for several years, cash rent levels likely would face downward pressures.

The \$3.50 corn price and \$8.50 soybean price represents a below average price scenario compared to long-run prices. Sometime in the future commodity prices likely will reach these levels, perhaps staying at these levels for several years. These prices have happened relatively recently, with corn prices averaging

close to \$3.50 in 2009. The \$3.50 corn price and \$8.50 soybean price scenario has a \$172 per acre operator and farmland return (see Table 1). A \$325 cash rent results in a -\$153 per acre loss to the farmer. Farmers would likely face losses at these price levels.

### Key points

Several key points result from the above comparisons. First, it is difficult to set cash rents in the current price environment at levels that will not have to be revised in future years. For example, one strategy could be to set cash rents based on long run prices (\$4.50 corn price and \$10.50 soybean price) and then leave those rents unchanged in future years. This strategy would result in cash rents that are significantly below those being currently negotiated. For central Illinois with high-productivity farmland, long-run prices result in a \$341 per acre operator and farmland return, suggesting cash rents in the low to mid-\$200 range. A mid \$200 per acre rent is significantly below average cash rents in central Illinois, where several counties have average cash rents above \$300 per acre (see [here](#)). Cash rents in the low to mid-\$200 range for high productivity farmland would result in high farmer returns over the past several years.

Second, the cash rental market could look fundamentally different in the future if corn and soybean prices are lower. A return to lower prices would result in much lower operator and farmland returns, leading to downward pressure on cash rents.

Third, one of the results of rising cash rents and volatile price environment is that farmers are taking on much more risks, as pointed out in this *farmdoc daily* post ([here](#)). In recent years, revenue declines have not resulted in widespread losses to farmers. In some year, revenues will decline after cash rent rates have been set, such that farmers will take losses.

Finally, in my opinion, several years of lower prices will be transmitted to many landowners in the form of lower cash rents. The question will be how many years it will take for cash rents to decline once a low price environment occurs. While landowners may wish to mute return changes over time, achieving that aim is not entirely possible given the variable price environment.