Shoolini University

# Course– MACROECONOMICS

## Lecture 14 CROSS ELASTICITY OF DEMAND

## August, 2015

# TOPICS TO BE DISCUSSED

**1. Cross Elasticity of Demand:**

- Meaning of cross elasticity of demand
- Measurement of cross elasticity of demand
- Degrees of cross elasticity of demand: positive, negative, zero elasticity

# CROSS ELASTICITY OF DEMAND

**Cross Elasticity of Demand-** Responsiveness of quantity demanded of one product/good to changes in the price of a related good/product – either a substitute or a complement

**Example: If price of TEA increases by 5%, What will happen to the demand for COFFEE?**

- **Will Increase or Decrease?**
- **By how much %?**

# MEASUREMENT OF CROSS ELASTICITY OF DEMAND

$$E_C = \frac{\%\text{Change in Quantity of X}}{\%\text{Change in Price of Y}}$$

$$E_C = \frac{\dfrac{\text{Change in Quantity } (\Delta\, Q_X)}{\text{Quantity } (Q_X)}}{\dfrac{\text{Change in Price } (\Delta\, P_Y)}{\text{Price } (P_Y)}}$$

# MEASUREMENT OF CROSS ELASTICITY OF DEMAND

$$E_C = \frac{P_Y}{Q_X} \times \frac{\Delta Q_X}{\Delta P_Y}$$

# DEGREES OF CROSS ELASTICITY OF DEMAND

- **Positive-** Substitutes
- **Negative-** Complimentary Goods
- **Zero-** When Goods are not Related

# CROSS ELASTICITY OF DEMAND- SUBSTITUTES

**Substitutes:**

- Measures the proportionate change in quantity demanded of a product due to change in price of its substitute
- Cross Elasticity will have a positive sign (positive relationship) as:
  - Increase in price of the product/good leads to increase in demand for its substitute

**Example: If price of <u>TEA</u> increases by 5%, demand for <u>COFFEE</u> will also increase proportionately**

# CROSS ELASTICITY OF DEMAND- COMPLIMENTS

**Complementary Goods:**

- Measures the proportionate change in quantity demanded of a product due to change in price of its compliment
- Cross Elasticity will have negative sign (inverse relationship) as:
  - Increase in price of the product/good leads to decrease in demand for its complimentary good/product

**Example: If price of <u>PETROL</u> increases by 5%, demand for <u>COFFEE</u> will decrease proportionately**

# CROSS ELASTICITY OF DEMAND

**Goods not Related to Each Other:**

- Cross Elasticity will have zero as:
  - Increase in price of the product/good leads to no change in demand for other good/product

**Example: If price of TEA increases by 5%, demand for PETROL will not be affected**

**Thank You ☺**