Lecture # 3 -- Supply and Demand Experiment

- Today's class consisted of experiment #1. It included 3 rounds of a simulated market of buyers and sellers. Round 3 Included a \$4 tax on buyers. 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:
 - Note the importance of perfect information. The predicted equilibrium price was \$21 (shown on the supply and demand curves). In round 1, early trades went as low as \$10, and the highest price was \$25. However, by the end we converged to a price around \$21. In round 2, people had better information, so prices remained close to the equilibrium price. The highest price was \$23, the lowest was \$20, and the average price for round 2 was \$21.50. Also, note that the last 7 trades in round 2 occurred between \$21 and \$21.50. So, by the end of round 2 we were converging on an equilibrium price of about \$21!,
 - 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. A few sellers had a marginal cost of \$0! Yet they still were able to sell our hypothetical good for over \$20.
 - 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 nearly \$19, which is about \$2 less than the original equilibrium price of \$21. As shown on the graphs, this is exactly what we expect.

In principle, the outcome should not change whether we tax buyers or sellers. In some years I have time to do four rounds, with the tax on the seller, rather than the buyer in round 4. In that case, we would expect the price to be higher, so that sellers make enough money to cover the added cost of the tax. I've also posted an example from an earlier year that includes results with both a tax on buyers (round 3) and a tax on sellers (round4). In that example, the expected equilibrium price prior to the tax was between \$21 and \$22. That is what we observed in round 2. With the tax on buyers in round 3, the average price fell a little over \$2, to \$18.69. Similarly, in round 4, the average price went up by nearly \$2, to \$23.18. Thus, in both cases, buyers and sellers were each responsible for about \$2 of the \$4 tax. In fact, as we'll see soon, if we repeat this enough,

the results between a tax on buyers and a tax on sellers shouldn't change at all.

• 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.