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Weekly Farm Economics: What We Know About Income Outlook for Crop Farms Given COVID-19

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COVID-19 has reduced grain farm income outlook for 2020. Expected revenue from remaining old crop sales and projected revenue for 2020 are reduced. Somewhat mitigating these reductions are potentially higher payments from commodity title programs. There also is a chance that some input prices will fall, particularly fuel and nitrogen fertilizer prices. Still, income outlook for grain farms has darkened since the introduction of COVID-19 control measures.

Financial Position before COVID-19

The financial position of Illinois grain farms at the end of 2019 can be summarized as follows:

- On average, net incomes on Illinois grain farmers were down considerably in 2019 as compared to 2018 levels. Still, 2019 net incomes were near 5-year averages, and would have been much worse without Market Facilitation Program (MFP) payments, crop insurance coverage, and additional assistance on prevent plant acres through Wildfire and Hurricane Indemnity Program Plus (WHIP+) payments. These payments kept incomes from being at very low levels.
- There were geographical areas of lower-than-average incomes, corresponding to areas where prevent plant was more prevalent (see Figure 1 in *farmdoc daily* released on August 15, 2019). Areas with large prevent plant also tended to have lower yields. Northern Illinois and parts of southern Illinois had lower incomes than some areas in central Illinois.
- On average, debt-to-asset ratios at the end of 2019 were roughly the same as at the end of 2018. Lower income areas had more deterioration than other areas.

- On average, working capital positions remained the same at the end of 2019 versus the end of 2018. Diversity existed across Illinois based on more prevent plant and lower yields.

Before COVID-19, concerns existed about 2020 cash flows and income. A combination of above-trend yields or additional government aid needed to occur for 2020 incomes to reach levels where financial positions on most farms remain stable. However, these results were based on an average corn price in the high $3 range and an average soybean price near $9 per bushel (see *farmdoc daily*, January 16, 2020), which may represent optimistic expectations in the current environment.

COVID-19 impacts on 2020 incomes

COVID-19 control measures lower the possibilities that corn prices will average in the high $3 per bushel range, and soybean prices will be near $9 per bushel. If lower prices result from COVID-19, the combination of above-trend yields or additional government aid will be even more crucial for 2020 incomes to be high enough for most farms to avoid further financial deterioration.

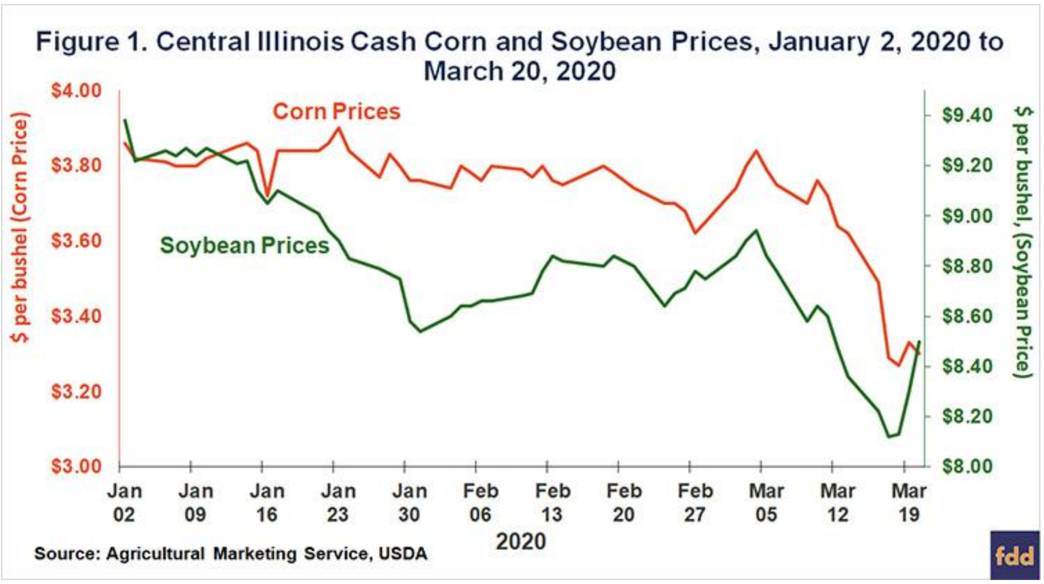
Impact of COVID-19 control measures on incomes include:

- Selling prices for 2019 old crop,
- Payment levels for 2019 commodity title programs,
- Prices and crop insurance payments for the 2020 crop,
- Payment levels for 2020 commodity title programs, and
- Changes in input prices

Selling Price of Old-2019 Crop

Many farmers still have a significant amount of crop produced in 2019 that has not been priced. Marketing weights from previous years give some indication of thre crop remaining to be priced. These marketing weights indicate the typical timing of cash receipts on crops. For the past four years, Illinois farmers have received 39% of their cash receipts from corn produced in the previous year in March through August. For soybeans, 21% of cash receipts occurred from March through August. Unpriced percentages likely are below 39% for corn and 21% for soybeans, as forward contract grain enters into marketing weights when it is delivered. Still, a sizable proportion of old crop likely needs to be priced.

Since COVID-19 measures have been introduced, cash prices for both corn and soybeans have fallen (see Figure 1). From January 2 through February 28, cash corn prices in central Illinois averaged $3.78 per bushel (data from Agricultural Marketing Service, USDA). At the end of last week, corn prices in central Illinois were $3.27 on Wednesday (3/18), $3.33 on Thursday (3/19), and $3.30 on Friday (3/20), to average $3.30 per bushel at the end of the last week. From January and February, corn prices have declined $.48 per bushel, or 13%. Assuming that 39% of 2019 crop needs to be marketed, a $.48 per bushel decline would reduce income by $35 per acre ($.48 decline x 191 average 2019 corn yield in Illinois x 39% to be marketed).



Soybean prices averaged $8.89 per bushel from January 2 to February 28 in central Illinois. Prices last week were $8.13 on Wednesday (3/17), $8.30 on Thursday (3/19), and $8.50 on Friday (3/20), for an average of $8.31 per bushel. From the January-February average, soybean prices fell $.58 per bushel, or a decline of 7%. Assuming that 21% of the soybean crop needs to be marketed, $.58 per bushel soybean price decline would reduce income by $19 per acre ($.58 price decline x 58 average 2019 soybean yield in Illinois x 21% to be marketed).

The paths of cash corn and soybean prices in the future are uncertain. Obviously, marketing old crop in this environment presents challenges, for which we have no easy answers. It is safe to say that expected cash flow from old crop has been reduced.

Payment Levels on 2019 Commodity Title Price Programs

Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC) programs could make larger payments for the 2019 production year as Market Year Average (MYA) prices still are in the process of being determined. These commodity title payments will be made in October 2020. Prospects for PLC and ARC are discussed in the following sub-sections.

PLC for corn: The 2019 marketing year for corn runs from September 2019 to August 2020. In its March *World Agricultural Supply and Demand Estimates* (WASDE) report, the Office of the Chief Economist projected the 2019 MYA price at $3.80 per bushel for corn. Lower cash prices for the remainder of the year could result in the MYA price falling below the $3.70 reference price, potentially generating PLC payments for corn. Given usual marketing patterns, cash prices would need to average near $3.58 from March to August before the 2019 MYA price falls below the $3.70 effective reference price. There is a possibility that this could happen. If national prices average $3.30 for the remainder of the marketing year (March through August), the MYA price for 2019 would average $3.60, resulting in a $.10 payment rate per PLC bushel. A farm with a 150 bushel per acre PLC yield would have a $13 payment per base acre (85% x 150 PLC yield x $.10 prospective payment rate). Note that base acres will not be the same as 2019 planted acres.

ARC-CO for corn: Falling MYA prices could result in higher ARC-CO payments for corn. A number of counties in Illinois had projected payments for 2020 based on information available in February (see farmdoc daily, February 21, 2020). More counties could have projected payments if MYA prices decline, with the size of the impact varying by county. For counties not previously projected to receive a payment with yields well above benchmark yields, price declines will not necessarily result in ARC-CO payments. For counties already expecting low payments, a decrease in price will increase the payment fairly directly. The increase will equal the 2019 county yield times the price decline times .85. This increase will continue up to the ten percent max payment, which equals roughly $45 through $70 per base acre in Illinois.

PLC for soybeans: The 2019 marketing year for soybeans runs from September 2019 to August 2020. In its March WASDE report, the Office of the Chief Economist projected the 2019 MYA price at $8.70 per bushel for soybeans. National cash price would have to average around $7.65 per bushel from March to August for the 2019 MYA price to equal $8.40. There is little possibility of prices falling far enough during the remaining months of the year to trigger payments.

ARC-CO for soybeans: There were a large number of counties in Illinois already projected to receive 2019 ARC-CO payments for soybeans (see farmdoc daily, February 21, 2020). Impacts of further price declines will again vary across counties. For counties not previously projected to receive a payment with yields well above benchmark yields, price declines will not necessarily result in ARC-CO payments. For counties already expecting low payments, a decrease in price will increase the payment fairly directly. The increase will equal the 2019 yield times the price decline times .85. This increase will continue up to the ten percent max payment, which equals roughly $30 through $50 per base acre in Illinois.

ARC-IC: Most farmers that enrolled farms in ARC-IC selected farms to maximize expected payments. Declines in MYA prices will increase the size of ARC-IC payments so long as the farm does not reach the maximum ARC-IC payment. Once over the maximum, ARC-IC payments will not increase. For example, farms that only enrolled Farm Service Agency (FSA) farms that were entirely prevent plant will not see increased ARC-IC payments.

Crop Revenue and Insurance Payments on 2020 Crop

The 2020 projected prices for crop insurance sold in Midwest states were $3.88 per bushel for corn and $9.17 per bushel for soybeans. Both corn and soybean projected prices were below 2019 projected prices, indicating that the safety net from crop insurance in 2020 is below that offered in 2019. The $3.88 projected price for corn in 2020 is $.12 lower than the $4.00 projected price for 2019, a 2% decline. The $9.17 soybean projected price for 2020 is $.35 per bushel below the $9.54 projected price for 2019.

The March 23 settlement price of the Chicago Mercantile Exchange (CME) contract for December delivery on corn is $3.64 per bushel. A $3.64 price would indicate a fall in expected prices of $.24 per bushel from the $3.88 level in February and would result in cash prices in central Illinois near $3.40 for corn near harvest. A $3.64 harvest price would not generate a Revenue Protection (RP) crop insurance payment without a yield decline. If actual yields are at guarantee levels, harvest prices must fall below $3.30 per bushel before an 85% RP policy would generate a payment.

The March 23 settlement price of the CME contract for November on soybeans is $8.72 per bushel. An $8.72 price is a $.45 decline below the 2020 projected price. Forward bids on soybeans in central Illinois are near $8.40 per bushel. An $8.72 harvest price would not generate an RP payment without a yield decline. If actual yields are at guarantee levels, harvest prices must fall below $7.80 per bushel before an 85% RP policy would generate a payment.

Overall, current levels of futures prices would indicate lower cash prices for 2020, near $3.40 for corn and $8.40 for soybeans for central Illinois. Crop insurances still would not generate payments at current futures contract trading levels without significant yield declines. COVID-19 has resulted in expected price declines of $.24 per bushel for corn and $.45 per bushel for soybeans. That would indicate a decline in revenue of $45 per acre for corn ($.24 price decline x 190 expected yield) and $25 per acre for soybeans ($.45 price decline x 55 expected yield).

Payment Levels on 2020 Commodity Title Programs

Expected commodity title program payments for 2020 likely will increase as a result of lower prices, particularly if the current price levels remain throughout the 2020 marketing year. The 2020 effective price for corn is $3.70, and current expected prices would be below that level. PLC payments in the $40 to $50 per acre range are possible for corn in Illinois in 2020. There were expectations for PLC payments before COVID-19. The likely impact of COVID-19 would be increased payments by about $30 per base acre. These payments would be received in October 2021.

Current prices carried through the 2020 marketing year would not be expected to result in large payments for soybeans. PLC for soybeans could generate payments if soybean price's average below $8.40 per bushel. An $8.30 average price would generate a $.10 payment per bushel, and roughly a $4 per base acre payment. ARC-CO will not generate payments without a yield decline in the county. The 2019 benchmark price for soybeans is $9.25, meaning that prices must fall below $7.96 ($9.25 x .86 guarantee) before price falls enough to generate payments in the absence of a yield decline.

Price declines currently suggested by futures markets would not generate ARC-IC payments for 2020.

Change in Input Prices

Some input prices could decline as a result of COVID-19. As world fuel use declines, energy-related costs may decline. Three of the most likely are:

Nitrogen fertilizer: Nitrogen fertilizer costs could decline as energy use decreases. As of yet, these potential price declines have not shown up in public data sources. The Agricultural Marketing Service (AMS) reported an anhydrous ammonia price of $503 per ton on March 12. Overall, ammonia prices have increased from the November price of $488 per ton. Potential price declines likely will be very muted for 2020 crop expenses.

Fuel: Fuel prices could decline. The last AMS report put diesel fuel costs at $2.24 per bushel, down by about $.20 over fall prices. In Illinois, fuel costs average $21 per acre for corn, or about 3% of non-land costs. Many farmers may already have fuel supplies locked in for the 2020 year. Thus, fuel cost declines will not have much impact on overall costs.

Drying costs: Drying costs could decline because of lower fuel costs.

Finally, interest rates have also declined, resulting in the potential for reduced interest expenses. Overall, production costs could decrease slightly in the coming months.

Summary

Income prospects have been diminished for Illinois grain farms because of the COVID-19 crisis. Expectations are for lower prices to remain after COVID-19, which will lower crop revenues for 2020. Increased commodity title payments could partially offset crop revenue declines, and some non-land costs could decrease. However, the expected price declines have larger impacts than any increase in commodity title payments or decreases in expenses. Given current expected prices, a combination of above-trend yields or government aid is needed to get incomes at levels where financial deterioration does not occur.