University of Texas at Austin

Problem Set #7

More on basic hedging. Forward contracts

7.1. **Payoff and profit for a producer of goods who hedges using a forward contract.**

Problem 7.1. Consider the general case in which

- C stands for the total aggregate fixed and variable costs of production per unit of good;
- F stands for the forward price per unit of good.

What is the price s^* per unit of good at which the profit of a producer who **hedges** using a forward contract equals the profit of the producer who does not hedge at all?

Problem 7.2. A farmer produces one million bushels of corn. The total cost of production is \$1.3 million. The farmer entered a forward contract to hedge at a forward price of \$2.50 per bushel on one million bushels. What is the farmer's profit?

Problem 7.3. Assume that farmer Brown is uncertain about his crop yield. Based on past experience, he thinks the following is a good model:

- 100,000 bushels with probability 1/4;
- 80,000 bushels with probability 3/4.

How many forward contracts do you think farmer Brow should short to hedge against fluctuations in corn prices at harvest time? Explain your way of thinking …

7.2. **Payoff and profit for a user/buyer of goods who hedges using a forward contract.**

Problem 7.4. Pancakes, Inc. produces chocolate chip pancakes. It longed a forward contract on 100 lbs of chocolate chips at \$3.00 per pound. Total fixed revenue is \$2,000 for the pancakes produced with the above chocolate chips. Other costs total \$1200. Find the company's profit.

(a) 2,000
(b) 1,700
(c) 800
(d) 500
(e) None of the above.

Problem 7.5. The **Extra-Healty Cereal (EHC)** company longed 20,000 forward contracts on corn at \$2.80 per bushel. The revenue from cereal made with the above corn is \$200,000 while the other (non-corn) aggregate fixed and variable costs amount to \$120,000. What is the EHC's profit?