University of Texas at Austin

Problem Set #4

Forward contracts.

Problem 4.1. (5 points) A soy-bean farmer shorts forward contracts on soy in an amount matching his crop volume and with delivery at harvest time. Then, he is considered:

(a) an arbitrageur.

(b) a broker.

(c) a speculator.

(d) a hedger.

(e) None of the above.

Problem 4.2. Derivative securities can reduce the risk of both the buyer and the writer of the security. *True or false?*

Problem 4.3. A short forward contract has an unlimited loss potential. *True or false?*

Problem 4.4. 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 4.5. 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 …

Problem 4.6. **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 4.7. 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?