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Dramatic Increases in Corn and Soybean Costs in 2009

Costs for corn and soybean production are projected for central Illinois farms having high-productivity farmland. Input prices, particularly for fertilizers, are uncertain and could be different than those used in these budgets. It is safe, however, to estimate large production cost increases for both corn and soybeans in 2009.

For corn, non-land production costs for 2009 are projected at \$529 per acre, an \$141 per acre increase from 2008 budgeted levels of \$388 per acre (see Table 1). Between 2003 and 2007, non-land production costs averaged \$286 per acre. Production costs for 2009 are projected to be \$243 per acre higher than the 2003-2007 average, an increase of 85 percent.

For soybeans, non-land production costs for 2009 are projected at \$321 per acre, up by \$82 over 2008 costs of \$239 per acre. Between 2003 and 2007, non-land costs for soybeans averaged \$180 per acre. Production costs for 2009 are projected to be \$141 higher than 2003-2007 levels, an increase of 78 percent.

Fertilizer Production Costs Have Large Increases

Fertilizer is the input with the largest cost increase. For corn, fertilizer costs in 2009 are projected at \$215 per acre, an increase of \$97 per acre over the 2008 projected level of \$118 per acre. For soybeans, fertilizer costs in 2009 are projected at \$98 per acre, a \$53 increase over the 2008 level of \$45 per acre.

Fertilizer costs are based on projected prices of \$1,000 per ton for anhydrous ammonia, \$1,000 per ton for diammonium phosphate (DAP) and \$900 per ton for potash. These prices were obtained by contacting fertilizer supply firms. Fertilizer prices varied across supply firms. Moreover, input prices may change into fall and spring. Hence, prices farmers pay will vary from those presented here. Additionally, fertilizer costs will vary across farms, as timing of fertilizer purchase will impact price.

Projected 2009 fertilizer prices are significantly above fertilizer prices in recent years. The U.S. Department of Agriculture (USDA) surveys fertilizer prices each spring for the north central region of the United States. In 2003, anhydrous ammonia prices were \$368 per ton according to the USDA. Ammonia price rose to \$536 per ton in 2007, an increase of \$168 per ton over 2003 levels (see Figure 1). In 2008, ammonia was \$769 per ton, a \$233 per ton increase over 2007 levels. The \$1,000 per ton price for 2009 represents a \$231 per ton increase over 2008 levels. If anhydrous ammonia is \$1,000 per ton in 2009, ammonia prices will have increased \$632 per ton since 2003, a 171 percent increase over the six year period.

Figure 1. Fertilizer Prices, 2003 through 2009 Projected.

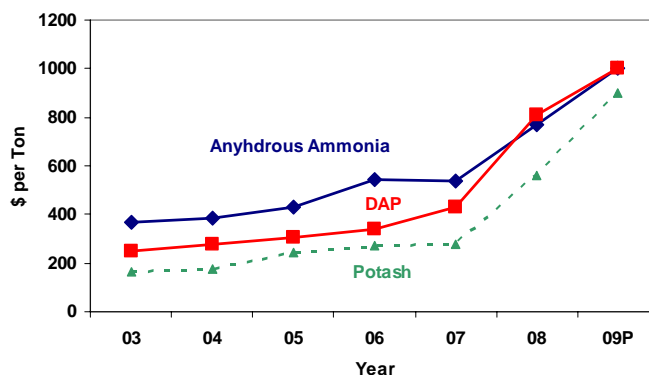


Table 1. Historical and Estimated (2008 - 2009) Crop Returns and Costs, Central Illinois High Productivity Farmland.

	<u>2003-2007 Averages¹</u>		<u>2008 Budgets</u>		<u>2009 Budgets</u>	
	Corn	Soybeans	Corn	Soybeans	Corn	Soybeans
Yield per acre	186	52	175	48	191	54
Price per bushel ²	\$2.74	\$7.28	\$6.00	\$12.75	\$4.80	\$11.00
LDP per bushel	0.13	0.03	0.00	0.00	0.00	0.00
Crop revenue	\$517	\$379	\$1,050	\$612	\$917	\$594
LDP revenue	24	2	0	0	0	0
Other government payments	32	32	25	25	24	24
Crop insurance proceeds	4	3	0	0	0	0
Gross revenue	\$577	\$416	\$1,075	\$637	\$941	\$618
Fertilizers	\$75	\$24	\$118	\$45	\$215	\$98
Pesticides	40	28	42	27	45	29
Seed	43	30	62	42	78	53
Drying	9	2	10	1	12	1
Storage	7	3	8	4	8	4
Crop insurance	10	6	20	8	27	12
Total direct costs	\$184	\$93	\$260	\$127	\$385	\$197
Machine hire/lease	\$6	\$5	\$9	\$7	\$10	\$8
Utilities	3	3	4	3	5	4
Machine repair	13	11	17	15	18	16
Fuel and oil	13	11	19	18	26	22
Light vehicle	2	1	2	1	2	1
Mach. depreciation	20	17	25	22	27	24
Total power costs	\$57	\$48	\$76	\$66	\$88	\$75
Hired labor	\$8	\$8	\$9	\$8	\$9	\$8
Building repair and rent	4	2	4	2	4	2
Building depreciation	4	2	4	2	4	2
Insurance	8	8	10	10	10	10
Misc.	6	6	7	7	7	7
Interest (non-land)	15	13	18	17	22	20
Total overhead costs	\$45	\$39	\$52	\$46	\$56	\$49
Total non-land costs	\$286	\$180	\$388	\$239	\$529	\$321
Operator and land return	\$291	\$236	\$687	\$398	\$412	\$297
Operator and land returns for ³ :						
1/2 corn -- 1/2 soybeans	\$267		\$554		\$363	
2/3 corn -- 1/3 soybeans	\$273		\$591		\$374	
all corn	\$269		\$649		\$380	

¹ Averages for the years 2003 through 2007 for grain farms enrolled in Illinois Farm Business Farm Management.

² Prices for 2003-2007 are average prices farmers received. USDA estimates of farmer-received prices are used for 2008. Prices for 2009 are estimated equilibrium prices. In July 2008, futures prices suggest commodity prices significantly above prices above those in this table.

³ The corn results represent a blend of corn-after-soybeans and corn-after-corn returns. For calculating operator and farmland returns, corn-after-soybeans is assumed to yield 5 bushels more than the corn shown above while corn-after-corn is assumed to yield 5 bushels less. Corn-after-soybeans is assumed to have \$8 less costs than above and corn-after-corn is assumed to have \$8 more costs.

DAP and potash prices also have large increases. The \$1,000 per ton DAP price is \$751 per ton over the 2003 price of \$249 per ton. DAP prices will have increased by 302 percent between 2003 and 2009. The \$900 per ton potash price is \$738 per ton higher than the 2003 price of \$162 per ton. Potash will have increased by 456 percent between 2003 and 2009.

In Table 1, the \$210 per acre fertilizer cost for corn assumes that 180 pounds of anhydrous ammonia, 127 pounds of DAP, and 125 pounds of potash are applied to meet plant nutrient needs. For soybeans, the \$98 fertilizer cost assumes that 38 pounds of DAP and 163 pounds of potash are needed to meet plant nutrient needs. Fertilizer costs in the budgets are slightly higher than nutrient needs to account for applications of lime.

Other Costs with Increases

Besides fertilizer, seed costs are projected to increase. Both the corn and soybean budgets for 2009 have 25 percent increases over 2008 levels.

Insurance costs also are projected to increase. Corn insurance costs are projected at \$27 per acre, a \$7 increase over 2008 levels (see Table 1). Soybean insurance costs are projected at \$12 per acre in 2009, an increase of \$4 over 2008 levels. As are all items, insurance costs in Table 1 are estimated for an average of farms in Illinois Farm Business Farm Management (FBFM). Some farmers take relatively costly policies while others do not take insurance. Hence, an individual farm could have insurance costs different from that shown in Table 1.

Power costs, which include machinery and fuel related items, also are projected to increase in 2009. Power costs for corn are budgeted at \$88 per acre in 2009, an increase of \$12 per acre over 2008 levels. Soybean power costs are projected at \$75 per acre in 2009, an increase of \$9 per acre over 2008 levels. Much of the power cost increase is related to fuel cost increases (\$7 per acre increase for corn and \$4 per acre increase for soybeans).

Within power costs, another noticeable trend has been an increase in machinery depreciation. For corn, depreciation is projected at \$27 per acre in 2009 compared to \$20 per acre as an average between 2003 and 2007. Recent higher farmer incomes have prompted some farmers to update and expand their machinery complement, leading to higher machinery depreciation.

Prices and Returns

Budgets for 2009 use a \$4.80 per bushel corn price and \$11 per bushel soybean price. These prices represent estimates of "equilibrium" prices based on the fact that commodity prices roughly doubled in the middle 1970s, the last time there was a sustained increase in corn and soybean price levels. The \$4.80 corn price results in a \$412 per acre operator and land return. The \$11 per bushel soybean prices yields a \$298 per acre operator and land return.

At the time of the article's writing, futures prices suggest higher commodity prices than used in budgets. The December 2009 corn futures contract on the Chicago Board of Trade (CBOT) is around \$6.50 per bushel, suggesting a corn price around \$6.00 per bushel. A \$6.00 corn price yield an operator and land return of \$641 per acre. November 2009 soybean futures contracts on the CBOT are trading at \$15.00 per bushel, suggesting a cash price around \$14.50. A \$14.50 soybean price results in an operator and farm land return of \$486 per acre.

Commodity prices for next year are uncertain. Table 2 shows estimates of operator and land returns for different commodity prices and crop yields.

Break-Even Prices

Non-land costs of \$529 per acre for corn and \$321 per acre for soybeans shown in Table 1 do not include land charges. A cash rent of \$200 per acre may be prevalent in 2009. Adding \$200 in cash rent to the above non-land costs gives total costs of \$729 per acre for corn and \$521 per acre for soybeans.

Given the 191 bushel expected yield in the budgets, the \$729 per acre corn costs results in a break-even corn price of \$3.82 per bushel ($\$729 \text{ corn cost} / 191 \text{ bushel yield}$). The soybean break-even price is \$9.65 per bushel ($\$521 \text{ soybean costs} / 54 \text{ bushel yield}$).

Table 2. Operator and Farmland Returns Given Differing Prices and Yields.¹

Corn Price	Corn Yield (bushel per acre)			Soybean Price	Soybean Yield (bu. per acre)		
	151	171	191		44	49	54
\$/bu.	\$ per acre			\$/bu.	\$ per acre		
3.00	-48	12	72	8.00	58	98	138
3.50	28	98	168	9.00	102	147	192
4.00	103	183	263	10.00	146	196	246
4.50	179	269	359	11.00	190	245	300
5.00	254	354	454	12.00	234	294	354
5.50	330	440	550	13.00	278	343	408
6.00	405	525	645	14.00	322	392	462
6.50	481	611	741	15.00	366	441	516
7.00	556	696	836	16.00	410	490	570
7.50	632	782	932	17.00	454	539	624
8.00	707	867	1,027	18.00	498	588	678

¹ Costs in Table 1 are used to calculate the above returns.

These break-even prices are significantly higher than historic commodity prices. Corn, for example, averaged close to \$2.40 per bushel between the mid 1970s to the middle 2000s. Large income losses would occur if commodity prices returned to historical averages.

Summary

Significantly higher costs will occur in 2009, leading to higher break-even prices for both corn and soybeans. Higher costs will cause farmers to more closely examine how much to adjust cash rent bids. Higher costs also may influence marketing and crop insurance decisions.

Acknowledgments

Data used in this study comes from the local Farm Business Farm Management (FBFM) Associations across the State of Illinois. Without their cooperation, information as comprehensive and accurate as this would not be available for educational purposes. FBFM, which consists of 6,000 plus farmers and 60 professional field staff, is a not-for-profit organization available to all farm operators in Illinois. FBFM field staff provides on-farm counsel with computerized recordkeeping, farm financial management, business entity planning and income tax management. For more information, please contact the State FBFM Office located at the University of Illinois Department of Agricultural and Consumer Economics at 217-333-5511 or visit the FBFM website at www.fbfm.org.

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