



Weekly Farm Economics: The 2012 Drought, Net Incomes with and without Insurance, and a Policy Concern

Gary Schnitkey

Department of Agricultural and Consumer Economics
University of Illinois

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The 2012 drought dramatically lowered yields on many Illinois farms, leading to large crop insurance payments. Herein, net incomes on Illinois grain farms with and without crop insurance are compared. A higher percentage of non-insured farms had low incomes than insured farms. These comparisons show that crop insurance reduced downside income risk. Income distributions then are used to shed light on a policy concern: Why are crop insurance payments made in a year when average revenue does not appear low?

Farms Included in Analysis

Data from Illinois Farm Business Farm Management were used to summarize net incomes from farms with and without crop insurance. Farms had to meet the following criteria to be included in this analysis:

1. Farms had to receive a majority of their income from grain farm operations.
2. Farms had to have records that were certified useable by Illinois Farm Business Farm Management field staff.
3. Farms had to have at least 500 acres.

Farms that met these criteria were divided into two groups. The “no insurance” group did not have any expenses associated with crop insurance purchases. There were 137 farms in the “no insurance” group and the farms averaged 1,200 tillable acre. The second group had crop insurance expenses of at least \$10 per acre. The value of \$10 was selected so as to have meaningful crop insurance protection on the farm. The “with insurance” group contained 1,633 farms and the farms averaged 1,370 tillable acres. Overall, “with insurance” group averaged slightly more tillable acres than the “no insurance” group.

Distribution of Incomes

The “no insurance” farms had average net farm income per acre of \$210 per tillable acre while the “with insurance” farms averaged \$279 of net income per acre (see Table 1). The difference in income between the two groups was \$69 per acre (\$279 – \$210), with this difference roughly accounted for in crop

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insurance payments.

Table 1. Net Incomes on Grain Farms With and Without Insurance, 2012.

	Farms Grouped by Crop Insurance Purchases	
	No Insurance	With Insurance ¹
Net Income per tillable acre	\$210	\$279
Percent of farms with net income per acre less than	<u>% of farms</u>	<u>% of farms</u>
\$0 per acre	12%	2%
\$50 per acre	18%	4%
\$100 per acre	28%	8%
\$150 per acre	37%	17%
Percent of farms with net income per acre greater than	<u>% of farms</u>	<u>% of farms</u>
\$400 per acre	12%	17%
\$450 per acre	10%	12%
\$500 per acre	6%	8%

¹ Farms had more than \$10 per acre in crop insurance expense.

Source: Data summarized from Illinois Farm Business Farm Management.

There was a distribution of net incomes in both groups, with the “no insurance” group having a higher proportion of the farms with low incomes. For example, 12% of the farms in the “no insurance” group had net incomes less than \$0 per acre (see Table 1). This compares to 2% for the “with insurance” group. Ten percentage points separate farms with below \$0 per acre in the “no insurance” group and the “with insurance” group. Differences between the groups occurred at all low income levels. At a \$150 per acre income level, 37% of the “no insurance” group had income below \$150 per acre compared to 17% for the “with insurance” group, a difference between the groups of 20 percentage points.

Both groups also had farms with incomes higher than the averages. For example, the “no insurance” group had 12% of the farms with over \$400 of net income per acre while the “with insurance” group had 17% with above \$400 of net income per acre. At a \$500 per acre level, 6% of the “no insurance” group had incomes over \$500 compared to 8% for the “with insurance” group. Note that the difference in proportion of farms with incomes between the two groups was relatively small. At the \$500 per acre level, only 2 percentage points separated the “no insurance” and “with insurance” groups.

Yields had large impacts on whether farms had high or low incomes in 2012. For example, “no insurance” farms with less than \$150 in net income per acre had an average corn yield of 71 bushels per acre. Those “no insurance” farms with over \$400 per acre of net income had a 154 bushel average yield. For farms in the “with insurance” group, farms with less than \$150 in net income per acre had an average corn yield of 88 bushels per acre, compared to a 143 bushel average for net incomes above \$400 per acre.

Factors other than yield also impact income distributions. One factor was timing of grain sales. In 2012, those farms with more pre-harvest sales tended to have lower incomes than farms with fewer sales. Obviously, timing of grain marketing will not have the same impact in different years.

Commentary

Droughts have differential impacts on yields across farms, with some farms having much lower yields

than other farms. Yield differences then lead to large differences in net incomes across farms. Some farms will have dramatically low incomes while other farms will have above average incomes. Crop insurance payments occur primarily on low revenue farms, thereby reducing the number of farms at the low end of the income distribution.

Often, average crop revenue is reported for a region, such as for the state of Illinois. These regional averages use average yields for the region and average prices for the region. Often, average crop revenue for a region during a drought year will be near or above expectations prior to planting, as percentage increases in price often will be of the same or higher magnitude as percentage decreases in yield. Because average revenue has not declined, the following policies concern sometimes arises: Why are large crop insurance payments occurring in years in which average revenue is not low?

Regional averages mask considerable variability in crop revenues across farms, where some farms have much larger yield decreases. Crop insurance proceeds tend to be targeted at those farms with low revenue. Adding crop insurance proceeds to average revenues then lead to high gross revenues. The design of crop insurance leads to this result almost by necessity, as low income farms receive crop insurance payments covering revenue losses.

Summary

Crop insurance payments reduced the proportion of farms that would have had low incomes in 2012. Crop insurance provides meaningful risk protection to grain farms.

Acknowledgements *This data comes from Illinois Farm Business Farm Management (FBFM), a record-keeping and financial service cooperative available to farms in Illinois. Farmers in FBFM receive financial statements, tax planning and tax preparation services, cash flow planning, and advice on financial matters. More information on FBFM can be obtained from www.fbfm.org. Contact Dwight Raab at 217-333-5511 or d-raab@illinois.edu for more information.*