Lecture 6-7

- The market mechanism
- Shifts in demand and supply
- Price and income elasticities
- Price controls
Market Mechanism

• Demand:
  – Curve/Function: downward sloping
    • willingness to pay in dollars for each unit
  – Quantity demanded:
    • total units/quantities purchased

• Supply:
  – Curve/Function: upward sloping
    • willingness to sell in dollars for each unit
  – Quantity supplied:
    • total units/quantities sold

• Market mechanism:
  – Tendency for quantity demanded equals to quantity supplied (market clears)
Shifts in Demand and Supply

- **Move along the curves:**
  - Demand: change in price or quantity
  - Supply: change in price or quantity

- **Shift of the demand curve:**
  - Income, tastes/preferences, prices of other goods, etc.
  - Parallel shift vs. rotation

- **Shift of the supply curve:**
  - Technology, weather, factor costs and their alternative uses, expectations, etc.
  - Parallel shift vs. rotation
Elasticities (1)

• Price elasticities:
  – The % change of quantities demanded or supplied as price rises by 1%
  – Demand: (Δ becomes derivative at a given point)
    • Own price \( E_D = \frac{(\Delta D/\Delta P)}{(P/D)(\Delta D/\Delta P)} < 0 \)
      – Elastic: \( E_D < -1 \); Inelastic: \( E_D > -1 \)
    • Cross price \( E_{D/P} = \frac{(\Delta D/\Delta P^*)}{(P^*/D)(\Delta D/\Delta P^*)} \)
      – Substitutes: \( E_{D/P} > 0 \); Complements: \( E_{D/P} < 0 \)
  – Supply: \( E_S = \frac{(\Delta S/S)}{(\Delta P/P)} = (P/S)(\Delta S/\Delta P) > 0 \)

• Income elasticities:
  – The % change of quantities demanded as income rises by 1%
  – Demand: \( E_I = \frac{(\Delta D/\Delta I)}{(I/D)(\Delta D/\Delta I)} \)
    • Normal good: \( E_I > 0 \); inferior good: \( E_I < 0 \)
Elasticities (2)

• Examples:
  – Demand: \( D = 5 - 2P + 5P^* \) (vs. inverse demand)
  – Supply: \( S = 4 + P \)
  – Market equilibrium at \( P^* = 1 \):
    \( D = S \Rightarrow P = 2, D = S = 6 \)
  – Price elasticities of demand at \((P,P^*,Q) = (2,1,6)\):
    \( E_D = (dD/dP)(P/D) = -2/3 \)
    \( E_{D/P} = (dD/dP^*)(P^*/D) = 5/6 \)

• Short-run vs. Long-run elasticities:
  – LR demand is more elastic for gas (D flatter)
    and less elastic for cars (D sleeper)
  – LR supply is usually more elastic (S flatter)
Price Controls

- **Price ceilings:**
  - $p_{\text{max}} < p_{\text{equilibrium}}$
  - Excess demand
  - Necessities or goods with positive externalities

- **Price floors:**
  - $p_{\text{min}} > p_{\text{equilibrium}}$
  - Excess supply
  - Minimum wages