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Weekly Farm Economics: Revised 2023 Crop Budgets

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Illinois crop budgets for 2023 have been revised from their initial release in August (*farmdoc daily*, August 2, 2022). Corn prices have been increased from $5.30 per bushel in August to $5.60. Soybean prices increase from $12.70 to $13.40. We also adjusted some costs. Overall, increases in projected prices raised estimates of 2023 profitability. However, costs are at all-time highs. As is always the case, incomes can vary from projections made at this time of the year.

Updated Budgets

Updated 2023 projections are contained in two publications in the Management section of farmdoc. First, the 2023 Crop Budgets give corn-after-corn, corn-after-soybeans, soybeans-after-corn, soybeans-after-soybeans, and wheat budgets for four regions: northern Illinois, central Illinois with high-productivity farmland, central Illinois with low-productivity farmland, and southern Illinois. A double-crop soybeans budget also is given for all regions except northern Illinois. The second publication — Revenue and Costs for Illinois Grain Crops — shows yearly returns and costs of producing corn, soybeans, wheat, and double-crop soybeans by region of Illinois. These budgets represent average returns regardless of the preceding crop and are summarized from farms enrolled in Illinois Farm Business Farm Management (FBFM).

Table 1 provides corn and soybean budgets for four regions of Illinois:

1. Northern Illinois,
2. Central Illinois with high-productivity farmland,
3. Central Illinois with low-productivity farmland, and
4. Southern Illinois.

Table 1. 2023 Corn and Soybean Budgets for Northern, Central, and Southern Illinois

	Northern		Central-High		Central-Low		Southern	
	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans
Yield per acre	217	65	227	72	211	64	187	59
Price per bu	$5.60	$13.40	$5.60	$13.40	$5.60	$13.40	$5.60	$13.40
Crop revenue	$1,215	$871	$1,271	$965	$1,182	$858	$1,047	$791
ARC/PLC	0	0	0	0	0	0	0	0
Ad hoc Federal payments	0	0	0	0	0	0	0	0
Crop insurance proceeds	0	0	0	0	0	0	0	0
Gross revenue	**$1,215**	**$871**	**$1,271**	**$965**	**$1,182**	**$858**	**$1,047**	**$791**
Fertilizers	250	95	250	95	246	95	230	95
Pesticides	108	64	123	74	120	74	109	75
Seed	130	83	130	84	130	70	118	76
Drying	27	4	34	4	23	5	18	5
Storage	3	1	6	5	5	2	4	3
Crop insurance	37	28	39	26	34	26	32	26
Total direct costs	**$555**	**$275**	**$582**	**$288**	**$558**	**$272**	**$511**	**$280**
Machine hire/lease	28	27	20	18	19	18	19	16
Utilities	8	7	7	7	8	7	9	7
Machine repair	50	31	41	37	41	37	52	52
Fuel and oil	40	26	34	26	30	26	37	26
Light vehicle	3	1	2	1	2	2	2	2
Mach. depreciation	79	70	79	70	79	68	81	73
Total power costs	**$208**	**$162**	**$183**	**$159**	**$179**	**$158**	**$200**	**$176**
Hired labor	27	25	25	22	21	18	35	34
Building repair and rent	5	7	8	7	9	7	9	9
Building depreciation	25	11	14	12	15	11	21	21
Insurance	12	11	13	13	13	13	17	17
Misc	12	11	13	13	11	11	13	13
Interest (non-land)	23	17	20	18	21	18	20	19
Total overhead costs	**$104**	**$82**	**$93**	**$85**	**$90**	**$78**	**$115**	**$113**
Total non-land costs	**$867**	**$519**	**$858**	**$532**	**$827**	**$508**	**$826**	**$569**
Operator and land return	**$348**	**$352**	**$413**	**$433**	**$355**	**$350**	**$221**	**$222**
Land costs (cash rent)	301	301	341	341	282	282	231	231
Farmer return	**$47**	**$51**	**$72**	**$92**	**$73**	**$68**	**-$10**	**-$9**
Breakeven price to cover:								
Non-land costs	$4.00	$7.98	$3.78	$7.39	$3.92	$7.94	$4.42	$9.64
Non-land and land costs	$5.38	$12.62	$5.28	$12.13	$5.26	$12.34	$5.65	$13.56

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Projections are based on the following assumptions:

- Projected prices are $5.60 per bushel for corn and $13.40 for soybeans, near current 2023 fall bids. From the August release, we have increased the corn price by $.30 per bushel from $5.30 to $5.60 per bushel. Projected soybean price is increased by $.70 per bushel for soybeans from $12.70 per bushel to $13.40 per bushel.

- Yields are set at trend levels for 2023, with trends established through historical yields. Over time, corn yields have increased an average of 2.0 bushels per acre each year, while soybean yields have increased by .5 bushels per acre.

- Non-land costs are based on historical expenses on Illinois farms, updated based on current and expected input price levels.

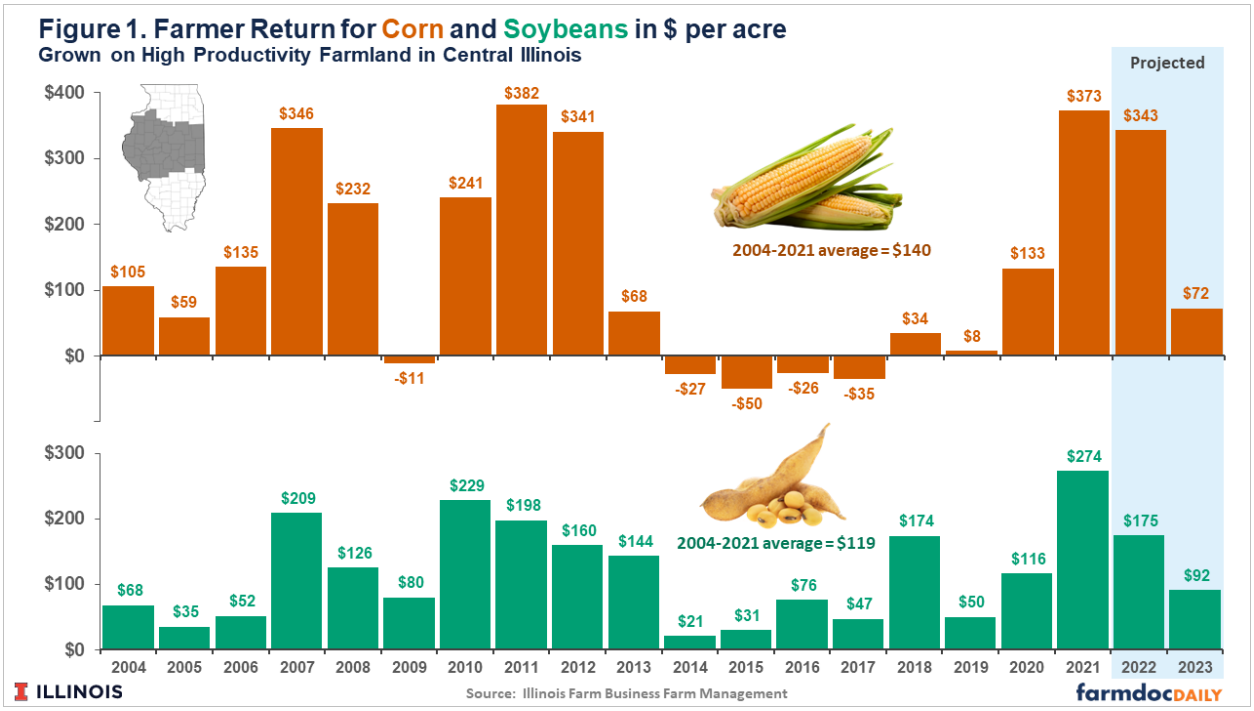
- Land costs are based on projected cash rents and are set at average levels

Return projections favor soybeans, but not by very large margins. In northern Illinois, projected farmer returns for corn are $47 per acre, $5 lower than the projected $51 per acre return for soybeans (see Table 1).

Farmer Returns

Farmer returns represent the amount remaining for the farmer after paying all financial costs, with a land charge at the average projected cash rent. In central Illinois, for high-productivity farmland, the 2023 farmer return is $72 per acre for corn and $92 per acre for soybeans.

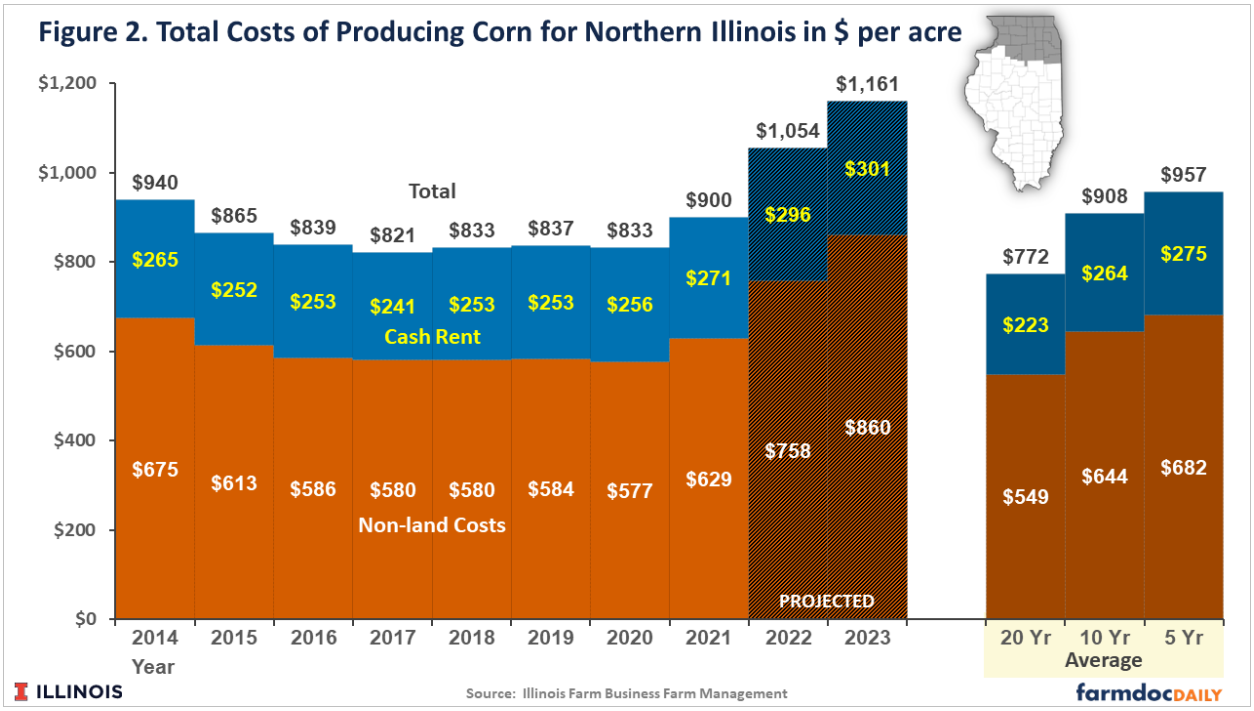
Figure 1 shows a history of farmer returns for central Illinois. From 2004 to 2022, farmer returns averaged $140 per acre for corn and $119 per acre for soybeans. The 2023 projected returns are below those 2004-2022 averages and considerably below returns from 2021 and 2022. Still, projected 2023 returns are above the low-income years from 2014 to 2019, when farmer returns averaged -$3 for corn and $77 for soybeans. Note that the average returns for soybeans during this period is highly influenced by the large Market Facilitation Program payments received for the 2018 soybean crop.



Recent incomes from 2020 to 2022 have been high, similar to those ten years ago, from 2010 to 2012 (see Figure 1). High prices persisted from 2010 to 2012 and then began to decline in 2013. Yields below trend occurred in some major world production regions from 2010 through 2012, with 2012 being a drought year in the Midwest. Yields were above trend in 2013, resulting in lower prices and lower returns. A similar phenomenon may be set up in 2023. If yields are above trend in both the US and Brazil, prices could fall, leading to lower returns. Of course, not much is known about yields in either hemisphere at this point, and poorer yields in either South or North America could continue into 2023, potentially leading to higher prices.

Costs

As has been noted (*farmdoc daily*, August 2, 2022), costs have continued to increase. Figure 2 illustrates cost increases for corn grown in northern Illinois. From 2021 to 2023 projections, total costs have increased from $900 per acre to $1,161 per acre, an increase of $261 per acre.



Higher costs raise breakeven prices, the price required to cover costs. Breakeven prices to cover total costs (both non-land and land costs) are now included in budgets (see Table 1). For northern Illinois, the breakeven price to cover total costs is $5.38 per bushel for corn and $12.62 per bushel for soybeans. Those breakeven prices are calculated given that yields are at trend levels. All regions have breakeven prices to cover total costs above $5.00 per bushel for corn and $12.00 per bushel for soybeans.

Summary

We have revised budgets, increasing the 2023 projected prices for corn and soybeans. The next revision will be by March. Overall, crop production is projected to be profitable in 2023, but the projection is for lower returns than in 2021 and 2022. Costs and breakeven prices are historically high, presenting risks to farmers.

References

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Schnitkey, G. and K. Swanson. “Revenue and Costs for Illinois Grain Crops, Actual for 2015 through 2021, Projected 2022.” Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, December 5, 2022.

Schnitkey, G., K. Swanson, C. Zulauf and J. Baltz. "2023 Crop Budgets: Higher Costs and Lower Returns." *farmdoc daily* (12):113, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, August 2, 2022.