

Appendix B

Sample instructions

General

This is an experiment in the economics of market decision-making. Various research agencies have provided funds for the conduct of 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. It is in your best interest to fully understand the instructions, so please feel free to ask any questions at any time. It is important that you do not talk and discuss your information with other participants in the room until the session is over.

All transactions in today's experiment will be in experimental francs. These experimental francs will be converted to real US dollars at the end of the experiment at the rate of _____ experimental francs = \$1. Notice that the more experimental dollars you earn, the more US dollars you earn. What you earn depends partly on your decisions and partly on the decisions of others.

In this experiment we are going to conduct markets in which you will be a participant in a sequence of trading periods. In every period, you will be a **seller** of a fictitious good X. The 16 participants in today's experiment will be randomly re-matched every period into 8 markets with 2 sellers in each market. Therefore, the specific person who is the other seller in your market will change randomly after each period. The experiment consists of 3 sections where each section will comprise of 20 trading periods.

In each period, each seller is endowed with a fixed amount of units of good X to sell i.e. good X costs you nothing to produce. This endowment of good X can be large or small. In each market, one seller will receive a large endowment and the other seller will receive a small endowment. If you receive a large endowment you will continue to receive a large endowment throughout the experiment. Similarly, if you receive a small endowment you will continue to receive a small endowment throughout the experiment. The information about the size of your and the other seller's endowment will be displayed on all decision screens. The size of the small endowment will change in periods 21 and 41.

As a seller you can sell multiple units of good X every period but each buyer will purchase exactly one unit of the good each period. The buyers in today's experiment are simulated by computerized "robots". There are 200 buyers in each of the 8 markets. The buyers will not pay a price greater than 50 experimental francs for the single unit of good X. This maximum price is the same for all buyers and sellers throughout the experiment, and will be displayed on everyone's decision screen as shown in Fig. 1 on the next page. Sellers are not allowed to post a price above this maximum.

Trading Instructions for periods 1-21

In this section, the size of the large endowment is _____ units while the amount of small endowment is _____ units.

Each trading period is subdivided into 2 rounds. At the beginning of each period, you first decide the **round** in which to set your price. You can choose to set your price either in Round 1 or Round 2. You will then be asked to set a **price** for good X. An example of the decision screen is shown in Fig 1.



Fig. 1 Round Decision Screen

After both you and the other seller have made their choice, the rounds chosen by both sellers are displayed on your screen.

There are 2 different cases, depending on the choice of round made by you and the other seller.

Case 1: If you chose to set your price in Round 1 or if both you and the other seller chose to price in the same round, you will be asked to choose the price you wish to charge per unit of good X. An example of the decision screen is shown in Fig. 2 for the case where both sellers chose Round 2 to make their pricing decision.

Case 2: If you chose to set your price in Round 2 and the other seller chose to set her price in Round 1, then you will learn the price of the other seller prior to making your pricing decision. An example of your decision screen is shown in Fig. 3.

Period 3 out of 3	Time Remaining [sec]: 29
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Your endowment for this period is 125 units
 The other seller's endowment for this period is 150 units
 The maximum price the buyers are willing to pay is 50

You chose to set your price in **Round 2**
 The other seller chose to set his/her price in **Round 2**

What price do you wish to charge?

Fig. 2 Price Decision Screen

Period 2 out of 3	Time Remaining [sec]: 26
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Your endowment for this period is 125 units
 The other seller's endowment for this period is 150 units
 The maximum price the buyers are willing to pay is 50

You chose to set your price in **Round 2**
 The other seller chose to set his/her price in **Round 1**

The other seller chose to set a price equal to 12.00

What price do you wish to charge?

Fig. 3 Price Decision Screen

The buyers, your quantity sold and your profit

Again, there are 200 computer simulated buyers in today's experiment. The buyers will not pay a price greater than 50 experimental francs for the single unit of good X.

If both sellers choose to set their prices in the same round (either Round 1 or Round 2) then the buyers will first purchase from the seller offering the lower price, and the remaining buyers will purchase from the higher priced seller. For example: Suppose Seller 1 (with, for example, an endowment of 150 units) sets a price of 26.36 and Seller 2 sets a price of 48.12 then Seller 1 sells her entire endowment of 150 units while Seller 2 sells the remaining $200 - 150 = 50$ units.

However, if one seller chose to set her price in Round 1 and the other seller chose to set her price in Round 2, then 40 out of the 200 buyers will buy from the first seller to set a price, whether or not this seller posted the lowest price. The remaining 160 buyers will wait until both sellers have set their price and will purchase from the seller offering the lower price. Hence, if one of the two sellers sets her price in Round 2, 160 buyers will wait until the end of Round 2 before purchasing. Typically, your profit is equal to your price times your quantity sold. **However, if either you or your paired seller or both set her price in Round 2, the quantity sold in Round 2 will be applied a factor of 0.8 when calculating your profit.**

There are 4 cases, depending on the rounds in which you and the other seller set their price. In all four cases, your profit for the period depends on the price set by you and the other seller in that period. The attached sheet labeled “Factored Quantity Sheet for Periods 1-20” provides the numerical value for the specific factor is multiplied by “your price” in the profit calculation in the different cases outlined below.

Case 1: You and the other seller set their price in Round 1. Note that in this case, your entire quantity sold comes from purchases made by buyers in Round 1. Your profit is computed as follows:

Your profit = your price \times your endowment **if your price < other seller’s price**

Your profit = your price \times (200 – other seller’s endowment) **if your price > other seller’s price**

Your profit = your price \times $\left(\frac{\text{your endowment}}{\text{your endowment} + \text{other's endowment}} \right) \times 200$
if your price = other seller’s price

Case 2: You and the other seller set their price in Round 2. Note that in this case, your entire quantity sold comes from purchases made by buyers in Round 2. Thus, a factor of 0.8 is applied in the profit calculations. Your profit is computed as follows:

Your profit = your price \times 0.8 \times your endowment **if your price < other seller’s price**

Your profit = your price \times 0.8 \times (200 – other seller’s endowment)
if your price > other seller’s price

Your profit = your price \times 0.8 \times $\left(\frac{\text{your endowment}}{\text{your endowment} + \text{other's endowment}} \right) \times 200$

price if your price = other seller's

Case 3: You set your price in Round 1 and the other seller set his/her price in Round 2. Note that in this case, you will sell 40 units in Round 1 and the rest in Round 2. *The factor of 0.8 is applied to the quantity sold in Round 2 only.* Your profit is computed as follows:

Your profit = your price × [40 + 0.8 × (your endowment – 40)] if your price < other seller's price

Your profit = your price × [40 + 0.8 × (200 – 40 – other seller's endowment)]
if your price > other seller's price

Your profit = your price × [40 + 0.8 × $\left(\frac{\text{your endowment} - 40}{\text{your endowment} - 40 + \text{other's endowment}} \right) \times (200 - 40)$]
if your price = other seller's price

Case 4: You set your price in Round 2 and the other seller set his/her price in Round 1. Note your entire quantity sold comes from purchases made by buyers in Round 2, and a factor of 0.8 is applied in the profit calculations. Your profit is computed as follows:

Your profit = your price × 0.8 × your endowment if your price < other seller's price

Your profit = your price × 0.8 × (200 – other seller's endowment)
if your price > other seller's price

Your profit = your price × 0.8 × $\left(\frac{\text{your endowment}}{\text{your endowment} + \text{other's endowment} - 40} \right) \times (200 - 40)$
if your price = other seller's price

Note that if your price is the lower price, you are guaranteed to sell your whole endowment. If your price is the higher price, you will sell a quantity equal to 200 minus the other seller's endowment. Finally, if sellers set the same price, the remaining buyers are split in proportion to the sellers' unsold endowments accordingly. At the end of each period, your profit is computed and displayed on the outcome screen as shown in Fig. 4.

Period		1 out of 4		Time Remaining [sec]: 26	
<p>You chose to set your price in Round 2</p> <p>The other seller chose to set his/her price in Round 1</p> <p>Your price 12.50</p> <p>Your quantity sold 50</p> <p>Your factored quantity sold 40</p> <p>Other Seller's Price 10.00</p> <p>Other Seller's quantity sold 150</p> <p>Your profit this period 500.00</p> <p>Your cumulative earnings in the experiment so far 500.00</p> <p>OK</p>					

Fig. 4 Outcome Screen

Once the outcome screen is displayed you should record all of the trading information: your choice of round, your price, your quantity sold, your factored quantity sold and the other seller's choice of round and the other seller's price in your Personal Record sheet. Also, record your profit from this period and the total profit from all previous periods. Then click on the button on the lower right of your screen to begin the next trading period. Recall that you will be randomly re-matched with a different seller every period.

[ON SEPARATE PAGE IN ORIGINAL INSTRUCTIONS]

Trading Instructions for Periods 21- 40

This section is similar to the previous section.

The only difference in this section is that the size of the small endowment will now be equal to _____ units while the size of the large endowment remains at _____ units,. All trading instructions and profit calculations are identical. In this section again, you will be making both a round and a pricing decision.

The attached sheet labeled "Factored Quantity Sheet for Periods 21-40" provides the numerical value for the factor multiplied by "your price" in the profit calculation in the 4 different cases outlined in the general instructions. Recall that you will be randomly re-matched with a different seller every period.

Trading Instructions for Periods 41-60

This section is similar to the previous section.

The only difference in this section is that the size of the small endowment will now be equal to _____ units again, while the size of the large endowment remains at _____ units,. All trading instructions and profit calculations are identical. In this section again, you will be making both a round and a pricing decision.

The attached sheet labeled “Factored Quantity Sheet for Periods 1-20” provides the numerical value for the factor multiplied by “your price” in the profit calculation in the 4 different cases outlined in the general instructions. Recall that you will be randomly re-matched with a different seller every period.

FACTORED QUANTITY FOR PERIODS 21-40

YOUR ENDOWMENT = 150 units

OTHER SELLER'S ENDOWMENT = 90 units

Remember that **YOUR PROFIT = YOUR PRICE × YOUR FACTORED QUANTITY**

	Both You and Other Seller in Round 1	Both You and Other Seller in Round 2	You – Round 1 Other Seller - Round 2	You – Round 2 Other Seller - Round 1
your price < other seller's price	150	120	128	120
your price > other seller's price	110	88	96	88
your price = other seller's price	125	100	110	96

FACTORED QUANTITY FOR PERIODS 41-60

YOUR ENDOWMENT = 150 units

OTHER SELLER'S ENDOWMENT = 130 units

Remember that **YOUR PROFIT = YOUR PRICE × YOUR FACTORED QUANTITY**

	Both You and Other Seller in Round 1	Both You and Other Seller in Round 2	You – Round 1 Other Seller - Round 2	You – Round 2 Other Seller - Round 1
your price < other seller's price	150	120	128	120
your price > other seller's price	70	56	64	56
your price = other seller's price	107	86	99	80

FACTORED QUANTITY FOR PERIODS 21-40

YOUR ENDOWMENT = 90 units

OTHER SELLER'S ENDOWMENT = 150 units

Remember that **YOUR PROFIT = YOUR PRICE × YOUR FACTORED QUANTITY**

	Both You and Other Seller in Round 1	Both You and Other Seller in Round 2	You – Round 1 Other Seller - Round 2	You – Round 2 Other Seller - Round 1
your price < other seller's price	90	72	80	72
your price > other seller's price	50	40	48	40
your price = other seller's price	75	60	72	58

FACTORED QUANTITY FOR PERIODS 41-60

YOUR ENDOWMENT = 130 units

OTHER SELLER'S ENDOWMENT = 150 units

Remember that **YOUR PROFIT = YOUR PRICE × YOUR FACTORED QUANTITY**

	Both You and Other Seller in Round 1	Both You and Other Seller in Round 2	You – Round 1 Other Seller - Round 2	You – Round 2 Other Seller - Round 1
your price < other seller's price	130	104	112	104
your price > other seller's price	50	40	48	40
your price = other seller's price	93	74	88	69