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Weekly Farm Economics: What Could Change the 2019 Corn and Soybean Return Outlook?

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The outlook for 2019 corn and soybean returns is lower than returns in recent years (see *farmdoc daily*, September 18, 2018). However, higher returns are possible under other economic and agronomic situations than those used to make projections. Meeting the following two conditions could result in 2019 returns being similar to the levels experienced from 2015 through 2017: 1) corn and soybeans continue to yield above trend, similar to the past three years, and 2) some other "price enhancement" occurs. This price enhancement could be the end of the trade dispute with China, generally higher prices because of other supply/demand conditions, or a continuation of the Market Facilitation Program. A return to trend or below yields would have the opposite effect, resulting in extremely low returns.

Outlook for 2019

Projected corn and soybean budgets for 2019 are shown in Table 1, along with average actual results for 2015 through 2017, and projections for 2018. These results and budgets are representative of high-productivity farmland in central Illinois. Actual results for 2015 through 2017 are summaries from grain farms enrolled in Illinois Farm Business Farm Management (FBFM). Details on these projections are available in *Revenue and Costs for Illinois Grain Crops*, a publication available in the management section of *farmdoc*.

Table 1. Results and 2019 Budgets for High-Productivity Farmland in Central Illinois

	Corn			Soybeans		
	Avg (2015-17)	2018P	2019P	Avg (2015-17)	2018P	2019P
Yield per acre	218	233	210	68	70	63
Price per bu	$3.54	$3.65	$3.60	$9.63	$8.50	$8.50
	$/acre	$/acre	$/acre	$/acre	$/acre	$/acre
Crop revenue	$771	$850	$756	$655	$595	$536
ARC/PLC or ACRE	19	0	7	19	0	7
Market Facilitation Program	0	2	0	0	116	0
Crop insurance proceeds	13	0	0	4	0	0
Gross revenue	**$803**	**$853**	**$763**	**$678**	**$711**	**$543**
Fertilizers	152	147	145	50	41	46
Pesticides	68	68	75	41	44	45
Seed	116	115	114	74	73	73
Drying	15	15	18	1	1	1
Storage	13	13	15	8	8	8
Crop insurance	23	23	23	15	16	16
Total direct costs	**$387**	**$381**	**$390**	**$189**	**$183**	**$189**
Machine hire/lease	12	12	12	12	14	14
Utilities	5	5	5	4	4	4
Machine repair	23	24	24	20	20	20
Fuel and oil	15	15	17	13	13	15
Light vehicle	1	1	1	1	1	1
Mach. depreciation	65	64	63	57	54	54
Total power costs	**$121**	**$121**	**$122**	**$107**	**$106**	**$108**
Hired labor	17	17	17	17	17	17
Building repair and rent	5	5	5	4	4	4
Building depreciation	12	12	12	10	11	11
Insurance	10	10	10	10	10	10
Misc	8	8	8	8	9	9
Interest (non-land)	14	16	18	12	14	15
Total overhead costs	**$66**	**$68**	**$70**	**$61**	**$65**	**$66**
Total non-land costs	**$574**	**$570**	**$582**	**$357**	**$354**	**$363**
Operator and land return	**$229**	**$283**	**$181**	**$321**	**$357**	**$180**
Cash rent	273	264	261	273	264	261
Farmer return	**-$44**	**$19**	**-$80**	**$48**	**$93**	**-$82**

Returns for farmland that is 50% in corn, 50% in soybeans

	Avg (2015-17)	2018P	2019P
Operator and land return	$275	$320	$180
minus cash rent	$273	$264	$261
Farmer return	$2	$56	-$81

Source: Data are from Illinois Farm Business Farm Management. See "Revenue and Costs for Illinois Grain Crops" in management section of farmdoc for more detail.

At the bottom of Table 1, return measures are shown for the situation in which corn and soybeans are grown in rotation, resulting in 50% of farmland in corn and 50% in soybeans, a typical rotation in central Illinois. Operator and land return represents a return that is split between the farmer and landowner. In a cash rent situation, the landowner receives a cash rent, and the farmer return equals the operator and land return minus cash rent. The farmer returns in Table 1 are given for a cash rent arrangement where the cash rent is at the average for high productivity farmland in central Illinois: $273 per acre for 2015-17, a projected $264 per acre for 2018, and an expected $261 per acre for 2019.

From 2015 to 2017, operator and land return on farmland that was 50% corn and 50% soybeans averaged $275 per acre, the cash rent was $273, and resulting farmer return was $2 per acre. These are extremely low farmer returns, unlike those in other recent periods of history (see *farmdoc daily*, August 22, 2017), resulting in deterioration of working capital on many Illinois farms (*farmdoc daily*, July 20, 2018). A continuation of these low returns would lead to continued downward pressure on cash rents. For 2018, operator and farmland return are projected at $320 per acre, higher than the $275 per acre average for 2015-2017. Higher returns are projected for 2018 due to three key factors:

- Market Facilitation Program (MFP) payments. MFP payments are expected to total $1 per acre for corn and $116 per acre for soybeans. These payments are $.01 per bushel for corn and $1.65 per bushel on soybeans, the full loss estimated by U.S.D.A. as associated with trade disruptions (for more detail, see *farmdoc daily*, August 28, 2018). So far, farmers can receive a "first" payment of $.005 per bushel for corn and $.825 per bushel for soybeans. Sonny Perdue, the Secretary of Agriculture, announced that a second round of MFP payments would be coming in December and that the second rates would likely be the same as the first rates (see *Successful Farming*). Hence, projections in Table 1 include the full rate in determining returns. With the first round of payments ($.005 per bushel for corn and $.825 per bushel for soybeans), operator and land return was estimated at $291 per acre. The second round of payments increases operator and land return by $29 per acre to $320 per acre.
- Exceptional yields across central Illinois. Current 2018 projections have yields in central Illinois at 233 bushels per acre for corn and 70 bushels per acre for soybeans, well above trend yields for this region.
- Significant pre-harvest hedging on soybeans. Both the corn and soybean budgets for 2018 have prices well above current cash bids. For example, soybean price for 2018 is projected average $8.50 per bushel while current cash bids are at or below $8.00 per bushel. The higher price is based on a significant portion of the 2019 crop being priced in the spring.

The 2018 operator and land return of $320 per acre less the average cash rent of $264 per acre results in a $56 per acre farmer return from cash rented farmland.

Projections are much lower for 2019, with operator and land return projected at $180 per acre, a $140 drop from the 2018 projection. At an average cash rent of $261 per acre, farmer return would be -$81 per acre. The -$81 per acre projected loss for 2019 more than offsets the $56 positive return in 2018. Losses at this level would result in serious deterioration of financial position on many farms.

Four items cause a sharp decline in 2019 projected returns:

- Yields are projected at trend yields for 2019. The 2019 projected yields are 210 bushels per acre for corn and 63 bushels per acre for soybeans. Both these yield levels are well below the above trend yields experienced in recent years.
- Soybean prices are projected at $8.50 per bushel, well below the $9.63 per bushel average from 2015 to 2017. Much of this decline in prices can be attributed to trade disputes occurring between the United States and China.
- No MFP payments. The MFP payments for 2018 production will add greatly to 2018 incomes.
- Rising costs. Energy and fertilizer prices have increased resulting in higher corn and soybean costs.

Positive Changes to Outlook

A number of events could result in significantly higher returns in 2019. In the following scenarios, the projected returns will be compared to the $261 per acre average cash rent that is projected for 2019. If returns are well below this average rent, significant financial drains will occur on farms, particularly those with a large portion of cash rented farmland.

Continued Above Trend Yields: Average yields in Illinois have been above trend since the drought of 2012, with yields above trend particularly pronounced for soybeans (see *farmdoc daily*, September 5, 2018). Many are speculating that new, higher plateaus have been reached. This is a good possibility; however, history strongly suggests that downward yield shocks will occur in the future.

Operator and land returns for a rotation of 50% corn and 50% soybeans are $180 per acre with trend yields of 210 bushels per acre and 63 bushels per acre. Yields above trend are estimated at 233 bushels per acre for corn and 70 bushels per acre for soybeans, the same as projected yields for 2018. Operator and land returns with above-trend yields are $251 per acre, $71 per acre higher than with trend yields.

In Table 2, the $180 per acre return in the "Base case" row and the "Trend Yield" column comes directly from the budgets in Table 1. The $251 per acre return for the "Base case" and "Above-Trend Yield" entry represents the case of price and yields the same as in Table 1, but with yields set at 2018 levels: 233 bushels per acre for corn and 70 bushels for soybeans. The base scenarios with "trend yields" and "above-trend yields" both result in operator and land return below the $261 per acre average cash rent.

Table 2. Operator and Land Return Under Differing 2019 Scenarios[1]

	Yield Scenario[2]	
	Trend Yields	Above-trend Yields
Base case[3]	$180	$251
Positive change		
Trade dispute with China ends (Soybean price -- $9.20 per bushel)	$202	$276
2019 MFP payment (Corn -- $.005 per bushel, Soybeans -- $.815 per bushel)	$207	$281
Higher prices (Corn -- $3.90 per bushel, Soybeans -- $9.20 per bushel)	$223	$299
Negative change		
Below trend yield[3] (Corn -- 200 bushels per acre, Soybeans -- 60 bushels per acre) (No increase in prices)	$150	$150
Lower Prices (Corn -- $3.40 per bushel, Soybeans -- $8.20 per bushel)	$150	$218
Adverse Pest Event ($15 per acre in additional costs)	$165	$236

[1] All items are as shown in budget except as denoted in footnotes.

[2] Trend yields are 210 bushels per acre for corn and 63 bushels per acre for soybeans. The "above trend yields" scenario is 233 bushels per acre for corn and 70 bushels per acre for soybeans.

[3] Yields and returns are the same for both "trend yield' and "above-trend yield" cases.

Trade Dispute with China Ends: Negotiations between the U.S. and China could result in the elimination of Chinese agricultural tariffs placed on U.S. agricultural products. This elimination likely would increase soybean prices. We estimated returns with a $9.20 soybean price rather than the $8.50 price used in 2019 budgets. Returns under trend yields increase to $202 per acre, up by $22 per acre from the $180 return for the base case. With above trend yields, returns climb to $276 per acre (see Table 2). This $276 projected return would result in slightly positive farmer returns given a $261 per acre cash rent.

Continuation of Market Facilitation Program (MFP) into 2019: The Trump administration has indicated that MFP will not continue into 2019. However, there is always a possibility that some extension could occur, particularly given the program structure and the possible longevity of the trade dispute. A 2019 MFP payment was included at the same levels at the first MFP payment in 2018 ($.005 per bushel on corn and $.825 per bushel on soybeans.

With this 2019 MFP payment, operator and land returns increase by $27 per acre to $207 per acre under trend yields (see Table 2). This level is below the average projected cash rent of $261 per acre. With above trend yields, operator and land returns increase to $281 per acre. Above trend yields and an MFP payment would result in returns being above the average cash rent.

Higher Prices: Higher prices could occur for several reasons not related to the trade dispute in China. For example, Brazil could have poor weather resulting in a poorer crop.

Prices of $3.90 per bushel for corn and $9.20 for soybeans were used in budgets. Operator and land return with higher prices increases by $43 per acre to $223 per acre, still below the average cash rent of $261 per acre. With above trend yields, returns increase to $299 per acre, above the $261 per acre cash rent.

Negative Impacts

Events could also occur that have a negative impact, resulting in lower returns than projected in budgets.

Below-trend yields: It is also quite possible that yields are below-trend. Below-trend yields could occur in a non-increasing price environment if others areas of the Corn Belt or other growing areas in the world are experiencing good growing conditions. To evaluate this possibility, returns were generated with below-trend yields of 200 bushels per acre for corn and 60 bushels per acre for soybeans. This results in returns of $150 per acre, over $100 per acre below the average cash rent.

This is one of the worst case scenarios for Corn Belt returns. Even with losses exceeding $100 per acre on cash rented land, yields and prices in this scenario are not low enough to trigger crop insurance or commodity title payments. Returns would be exceptionally low leading to large losses. Significant erosion would occur in the financial position of farms.

Lower Prices: Lower prices could result for any number of reasons. For example, South America could have an exceptional growing season. Lower prices were budgeted as $3.40 for corn and $8.20 for soybeans. Under trend yields, operator and land return is $150 per acre. With above-trend yields, operator and land return is $218 per acre.

Adverse Pest Events Requiring Additional Rescue Treatments: Pest events could occur resulting in the need for additional rescue sprays. An additional cost of $15 per acre was included in budgets. Operator and land returns with trend yields are $165 per acre, and $236 per acre with above-trend yields.

Summary

Current projections suggest that operator and land return will be positive in 2018 on many farms in central Illinois. Market Facilitation Program payments are a major reason why returns are positive. Exceptional yields and some pre-harvest hedging also play a significant role in higher returns.

For 2019, operator and land returns are projected to be below average cash rents even if yields continue to be above-trend, resulting in some erosion in financial positon of farms. Our projections suggest that above-trend yields and some sort of ”price enhancement” are needed to have operator and land returns above an average cash rent.

Financial projections with trend or lower yields are sobering. Under these “lower” yields scenario, it is difficult to build a scenario where operator and land returns are high enough to cover cash rents. When trend yields again occur, a great deal of financial stress will be felt in Illinois and across the Corn Belt more generally, particularly if there is no significant positive price response to those lower yields.

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