



2016 Net Farm Income Projections Under Different Price Scenarios

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Recent increases in corn and soybean prices have cast a more optimistic light on the potential for higher 2016 incomes. In this article, net incomes for different price scenarios are examined given that yields are at their expected levels. Even given recent increases, prices near current fall delivery bids will result in working capital deterioration on many farms. Given expected yields, prices need to be above \$4.20 for corn and \$10.25 for soybeans before working capital stabilizes on typical grain farms. Again all of these projections are made using expected yields. A key period for understanding 2016 net income levels will occur in August 2016 when a clearer picture of yields and prices emerges.

Operator and Land Returns and Net Incomes at Different Price Levels

Returns and incomes are projected at five different price levels using expected yields for central Illinois, high-productivity farmland: corn yield of 201 bushels per acre and soybean yield of 58 bushels per acre. Non-land costs are at levels projected in *2016 Illinois Crop Budgets*: \$552 per acre for corn and \$351 per acre for soybeans. These 2016 cost levels are below 2015 levels by \$39 per acre for corn and \$24 per acre for soybeans. Cash rent is estimated at \$275 per acre, down \$13 per acre from 2015 levels. Given that yields do not vary across the scenarios, these different prices reflect differences in demand scenarios (see *farmdoc daily*, April 22, 2016 for discussion of demand scenarios).

WASDE Prices: At USDA's Agricultural Outlook Conference in February, WASDE forecast 2016 prices of \$3.40 for corn and \$9.75 for soybeans (see Table 1). At those price levels, Agricultural Risk Coverage at the county level (ARC-CO) will make payments in Champaign County, Illinois at \$56 per base acre given that 2016 yields are at trend. This \$56 ARC-CO payment estimate is based on half the base acres being in corn and half in soybeans. If these 2016 ARC-CO payments occur, they will be received in the fall of 2017.

Given these prices and ARC-CO payment estimates, operator and land return is estimated at \$187 per acre for corn and \$227 per acre for soybean, both below the projected cash rent of \$275 per acre (see Table 1). As a result, farmer return on cash rent farmland is negative. Projections are for a \$68 loss on cash rent farmland given that 50% of farmland is in corn and 50% in soybeans (see Table 1).

Income projections are for a 1,500-acre farm with 15% of the acres are owned, 40% of the acres are share rented, and 45% of the acres are cash rented. Percentages in each farmland control category are typical

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for central Illinois farms. For this farm, net farm income is projected at -\$17,775 per farm, with negative incomes resulting in financial deterioration.

Table 1. 2016 Operator and Land Returns and Net Income Projections for a Typical Central Illinois Grain Farm

| | Unit | Current WASDE | Current Fall Bids | More Optimistic | Long-run Averages | Long-run Optimistic |
|--|---------|------------------|----------------------|--------------------|----------------------|------------------------|
| Corn Price | \$/bu | \$3.40 | \$3.80 | \$4.20 | \$4.60 | \$5.00 |
| Soybean Price | \$/bu | \$9.00 | \$9.75 | \$10.25 | \$11.00 | \$11.50 |
| 2016 ARC-CO payments ¹ | \$/acre | \$56 | \$12 | \$0 | \$0 | \$0 |
| Operator and Land Return ² | | | | | | |
| Corn | \$/acre | \$187 | \$224 | \$292 | \$373 | \$453 |
| Soybeans | \$/acre | \$227 | \$227 | \$244 | \$287 | \$316 |
| Projected Cash Rent | \$/acre | \$275 | \$275 | \$275 | \$275 | \$275 |
| Farmer Return from Cash Rent Farmland ³ | | | | | | |
| | \$/acre | -\$68 | -\$50 | -\$7 | \$55 | \$110 |
| Net Farm Income ⁴ | \$/farm | (\$17,775) | \$4,425 | \$55,425 | \$129,825 | \$195,225 |

¹ Estimated for Champaign County at trend yields and prices shown above for 50% of base acres in corn and 50% of base acres in soybeans.

² Based on 2016 Illinois Crop Budgets for central Illinois, high-productivity farmland. Yields are 201 bushels per acre for corn and 58 bushels for soybeans. Non-land costs are \$552 per acre for corn and \$351 per acre for soybeans.

³ Equals operator and land return minus average cash rent given that 50% of the acres are in corn and 50% are in soybeans.

⁴ Based on a farm with 15% of acres owned, 40% of acres share-rented, and 45% of acres cash rented.

Current Fall Bids: On April 25th, cash fall delivery bids were \$3.80 per bushel for corn and \$9.75 per bushel for soybeans. At those prices, 2016 ARC-CO are projected at \$12 per acre. Operator and land returns are \$224 per acre for corn and \$227 per acre for soybeans. Farmer return from cash rent farmland is projected at -\$50 per acre and net farm income at \$4,425 per farm.

In this case, farm income is positive (\$4,425 per farm) while farmer return from cash rent farmland is negative (-\$50 per acre). Farm income is positive because of positive returns from owned and share rent farmland. Under this price scenario, returns from owned and share rent farmland are offsetting negative returns from cash rent farmland.

While positive, net incomes of \$4,425 per farm are not large enough to forestall financial deterioration. On farms, net incomes are used to repay debt principal, fund family living, and make farm investments. While exact levels will vary from farm-to-farm, a useful benchmark of net income at which financial stability occurs for a 1,500-acre farm is around \$60,000 of net income. This benchmark assumes a single farm operator with significant off-farm income. Financial deterioration will occur when incomes are below \$60,000, with

most of the deterioration initially occurring as reductions in working capital (see *farmdoc daily*, [October 6, 2015](#); [June 9, 2015](#); [March 18, 2016](#)). Financial reserves will be built when incomes are above \$60,000. The \$4,425 level projected for this farm is well below the \$60,000 benchmark.

More Optimistic Prices: More optimistic prices of \$4.20 per bushel for corn and \$10.25 per bushel for soybeans result in net income of \$55,425 per farm. These prices roughly yield financial stability: farms are not losing working capital but are not building much either.

As a guide, prices of \$4.20 for corn and \$10.25 for soybeans will result in financial stability given the cost structure that exists today. This price benchmark, however, depends on yield levels. If yields are below average, a \$4.20 corn price and \$10.25 soybean price will not result in a stable financial position.

Also, the \$4.20 and \$10.25 soybean price benchmarks depend on farmland control. At these prices, the farm is still generating a -\$7 return on cash rent farmland. The returns from owned land and share rent farmland are offsetting the negative returns from cash rent farmland. If the 1,500 acres were all cash rented, net incomes would be negative at a \$4.20 corn price and \$10.25 soybean price.

Long-run Average Prices: Over time, prices are likely to average \$4.60 for corn and \$11 per bushel for soybeans (see *farmdoc daily*, [April 22, 2016](#)). At expected yields, these prices result in \$55 per acre return from cash rent farmland. The farm would have \$129,825 of net farm income. At these price levels, most farms would build financial reserves.

An important caveat associated with these return projections is that yields are near expected levels. One potential cause for prices to rise to \$4.60 for corn and \$11.00 for soybeans are low yields. If yields are lower than anticipated, a farm would not equal \$12,825 because fewer bushels will be sold.

Optimistic Prices: Optimistic prices of \$5.00 per bushel for corn and \$11.50 per bushel for soybeans results in \$195,225 of net farm income (see Table 1). Again, these income projections assume yields at expected levels.

Summary and Commentary

For 2016, prices must be above \$4.20 for corn and \$10.25 for soybeans before financial position stabilizes on typical grain farms. These price benchmarks are based on yields at expected levels. If yields are lower than expected, prices will need to be above \$4.20 for corn and \$10.25 for soybeans. The opposite is true as well: higher yields could result in benchmarks being below the above prices.

A critical time will be in August when 2016 yields and prices come into clearer focus. If prices are below the \$4.20 corn and \$10.25 soybean benchmarks, cost cutting will continue to be important to avoid continuing large losses to working capital in 2017. In particular, below \$4.00 corn prices and below \$9.00 soybean prices will result in the extreme need to reduce costs as working capital likely will be very limited on most farms. August is particularly crucial because many of the 2017 cash rent and input decisions begin to be made in August.

Prices at or above long-run averages likely results in working capital increases on farms, given that yields are at their expected levels. This fact does not reduce the need to cut costs for 2017 if prices remain low. The long-run prices may, in fact, be correct and will occur; however, the question is when they will happen. If it is several years in the future, financial stress could get severe. Surviving a continuing and extended period of low prices will require cutting costs.

Finally, the above income estimates do not include marketing gains on crop produced in 2015 and sold in 2016 (see *farmdoc daily*, [May 27, 2015](#) for a discussion of marketing gains). Up to the last couple of weeks, marketing gains were likely to be very limited in 2016. Marketing gains could occur if farmers still have large numbers of 2015 bushels unsold and get it sold at current or higher cash bids. Pricing 2015 crop now seems beneficial. Considering price targets for selling 2016 and 2017 crop is important (see *farmdoc daily*, [April 25, 2016](#)).

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