4 Welfare Economics

4.1 Lecture 9: Supply and Demand, Consumer and Producer Surplus

4.1.1 Demand and supply

- **Demand curve** measures the willingness of consumers to buy the good
- **Supply curve** measures the willingness of suppliers to supply the good
- Supply and demand curves can shift when there are
  - changes in the ability of producers to supply (driven by cost of an input or technology)
  - changes in consumer tastes or preferences
  - changes in income
  - changes to the price of complement or substitute goods. A rise in the price of a substitute good for good X raises the demand for X.

  For example, suppose that tastes change so that folks want to drive big cars. Gas guzzling cars are a complement for gas, because as people want more of gas guzzling cars, they want more gas. This will shift out the demand for gas.

  Now suppose that there is a war in the middle east and we suddenly it is harder to get as much gas. This makes it more expensive to get gas, so for each quantity of gas the suppliers need to charge more, which causes an upward shift in the supply curve.
- Case of perfectly elastic demand: demand will drop to zero if price moves at all from the original equilibrium

4.1.2 Consumer surplus

- **Consumer surplus** is the area under the demand curve and above the price since the demand curve represents the marginal willingness to pay for a good.
- Consumer surplus is inversely related to elasticity of demand.

4.1.3 Producer surplus

- **Producer surplus** is the area above the supply curve and below the price since the supply curve represents the marginal cost of producing the good.
- In the long run, producer surplus is the profit.

4.1.4 Total welfare

- Social welfare is the sum of producer and consumer surplus.
- In competitive equilibrium, where supply equals to demand maximizes total welfare.

4.1.5 Deadweight loss

- **Deadweight loss** is the loss in welfare that is a result of moving away from the perfectly competitive equilibrium.
- Deadweight loss can be caused by monopolies, government taxation.

4.1.6 TO KNOW – Conceptual Understanding

- Describe factors that shift supply and demand curves
- Explain how consumer surplus depends on the elasticity of the demand curve
- Explain what deadweight loss is intuitively
- Explain why competition maximizes total surplus

4.1.7 TO KNOW – Graphical and Math Understanding

- Know how to calculate consumer surplus, producer surplus, and deadweight loss from various government policies (quantity restriction, price ceiling, price floor, tax, etc.)