

Lab Report: Auction Experiment

Name(s) :

Section:

Purpose: To organize, describe, and evaluate the data generated from the market experiment.

Materials: Data from the experiment (located online at www.marietta.edu/~delemeeq/econ211/labs).

- Graph the supply and demand curves for Sessions 1 through 4.** Use the data on the distribution of buyer and seller values provided by your instructor to graph the step supply and demand curves for Sessions 1 and 2 on Chart 1 (see attached). Graph the step supply and demand curves for Sessions 3 and 4 on Chart 2. Please label the curves clearly.
- Plot the sequence of actual contract prices.** Use the Excel spreadsheet data provided by your instructor to create an Excel chart showing the actual contract prices as they occurred in real time. Label this as Chart 3: Price Sequence. Label the horizontal axis as "Contracts" and the vertical axis as "Price." Draw in a solid horizontal line (in a different color) representing the predicted price for each of the four sessions.
- Complete the table below.** Use Chart 1 to determine the **predicted** values for a single hypothetical round within Sessions 1 and 2. Use Chart 2 to determine the **predicted** values for a single hypothetical round within Sessions 3 and 4. Use the contract data posted on the web to calculate the **actual** outcomes from the last round in each Session. Market efficiency is found by dividing the actual total profits by the Competitive Equilibrium predicted total profits from Session 1.

Session 1: <i>Base Experiment</i>	Competitive Equilibrium Prediction	Actual Outcome: Last Round	Market Efficiency
Average Price			
Number of Trades			
Total Profits			

Session 2: <i>Sales Tax</i>	Competitive Equilibrium Prediction	Actual Outcome: Last Round	Market Efficiency
Average Price			
Number of Trades			
Tax Revenue			
Total Profits (including tax revenue)			

Session 3: <i>Price Ceiling = \$16</i>	Theoretical Prediction	Actual Outcome: Last Round	Market Efficiency
Average Price			
Number of Trades			
Total Profits			

Session 4: <i>Price Floor = \$32</i>	Theoretical Prediction	Actual Outcome: Last Round	Market Efficiency
Average Price			
Number of Trades			
Total Profits			

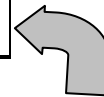
4. **Calculate consumer and producer surplus.** Use Chart 1 (Session 1) to make the following calculations. To determine consumer surplus, note that it is the area below the demand curve, but above the market price, out to the quantity purchased. In other words, consumer surplus (CS) is the sum of the differences between the buyer values and the market price for each of the equilibrium units traded.

To determine producer surplus, note that it is the area above the supply curve, but below the market price, out to the quantity sold. In other words, producer surplus (PS) is the sum of the differences between the market price and the seller costs for each of the equilibrium units traded.

The total social welfare generated by this market is the sum of CS and PS; in other words, social welfare is the sum of buyer and seller profits.

Do the calculations for only a single, representative trading round based on the theoretical supply and demand curves described in Chart 1.

	Session 1
Consumer Surplus (= Buyer Profits)	
Producer Surplus (= Seller Profits)	
Social Welfare (= Total Profits)	



[Your answer here should match the Total Profits for Session 1's Competitive Equilibrium Prediction from #3 above.]

5. **Questions:**

- a) How close did the experiment come to the theoretical predictions in **Session 1** for each of the variables listed in the table to question 3 above? Mathematically, how do you define "close"?

- b) Did everyone make a trade during the last round of **Session 1**? If not, why not? What types of buyers and sellers were excluded? What types of buyers and sellers were able to make trades? Explain.

- c) Referring to Chart 3, describe the path of the actual contract prices during **Session 1**. Is equilibrium price achieved immediately or is there a slow convergence toward equilibrium? How might the rules of the market be changed to increase the speed of convergence toward the equilibrium price? Identify and explain one such factor. (Do NOT consider price controls as your example.)

- d) During Session 2 a **SALES TAX** of \$15 was placed on sellers.
- i) What happened to the actual number of trades, average contract price, and actual total profits (including tax revenues) during the last round of Session 2 as compared to the theoretical predictions for Session 1?
 - ii) Describe how the economic burden of the tax is split between the buyers and sellers. That is, how much of the \$15 tax did buyers end up paying? How much did sellers end up paying?
- e) During Session 3 a **PRICE CEILING** was imposed at \$16.
- i) Draw a horizontal line at \$16 on your graph (Chart 2) for Session 3. What is quantity demanded at \$16? What is quantity supplied at \$16? What type of disequilibrium occurs at \$16?
 - ii) What happened to the actual number of trades during the last round of Session 3 as compared to the theoretical predictions for Session 1? What happened to the total profits during the last round of Session 3 as compared to Session 1? Did buyers or sellers tend to fare better? Explain.
- f) During Session 4 a **PRICE FLOOR** was imposed at \$32.
- i) Draw a horizontal line at \$32 on your graph (Chart 2) for Session 4. What is the quantity demanded at \$32? What is the quantity supplied at \$32? What type of disequilibrium occurs at \$32?
 - ii) What happened to the actual number of trades during the last round of Session 4 as compared to the theoretical predictions for Session 1? What happened to the total profits during the last round of Session 4 as compared to Session 1? Did buyers or seller tend to fare better? Explain.

Chart 1: Supply and Demand for Sessions 1 and 2

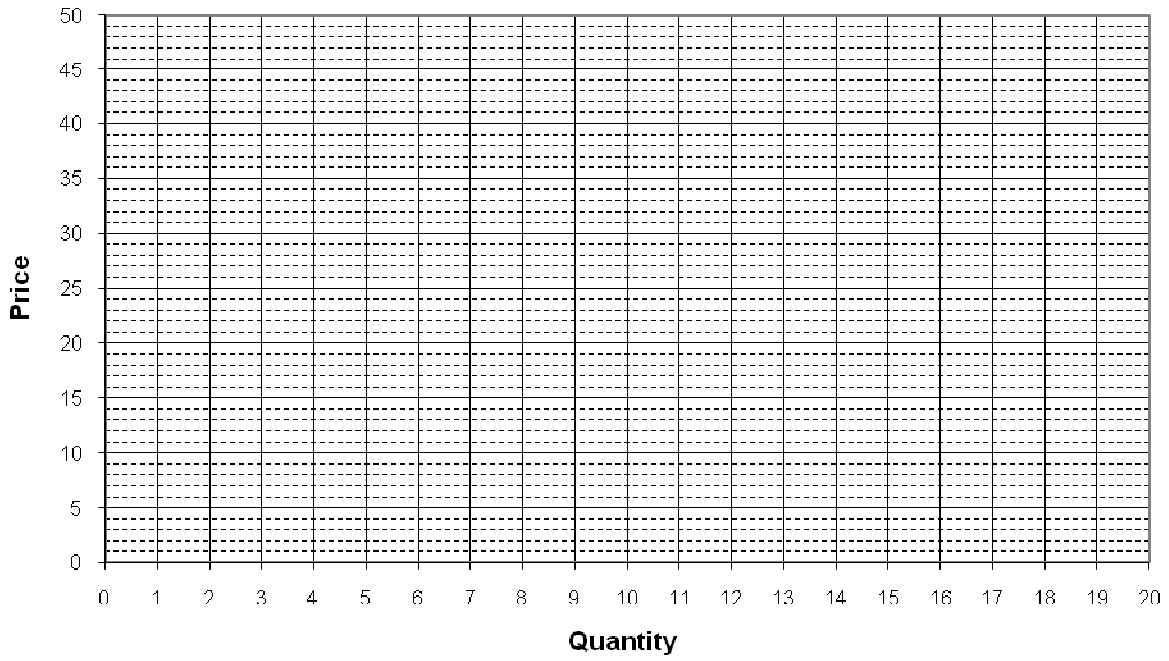


Chart 2: Supply and Demand for Sessions 3 and 4

