

Lecture # 3 -- Supply and Demand Experiment

- Today's class consisted of experiment #1. It included 4 rounds of a simulated market of buyers and sellers. Rounds 3 & 4 included a \$4 tax on either buyers or sellers. You can download the spreadsheet with the results of the experiment, along with the corresponding supply and demand diagrams, from the web site.
- Lessons from the simulated market:
 1. Note the importance of perfect information. The predicted equilibrium price was \$21 (shown on the supply and demand curves). In round 1, early trades fluctuated between \$19 and \$25. However, by the end we converged to a price around \$21. Unusually, in round 2 we still had some sellers willing to sell for a low price early in the round. Thus the average price was somewhat lower in round 2. But by the end of round 2, most sales occurred at \$21. In both rounds the quantity sold was a bit lower than the predicted equilibrium of 20 or 21 because of those early trades that deviated from the expected equilibrium price.

I have also posted a spreadsheet with an example from 2019, which shows a typical result in a large class. In this example, even though the prices fluctuated early in round 1, by the end of round 1 the price was already converging towards the predicted equilibrium price of \$22. Thus, in round 2 nearly all sales occurred for either \$21 or \$22. With a larger market, one or two high or low sales have less influence on the overall market and there is more opportunity to learn what price will prevail in the market.

2. Even though some people had low marginal costs or high valuations, they were able to wait and get a price close to the equilibrium. One or two students in each class had a marginal cost of \$0! Yet they still were able to sell our hypothetical good for over \$20.
3. Note that the tax affects both buyers and sellers, even though only one side is legally responsible for it. This is because suppliers need to account for how the quantity demanded changes (a movement along the demand curve) as they raise prices, and buyers need to count for how quantity supplied changes as they lower their bids. For example, with the tax on buyers, the price offered was lower than the no-tax equilibrium. However, the price did not fall by \$4. Rather, it was about \$2 less than the original equilibrium price of \$21 in each section. As shown on the graphs, this is exactly what we expect.

In principle, the outcome should not change whether we tax buyers or sellers. However, that was not the case this year. A few sellers were willing to sell for low prices, which prevented the price from increasing all the way to the predicted new equilibrium of \$23. However, the average

price in round 4 was still the highest of all four rounds. As we'll see soon, if we repeat this enough, they shouldn't change at all.

4. Finally, at the end of class I discussed the concepts of consumer and producer surplus. We'll go over this more formally on Monday, but the basic intuition is that the difference between the demand curve and the price represents the extra value that consumers get, and the difference between the supply curve and price is the extra profit that producers get.