

“Re-matching, Information and Sequencing Effects in Posted Offer Markets” (by D.Davis, O. Korenok and R. Reilly),

[Note: In what follows, instructions for an initial training sequence are followed by combinations of instructions for different information/order in sequence/ re-matching or fixed group treatment combinations. For brevity, we provide here instructions only for a pair of sessions that illustrate the difference treatment combinations. The sessions are

- (1) A no information, fixed group market where the number of sellers rises from 2 to 3 across sequences
- (2) A full information re-matched group market where the number of sellers fall from 3 to 2 across sequences.]

Experiment Instructions [General]

Overview: This is an experiment in the economics of decision-making. Various research foundations have provided funds for this research. The instructions are simple, and if you follow them carefully and make good decisions, you may earn a considerable amount of money that will be paid to you in CASH at the end of the experiment. Your earnings will be determined partly by your decisions and partly by the decisions of others.

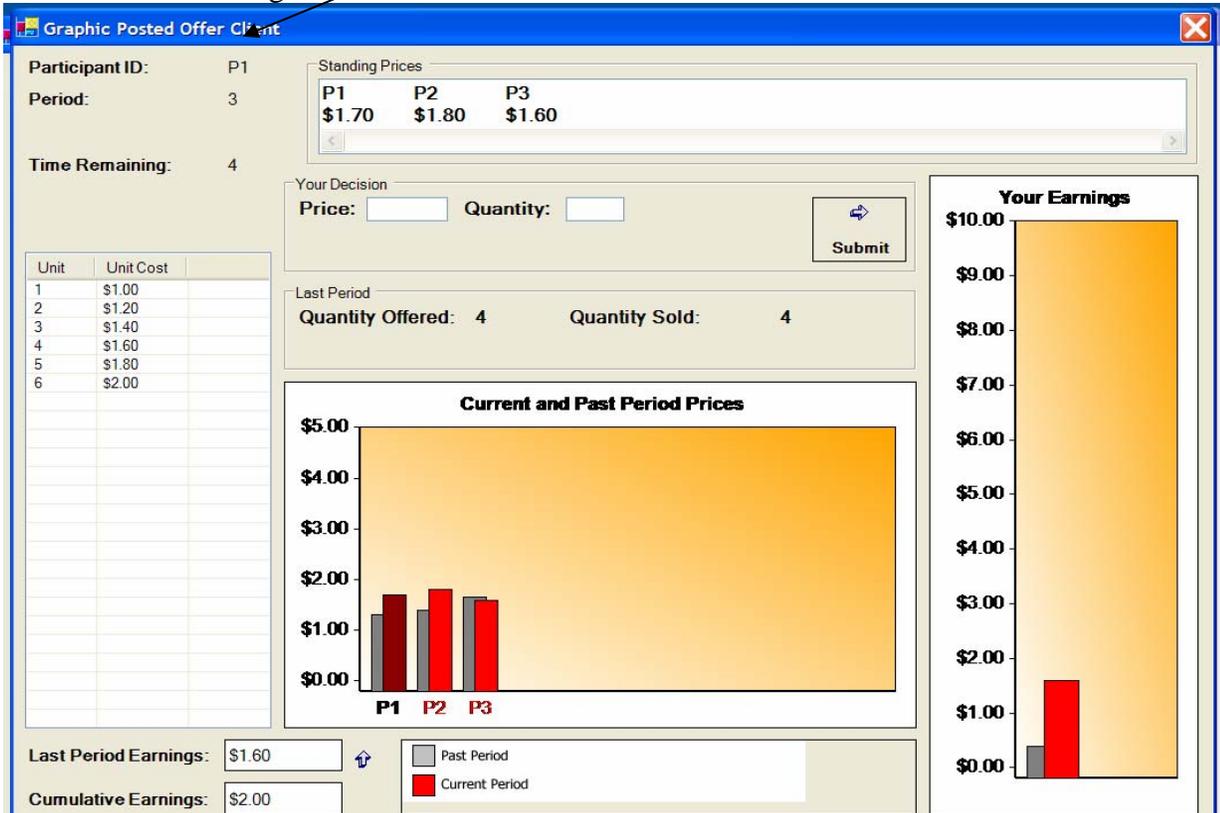
General Incentives. In today’s experiments, sellers, endowed with unit costs, offer “units” for sale to a simulated buyer. The sellers earn money by selling units to the buyer at prices in excess of his or her unit costs. Importantly, sellers incur costs only for the units that the buyer purchases. Sellers bear no costs for unsold units.

The Trading Sequence. Today’s market will consist of a number of *trading periods*. At the outset of each period sellers are induced with costs and an automated buyer is induced with a demand condition that will not be revealed to the sellers. Trading follows a simple two-step process. First, the sellers are given the chance to make a pricing decision. Second, after a pre-set time limit, the buyer makes all purchases possible from the seller at the posted prices. Then sellers earning are calculated and a new period begins.

The trading periods in today’s initial sequence will last **30 seconds**. If a seller does not change his or her price prior to the expiration of the period, the seller’s price from the previous period will automatically be carried forward.

Specific Instructions. Participants in today’s experiment are grouped into markets of 2 or 3 sellers. The number of sellers in your market will be obvious from the number of standing prices that are posted each period, and the number of current and past price bars on the screen.

The screen display below illustrates the screen for a seller P1 who is in a market with two other sellers. Please take a moment now to look in the upper left corner of your computer screen to identify your seller number in today's market. The illustration shows a market with 3 seconds remaining in period 4. Notice that seller P1 can offer up to 6 units for sale, and that each unit has costs ranging from \$1.00 per unit to \$2.00 per unit. In each sequence of today's session, your unit costs will differ from those shown in the figure



In the previous period, (period 3) seller P1 posted a price of \$1.70 and sold 4 of the six units he could profitably offer at that price. The seller earned \$1.60 in period 3. Period earnings are the difference between the revenues from selling 4 units at a price of \$1.70 per unit and the costs of the 4 units sold or

$$\begin{array}{rcl}
 \text{Total Revenue} & - & \text{Total Costs} & = & \text{Earnings} \\
 \$1.70 \times 4 & & (\$1.00 + \$1.20 + \$1.40 + \$1.60) & & \\
 \$6.80 & - & \$5.20 & = & \$1.60
 \end{array}$$

Notice that the bar graphs on the screen allow you to track price and earnings changes relative to the preceding period. In the figure, for example, notice that seller P1 increased his price relative to period 2, and as a consequence his earnings increased.

Price Posting. At the start of a session, you have, by default, a posted price of zero and you offer no units. To change your price, simply click on the price box, and type in a price. The computer will automatically enter all units you can profitably sell that price in the “offer quantity: box. For example, suppose that seller P1 decided to post a price of \$2.00. By typing in a price of \$2.00 in the price box and then clicking the ‘submit’ box the price would take effect at the end of the trading period

If you do not wish to change your price in a period, you need do nothing your standing price will be repeated in the following period.

Buyer Decision: You will not be told the buyer’s maximum values for units. However, as a general matter, the buyer will purchase more units as the price falls. Further, in this market, buyer reservation values will remain the same each period. The buyer will make all profitable purchases. In the case that sellers post the same prices, the buyer will rotate purchases as evenly as possible among the sellers posting the same price.

Summary: Your job is make as much money as possible.

Details

- 1) This is the first of three different sequences in today's experiment. If you finish ahead of the others, please wait patiently for the start of the next sequence.
- 2) The purpose of this short initial sequence is to ensure that you know how to post prices and earn profits. You will not be paid for your decisions in this first sequence.

Any questions?

[Fixed Groups, No Market Information, Duopoly to Triopoly]

Sequence 2 Instructions.

Now we will begin a second sequence. Procedures in this second sequence are exactly like those in the first sequence, with the following differences.

- 1) You will now be paid for your decisions. Your laboratory earnings will be converted to U.S. currency at the rate of \$100 lab = \$1 U.S.
- 2) Your units costs will differ from those in the first session.
- 3) This market will last for 160 periods. Each period will last **12 seconds**.
- 4) Each of the markets in this sequence will have 2 sellers. You will remain paired the same other seller throughout the sequence.

Sequence 3 Instructions.

Now we will begin a third sequence. This sequence differs from the sequence just completed in that a series of spinoffs have occurred. Now you will participate in a market with three sellers. Except for this difference, procedures are exactly like those in the just completed sequence. In particular,

- 1) Your laboratory earnings will be converted to U.S. currency at the rate of \$100 lab = \$1 U.S.
- 2) This market will last for 160 periods. Each period will last **12 seconds**.
- 3) You will remain paired with the same two participants throughout the sequence.

[ReMatched Groups, Market Information, Triopoly to Duopoly]
Sequence 2 Instructions.

Now we will begin a second sequence. Procedures in this second sequence are exactly like those in the first sequence, with the following differences.

1) You will now be paid for your decisions. Your laboratory earnings will be converted to U.S. currency at the rate of \$100 lab = \$1 U.S.

2) Your units costs will differ from those in the first session.

3) This market will last for 160 periods. Each period will last 12 **seconds**.

4) Each of the markets in this sequence will have 3 sellers. At the end of each period you will be randomly rematched with one of the other sellers. Note: At the time you make your price decisions, you will NOT know the sellers with whom you will be matched as you make your decision. The persons with whom you were paired will become evident when you see the price bars showing results at the end of the period.

5) We provide you with the following information about demand and supply in your market.

Demand: In each market, a buyer will purchase **9** units at **prices up to \$6.00** per unit. The buyer will purchase the lowest priced units available first. In the case of a tie, the buyer will divide purchases as evenly as possible among the sellers posting the same price.

Supply: Each seller in your market may offer **4** units per period. Each of these units **cost \$2.00** each. Thus, in total, all sellers can offer 12 units to the market, at any price above \$2.00.

Combining supply and demand, notice that the seller posting the highest price is certain to sell at least one unit each period. Notice also that each period two sellers will each sell all their units, while a third seller (the seller posting the highest price) will sell one unit.

To help you understand this information, let us consider some sample prices.

- 1) Suppose P1 posts a price of \$10, P2 posts a price of \$2 and P3 posts a price of \$6.01. Each seller offers 4 units. Who will sell what? How much will each seller earn? (Elicit answer from group)

Observation: The buyer will purchase no units at any price above \$6.00

- 2) Suppose P1 posts a price of \$2.5, P2 posts a price of \$3 and P3 posts a price of \$6. Who will sell what? What will each seller earn? (Elicit answers from group)

Observations:

- The highest pricing seller is certain to sell at least 1 unit period period at a price of \$6 per unit or less.
- It may not be the most profitable to be either the highest pricing seller, or the lowest pricing seller.

Any questions?

Sequence 3 Instructions.

Now we will begin a third sequence. This sequence differs from the sequence just completed in that a series of mergers have occurred. Now you will participate in a market with 2 sellers. Except for this difference, procedures are exactly like those in the just completed sequence. In particular,

- 1) Your laboratory earnings will be converted to U.S. currency at the rate of \$100 lab = \$1 U.S.
- 2) This market will last for 160 periods. Each period will last 12 **seconds**.
- 3) At the end of each period you will be randomly rematched with another seller. As in sequence 2, you will NOT know the seller with whom you will be matched as you make your decision. The seller with whom you were paired will become evident when you see the price bars showing results at the end of the period.
- 4) Supply and Demand conditions are the same as before, except that the 12 units that sellers may collectively offer are now divided among two sellers rather than 3 sellers. (That is, each seller now may offer 6 units per period, at a cost of \$1 per unit, and the buyer will purchase 9 units at any price of \$6.00 or less

Combining supply and demand, notice that the seller posting the highest price is certain to sell at least three units each period. Notice also that each period the seller posting the lowest price will sell 6 of his or her units. To help you understand this information, let us consider some sample prices.

- 1) Suppose P1 posts a price of \$6.01 and P2 posts a price of \$4.00. Who will sell what? What will each seller earn? (Elicit answers from group)

Observation: The buyer will purchase no units at any price above \$6.00

- 2) Suppose P1 posts a price of \$6.00 and, P2 posts a price of \$3. Who will sell what? What will each seller earn? (Elicit answer from group)

Observations

- The high pricing seller is certain to sell at least 3 units at any price of \$6 or less.
- The low pricing seller may earn more money than a high pricing seller.

- 3) Suppose P1 posts a price of \$5.00 and, P2 posts a price of \$2.00. Who will sell what? What will each seller earn? (Elicit answer from group)

Observations

The high pricing seller may earn more money than a low pricing seller.

Any questions?