

Hand-out week 6

- This week:**
2. Theory of the Firm - continued
 - fixed costs
 - long vs. short run
 3. Partial Equilibrium
 - aggregation of individual demand/supply functions
 - workings of the price mechanism
 - welfare effects of taxation

Readings: Varian first part of chapter 15 and the entire chapter 16.

Practice Problems:

1. How does a fixed cost of one million affect Coca Cola's profit maximizing output? How would it affect your barber/hairdresser? Depict both cases graphically.
2. In one diagram depict long run MC and AC as well as several examples of short run MC and AC curves. Why are there several short run curves but only one long run curve for MC and AC respectively? What can you say about the slope of the output supply curve in the long and in the short run?
3. Your preferences can be represented by the utility function $U(x, y) = a \ln(x) + \ln(y)$, your neighbor's by $U(x, y) = b \ln(x) + \ln(y)$. Depict your and your neighbor's demand (as a function of own price) for good x and aggregate them graphically as well as mathematically. Under which condition on a and b is aggregate demand a function of aggregate income (aggregate $I = \text{your } I + \text{your neighbor's } I$) instead of both incomes separately. Which characteristic of the Cobb-Douglas utility function was also crucial in obtaining this result (namely that demand is a function of aggregate income)?
4. Let aggregate demand for good i be of the form $D(p_i, \dots) = 10 - p_i$ and aggregate supply of the form $S(p_i, \dots) = 3 p_i$. Calculate the equilibrium price and quantity. What could be the reasons behind shifts in these demand and supply curves?
5. In a partial equilibrium setting, discuss the welfare effects of a tax when demand is relatively elastic and supply relatively inelastic and vice versa. Who really pays the tax - the elastic or inelastic side of the market?