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Forecast of 2017 Net Income on Grain Farms in Illinois: Lower than in 2016 but Better Than Expected

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Average net income on Illinois grain farms is forecast at around $60,000 per farm in 2017. This forecast is for a composite of grain farms enrolled in Illinois Farm Business Farm Management (FBFM). In 2016, these farms had an average income of about $94,000 per farm. Incomes in 2017 are projected lower because of lower corn prices, lower soybean prices, and lower Agricultural Risk Coverage (ARC) payments. Partially offsetting these reductions are lower non-land costs. Overall, 2017 net farm incomes could have been worse as yields on many farms turned out better than expected. Still, deterioration of working capital on most farms should be expected. As always, incomes will vary across farms, with some farms having higher incomes in 2017 than in 2016. Those farms with below average yields will have lower incomes and could potentially face more financial stress.

Changes in Yields, Prices, Revenues, and Costs

Income is forecast by first estimating yield, revenue, and cost differences from 2016 to 2017. Differences are summarized in Table 1 and represent averages for Illinois. The goal of these calculations is to arrive at an average per acre income difference from 2016 to 2017. The average difference is estimated at $19 per acre of less income in 2017 as compared to 2016 (see the final line in Table 1). Items contributing to this reduction are described below.

Marketing gain: Most farmers prepare financial statement using modified costs methods in which an inventory price is placed on unsold grain at the end of the calendar year. A marketing gain occurs when the average sales price is higher than the inventory price. Conversely, a marketing loss occurs when the sales price is lower than the inventory price. Marketing gains and losses can be large in some years (see *farmdoc daily*, May 10, 2016, for more discussion).

For 2016, marketing gains occurred on most farms for corn and soybeans. Illinois Farm Business Farm Management (FBFM) used an end-of-the-year inventory price for calendar year 2015 of $3.60 per bushel for corn. Farmers sold old-crop corn for an average of $3.70 per bushel, resulting in a $.10 marketing gain. For soybeans, the 2015 end-of-year inventory price was $8.60 per bushel. Farmers sold old crop soybeans for $9.68 per bushel resulting in a $1.08 marketing gain. On a per acre basis, marketing gains for 2016 were estimated at $14 per acre for corn and $41 per acre for soybeans (see Table 1).

Table 1. Differences in 2016 and 2017 Revenues and Costs Impacting Grain Farm Net Income

	Unit	Year 2016	Year 2017	Differnece[1]
Marketing gain				
Corn	$/acre	$14	$30	$16
Soybeans	$/acre	$41	-$5	-$46
Corn				
Yield	bu./acre	197	198	
Price	$/bu.	$3.45	$3.35	
Revenue	$/acre	$680	$663	-$16
Soybean				
Yield	bu./acre	59	58	
Price	$/bu.	$9.74	$9.55	
Revenue	$/acre	$575	$554	-$21
ARC-CO / PLC payments	$/acre	$17	$10	-$7
Non-land costs				
Corn	$/acre	$576	$553	-$23
Soybeans	$/acre	$352	$337	-$15
Cash Rent	$/acre	$221	$218	-$3
Difference in income[2]				
Corn	$/acre			$19
Soybeans	$/acre			-$56
Average[3]	$/acre			-$19

[1] Equals 2017 value minus 2016 value.

[2] For corn, equals corn marketing gain difference + corn revenue difference + ARC-CO difference - non-land cost difference - cash rent difference. A similar calculation is done for soybeans.

[3] Simple average of corn and soybean differences in income.

The end-of-year inventory prices for 2016 were $3.30 per bushel for corn and $9.80 per bushel for soybeans. U.S.D.A. is reporting 2017 sales prices of $3.50 for corn and $9.62 price for soybeans. In 2017, farmers likely have marketing gains on corn and marketing losses on soybeans. The 2017 marketing gains are estimated at $30 per acre of corn and -$5 per acre for soybeans.

The difference between 2016 and 2017 marketing gains are $16 per acre for corn and -$46 per acre for soybeans (see Table 1). The positive value for corn means that incomes will increase in 2017 due to a change in marketing gains. The negative value for soybeans means that income will decrease in 2017 due to a change in marketing gains.

Corn Revenue: In October, U.S.D.A. estimates 2017 corn yield in Illinois at 198 bushels per acre, up by 1 bushels from the 2016 level of 197 bushels per acre (see Crop Production). For 2016 crop, farmers averaged a $3.45 per bushel price for corn while a $3.35 per bushel price is projected for 2017. Given these prices and yields, corn revenue is projected at $663 per bushel, down by $16 per acre from the 2016 corn revenue of $680 per acre.

Soybean Revenue: In November, USDA estimates 2017 soybean yield in Illinois at 58 bushels per acre (see Crop Production). The 2017 projected yield is 1 bushel below the 2016 yield of 59 bushel per acre. Soybean price in 2016 was $9.74 per bushel. A $9.55 price is used for 2017. Given these prices and yields, soybean revenue was $575 per acre in 2016 and is projected at $554 per acre in 2017. Soybean revenue is projected down by $21 per acre in 2017.

ARC-CO payments: Agricultural Revenue Coverage at the county level (ARC-CO) payments averaged $17 per acre for crop produced in 2016. These payments varied widely across counties (see Table 1 in *farmdoc daily*, October 6, 2017). For 2017 crop, ARC-CO payments are projected to be $10 per acre for 2017. ARC-CO payments are projected to be $7 lower in 2017 than in 2016.

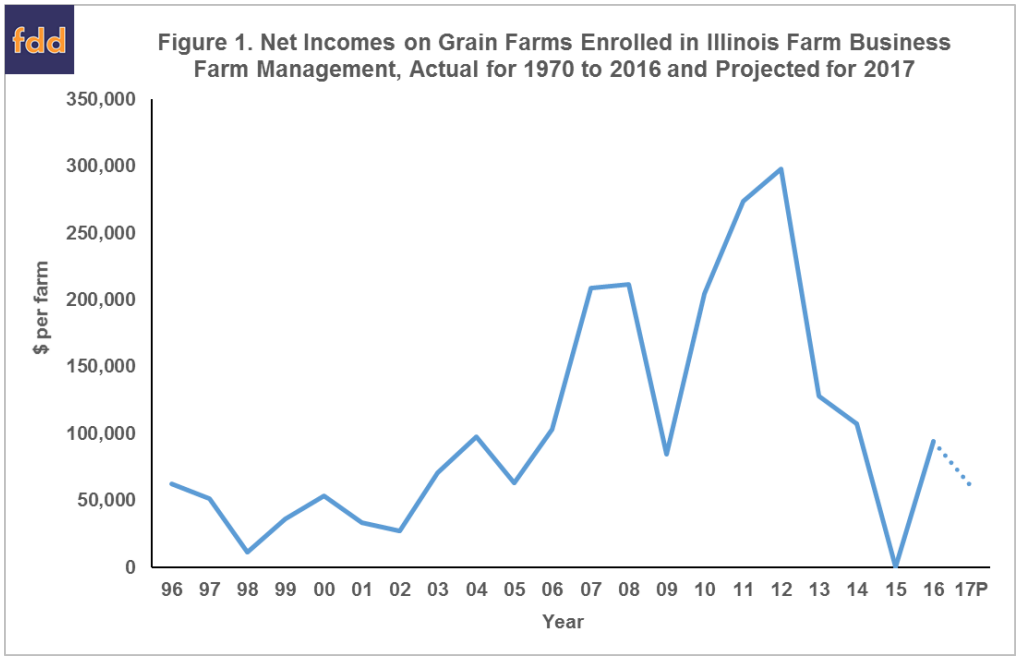
Note that these ARC-CO payments are received a year after production. In the fall of 2016, farmers and land owners received 2015 payments which averaged $36 per acre. The ARC-CO payment received in the fall of 2017 will average about $17 per acre, much lower than in 2016. This suggests that cash flow will be lower in 2017 than is indicated by changes in accrual income.

Non-land costs and cash rents: Non-land costs are projected down in 2017 from 2016 levels by $23 per acre for corn and $15 for soybeans (see Table 1). A July 25, 2017 *farmdoc daily* article provides more detail on cost estimates. Cash rents in 2017 were down by $3 from 2016 levels (see *farmdoc daily*, August 8, 2017).

Difference in income: Difference in incomes from 2017 as compared to 2016 are calculated for both corn and soybeans. Corn income is up by $19 per acre while soybean income is projected down by $56 per acre (see Table 1). Averaged over both corn and soybeans suggests that income will be down by $19 per acre.

Projected 2017 Incomes

A $19 decrease in per acre income results in lower projected 2017 per farm incomes as compared to 2016. Figure 1 shows average income for grain farms enrolled in Illinois Farm Business Farm Management (FBFM). These are per farm income. The -$17 per acre difference suggests a 2017 net income of around $60,000 per farm.



The $60,000 per farm income would be lower than the 2016 income. If projections hold, the 2017 income would be the second lowest income since 2005. The only income since 2005 that is below $60,000 occurred in 2015 when per farm net income was near $0.

Historical values in Figure 1 are from an average of farms located across Illinois. These farms vary in geographical location, size, land control method, and financing. On average, the farms have an average

size of 1,500 acre, but there is a considerable range. There is a subset of farms that are over 5,000 acres and another sub-set that are smaller than 1,000 acre.

Comparison to Earlier Income Forecasts

A 2017 net income forecast was made in an August 15, 2017 *farmdoc daily* article. Net income forecasts between the two articles do not vary much; however, yield and prices do vary between the two forecasts:

- Corn yields in the November forecast is higher than the August forecast. Corn yield was 188 in the August forecast compared to 198 in the November forecast.
- The corn price is lower in the November forecast compared to the August forecast. The August forecast used a $3.65 corn price compared to a $3.35 price in the November forecast.
- The soybean price is higher in the November forecast compared to the August forecast. The August forecast used a $9.00 per bushel price compared to a $9.55 per bushel price in the November forecast.

Commentary

According to USDA forecasts, corn and soybean yields in Illinois will average above trend levels. These relatively high yields will provide a higher level of income than many expected during mid to late summer.

Overall, average net income levels will result in deterioration in working capital on many farms, a continuation of the trend that has been occurring since 2013. As a result, attention will continue to be focused on lowering costs and other cash flows to meet these shortfalls.

As always, there will be considerable variability in income across farms. Those farms that have higher yields will have higher incomes than those farms with lower yields. The amount forward contracted could also play a role in the distribution of incomes across farms. Prices during late winter and early spring for 2017 harvest-time delivery were higher than most fall delivery prices, particularly for soybeans. Those farmers that forward contracted more could have higher relative incomes than those that did not contract as much.

Even at this late time in the year, 2017 incomes could differ from the forecasts shown here. Incomes are greatly influenced by end-of-year prices used to value inventory. Any material differences from the $3.35 corn price and $9.55 soybean price used in forecasts will result in a different income forecast.

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