MARKET ECONOMICS

INTRODUCTION TO ELASTICITY & ELASTICITY OF DEMAND [UNIT-2, PART-12]
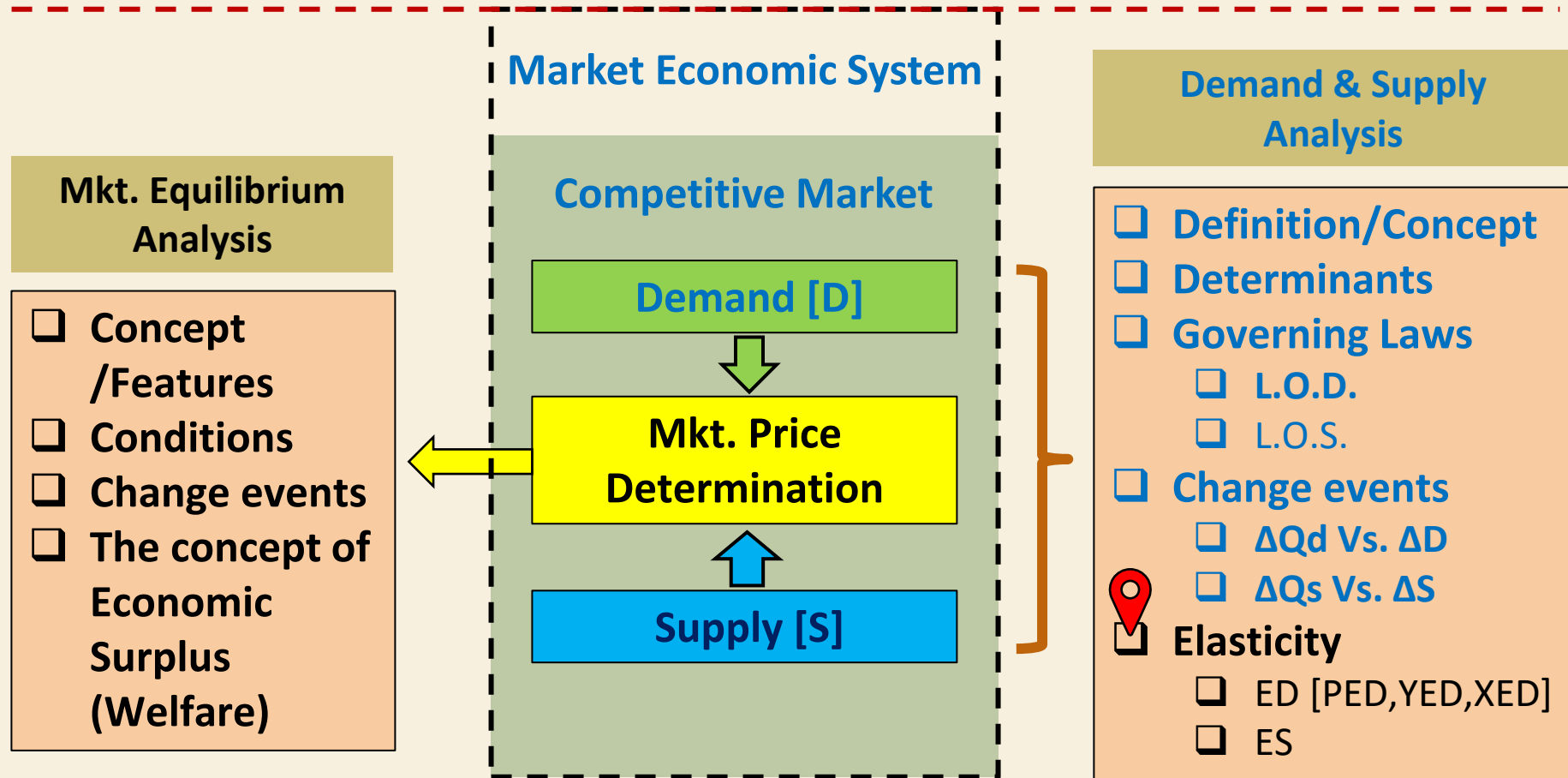
MIND-HUB   ECON-HUB   THEORY

Unit Map - **Market Economics** [Unit 2]

Microeconomics

Market Economic System

Demand & Supply Analysis

Mkt. Equilibrium Analysis

❑ **Concept /Features**
❑ **Conditions**
❑ **Change events**
❑ **The concept of Economic Surplus (Welfare)**

Competitive Market

Demand [D]

Mkt. Price Determination

Supply [S]

❑ **Definition/Concept**
❑ **Determinants**
❑ **Governing Laws**
  ❑ **L.O.D.**
  ❑ **L.O.S.**
❑ **Change events**
  ❑ **ΔQd Vs. ΔD**
  ❑ **ΔQs Vs. ΔS**
❑ **Elasticity**
  ❑ ED [PED,YED,XED]
  ❑ ES

Conceptualized by: Imran Hasheem

ELASTICITY STARTER KIT ELEMENTS

❑ **The concept of demand [Definition]**

❑ **Law of Demand [Definition, Application]**

❑ **Demand Schedule, Curve and Equation [Application]**

❑ **Types of Goods: Normal, Inferior, Substitute and Complementary**

❑ **The concept of Supply [Definition]**

❑ **Law of Supply [Definition, Application]**

❑ **Supply Schedule, Curve and Equation [Application]**

ELASTICITY [GENERAL CONCEPT]:

Elasticity is an indicator that measures the proportionate sensitivity or responsiveness of a **dependent variable** to a change in an **independent variable**, when said variables are functionally related.

$$\text{Elasticity [E]} = \frac{\text{Percentage Change in Dependent Variable}}{\text{Percentage Change in Independent Variable}}$$

BASIC APPLICATION

Assume: **Y = f (X)**

X	Y
100	10
120	14

Δ 20 { (for X: 100 → 120)
Δ 4 } (for Y: 10 → 14)

Understanding the Functional Relationship:

As per this function, variable (X) is the independent variable and variable (Y) is the dependent variable. I.e. (X) changes first, causing a change in (Y).

Estimating Elasticity between (X) and (Y):

$$\text{Elasticity [E]} = \frac{\%\Delta\ V(D)}{\%\Delta\ V(I)}$$

Interpretation (meaning):

If the (Exy) coefficient is (2), then essentially it means when (X) changes by a certain percentage, then (Y) tends to change two times as much.

$$\text{Elasticity [E]} \quad = \quad \frac{\%\Delta\ V(D)}{\%\Delta\ V(I)}$$

ELASTICITY [E]

PRICE ELASTICITY OF DEMAND [PED]

The PED estimation can be expressed
as follows:

$$\text{PED} = \frac{\text{Percentage Change in Quantity Demanded}}{\text{Percentage Change in Price}}$$

[E10] Application Exercise: PED

The demand schedule pertaining to product (X) is given below, estimate the PED when price changes from Rs.10 to Rs.12.

Px	Qdx
10	100
12	60

$$PED = \frac{\%\Delta\ Qd}{\%\Delta\ P}$$

Workings [Estimating Percentage Changes]

[E10] Application Exercise: PED

The demand schedule pertaining to product (X) is given below, estimate the PED when price changes from Rs.10 to Rs.12.

Px	Qdx
10	100
12	60

$$PED = \frac{\%\Delta\ Qd}{\%\Delta\ P}$$

PED COEFFICIENT

Key Note: **Coefficient** of price elasticity of demand

The answer obtained from the formula of price elasticity of demand is known as price elasticity of demand coefficient. Based on the responsiveness of quantity demanded of a product to a change in price, the coefficient value can **range** from **Zero (0)** to **Infinity (∞).**

The price elasticity of demand coefficient value essentially takes a negative value, implying the inverse or indirect relationship between price and quantity demanded of a certain product (i.e., law of demand).

Therefore, with regards to normal and standard inferior goods essentially, either the denominator (lower component) or the numerator (top component) of the PED formula always is a negative/minus value.

Generally, economist find it convenient to omit the minus or negative sign in price elasticity of demand because it is easier to deal in positive values (use as an absolute value), **while accepting PED coefficient values are in reality negative.**