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Weekly Farm Economics: One Last Look at 2019 Crop Budgets Before Planting

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Hopefully, planting proceeds quickly as weather forecasts suggest drying weather this week. Using up-to-date prices, we take one more look at 2019 corn and soybean budgets before planting commences. Not much has changed since the initial release of 2019 budgets in September: Returns are still projected to be low, and soybeans have higher projected returns more than corn. Managing liquidity will be key. Lowering nitrogen application rates to University-recommended levels to reduce costs is warranted.

2019 Corn and Soybean Budgets

Table 1 shows corn and soybean budgets for central Illinois farmland. The left three columns show budgets for corn-after-soybeans, corn-after-corn, and soybeans-after-corn on high-productivity farmland. The right three columns show those budgets for low-productivity farmland. As their names imply, high-productivity budgets have higher expected yields than low-productivity budgets. For example, the expected yield for corn-after-soybeans is 213 bushels per acre for high-productivity farmland, 16 bushels per acre higher than low-productivity budgets yield of 197 bushels per acre.

Budgets in Table 1 come from the 2019 Illinois Crop Budgets released in September 2018. In most years, several releases occur after September to reflect changes in market conditions. This year, however, no revisions have occurred as markets have been relatively stable. The budgets in Table 1 have three, relatively small changes from the September release:

1. Corn prices are $3.50 in Table 1 as compared to $3.60 in the September 2018 version.
2. Soybean prices are $8.60 in Table 1 as compared to $8.50 in the September 2018 version.
3. Fertilizer costs are higher. For example, corn-after-soybeans for high-productivity farmland is $150 per acre in Table 1 as compared to $145 per acre in the September 2018 version.

Table 1. 2019 Crop Budgets, Central Illinois

	High-Productivity Farmland			Low-Productivity Farmland		
	Corn-after-Soybeans	Corn-after-Corn	Soybeans-after-Corn	Corn-after-Soybeans	Corn-after-Corn	Soybeans-after-Corn
Yield per acre	213	203	63	197	187	60
Price per bu	$3.50	$3.50	$8.50	$3.50	$3.50	$8.50
Crop revenue	$746	$711	$536	$690	$655	$510
ARC/PLC	7	7	7	6	6	6
Crop insurance proceeds	0	0	0	0	0	0
Gross revenue	**$753**	**$718**	**$543**	**$696**	**$661**	**$516**
Fertilizers	$150	$160	$50	$150	$160	$45
Pesticides	75	81	45	75	81	46
Seed	114	114	73	120	120	62
Drying	18	17	1	20	20	1
Storage	15	15	8	12	12	5
Crop insurance	24	24	16	22	22	15
Total direct costs	**$396**	**$411**	**$193**	**$399**	**$415**	**$174**
Machine hire/lease	$13	$13	$14	$12	$12	$10
Utilities	5	5	4	6	6	5
Machine repair	24	24	20	25	25	21
Fuel and oil	17	17	15	14	14	14
Light vehicle	1	1	1	1	1	1
Mach. depreciation	63	63	54	64	64	55
Total power costs	**$123**	**$123**	**$108**	**$122**	**$122**	**$106**
Hired labor	$18	$18	$17	$15	$15	$14
Building repair and rent	5	5	4	5	5	4
Building depreciation	12	12	11	13	13	11
Insurance	10	10	10	10	10	10
Misc	9	9	9	8	8	8
Interest (non-land)	18	18	15	18	18	14
Total overhead costs	**$72**	**$72**	**$66**	**$69**	**$69**	**$61**
Total non-land costs	**$591**	**$606**	**$367**	**$590**	**$606**	**$341**
Operator and land return	**$162**	**$112**	**$176**	**$106**	**$55**	**$175**

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Available in the management section of farmdoc (www.farmdoc.illinois.edu).

Source: Data from Illinois Farm Business Farm Management.

In Table 1, corn and soybean prices are at the fall delivery prices, which are slightly different from the September 2018 projected prices. In September 2018 budgets, fertilizer costs were anticipated to be higher in 2019 than in 2018. Still, fertilizer prices rose more than anticipated in September.

Operator and land returns shown in Table 1 equal gross revenue minus non-land costs, and represent a return to both farmland and the operator. If farmland is cash rented at $250 per acre, an operator and land return of $200 implies an -$50 per acre return to the farmer (-50 = $200 operator and land return - $250 cash rent).

Corn versus Soybean Returns

The 2019 Prospective Plantings released by the National Agricultural Statistical Service (NASS) on March 29th suggests that US corn acres will increase by 4 percent in 2019 over 2018 levels, while soybean acre will decrease by 5 percent. For Illinois, NASS surveys suggest relatively modest changes in acres. From 2018 to 2019, Illinois corn acres are projected to increase by 200,000 acres to 11.2 million acres. Illinois soybean acres are projected to decrease by 300,000 acres to 10.5 million acres.

For both high and low productivity budgets in Table 1, soybeans are projected to be more profitable than corn. For low-productivity farmland, soybeans have a projected operator and land return of $175 per acre compared to $106 per acre for corn-after-soybeans. Given these projections, large shifts in acreage from soybeans to corn do not appear likely in Illinois, as suggested by NASS plantings forecasts.

Low Operator and Land Returns

Operator and land returns are projected to be well below average cash rent levels. Average cash rents are projected at $260 for high-productivity farmland and $220 for low-productivity land, resulting in losses to the farmer. These low returns have been a consistent theme since the release of 2019 budgets (see *farmdoc daily*, September 18, 2018; February 19, 2019). Current market prices have not changed the outlook.

Market conditions could change, perhaps leading too much higher returns. In recent years, most of Illinois has experienced high yields *(farmdoc daily*, February 5, 2019; April 9, 2019; April 16, 2019). A continuation of those high-yields into 2019 would lead to higher returns.

Yields in Table 1 are at trend levels. For high-productivity farms in central Illinois, Illinois Farm Business Farm Management reported 2018 average yields of 237 bushels for corn and 74 bushels for soybeans. For corn-after-soybean, replacing the 213 trend yield with a 237 yield increases operator and land returns from $162 per acre to $246 per acre. For soybeans-after-corn, replacing the 63 trend yield with a 74 yield increases returns from $176 per acre to $269 per acre. Higher yields with no deterioration in prices will result in higher returns.

Cash Flow

Table 1 includes all costs that appear on an income statement, including non-cash costs such as machinery and building depreciation. For high-productivity farmland, depreciation totals $75 per acre for corn-after-soybeans and $65 per acre for soybeans. If a farmer makes no capital purchases, cash flows from budgets will increase to $237 per acre for corn-after-soybeans ($162 operator and land return + $75 depreciation) and $241 per acre for soybeans. The key to having these “higher” cash returns is not to make capital purchases. Forgoing capital purchases this year will aid in maintaining the liquidity position of farms.

Fertilizer Costs

Fertilizer prices have risen dramatically in 2019, particularly for nitrogen fertilizers. According to Agricultural Marketing Service (AMS), an agency of the U.S. Department of Agriculture, anhydrous ammonia prices average $616 per acre in the first part of April (Illinois Production Cost Report), over $130 per ton higher than 2018 average prices.

Fertilizer costs for corn were implied for 2019 based on average fertilizer prices since October as reported by AMS: $577 per acre for anhydrous ammonia, $517 per ton for DAP, and $391 per ton for potash (see *farmdoc daily*, July 11, 2017 for more detail on procedures). These prices suggest a $129 fertilizer cost for corn in central Illinois, up by $18 per acre over 2018 costs (see Table 2). The procedure used to imply fertilizer costs has been below actual fertilizer costs in recent years by about $20 per acre (see Table 2). Adding $20 of costs to the $129 implied level results in a rounded estimate of fertilizer costs for corn at $150 per acre.

Table 2. Fertilizer Prices and Costs, Illinois, 2009 through 2018 Actual, 2019 Projected

Year	Fertilizer Prices [1]			Implied Fertilizer Costs Corn [2]	Central Ill. Fertilizer Costs Corn[3]	Actual Minus Implied Costs[4]
	Anhydrous Ammonia	Diammonium Phosphate	Potash			
	$/ton	$/ton	$/ton	$/acre	$/acre	
2009	808	725	847	194	185	-9
2010	506	454	511	121	122	1
2011	773	673	570	173	159	-14
2012	846	665	639	183	200	17
2013	879	611	578	179	193	14
2014	691	545	461	147	171	24
2015	729	559	479	153	166	13
2016	608	489	378	129	154	25
2017	509	425	318	109	136	27
2018	480	462	341	111	131	20
2019P	577	517	391	129		

[1] Prices taken from Illinois Production Cost Report produced by Agricultural Marketing Service, U.S. Department of Agriculture. They are average prices from October in the year proceeding production to June in the year of production.

[2] Calculated given applications of 215 pounds of anhydrous ammonia, 190 pounds of DAP, and 90 pounds of potash.

[3] Fertilizer costs taken for corn grown in Central Illinois on high-productivity farmland as reported by Illinois FBFM.

[4] Actual fertilizer costs minus implied fertilizer costs.

One reason for actual costs being higher than implied costs is some farmers may use rates higher than recommended levels (see *farmdoc daily*, March 19, 2019). Given low projections, reducing rates to University of Illinois recommendation seems prudent.

Summary

In recent months, not much has changed in 2019 outlook and very low returns could occur. Maintaining liquidity in this time period is crucial. Cutting fertilizer rates to near University recommendations seems prudent.

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