Review Notes – Consumer Surplus

- Consumer Surplus
  - How do we derive a demand curve graphically from indifference curve analysis?
    - Note that here utility yields a demand curve
    - But in real world actually observe demand not utility
      - => How do we derive utility from demand?
      - One answer = consumer surplus.
  - Consumer surplus for a discrete good
    - What is a discrete good?
    - What is a reservation price?
    - What does D for a discrete good look like?
    - Why does reservation price (Demand) equal marginal utility?
      - Only strictly true for quasi-linear preferences
    - What is total value or the gross surplus for the discrete good equal to?
      - \( r_1 + r_2 + r_3 + \ldots + r_n \)
    - Consumer Surplus or Net Consumer Surplus
      - Subtracts the cost per unit – the price – from the gross surplus
      - \( = (r_1 - p) + (r_2 - p) + (r_3 - p) + \ldots + (r_n - p) = \text{Gross Surplus} - np \)
      - What does this look like graphically?
  - Quasi-linear Preferences – what do you need to know about them?
    - What are they? \( U(x,y) = V(x) + by \)
    - What impact do they have on reservation prices and demand?
      - In general reservation prices for one good depend upon consumption of the other good. But not true for quasi-linear preferences.
      - D exactly measures marginal utility for QL preferences.
      - Area under D measures total utility for QL preferences.
      - For other types of utility D ~ MU and area under D ~ TU.
  - Consumer surplus for a continuous good
    - What is a continuous good?
    - Is D still = MU?
    - Is area under D = TU? (How do you measure area?)
    - Is Consumer Surplus still TU – pn?
    - How do we interpret the change in consumer surplus when price changes?

- Compensating and Equivalent Variation
  - How are these similar/different to Consumer Surplus?
    - Still a method of calculating the change in value resulting from a change in price of a good.
    - Uses utility rather than D to measure => arguably better measure although more difficult to get utility than D.
- Assumptions/Definitions
  - We know the person’s utility/preferences.
  - Only 2 goods; one whose price changes interested in; one whose price = $1 => composite good (money left after buying first good => available to buy all other goods). Why do we make this assumption?
  - The price of the first good (P1) changes => trying to measure how much value the consumer gets from this price change.
    - Be able to show optimal consumption both before and after the price changes on an indifference curve graph. Should have two prices for good 1; P1 = old price and P1^2 = new price reflected by two budget lines, BL1 (old) and BL2 (new) along with two indifference curves, I1 (old) and I2 (new).
    - Compensating Variation = the change in income needed to restore the consumer to his original indifference curve after a change in price for the first good. (New price, P1^2, new income, old indifference curve, I1)
    - Equivalent Variation = the change in income needed before the price of the first good changes to move the consumer onto the new indifference curve. (Old price, P1, new income, new indifference curve, I2)

- CV and EV graphically
  - Should know how to find both graphically for two different situations
    - P1 increases
    - P1 decreases
    - How are these related to Hicks decompositions?
    - Will you stay up late nights thinking about EV and CV?

- Net Producer Surplus
  - Is net producer surplus = profit?
  - Similar concept to consumer surplus => net producer surplus = total value – total cost = the difference between the price the firm actually gets and the price the firm would take (given by the supply curve).
  - What does it look like graphically?
  - What does a change in net producer surplus look like as price of the good changes?

- Net Surplus = Net Consumer Surplus + Net Producer Surplus
  - How is this related to allocative efficiency?
  - Changes in Net Surplus = Deadweight Losses
  - Examples