Econ 101 Discussion Section-Handout 4

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1 Review

SUPER IMPORTANT: MIDTERM OCT 7 HOMEWORK OCT 2

Important Key Concepts of the week:

- All about Demand: The demand captures the consumers, their desires for goods and how prices, income and other stuff shape their decision.
  - Demand function: We say that the demand usually has a negative relation with prices, and positive relation with income, nevertheless this is not always the case.
    - Normal goods: If you get more income you demand more (e.g. clothes)
    - Inferior goods: If you get more income you desire less (e.g. dinning halls)
  - Demand Curve: The demand curve captures the relationship between price and quantity in a graph
    - Remember it is a convention to put the price in the vertical axis.
  - Demand Shocks: There are several shocks that can shift the demand curve.The main idea is that at the same price you Desiree it more or less
    - Change in taste and Preferences
      - Weather Usually change how much we enjoy a good.
    - Other Goods
      - Complements: If the price of one of the good falls, the other should be more demanded
      - Substitutes: If the price of one good falls, the other should be less demanded
  - Market Demand: Horizontal Sum of individual demands, be careful with the price range.
- All about Supply: Think as a producer, the supply captures how production relates to prices, inputs and technology.
  - Supply Function: we say that the supply usually has a negative relation with prices, nevertheless this is not always the case
    - "Supply with a Positive Slope", the higher the price you want to produce more.
    - "Vertical Supply" when the quantity is fixed. No how much you pay you can only find 9 studio albums from The Beatles.
    - "Horizontal Supply", there is a fixed price for some goods
    - "Backward Bending Supply" Labor market
  - Supply Shocks
    - New Technology
    - Prices on inputs
  - Market Supply: same Idea as with demand
- Equilibrium: The general idea is that the supply and the demand reach to a market price and a market quantity.
  - Consumer Surplus: How much gain from buying the good the consumer gets.
  - Producer Surplus: How much gain from selling the good the producer gets.

2 Problems: Demand, Supply, Equilibrium

1. Consider the market for PhDs from the Department of Economics, UW-Madison. Suppose that the department could produce more PhD students in a given year if the wage increases (i.e. we treat the Department as a producer, PhDs its products, and wage is the price of PhDs. There is an upward sloping supply curve), and the market demand curve for PhDs has a downward slope. For each of the following scenarios, graphically explain what would happen to the demand and supply curve and find the effect on equilibrium wage and quantity. (Answer each question by "increase," "decrease," or "ambiguous.") 1.

   (a) There is a financial crisis and the Government finds that PhDs in Economics are not totally useless. So they decide to hire more PhDs from UW-Madison.

   (b) The final exam of Econ 711 is so difficult this year that one half of the first year PhD students (the raw material of PhDs) fail and cannot graduate in time. 3.

   (c) Daron Acemoglu (a famous economist at MIT) suddenly announces to join the Department of Economics, University of Michigan-Ann Arbor, and PhD students there now become very popular.

   (d) Paul Krugman publishes an article in the New York Times, predicting that there will be a recession in the next five months and your company will suffer less with some PhDs in Economics working for you at that time. 5.

   (e) Steve Levitt publishes his new book "Super Super Super Freak Economics" and many students are inspired and willing to get a PhD degree in Economics without funding. But at the same time, some Wall Street economist makes a wrong prediction of stock price that PhDs in Econ get less popular among firms. 6

   (f) Papa John decides to provide free pizza to the Department, so the cost of producing PhDs falls 50%. And a recently opened sports school in China declares that they will hire 100 economic PhDs with the "invisible hand" to teach Kung Fu in the future two years.

2. Ten years later, one PhD in Econ who benefited from Papa John's free pizza becomes the President. To thank Papa John's generosity, he implements a price support program at \$24. Demand for Papa John's Pizza is given by $P = 30 - 2Q$; supply is given by $P = 10 + 2Q$

   (a) Is the price floor binding?

   (b) Find the quantity demanded and quantity supplied under the program.

   (c) What is the value of excess supply?

3. Again let's consider the market of PhDs in Economics. The market demand is given by: $Q = 100 - 2W$. The market supply is:$Q = 3W$

   (a) Find the equilibrium wage and quantity.

   (b) Find the consumer surplus, producer surplus and the total welfare. (Total surplus)

   (c) The newly elected President performed poorly as a PhD student when at UW-Madison, so he tries to revenge the Department of Economics and imposes a wage cap of 30. Would the situation of the Department become worse?

   (d) It takes the President some time to realize his stupidity, and then he reduces the wage cap to 10. How much will consumer surplus and producer surplus change now? Is there any deadweight loss?

4. Consider the same market of PhDs in previous question. After talking to Professor Kelly, the President now feels regret and cancels the wage cap. Instead, he decides to implement a wage subsidy of 10 to compensate the Department.

   (a) How many units of PhDs will be supplied in this case?

   (b) At what wage is the market willing to hire 90 units of PhDs?

   (c) What is the cost of the subsidy program?