Section V – Ten Questions

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Brown County, Ohio – Corn Data

Year	Yield	Price
1997	103.5	2.48
1998	119.4	2.03
1999	101.3	1.89
2000	152.9	1.90
2001	125.3	2.00
2002	89.2	2.48
2003	120.9	2.45
2004	149.6	2.04
2005	139.5	1.98
2006	146.5	3.08
2007	134.3	4.29
2008	124.0	4.21
2009	172.7	3.55
2010	141.2	5.45
2011	149.7	6.44
2012	123.8	7.09
2013	172.6	4.41
2014	171.3	3.78
2015	182.9	3.89
2016	170.6	3.61
2017	174.4	3.55
Average	141.2	3.50

Other Information

- The data for county level yields and prices for Brown County, Ohio are presented in Table 1.
- The farmer of interest (Professor Moss's Uncle-in-Law) has 2,560 of farmland historically planted to corn and soybeans. The basis is 45 % corn (1,152 acres) and the base yield established in 2009 with the change in farm program (i.e., FSRI 2002 to the 2008 Farm Bill) was 140.5 bu./acre.
- In addition, the Reference price for corn is $ 3.70/bu and the loan rate is $ 1.95/bu.
- The expected price received this year (the MYA) is $ 3.35/bu.

Questions 1 and 2

1. The price used to compute the Agricultural Risk Coverage Payoff is
   a. $ 3.76 /bu.
   b. $ 3.50 /bu.
   c. $ 3.85 /bu.
   d. Cannot determine
2. The Agricultural Risk Coverage Payoff for this farm (assuming ARC-IC) and a recent proven yield of 167.32 bu./acre would be
   a. $ 632.02
   b. $ 488.21
   c. $ 542.67
   d. None of the above.

Question 3 and 4

3. Assume that the market year price for corn this year is $ 3.35/bu, what is the Price Loss Coverage received by this farm for corn?
    a. $ 56,650
    b. $ 57,344
    c. $ 48,152
    d. None of the above
4. The maximum price difference for Price Loss Coverage program is
    a. The Reference Price minus the Market Year Price
    b. The Reference price minus the Loan Rate
    c. The Market Year Price minus the Loan Rate
    d. None of the above.

Yield/Price Probabilities

Obs	Yield	Price	Prob(Y,p)	Obs	Yield	Price	Prob(Y,p)
1	116.79	1.87	0.00001	29	116.79	4.66	0.01401
2	126.29	1.87	0.00009	30	126.29	4.66	0.05110
3	150.02	1.87	0.00369	31	150.02	4.66	0.31873
4	164.26	1.87	0.01314	32	164.26	4.66	0.36460
5	178.50	1.87	0.02270	33	178.50	4.66	0.20242
6	202.23	1.87	0.01132	34	202.23	4.66	0.01523
7	211.72	1.87	0.00489	35	211.72	4.66	0.00308
8	116.79	2.43	0.00010	36	116.79	5.22	0.02064
9	126.29	2.43	0.00065	37	126.29	5.22	0.06474
10	150.02	2.43	0.01853	38	150.02	5.22	0.27659
11	164.26	2.43	0.05254	39	164.26	5.22	0.25214
12	178.50	2.43	0.07232	40	178.50	5.22	0.11156
13	202.23	2.43	0.02471	41	202.23	5.22	0.00575
14	211.72	2.43	0.00917	42	211.72	5.22	0.00100
15	116.79	3.54	0.00235	43	116.79	5.78	0.02181
16	126.29	3.54	0.01158	44	126.29	5.78	0.05880
17	150.02	3.54	0.15394	45	150.02	5.78	0.17208
18	164.26	3.54	0.27727	46	164.26	5.78	0.12501
19	178.50	3.54	0.24239	47	178.50	5.78	0.04408
20	202.23	3.54	0.03886	48	202.23	5.78	0.00156
21	211.72	3.54	0.01065	49	211.72	5.78	0.00023
22	116.79	4.10	0.00679	50	116.79	6.33	0.01656
23	126.29	4.10	0.02884	51	126.29	6.33	0.03837
24	150.02	4.10	0.26255	52	150.02	6.33	0.07691
25	164.26	4.10	0.37686	53	164.26	6.33	0.04453
26	178.50	4.10	0.26255	54	178.50	6.33	0.01251
27	202.23	4.10	0.02884	55	202.23	6.33	0.00030
28	211.72	4.10	0.00679	56	211.72	6.33	0.00004

Questions 5, 6 and 7

5. Assume that the proven average yield is 167.82 bu./acre. Given a price of $ 3.76 /bu, what is the actuarially fair price of a 80 % yield coverage policy?
6. Assuming 80 % yield coverage and a contract price of $ 3.50, what would the actuarially fair price of revenue protection be?
7. In issuing insurance the "load" is
   a. The cost of writing policies, paying claims, and other business cost.
   b. Increased input use by farmers attempting to game the insurance policy.
   c. The concept that farmers with lower expected yields and/or higher risk tend to remain in the pool as the insurer increases the premium.
   d. None of the above.

Questions 8 and 9

8. Reinsurance of multi-peril crop insurance in the United States is
   a. Administered by the Risk Management Agency of the United States Department of Agriculture.
   b. Operates by private insurance companies placing insurance policies into one of two funds: the Assigned Risk Fund and the Commercial Fund.
   c. The payoff to the insurance company varies by the state the insurance policy is written in.
   d. All of the above
9. In general reinsurance allows crop insures to
   a. Obtain profits by leveraging their position.
   b. Reduce the potential loss by diversifying risk across regions.
   c. Was issued by Lloyds of London.
   d. None of the above.

Question 10

10. Of the current agricultural policies, the policy(s) that tend to be price distorting are
    a. Price Loss Coverage
    b. Agricultural Risk Coverage
    c. Crop Insurance
    d. b and c