

September 30, 2005

FEFO 05-18

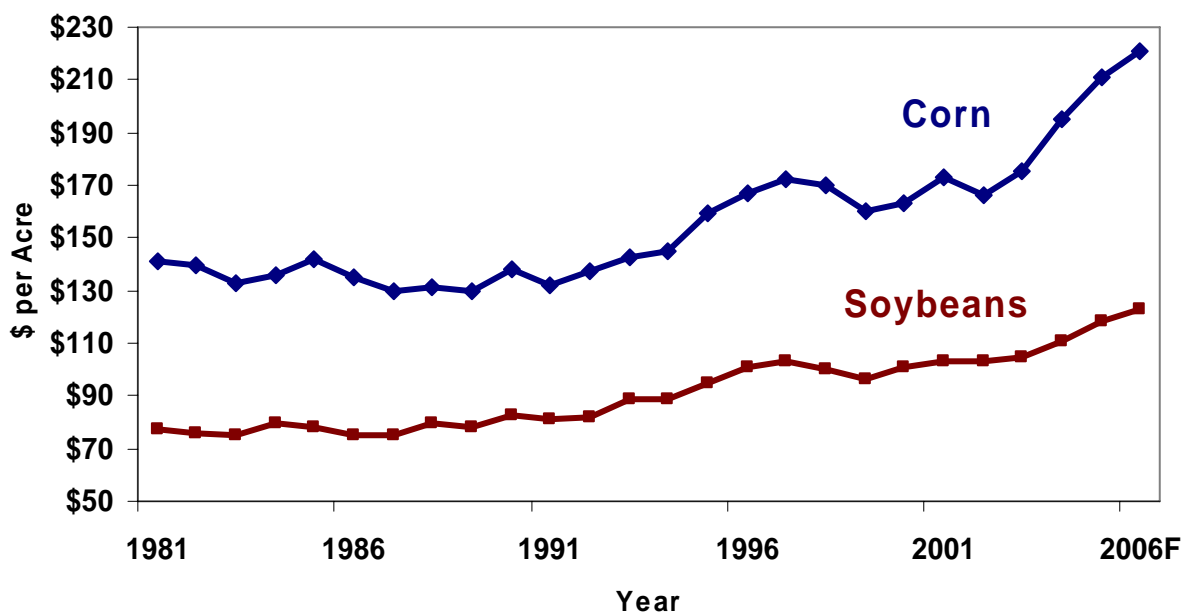
Variable Cost Increases for Corn and Soybeans in Historical Perspective

On Illinois grain farms, variable costs for corn are projected to be \$55 per acre higher in 2006 than in 2002. Similarly, variable costs for soybeans will be \$20 per acre higher in 2006 than in 2002. In percentage terms, cost increases are 33% for corn and 19% for soybeans over the four-year period from 2002 to 2006. Increases of this magnitude have not occurred in recent history and will cause reductions in farm profitability. Further historical perspectives on these increases are provided in this article.

Corn and Soybean Variable Costs from 1981 through 2006

Figure 1 shows average variable costs for corn and soybeans on Illinois grain farms enrolled in Farm Business Farm Management (FBFM). Values for 1981 through 2004 represent yearly averages from about 1,500 grain farms while 2005 and 2006 costs are projections. Variable costs include fertilizer, pesticides and seed, drying and storage, and machinery-related (i.e., fuel, repairs, and machine hire) items. These variable costs do not represent all costs faced by grain farms, which also include farmland rent, depreciation, overhead, interest, and labor.

Figure 1. Per Acre Variable Costs on Illinois FBFM Grain Farms, 1981 - 2006F



See Tables 1 and 2 for data and sources.

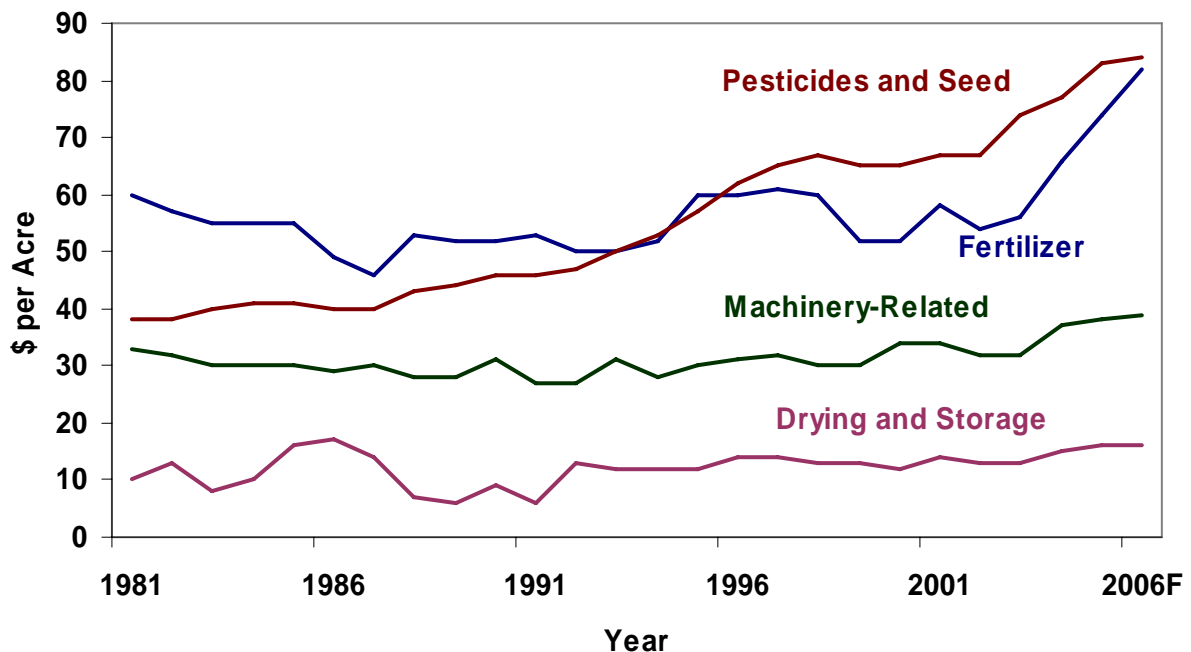
Corn variable costs were relatively stable between 1981 through 1992, averaging \$135 per acre (see Figure 1 or Table 1 at the end of this article). Between 1993 and 1997, variable costs steadily increased an average of \$7 per year. Then, corn costs were again relatively stable between 1998 and 2002, averaging \$166 per acre. Per acre corn costs are projected to increase \$13.75 per year from 2002 to 2006, reaching a high of \$221 per acre in 2006. This recent \$13.75 yearly increase compares to an average yearly increase of \$1.20 per acre from 1981 through 2002.

As one would expect, soybean variable costs follow the same trends as corn. Soybean costs averaged \$78 per acre from 1981 through 1992 (see Figure 1 and Table 2 for more detail). From 1993 through 1997, soybean costs increased an average of \$4.25 per acre. Then, soybean costs were relatively stable between 1998 through 2002, averaging \$101 per acre. Soybean costs are projected to increase \$5 per year from 2002 to 2006, reaching a high of \$123 per acre in 2006. The \$5 yearly increase since 2002 compares to a \$1.25 increase for the years between 1981 through 2002.

Components of Variable Costs

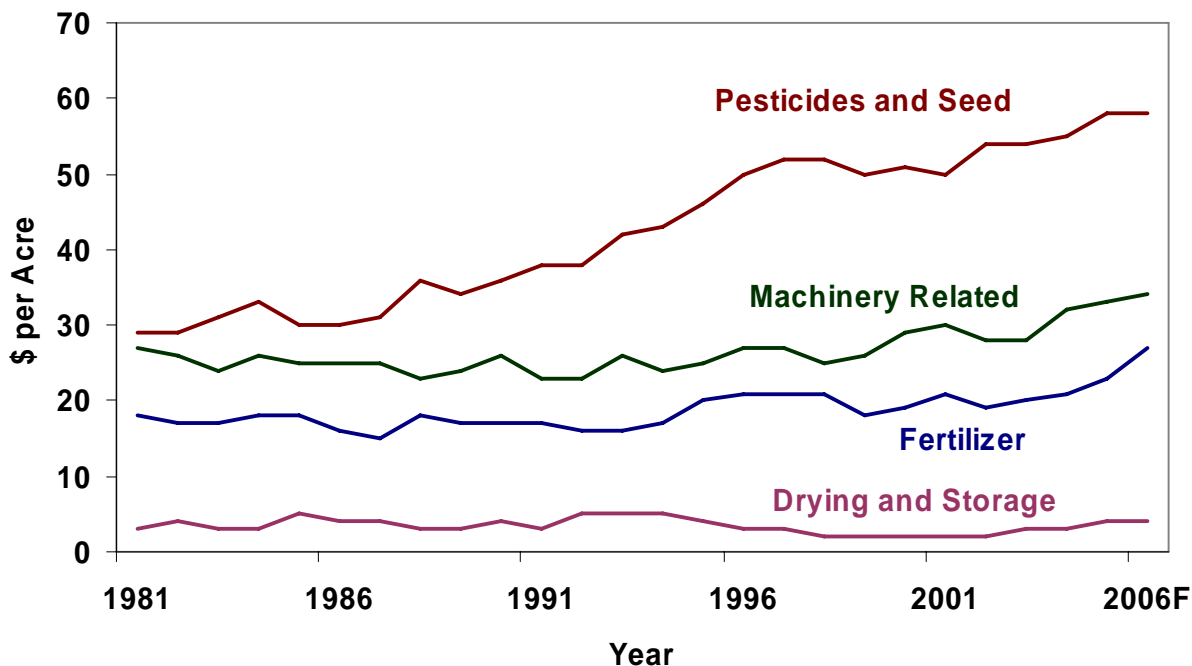
Figure 2 shows how categories of corn variable costs have changed over time. Increases have occurred in all categories since 2002 (see Figure 2), with fertilizer costs leading the way. Fertilizer costs are projected to be \$28 higher in 2006 as compared to 2002, pesticides and seeds are \$17 per acre higher, drying and storage \$3 per acre higher, and machinery-related items are \$7 per acre higher. The \$7 increase in machinery items is due primarily to fuel cost increases. What has been most unusual about the 2002 through 2006 period is the dramatic increase in fertilizer costs. Much of this increase is due to higher nitrogen prices.

Figure 2. Variable Costs, Corn, Illinois, 1981 to 2006F



Similarly, all categories of soybean variable costs have increased since 2002 (see Figure 3). Fertilizer costs are projected to be \$8 higher in 2006 as compared to 2002, pesticides and seeds are \$4 per acre higher, drying and storage \$2 per acre higher, and machinery-related items are \$6 per acre higher. Costs for all components have increased less for soybeans than for corn.

Figure 3. Variable Costs, Soybeans, Illinois, 1981 to 2006F



Large declines for pesticides and seed, drying and storage, and machinery-related categories for either corn or soybeans have not occurred since 1981. This experience suggests that it is not likely that decreases in these categories will occur. If variable costs decline in the near future, it will likely be caused by a reduction in energy prices, leading to lower fertilizers and fuel prices. At this point, energy prices do not appear like they will decline.

Summary

Variable costs have increased significantly from 2002 through 2005 and projections are for another increase in 2006. Increasing variable costs will have a detrimental impact on 2006 profitability. High crop revenue in 2006 – caused by high yields, high prices, or some combination thereof – could cause 2006 to be a profitable year. However, even if revenues in 2006 are as good as in 2003 and 2004, two exceptional years in terms of crop revenue, 2006 will not be as good as 2003 and 2004 because of cost increases.

Costs have increased more for corn than for soybeans. This suggests re-evaluating cropping decisions, perhaps shifting to more soybeans.

Declines in variable costs may occur in the future. If they occur, it will likely be due to overall energy price reductions, which then could lead to fertilizer cost decreases.

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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.

Table 1. Per Acre Variable Costs for Corn, Illinois, 1981 through 2006F.

| | Fertilizer | Pesticides | Seed | Drying + Storage | Mach Fuel, Repairs, Hire | Total Variable |
|-------|------------|------------|------|---------------------|-----------------------------|-------------------|
| 1981 | \$60 | \$19 | \$19 | \$10 | \$33 | \$141 |
| 1982 | 57 | 20 | 18 | 13 | 32 | 140 |
| 1983 | 55 | 21 | 19 | 8 | 30 | 133 |
| 1984 | 55 | 20 | 21 | 10 | 30 | 136 |
| 1985 | 55 | 20 | 21 | 16 | 30 | 142 |
| 1986 | 49 | 19 | 21 | 17 | 29 | 135 |
| 1987 | 46 | 19 | 21 | 14 | 30 | 130 |
| 1988 | 53 | 21 | 22 | 7 | 28 | 131 |
| 1989 | 52 | 20 | 24 | 6 | 28 | 130 |
| 1990 | 52 | 23 | 23 | 9 | 31 | 138 |
| 1991 | 53 | 23 | 23 | 6 | 27 | 132 |
| 1992 | 50 | 23 | 24 | 13 | 27 | 137 |
| 1993 | 50 | 26 | 24 | 12 | 31 | 143 |
| 1994 | 52 | 28 | 25 | 12 | 28 | 145 |
| 1995 | 60 | 30 | 27 | 12 | 30 | 159 |
| 1996 | 60 | 33 | 29 | 14 | 31 | 167 |
| 1997 | 61 | 34 | 31 | 14 | 32 | 172 |
| 1998 | 60 | 33 | 34 | 13 | 30 | 170 |
| 1999 | 52 | 31 | 34 | 13 | 30 | 160 |
| 2000 | 52 | 31 | 34 | 12 | 34 | 163 |
| 2001 | 58 | 33 | 34 | 14 | 34 | 173 |
| 2002 | 54 | 33 | 34 | 13 | 32 | 166 |
| 2003 | 56 | 38 | 36 | 13 | 32 | 175 |
| 2004 | 66 | 38 | 39 | 15 | 37 | 195 |
| 2005F | 74 | 43 | 40 | 16 | 38 | 211 |
| 2006F | 82 | 43 | 41 | 16 | 39 | 221 |

Source: Illinois Farm Business Farm Management

Table 2. Per Acre Variable Costs for Soybeans, Illinois, 1981 through 2006F.

| | Fertilizer | Pesticides | Seed | Drying + Storage | Mach Fuel, Repairs, Hire | Total Variable |
|-------|------------|------------|------|---------------------|-----------------------------|-------------------|
| 1981 | \$18 | \$16 | \$13 | \$3 | \$27 | \$77 |
| 1982 | 17 | 16 | 13 | 4 | 26 | 76 |
| 1983 | 17 | 18 | 13 | 3 | 24 | 75 |
| 1984 | 18 | 19 | 14 | 3 | 26 | 80 |
| 1985 | 18 | 18 | 12 | 5 | 25 | 78 |
| 1986 | 16 | 18 | 12 | 4 | 25 | 75 |
| 1987 | 15 | 19 | 12 | 4 | 25 | 75 |
| 1988 | 18 | 24 | 12 | 3 | 23 | 80 |
| 1989 | 17 | 21 | 13 | 3 | 24 | 78 |
| 1990 | 17 | 23 | 13 | 4 | 26 | 83 |
| 1991 | 17 | 25 | 13 | 3 | 23 | 81 |
| 1992 | 16 | 25 | 13 | 5 | 23 | 82 |
| 1993 | 16 | 28 | 14 | 5 | 26 | 89 |
| 1994 | 17 | 29 | 14 | 5 | 24 | 89 |
| 1995 | 20 | 31 | 15 | 4 | 25 | 95 |
| 1996 | 21 | 34 | 16 | 3 | 27 | 101 |
| 1997 | 21 | 35 | 17 | 3 | 27 | 103 |
| 1998 | 21 | 34 | 18 | 2 | 25 | 100 |
| 1999 | 18 | 32 | 18 | 2 | 26 | 96 |
| 2000 | 19 | 32 | 19 | 2 | 29 | 101 |
| 2001 | 21 | 29 | 21 | 2 | 30 | 103 |
| 2002 | 19 | 30 | 24 | 2 | 28 | 103 |
| 2003 | 20 | 29 | 25 | 3 | 28 | 105 |
| 2004 | 21 | 28 | 27 | 3 | 32 | 111 |
| 2005F | 23 | 28 | 30 | 4 | 33 | 118 |
| 2006F | 27 | 28 | 30 | 4 | 34 | 123 |

Source: Illinois Farm Business Farm Management