

This electronic appendix is for “Squeezing Lemonade into Lemons: Making Efficient Markets Inefficient” by Bart Wilson and Artie Zillante. The appendix includes instructions for the experiment as well as screenshots for the treatments.

## Experiment Instructions

We have instructions for our two-sided multilateral negotiations (TSMN) treatment as well as our posted-offer treatment. Instructions for all sessions were read out loud as subjects followed along with the electronic version at their computer.

### Instructions (TSMN)

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#### Welcome

This is an experiment in the economics of decision making. The instructions are simple, and if you follow them carefully and make good decisions, you may earn a considerable amount of money which will be paid to you in CASH at the end of the experiment.

In this experiment you are a {**buyer or seller**}. There are **16** buyers and **4** sellers in this experiment including you. The experiment will last 1500 seconds.

During that time each buyer will have the opportunity to purchase **one (and only one)** unit of a fictitious item from **one** of the sellers. To do so, a buyer will need to “stand” in line at one of the seller’s “stores” by clicking on the radio button at the top portion of the screen.

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#### Buyers and Sellers

Once a buyer is at the front of a line, a chat window will appear in the upper left portion of the screen. This chat window is a private conversation between the buyer and seller. You are free to discuss all aspects of the experiment, with the following exceptions: you may not reveal your name, discuss side payments, make threats, or engage in inappropriate language (including such shorthand as ‘WTF’). If you do, you will be excused and you will forfeit your earnings.

At any time during the conversation, a seller can make an offer to sell an item to the buyer by entering in the desired price into the “Offer” textbox and clicking the **Make Offer** button. The offer will appear below the seller chat window, and the buyer can choose to **Accept** or **Reject** it. If the offer is rejected, the seller may enter a new offer. If the offer is accepted, the earnings box in the middle of the screen will reflect the outcome. Each buyer can only purchase **one** unit during the entire experiment.

A buyer and a seller can leave the conversation at any time by clicking on a **Leave** button. All outstanding offers will be canceled when a conversation is terminated. A buyer may continue to enter new lines until the time remaining for shopping expires.

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### **Regular or Super?**

There are two types of items available, *regular* and *super*. Each seller can only sell one or the other. Only the individual seller knows whether he or she sells *regular* or *super* items to the buyers.

If buyers purchase an item, they receive as profit the difference between their value and the price they pay.

#### **TO SUM UP:**

$$\text{Value} - \text{Price Paid} = \text{Buyer Profit}$$

The value of the item depends upon whether it is a *regular* or a *super*. The value to buyers of a *super* item is greater than a *regular* item. The average value across all buyers for the *super* and *regular* items is **2400**. Only the individual buyer knows his or her value for a *super* and *regular* item. This is shown in the “Potential Earnings” section in the middle of the buyer screen.

Only after purchasing a unit will the buyer know if he or she has received a *super* or *regular* item from the seller. The “Potential Earnings” section will indicate whether the buyer has received a *super* or *regular* item.

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Sellers earn profit by selling units at a price greater than their cost. Sellers can sell several units to the buyers. For each unit that a seller sells to a buyer, a seller receives as profit the difference between the price that the buyer pays and the cost of the unit.

#### **TO SUM UP:**

$$\text{Price} - \text{Cost per Unit} = \text{Seller Profit per Unit}$$

Each row in the “Earnings” section of the screen represents one unit that a seller can sell to a buyer. These rows fill in as the seller sells units to the buyers. Recall that each seller can only sell either *supers* or *regulars*, but not both.

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### **Shopping Time**

Only a subset of buyers will be able to shop at any point in time during the experiment. Buyers will receive a message in the middle of their screen when they can shop. Each buyer only has **300** seconds to purchase a unit. If time elapses before a buyer purchases a unit, he or she will **not** have another opportunity to shop.

<The following statement appeared only the buyer’s screen. It was read out loud with all the instructions with “x” replacing “0.92”.>

Except during the 300 second-window for shopping, buyers earn an additional 0.92 cents per second. <end>

If you wish to review the instructions, you may go back at this time. If you feel you are prepared to proceed with the actual experiment, click on the **Start** button. The experiment will begin once everyone has clicked on the **Start** button. If you have a question that you feel was not adequately answered by the instructions, please raise your hand and ask the monitor before proceeding.

### **Instructions (Posted Offer)**

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#### **Welcome**

This is an experiment in the economics of decision making. The instructions are simple, and if you follow them carefully and make good decisions, you may earn a considerable amount of money which will be paid to you in CASH at the end of the experiment.

In this experiment you are a {**buyer or seller**}. There are **16** buyers and **4** sellers in this experiment including you. The experiment will last 1500 seconds.

During that time each buyer will have the opportunity to purchase **one (and only one)** unit of a fictitious item from **one** of the sellers. To do so, a buyer will need to “stand” in line at one of the seller’s “stores” by clicking on the radio button at the top portion of the screen.

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#### **Buyers and Sellers**

Once a buyer is at the front of a line, the buyer will see the advertised price of the seller.

The buyer can either **Accept** the offer and purchase at that price, or the buyer can leave by clicking on a **Leave** button. A buyer may continue to enter new lines until the time remaining for shopping expires.

If the offer is accepted, the earnings box in the middle of the screen will reflect the outcome. Each buyer can only purchase **one** unit during the entire experiment.

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#### **Regular or Super?**

There are two types of items available, *regular* and *super*. Each seller can only sell one or the other. Only the individual seller knows whether he or she sells *regular* or *super* items to the buyers.

If buyers purchase an item, they receive as profit the difference between their value and the price they pay.

**TO SUM UP:**

$$\text{Value} - \text{Price Paid} = \text{Buyer Profit}$$

The value of the item depends upon whether it is a *regular* or a *super*. The value to buyers of a *super* item is greater than a *regular* item. The average value across all buyers for the *super* and *regular* items is **2400**. Only the individual buyer knows his or her value for a *super* and *regular* item. This is shown in the “Potential Earnings” section in the middle of the buyer screen.

Only after purchasing a unit will the buyer know if he or she has received a *super* or *regular* item from the seller. The “Potential Earnings” section will indicate whether the buyer has received a *super* or *regular* item.

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Sellers earn profit by selling units at a price greater than their cost. Sellers can sell several units to the buyers. For each unit that a seller sells to a buyer, a seller receives as profit the difference between the price that the buyer pays and the cost of the unit.

**TO SUM UP:**

$$\text{Price} - \text{Cost per Unit} = \text{Seller Profit per Unit}$$

Each row in the “Earnings” section of the screen represents one unit that a seller can sell to a buyer. These rows fill in as the seller sells units to the buyers. Recall that each seller can only sell either *supers* or *regulars*, but not both.

<page 5>

**Shopping Time**

Only a subset of buyers will be able to shop at any point in time during the experiment. Buyers will receive a message in the middle of their screen when they can shop. Each buyer only has 300 seconds to purchase a unit. If time elapses before a buyer purchases a unit, he or she will **not** have another opportunity to shop.

While the buyers are shopping, sellers post advertisements <Private treatment> that buyers only see when at the front of the line <end>. The advertisement includes the price at which the seller is willing to sell, and it may or may not include the type of unit that the seller wishes to advertise as selling.

<The following statement appeared only the buyer’s screen and was announced as such. It was read out loud with “x” replacing “0.92”.>

Except during the 300 second-window for shopping, buyers earn an additional 0.92 cents per second.

<end>

If you wish to review the instructions, you may go back at this time. If you feel you are prepared to proceed with the actual experiment, click on the **Start** button. The experiment will begin once everyone has clicked on the **Start** button. If you have a question that you feel was not adequately answered by the instructions, please raise your hand and ask the monitor before proceeding.

## Screenshots

The following six figures contain screenshots for the buyers and sellers in our three treatments. The first pair of figures contains the screenshots for the TSMN treatment. The second contains the screenshots for the posted-offer treatments where sellers could not see the posted-offers of other sellers and the third contains the screenshots for the posted-offer treatments where the sellers could see the posted-offers of other sellers.

buyer 3

**Seller 1 Chat**

<Buyer 3>: do you sell supers?  
 <Seller 1>: of course I do

Send

**Seller 1 has offered you a price of 2750.**

Accept Offer

Reject Offer

Line

Seller 1  
 Seller 2  
 Seller 3  
 Seller 4

**You can now shop.**

Leave

**Potential Earnings**

If item it is a ->	Super Unit	Regular Unit
Value	3600	1200
- Price Paid	2750	2750
= Profit	850	-1550

**Summary Information**

Total Time Remaining: 18:31

Your Shopping Time Remaining: 03:31

Total Profit (cents): 0.0

**Legend**

You  
 Others

Figure 1 Screenshot for a buyer in a TSMN treatment

seller 3

**Buyer 1 Chat**

<Seller 3>: what are you willing to pay?  
 [You sent an offer of 2760 \*Private\*]  
 [Your offer was rejected \*Private\*]

Send

Offer: 2750

Make Offer

Line

Seller 1  
 Seller 2  
 You  
 Seller 4

**You sell super units.**

Leave

**Earnings (You have Super units)**

Units	Buyer	Price	Cost	Profit
1st			2500	
2nd			2500	
3rd			2500	
4th			2500	
5th			2500	

**Summary Information**

Total Time Remaining: 17:16

Total Profit (cents): 0.0

**Legend**

Buyers

Figure 2 Screenshot for a seller in a TSMN treatment

buyer 3

Seller 1

Line

Seller 1 

Seller 2

Seller 3

Seller 4

**You can now shop.**

**Leave**

Potential Earnings

If item it is a ->	Super Unit	Regular Unit
Value	3600	1200
- Price Paid		
= Profit		

Advertisement: One Super Unit for 2756.

**Accept Offer**

Summary Information

Total Time Remaining: **24:00**

Your Shopping Time Remaining: **04:30**

Total Profit (cents): **26.7**

Legend

 You

 Others

The average value is 2400.

Figure 3 Screenshot for a buyer in a PO-private treatment

seller 1

Buyer 1

What type of unit would you like to advertise as selling?

Super
  Regular
  Leave blank

What price would you like to sell at?

**2900**


**Post Advertisement**

This will only update when a new buyer enters your store.


Buyer sees:

Advertisement: One Super Unit for 2900.

Line

You 

Seller 2

Seller 3 

Seller 4

**You sell super units.**

**Leave**

Earnings (You have Super units)


Units	Buyer	Price	Cost	Profit
1st			2500	
2nd			2500	
3rd			2500	
4th			2500	
5th			2500	

Summary Information

Total Time Remaining: **24:07**

Total Profit (cents): **0.0**

Legend

 Buyers

The average value is 2400.

Figure 4 Screenshot for a seller in a PO-private treatment



buyer 1

Seller 2

Line

Seller 1  
 Advertisement: One Super Unit for 2800.

Seller 2  
 Advertisement: One Super Unit for 2775.

Seller 3  
 Advertisement: One Super Unit for 2950.

Seller 4  
 Advertisement: One Unit for 2450.

**You can now shop.**

**Leave**

**Summary Information**

Total Time Remaining: **21:49**

Your Shopping Time Remaining: **02:49**

Total Profit (cents): **54.3**

**Legend**

You

Others

The average value is 2400.

**Potential Earnings**

If item it is a ->	Super Unit	Regular Unit
Value	3600	1200
- Price Paid		
= Profit		

**Advertisement: One Super Unit for 2775.**

**Accept Offer**

Figure 5 Screenshot for a buyer in a PO-public treatment

seller 2

Buyer 1

What type of unit would you like to advertise as selling?

Super   
  Regular   
  Leave blank

What price would you like to sell at?

**2775**

**Post Advertisement**    This will only update when a new buyer enters your store.

Buyer sees:  
**Advertisement: One Super Unit for 2775.**

Line

Seller 1  
 Advertisement: One Super Unit for 2800.

You  
 Advertisement: One Super Unit for 2775.

Seller 3  
 Advertisement: One Super Unit for 2950.

Seller 4  
 Advertisement: One Unit for 2450.

**You sell regular units.**

**Leave**

**Summary Information**

Total Time Remaining: **20:50**

Total Profit (cents): **0.0**

**Legend**

Buyers

The average value is 2400.

**Earnings (You have Regular units)**

Units	Buyer	Price	Cost	Profit
1st			100	
2nd			100	
3rd			100	
4th			100	
5th			100	

Figure 6 Screenshot for a seller in a PO-public treatment