

e - c o m p a n i o n

ONLY AVAILABLE IN ELECTRONIC FORM

Electronic Companion—"Do Auctioneers Pick Optimal Reserve Prices?"
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Online Appendix: Additional Results

Table 1: Fixed effects regressions for Tables 2 and 3. Cuberoot and Cube regressions were separated to better interpret the constant term. * p-value < 0.01. Standard errors are in parentheses.

Variable	Description	NoInfo		FullInfo	
		Cuberoot	Cube	Cuberoot	Cube
<i>Constant</i>	Intercept	29.46* [0.28]	61.27* [0.26]	34.86* [0.33]	63.14* [0.44]
$n - \bar{n}$	# of bidders minus the average number of bidders	3.24* [0.11]	2.71* [0.11]	4.25* [0.10]	2.88* [0.13]
$Per - \overline{Per}$	# decision period minus the average number of periods	0.02 [0.016]	0.05* [0.015]	-0.12* [0.019]	-0.07* [0.025]
R^2		0.212	0.128	0.473	0.142

Table 2: Detailed results for classification of subjects from Table 4. Note how few subjects are in the center cell of each table, which illustrates the number of subjects who set r optimally on average and did not have any n effect.

(a) NoInfo					(b) FullInfo						
n effect	Cuberooot	Average r			Total	n effect	Cuberooot	Average r			Total
		Below	Neutral	Above				Below	Neutral	Above	
	Negative	4	0	0	4		Negative	1	0	0	1
	Neutral	10	0	1	11		Neutral	0	1	0	1
	Positive	17	5	3	25		Positive	15	0	3	18
	Total	31	5	4	40		Total	16	1	3	20

(c) NoInfo					(d) FullInfo						
n effect	Cube	Average r			Total	n effect	Cube	Average r			Total
		Below	Neutral	Above				Below	Neutral	Above	
	Negative	4	1	0	5		Negative	2	0	0	2
	Neutral	4	2	0	6		Neutral	2	0	0	2
	Positive	8	2	19	29		Positive	1	3	12	16
	Total	16	5	19	40		Total	5	3	12	20

Online Appendix: Sample Instructions

You are about to participate in an experiment in the economics of decision making. If you follow these instructions carefully and make good decisions you will earn a considerable amount of money that will be paid to you in cash at the end of the session. If you have a question at any time, please raise your hand and I will answer it. We ask that you not talk with one another for the duration of the experiment.

On your desk you should have a check-out form, a copy of the instructions, a pen and two copies of the consent form.

How to make money

Today's session includes two games. In the first game you will be participating in auctions as a seller. In the second game you will be choosing between pairs of lottery games.

Details of Game 1

You are a seller of a fictitious product. To make money you must sell that product in an auction. In each auction you will be selling your product to a different number of computerized buyers. To sell the product, you enter the minimum value that you are willing to sell this product for; this amount is your **Reservation Price**.

Before you enter your **Reservation Price**, you will know the number of computerized buyers that will be participating in your auction for each round. Each of these buyers will have a maximum willingness to pay for your product. The maximum willingness to pay is an integer from 0 to 100 (more details to follow).

In each auction bids ascend until all buyers reach their maximum willingness to pay. Therefore, throughout the auction some buyers will be forced to stop bidding. The auction ends when one buyer remains. The amount where each buyer stops bidding in the auction is called the **Drop-Out Price**.

The buyer with the highest drop-out price wins so long as that amount is equal to or above your Reservation Price. If all of the Drop-Out Prices are below your Reservation Price, then your product will not be sold and you will earn zero in that round. The profit calculation is as follows:

- **Your Profit = Second Highest Drop-Out Price** if the second highest Drop-Out Price is equal to or above your Reservation Price.
- **Your Profit = Reservation Price** if the highest Drop-Out Price is above the Reservation Price, but the second highest Drop-Out Price is below the Reservation Price.
- **Your Profit = 0** if all of the Drop-Out Prices are below the Reservation Price.

During the auction you will always have one unit of a product that you are selling, regardless of whether or not you sold it in the previous round.

You will participate in 60 consecutive auctions. For each round the number of buyers is randomly drawn as being 1, 4, 7, or 10, each number equally likely. The maximum amount

a buyer is willing to pay is a whole number from 0 to 100 (see the table and graph at the end of these instructions for an example). Your product will be the same product each round.

Examples

Example 1

Suppose you enter a Reservation Price of 60 and the second highest Drop-Out Price is 75, you earn a profit of 75 in this round.

Example 2

Suppose you enter a Reservation Price of 40 and the second highest Drop-Out Price is 30, but the highest Drop-Out Price is 60, you earn a profit of 40 in this round.

Example 3

Suppose you enter a Reservation price of 60 and the highest willingness to pay is 55, then none of the buyers have a Drop-Out Price equal to or higher than 60. Then no bids will be entered, and you earn a profit of 0 in this round.

The mechanics of entering a Reservation Price

To enter a Reservation Price, you enter your amount in the "Enter Your Reservation Price" box and then click on the Submit button. Once this is complete, the auction will proceed.

Information you will see at the end of each round

After each round you will be shown the results. The screen will show what the Drop-Out Prices were for each buyer or whether the buyer was unable to bid because his maximum willingness to pay was below the Reservation Price.

You will also see the following information:

- The Period, the Reservation Price, the Number of Buyers
- The Winning Bid, and Your Profit for the round

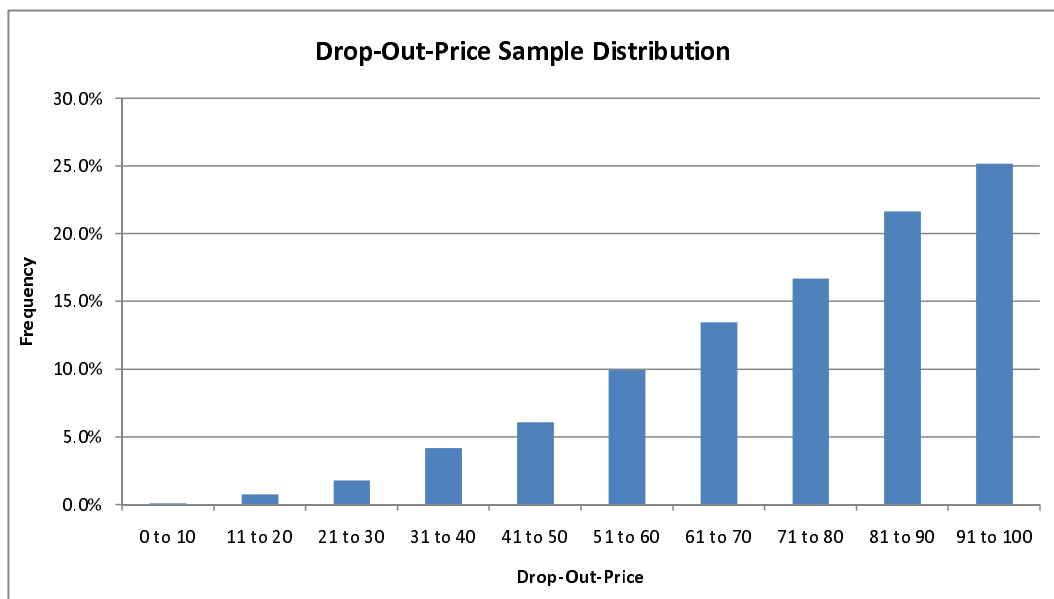
On the bottom of each screen you will also see this information for all previous rounds.

Bidding Distribution

As mentioned previously, Drop-Out-Prices will be integers between 0 and 100. Here is a sample of 100 rounds:

91	84	71	94	93	88	96	99	64	79
54	87	88	40	94	68	23	75	66	48
93	58	97	56	26	61	53	40	30	62
99	81	20	74	65	81	77	41	59	99
97	96	79	70	51	82	85	66	91	71
53	78	43	77	100	40	73	72	94	97
64	95	78	84	46	92	81	100	46	96
85	61	72	73	72	88	94	72	85	47
48	81	100	59	100	38	76	86	99	94
59	90	53	48	84	69	100	84	71	87

Here is a column chart of 10,000 rounds of Drop-Out-Prices:



Average: 75

Min: 0

Max: 100

Details of Game 2

This phase of the experiment includes a lottery game that deals with pairs of lotteries. In each pair, Option A is always a 50/50 chance of winning either \$4.50 or \$5.50. Option B of each pair is a 50/50 chance of winning either \$1 or a prize. The amount of the prize for Option B is \$9 for pair 1, \$9.50 for pair 2, \$10 for pair 3, and so on. The decision screen for the lottery game is shown below.

The screenshot shows a software interface for Game 2. At the top, it says 'Period 1 of 1' and 'Remaining time [sec] 0'. Below this is a table with 10 rows, each representing a lottery pair. Each row has columns for 'Pair', 'Option A', 'Option B', and 'Choice'. Option A is always '50% chance at \$4.50, 50% chance at \$5.50'. Option B varies by pair: '50% chance at \$1.00, 50% chance at \$9.00' for pair 1, '50% chance at \$1.00, 50% chance at \$9.50' for pair 2, '50% chance at \$1.00, 50% chance at \$10.00' for pair 3, '50% chance at \$1.00, 50% chance at \$11.00' for pair 4, '50% chance at \$1.00, 50% chance at \$12.00' for pair 5, '50% chance at \$1.00, 50% chance at \$13.00' for pair 6, '50% chance at \$1.00, 50% chance at \$14.00' for pair 7, '50% chance at \$1.00, 50% chance at \$15.00' for pair 8, '50% chance at \$1.00, 50% chance at \$17.00' for pair 9, and '50% chance at \$1.00, 50% chance at \$20.00' for pair 10. Each row has a 'Choice' column with radio buttons for 'A' and 'B'. To the right of the table are buttons labeled 'Test1' through 'Test10'. On the right side of the screen, there is a results panel for 'Results for Lottery Pair 1'. It shows 'Your chose Option A' and explains the random number drawing process: 'A random number was drawn on the range of 1 to 100, to determined the amount earned. If this number is less than or equal to 50, you earn \$4.50. If this number is greater than 50, you earn \$5.50'. It then shows 'The random number is 78' and 'Your earnings would be \$5.50'. At the bottom of the screen, there is a 'Continue' button and a note: 'When you are satisfied with your choice for each lottery pair press the Continue button.'

The outcome of each lottery in each pair is determined by drawing an integer from 1 to 100, each integer equally likely. If the random number drawn is less than or equal to 50, the outcome of a lottery is \$4.50 for Option A and \$1 for Option B. If the random number drawn is greater than 50, the outcome of the lottery is \$5.50 for Option A and the prize amount for Option B.

Your task is to choose which Option, A or B, you prefer for each of the 10 lottery pairs. Before you make your decision you can use the test button to play the lottery. The screen shot above shows results of using the test button for Pair 1 and Option A. Since the random number selected was 78, the outcome is \$5.50. You can use test buttons on as many of the lottery pairs as many times as you like before you finalize your decision. After you selected your preferred option for each of the 10 lottery pairs, click the Continue button.

One of the 10 lottery pairs will be selected at random and played for real money. You will earn the amount that corresponds to the Option (A or B) you selected for the chosen pair and the value of the random number the computer generates.

How you will be paid

At the end of the session, the computer will calculate the total profit you earned in all rounds of Game 1 and will convert it to US dollars at an exchange rate of 600 computer dollars to one US dollar. These dollar earnings will be added to your earnings from Game 2 along with your \$5 participation fee and displayed on your computer screen. Please use this information to fill out the check-out form on your desk. All earnings will be paid in cash at the end of the session.