

Project Description

This project is about the application of game theory to real world online auctions. Students should use their theoretical knowledge and collect data from a real world online auction to answer the following questions.

- (a) What is the effect of a positive reserve price on the final price of an auction?
- (b) What is the effect of the number of bidders on the final price of an auction?

To find the answer to these questions you need to collect data from ebay. First, choose a specific object which is popular for sale on ebay via auction. For instance, used iphone 8 or 7, used ipad, used Samsung galaxy s8, etc. (you cannot choose two different objects). Then you need to collect the following information for at least 40 auctions.

- (a) Number of bidders with their highest bids.
- (b) Whether the seller used a reserve price and what was the reserve price if there was any.
- (c) Final bid which is the sell price.
- (d) The date in which the auction ended.
- (e) Other information you consider important. (An example of how to present data is posted on the blackboard. It is an example, it is not prescriptive.)

To collect these information you need to have an ebay log in and password. After you logged in, search for the item you chose, for instance iphone 7. Choose auction only sales and watch as many items as possible. You need to click on the "add to watch list". After each of these auctions finishes you can click on the number of bids to see each bids (below picture). For instance, in the picture below we have 8 bidders. Name them from bidder 1 to 8 and write the highest bid of each of them in front of their names. At this stage you need to create an Excel file to keep these information. The reserve price for the picture below is \$299.99 which is called the starting price as well. Try to collect a combination of auctions with and without reserve prices to be able to allow sufficient variation in your data to estimate a regression.

Once you collected the above information for at least 40 Auctions, (If you collect more data, then your results become more reliable. So I encourage you to collect as many as you can.) then you need to test the two questions. To test each question, you need to run a regression that can represent the relationship between the final price and either the reserve price or the number of bidders. You are free to use other independent variables in your regression as controls. Then represent the results of your regression such as R-squared as a justification for the significance of the regression, or coefficients as a justification of the relation between the final price and the number of bidders or the reserve price. You are free to use any software that can run a regression such as Excel, STATA or Eviews. Also you must submit your collected data as an Excel file to the Blackboard.

Finally, compare your findings with what the theory suggests and explain your results.

The result of your project will be two files. First, the excel file including the data you collected. Second, the .pdf file which is your answers to the questions and any other relevant discussions. Graphs need to be included in your .pdf file when you discuss them. There is no word limit for this project but I expect around 2-3 pages (excluding graphs and tables) for the answers to both questions.

Marking criteria


- Collection and interpretation of relevant data = 5 marks: less than 40 observations zero marks, 40-80 observations 3 marks, 80-100 observations 4 marks and more than 100 observations 5 marks.
- The answer and interpretation of the results for the first question as well as justification of your model = 10 marks
- The answer and interpretation of the results for the second question as well as justification of your model = 10 marks

Appendix

The ebay tutorial

Bid history [Tell us what you think](#)

Item number: 262321714276



Apple iPhone 6S Plus (Latest Model) - 16GB - Rose Gold (Sprint) Smartphone
Winning bid: **US \$482.99**

Bidders: 8 Bids: 16 Time Ended: Mar-08-16 16:59:23 PST Duration: 3 days

i This item has ended.

Only actual bids (not automatic bids generated up to a bidder's maximum) are shown. Automatic bids may be placed days or hours before a listing ends. [Learn more about bidding.](#) [Show automatic bids](#)

Bidder	Bid Amount	Bid Time
a***7 (930 ☆)	US \$482.99	Mar-08-16 16:59:17 PST
8***a (101 ☆)	US \$479.00	Mar-08-16 16:59:22 PST
8***a (101 ☆)	US \$469.00	Mar-08-16 16:58:58 PST
d***d (110 ☆)	US \$463.65	Mar-08-16 12:03:54 PST
8***a (101 ☆)	US \$460.00	Mar-08-16 16:58:52 PST
o***y (55 ☆)	US \$450.00	Mar-06-16 13:51:01 PST
k***a (19 ☆)	US \$445.00	Mar-08-16 11:38:00 PST
k***a (19 ☆)	US \$435.00	Mar-08-16 11:37:24 PST
-***e (12 ☆) ⚡	US \$425.00	Mar-07-16 09:43:00 PST
-***e (12 ☆) ⚡	US \$415.00	Mar-07-16 09:42:20 PST
k***a (19 ☆)	US \$401.00	Mar-06-16 13:50:45 PST
a***e (0)	US \$400.00	Mar-05-16 20:27:00 PST
o***y (55 ☆)	US \$330.00	Mar-06-16 13:50:43 PST
o***y (55 ☆)	US \$320.00	Mar-06-16 13:50:24 PST
e***r (292 ☆)	US \$304.99	Mar-06-16 03:31:29 PST
a***e (0)	US \$300.00	Mar-05-16 20:26:41 PST
Starting Price	US \$299.99	Mar-05-16 16:59:23 PST

If two people bid the same amount, the first bid has priority.