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Trade and Investment Strategy
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ASSIGNMENT 2

This is an empirically oriented assignment that analyzes bidding by the students who take this course (including you). The data for the ascending, SPSB and FPSB auctions that your class and several others have played are displayed here.

Question 1 (8 points)

Analyzing data from the FPSB auction

a) For the FPSB auction, order the bids from highest to lowest and order the valuations from highest to lowest. Plot each point on a diagram with "valuation order" on the horizontal axis and "bid order" on the vertical axis.
b) If all the bidders behaved according to the predictions of theory analyzed in lectures, what would the graph look like?
c) Regress "bid order" on "valuation order" (using Excel or some other least squares program). Test the joint hypothesis that the intercept and the slope coefficient behave according to the theoretical prediction.
d) Write down and explain the formula (in terms of winning probability, valuation and bid) that represents the expected value from bidding in the auction.
e) Are there some obvious things that an expert bidder would not do? Briefly explain why your group considers such bids "outliers", bids that are unlikely to be submitted by experts?
f) Throw out the outliers from the data set. For example, throw out observations in which the bidder submitted a bid that would have lost (or did lose) money if (or when) s/he won, and focus on the other bidders for the remaining questions. Now repeat a) and c) on the remaining date. How much closer does theory match with the remaining data?

g) For each winning bid in the FBSB auction, plot the corresponding highest losing valuation (that is the second highest valuation); you should plot as many points as there are FBSB auction class experiments.
h) Regress winning bid on highest losing valuation for the data set that omits the outliers. What does theory say about the intercept and slope term? Is the theory rejected by the data?

Question 2 (7 points)

Comparing the data from the three auctions

a) What does the revenue equivalence theorem imply about the revenue from a FPSB auction, a SPSB auction and an ascending auction? Comparing all three, are they supposed to be the same every time, or just on average?
b) Reviewing the data collected from the classes, what are the averages and standard deviations of the revenue earned in each of the three auction types (FPSB, SPSB and ascending)?
c) Is the expected revenue from one of the auctions significantly larger than for the other two?
d) For the SPSB auction, plot the coordinate pair (valuation, bid) on a graph with valuations on the horizontal axis and bids on the vertical axis.
e) What does theory predict about what to bid in a SPSB auction? Allowing for approximation in bidding, what percentage of bidders followed the theory?
f) Plot the valuations (on the horizontal axis) and the winning bids (on the vertical axis) of the winning bids in both the SPSB and ascending auctions on the one diagram.
g) Are there any obvious differences between the winning bids in these two auctions?