



## Supply Chain Contracting at Winter Gear: Negotiation (C)

### Preparing to Negotiate

Winter Gear is about to release another product. It is a motorized snowboard called JetBoard XL. Customer demand for the JetBoard is between  $A = 700$  and  $B = 2500$  units, with each amount between 700 and 2500 equally likely. The eBay salvage value for any units unsold at the end of the season is  $V = \$1000$ . The goodwill loss for unfilled demand is \$500 per unit, and this goodwill cost is the same for Pete's and Winter Gear.

### Private Information

In the negotiation assignment you will have the role of Greg, the CEO of Winter Gear, or Pete, the owner of Pete's Extreme Sports. In class you will receive a sheet with your private information. If you are Greg, you will know the production cost  $C$ , but not the retail price  $P$ . If you are Pete, you will know the retail price  $P$  but not the production cost  $C$ . Additionally, both, Pete and Greg will have outside options that will also be their private information.

To prepare to negotiate, we will use made-up number for  $P$  and  $C$ . For now, use  $P = \$10,000$  and  $C = \$5,000$ . Note that these are not the real numbers, and are not even really in the right ballpark, so I am giving them to you only for the purpose of getting you used to using the model.

### Assignment

Download the file "Winter Gear DSS.xls" that I have posted on ANGEL for you. It is located in the Winter Gear Negotiation folder. Fill in all the input information on all four worksheets. In the yellow cells, fill in  $P = 10,000$  and  $C = 5,000$  on all four worksheets. Now answer the following questions and type in your answers on the worksheet called "answers to questions" in the "Winter Gear DSS.xls" file. After you are finished, save your file and upload a copy of it to the ANGEL drop box in the "Winter Gear Negotiation" folder.

1. Refer to the First best model worksheet.
  - a. What is the first best order quantity?
  - b. What is the first best expected total supply chain profit?
2. Refer to the wholesale price contract model worksheet.
  - a. What Wholesale price  $W$  (approximately) maximizes Winter Gear's profit in the wholesale contract.

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*This note was prepared as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.*

- b. With that  $W$ , what is Pete's order quantity?
  - c. What is Winter Gear's expected profit?
  - d. What is Pete's expected profit?
  - e. What is the total supply chain profit?
  - f. What is the cost of double marginalization?
3. On the buyback model worksheet, put in the formula in cell I19 that computes  $B$  that coordinates the supply chain (refer to the previous assignment and lecture notes for the formula).
- a. What wholesale price  $W$  would make Pete and Winter Gear's total expected profits the same?
  - b. With that  $W$ , what is the rebate  $B$ ?
  - c. What is the total expected profit for Pete,
  - d. for Winter Gear,
  - e. for the supply chain?