FARM BUSINESS MANAGEMENT

FARM ECONOMICS Facts & Opinions

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August 30, 2005 **FEFO 05-16**

2005 and 2006 Crop Budgets: Implications for Cash Rents and Production Decisions

Per acre corn and soybean returns in 2005 and 2006 are projected to be significantly lower than returns in 2003 and 2004. As a result, less funds will be available to pay cash rents in 2005 and 2006. Landlords and tenants may wish to renegotiate cash rents. Fertilizer and fuel costs have increased dramatically, causing soybean profitability to increase relative to corn profitability. Shifting acres to soybeans may be prudent. Also, reducing fertilization rates and eliminating tillage passes may be economical.

Crop Revenue and Variable Costs for Central Illinois, High-Productivity Farmland

Actual and projected budgets for central Illinois farms having high productivity farmland are shown in Table 1. Results for 2001 through 2004 are averages for farms enrolled in Illinois Farm Business Farm Management (FBFM) while 2005 and 2006 are projections.

2005 Crop Revenue less Variable Costs: The 2005 drought has reduced yields over much of Illinois; resulting in National Agricultural Statistical Service (NASS) projected yields of 130 bu. for corn and 41 bu. for soybeans (see Table 1). However, the drought has not been widespread over the greater corn-belt and total grain supplies are not as low as would have been the case in a more widespread drought. As a result, grain prices have not increased as much as in other drought years. The combination of low yields and non-increasing prices causes lower crop revenue in 2005 than in 2003 and 2004. For corn, crop revenue was $448 in 2004 while 2005 revenue is projected at $273. Soybean crop revenue is projected at $246 per acre in 2005, while 2004 revenue was $331.

Lead primarily by fertilizer and fuel price increases, variable costs have risen dramatically since 2002 (see Table 1). Corn variable costs are projected at $206 per acre in 2005, $13 over 2004 costs and $35 over average costs between 2001 through 2003 (see Table 1). Soybean variable costs for 2005 are projected at $118 per acre, $6 per acre higher than in 2004 and $13 per acre higher than the average between 2001 through 2003. Averaging corn and soybean cost increases, thereby representing a 50% corn – 50% soybeans rotation, results in a cost increase of $24 since the 2001 through 2003 period.

The combination of lower yields and higher costs leads to lower “Crop Revenue less Variable Costs” (CRVCs). For corn, CRVC is projected at $67 per acre in 2005, $188 lower than the 2004 CRVCs of $255. For soybeans, CRVC is projected at $128 per acre, $91 per acre below the 2004 return.

Some farms will have better return performance while others will have worse performance than shown in Table 1. Rains have been spotty causing wide variations in yields across farms. Other factors also cause return variations across farms. In particular, crop insurance choices have large impacts. Given yields in Table 1, some insurance choices would make significant payments. Table 1 does not include payments because roughly half the farms made insurance choices that would result in no payments.

Table 1. Actual and Projected Revenue Less Variable Costs, Central Illinois, High-Productivity Farmland, 2001 through 2006[1].

	Year					
	2001	2002	2003	2004	2005P	2006P
Panel A. Corn.						
Average yields (bu. per acre)	168	152	186	190	130	170
Market price	2.06	2.37	2.41	2.10	2.10	2.20
Effective LDP[2]	0.14	0.00	0.00	0.26	0.00	0.00
Total price received (per bu.)	$2.20	$2.37	$2.41	$2.36	$2.10	$2.20
Revenue per acre	$370	$360	$448	$448	$273	$374
Variable costs per acre						
Fertilizer and lime	$57	$55	$57	$68	$75	$80
Pesticides	33	34	38	38	43	40
Seed	34	34	36	38	39	39
Drying and storage	15	16	14	15	14	14
Machinery repair, fuel, and hire	31	30	30	34	35	36
Total variable costs	$170	$169	$175	$193	$206	$209
Revenue less variable costs	**$200**	**$191**	**$273**	**$255**	**$67**	**$165**
Panel B. Soybeans.						
Average yields (bu. per acre)	50	52	41	56	41	49
Market price	4.53	5.72	7.39	5.80	6.00	6.00
Effective LDP[2]	1.21	0.01	0.00	0.11	0.00	0.00
Total price received (per bu.)	$5.74	$5.73	$7.39	$5.91	$6.00	$6.00
Revenue per acre	$287	$298	$303	$331	$246	$294
Variable costs per acre						
Fertilizer and lime	$21	$20	$20	$22	$24	$28
Pesticides	30	31	29	28	28	24
Seed	21	24	25	27	30	30
Drying and storage	5	5	5	5	5	5
Machinery repair, fuel, and hire	27	26	26	30	31	32
Total variable costs	$104	$106	$105	$112	$118	$119
Revenue less variable costs	**$183**	**$192**	**$198**	**$219**	**$128**	**$175**
Difference (corn minus soybeans)	$17	-$1	$75	$36	-$61	-$10

[1] Data for 2001 through 2004 are from Illinois Farm Business Farm Management (FBFM). Revenue and costs are given for Central Illinois farms. Revenues from direct and counter-cyclical payments are not included. Revenue and costs for 2005 and 2006 are projections.

[2] Represents the average per bu. receipt from Market Loan and Loan Deficiency Payment programs in Illinois.

2006 Crop Revenue less Variable Costs: For 2006, CRVCs for corn and soybeans are $165 and $175, respectively (see Table 1). The 2006 CRVCs are above 2005 CRVCs because trend-line yields are used in 2006 projections. Trend-line yields are above drought-reduced 2005 yields. CRVCs in 2006 are significantly below 2003 and 2004 levels for two reasons: 1) 2006 trend-line yields are below yields realized in 2003 and 2004 and 2) variable costs have increased. Variable cost increases for 2006 could be larger than those shown in Table 1, as fuel and fertilizer prices continue to rise.

Decisions in 2006

Increasing costs may require re-evaluation of cropping decisions and cash rent levels.

Corn versus Soybean Production: Cost increases have been higher for corn than for soybeans. In 2005, soybean production is projected to be more profitable than corn production by $61 per acre (see Table 1). For 2006, soybean production is projected to be $10 per acre more profitable than corn. Shifting acres to soybeans may be warranted.

Fertilization: Fertilizer costs have increased dramatically, particularly for nitrogen. Cost increases suggest lowering fertilizer rates. Perhaps experimenting with lower rates in some fields may be warranted.

Tillage Passes: Higher fuel prices suggest reducing fuel use. One way may be to reduce tillage passes, particularly "deep" tillage passes that have high fuel use.

Table 2. Operator and Farmland Returns, Central Illinois High-Productivity Farmland.

	($ per acre)
2002	$145
2003	201
2004	217
2005	78
2006	148

Cash Rents: Cost increases of $24 per acre have reduced returns available to pay for cash rent. To assess this situation, operator and farmland returns are calculated for central Illinois farms having high productivity for the years from 2002 through 2006. Methods of calculating returns are shown in Appendix A and resulting returns are shown in Table 2. Returns will vary across farms from those shown in Table 2 because of differences in farmland productivity and cost structure. Farmland that has higher yields generally will have higher expected returns. Farms with lower costs will have higher operator and farmland returns. (Some farms have $20 per acre in lower cost than those used to calculate returns in Table 2.)

When farmland is rented, the operator and farmland returns shown in Table 2 are split between the farmer and landlord. For cash rented farmland, subtracting cash rent from operator and farmland return leaves the operator return. The operator and farmland return for 2006 is projected at $148 per acre. If cash rent is $140 per acre, the operator will make an $8 return for his/her labor, management, and capital.

Operator and farmland returns in 2003 and 2004 were $201 and $217 per acre, respectively (see Table 2). Returns in 2005 and 2006 are much lower, projected at $78 per acre in 2005 and $148 per acre in 2006.

Cash rents have been increasing in Illinois, with some "aggressive" cash rents greatly exceeding $175 per acre. A farmer who paid $175 per acre for cash rent would have had an operator return of $26 in 2003 ($201 operator and farmland return - $175 cash rent) and $42 per acre in 2004 ($217 operator and farmland return - $175 cash rent). A $175 per acre cash rent results in projected losses of $97 per acre in 2005 and $27 per acre in 2006. Landlords and farmers with high cash rent levels may need to consider renegotiating rent levels so that farmers can maintain profitability.

Looking to crop years beyond 2006, it is our estimation that returns will be, on average, closer to projected 2006 levels than to 2003 and 2004 levels. High returns in 2003 and 2004 were obtained because of above average yields, relatively high prices, and large government payments (particularly in 2004). These conditions may repeat themselves but are atypical. Using historical returns as a guide, high returns occur about one in five years. Hence, using 2006 projected returns when setting cash rents seems prudent rather than actual results from 2003 and 2004.

Summary

Returns for corn and soybeans are projected to be lower in 2005 and 2006 than for 2003 and 2004. Large variable cost increases have occurred since the 2001 through 2003 period resulting in lower profitability to grain farming. Over the next few years, there are no signs that these variable cost increases, led primarily by fuel and fertilizer price increases, will abate. For 2006 production, farmers may choose to switch to more soybeans and reduce fertilization and fuel use. In some cases, renegotiating cash rents to lower levels may be warranted.

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Acknowledgments

Data used in this study comes from local Farm Business Farm Management (FBFM) Associations across 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.

Appendix A. Calculation of Operator and Farmland Return

Calculation of operator and farmland returns is illustrated in Appendix Table 1 using revenues and costs for 2002 through 2006. Calculations begin with corn and soybean CRVCs from Table 1. For each year, the corn and soybean CRVCs are averaged to arrive at a return for a 50% corn – 50% soybean rotation. Average CRVCs were $236 per acre in 2003 and $237 per acre in 2004 and are projected at $98 in 2005 and $170 in 2006. To average CRVCs, government payments (direct and counter-cyclical payments) are added to arrive at CRVC plus government payments. Direct payments were $22 per acre in 2002 and 2003. In these two years, counter-cyclical payments did not occur. Counter-cyclical payments for corn are projected for 2004 through 2006, resulting in direct and counter-cyclical payments close to $40 per acre. Other non-land costs are subtracted from CRVC and government payments to arrive at operator and farmland return. Other non-land costs average above $60 per acre and include machinery depreciation, building costs, labor, interest, and overhead charges.

Appendix Table 1. Per Acre Operator and Farmland Return, Central Illinois High-Productivity Farmland, 2002 through 2006.

	Year				
	2002	2003	2004	2005P	2006P
Crop Revenue less Variable Costs (CRVC)[1]					
Corn	191	273	255	67	165
Soybeans	192	198	219	128	175
Average CRVC[2]	$192	$236	$237	$98	$170
+ Direct and counter-cyclical payments[3]	$22	$22	$40	$42	$42
Average CRVC plus government payments	$214	$258	$277	$140	$212
Machinery depreciation	27	17	18	19	20
Building repair and depreciation	8	5	6	7	7
Paid labor	8	8	8	8	8
Paid non-land interest	7	7	7	7	7
Overhead	19	20	21	21	22
- Other, non-land costs[4]	$69	$57	$60	$62	$64
Operator and farmland return	$145	$201	$217	$78	$148

[1] Taken from Table 1.

[2] Average of corn and soybean CRVCs. Represents a case of a 50% corn - 50% soybean rotation.

[3] Given that .5 corn base acres and .5 soybean base acres exist for each acre of production. Direct payment yields are 120 bu for corn and 41 bu for soybeans. Counter-cyclical payment yields are 151 for corn and 49 for soybeans.

[4] Taken from Illinois Farm Business Farm Management Association data.