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Department of Agricultural and Consumer Economics, University of Illinois Urbana-Champaign

Revised 2018 Corn and Soybean Budgets

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Revised 2018 corn and soybean budgets are available in the management section of *farmdoc* (here). The major revision was to commodity prices. A $3.60 per bushel corn price and $9.60 per bushel price are now used in budgets, closely matching current fall delivery bids. Those prices are higher than in the July 2017 release. Still, the revised budgets suggest low returns and soybeans still are projected more profitable than corn.

Central Illinois High-Productivity Budgets

Table 1 shows budgets for high-productivity farmland in central Illinois. Three other sets of budgets are available in the "2018 Crop Budgets": 1) Northern Illinois, 2) Central Illinois farmland with low productivity, and 3) Southern Illinois. In all cases, budgets are given for corn-after-soybeans, corn-after-corn, soybeans-after-corn, soybeans-after-soybeans, and wheat. Double-crop soybean budgets are provided for central and southern Illinois.

For all regions, budgets are based on historical values from grain farms enrolled in Illinois Farm Business Farm Management (FBFM). Historical values for the regions are shown in "Revenues and Costs for Corn, Soybeans, Wheat, and Double-Crop Soybeans", a publication available in the management section of *farmdoc*. Historical values in FBFM are updated to current conditions based on changes in commodity and input prices.

Budgets do not represent a specific production system. Rather they represent the average of all costs and revenues of farms enrolled in FBFM.

Yields Used in Budgets

Corn yield used in the corn-after-soybeans budget is 208 bushels per acre. This yield is a trend yield for high-productivity farmland in central Illinois. The trend yield represents an expectation of yield for the coming year. As always, actual yield will vary from the trend yield based on conditions experienced during the growing season. Note that the 208 bushel yield is well below yields in recent years. Corn yields on high-productivity farmland were 228 bushels per acre in 2016 and are projected to be 226 bushels per acre in 2017. Corn yield in 2015 was 200 bushels per acre, below the 208 bushel per acre yields in 2018 budgets.

Table 1. 2018 Crop Budgets, Central Illinois -- High Productivity Farmland

	Corn-after-Soybeans	Corn-after-Corn	Soybeans-after-Corn	Soybeans-after-Soybeans	Wheat	Double-Crop Soybeans
Yield per acre	208	198	63	60	75	40
Price per bu	$3.60	$3.60	$9.60	$9.60	$4.70	$9.60
Crop revenue	$749	$713	$605	$576	$353	$384
ARC/PLC	0	0	0	0	0	0
Crop insurance proceeds	0	0	0	0	0	0
Gross revenue	**$749**	**$713**	**$605**	**$576**	**$353**	**$384**
Fertilizers	$129	$139	$36	$36	$76	$23
Pesticides	65	71	39	44	27	40
Seed	117	117	73	78	50	48
Drying	11	10	1	1	1	0
Storage	10	10	8	8	1	1
Crop insurance	21	21	14	14	9	4
Total direct costs	**$353**	**$368**	**$171**	**$181**	**$164**	**$116**
Machine hire/lease	$12	$12	$11	$11	$18	$11
Utilities	5	5	4	4	7	5
Machine repair	20	20	19	19	33	25
Fuel and oil	14	14	12	12	20	20
Light vehicle	1	1	1	1	2	2
Mach. depreciation	62	62	55	55	49	27
Total power costs	**$114**	**$114**	**$102**	**$102**	**$129**	**$90**
Hired labor	$17	$17	$16	$16	$15	$12
Building repair and rent	4	4	4	4	3	6
Building depreciation	12	12	10	10	8	5
Insurance	11	11	11	11	5	0
Misc	8	8	8	8	9	0
Interest (non-land)	15	15	13	13	14	9
Total overhead costs	**$67**	**$67**	**$62**	**$62**	**$54**	**$32**
Total non-land costs	**$534**	**$549**	**$335**	**$345**	**$347**	**$238**
Operator and land return	**$215**	**$164**	**$270**	**$231**	**$6**	**$146**

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Corn yields in the corn-after-corn budgets are ten bushels lower than corn-after-soybean budgets, representing a typical yield drag from corn following corn. The yield drag can vary from year-to-year, with a much larger yield drag often occurring in stressful years like drought years.

Soybean yield used in the soybean-after-corn budget is 63 bushels per acre. Similar to corn yield, the 63 bushel yield is a trend yield. Similar to corn, recent yields have been higher than the 63 bushel trend yield. Soybean yields were 66 bushels per acre in 2015, 69 bushels per acre in 2016, and 67 bushels per acre in 2017.

Soybean yield used in soybeans-after-soybeans is 60 bushels per acre, 3 bushels lower than the soybeans-after-corn yield. This lower yield represents a typical yield drag associated with soybeans following soybeans.

Commodity Prices

A $3.60 per bushel corn price and $9.60 per bushel soybean price are used in budgets. These represent current fall delivery bid prices for the two crops. Obviously, corn and soybean prices can vary from those shown in budgets.

The 2018 projected corn price is higher than those of recent years. Corn prices received by central Illinois farmers averages $3.47 in 2017 and are projected to average $3.50 for 2018. The 2017 soybean price is near the same in recent years. Central Illinois farmers received $9.50 per bushel in 2016 and are projected to average $9.50 in 2017.

Non-land costs

Non-land costs shown in Table 1 are lower than those in recent years as continued costs reductions are projected. For example, the $534 per acre estimate of non-land costs for corn-after-soybeans is about $10 per acre less than non-land costs in 2017.

Operator and land returns

Operator and land return represents a return to the farmer and landowner. If farmland is cash rent, the cash rent would be subtracted from operator and land return. Take the operator and land return of $215 per acre for corn-after-soybeans and a cash rent of $260 per acre, close to the average for high-productivity farmland in central Illinois. In the case, the farmer's return is -$45 per acre (-$45 = $215 operator and land return - $260 can rent).

Negative returns are projected for cash rented farmland at average cash rents, given that yields are at trend levels and prices are near fall delivery prices. For farms to be profitable on corn-after-soybeans, either yields or prices must be higher. Take a $300 operator and land return as an example. A $300 return would allow payment of a $260 cash rent and a modest return for the farmer. For corn-after-soybeans to generate a $300 return, yields would have to be 231 bushels per acre, given that all other prices and costs are as shown in the budget. That yield is close to the exceptional yields of 2016 and 2017. Alternatively, a $4.00 corn price would generate a $300 per acre return given a 208 bushel per acre yield and $534 of non-land costs shown in the budgets. As noted previously (farmdocDaily, January 30, 2018), either exceptional yields or above $4.00 corn prices are needed for reasonable returns in 2018.

Corn Versus Soybeans

Soybeans are projected to be more profitable than corn, similar to results for all years since 2013 (*farmdoc daily*, July 25, 2017). Soybeans-after-corn is projected to have a $270 per acre return compared to $215 per acre of corn-after-soybeans.

Soybeans-after-soybeans is projected to have $231 per acre of returns, a $16 higher return than corn-after-soybeans. The soybeans-after-soybeans has a 3 bushel per acre lower yield than does soybeans-after-corn and costs that are $10 higher on a per acre basis. While higher, the soybeans-after-soybeans return may not be large enough to warrant planting soybeans versus planting corn. Soybeans-after-soybeans represents a higher risk level than is represented by a corn-soybeans rotation. The soybeans-after-soybeans yield drag may be more significant in a year with an adverse growing season.

Corn-after-corn has a $164 operator and land return, significantly lower than $270 return for soybeans-after-corn. Corn-after-corn has a 10 bushels lower yield than corn-after-soybeans and $13 per ace higher costs. It seems difficult to economically justify planting corn-after-corn.

Summary

Budgets for 2018 depict a low to negative return environment for corn and soybean production in 2018. These projections do not differ greatly from projections made in 2016 and 2017. Similar to 2016 and 2017, high yields again could lead to higher returns. Alternatively, higher prices could occur. However, neither of those situations are foregone conclusions. A very poor income will result if prices do not increase and yields are close to historically expected levels.

Soybeans are projected to be more profitable than corn. Again, these projections do not differ from those in recent years. Illinois farmers have been shifting to more soybeans. In central Illinois, additional risks associated with soybeans-after-soybeans production may not outweigh the additional projected returns from soybeans-after-soybeans. Perhaps more important, corn-after-corn does not seem like an economical alternative in 2018.

References

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