

Means *flexibility* or *responsiveness*



Elastic *or* Stretchable *or* Responsive

Elasticity of Demand

Measures the degree of *responsiveness* of the *demanded quantity* of a good to a *change in its price*

$$E_D = \frac{(-) \% \text{ Change in Quantity Demanded}}{\% \text{ Change in Price}}$$

Signifies *(-ve) relationship* between *price & demand*

Elasticity of Supply

Measures the degree of *responsiveness* of the *quantity supplied* of a good to a *change in its price*

$$E_S = \frac{(+)\% \text{ Change in Quantity Supplied}}{\% \text{ Change in Price}}$$

Signifies *(+ve) relationship* between *price & supply*

Measures *responsiveness* of *quantity supplied* of a commodity to the *change* in its *price*
or

Shows how *sluggishly* or how *fast* (quickly) *supply responds* to the *change in price*

$$E_s = (+) \frac{\text{Percentage Change in Quantity Supplied}}{\text{Percentage Change in Price}}$$

OR

$$E_s = (+) \frac{\Delta Q}{\Delta P} \times \frac{P_1}{Q_1}$$

where,

$\Delta Q = Q_2 - Q_1$ = Change in quantity supplied

$\Delta P = P_2 - P_1$ = Change in the price

P_1 = Initial price

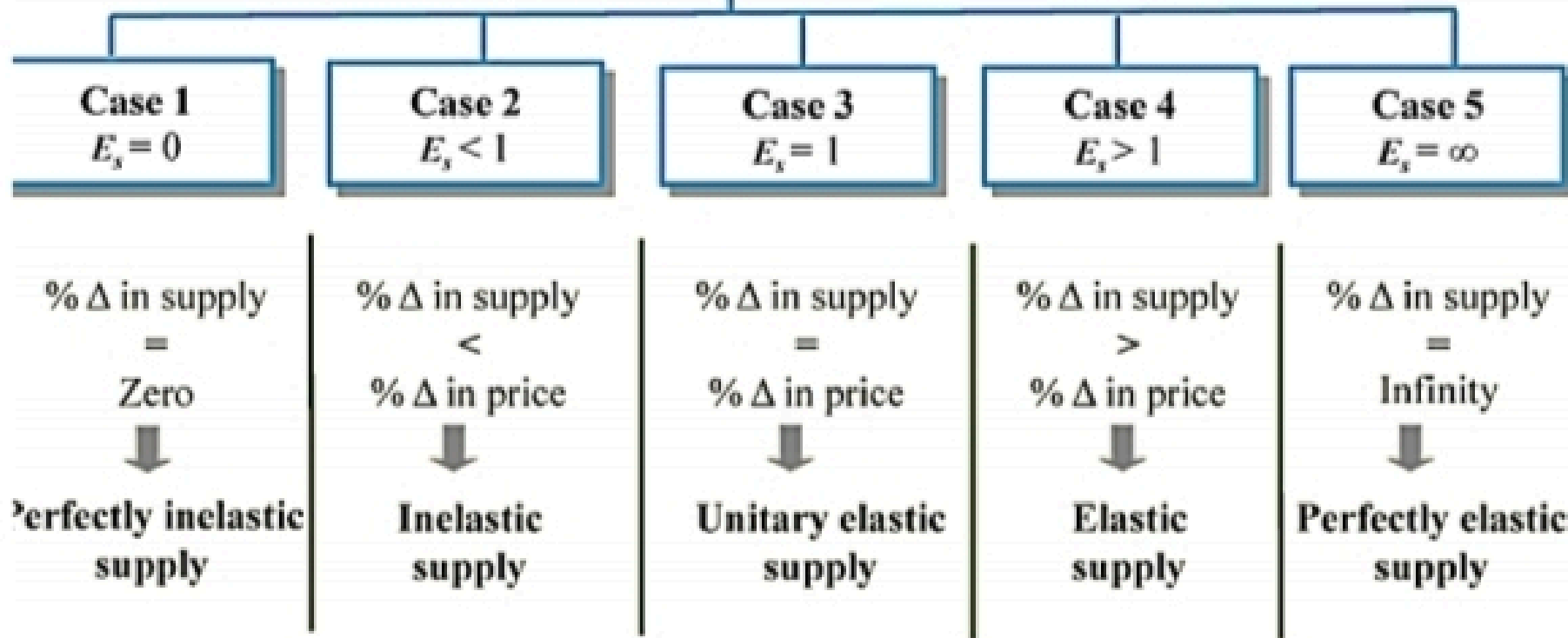
P_2 = Final price

Q_1 = Initial quantity supplied

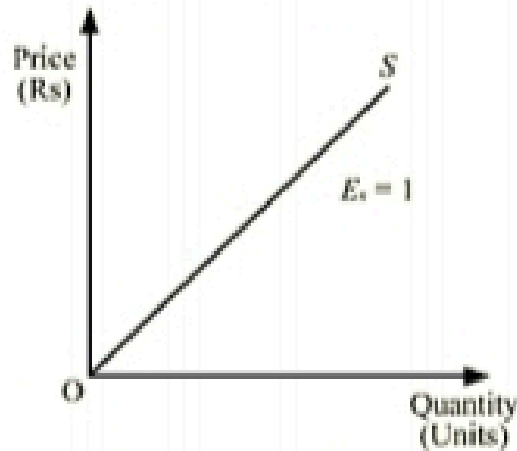
Q_2 = Final quantity supplied



Different Values

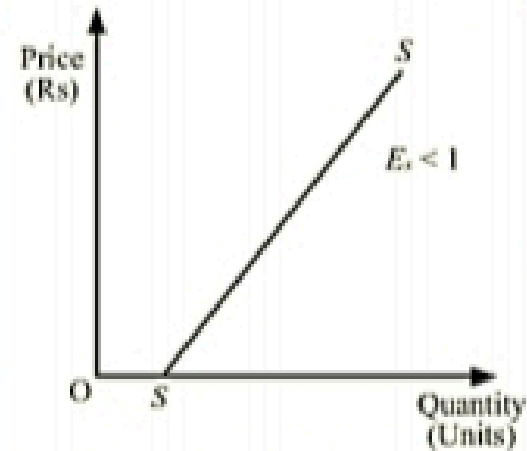


Unitary Elastic



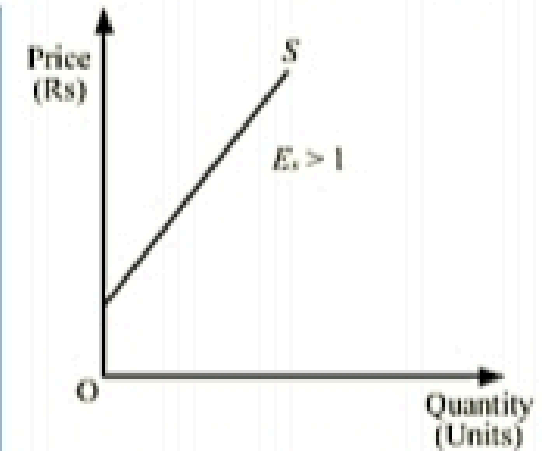
Originates from *origin*

Less Elastic



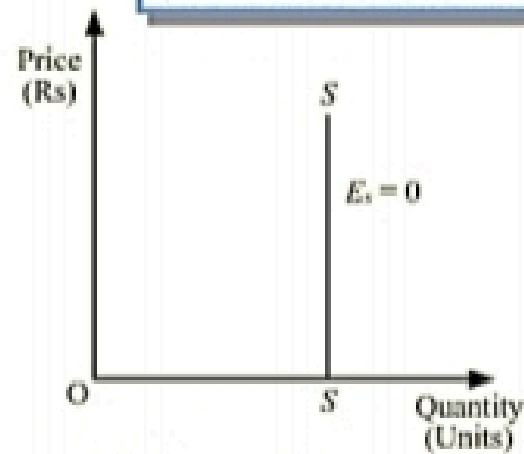
Originates from *quantity axis*

More Elastic



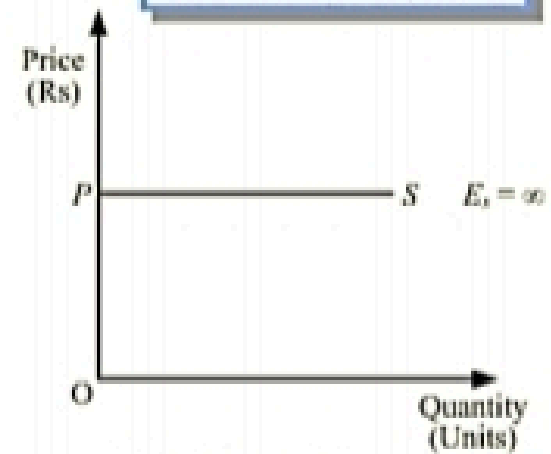
Originates from *price axis*

Perfectly Inelastic

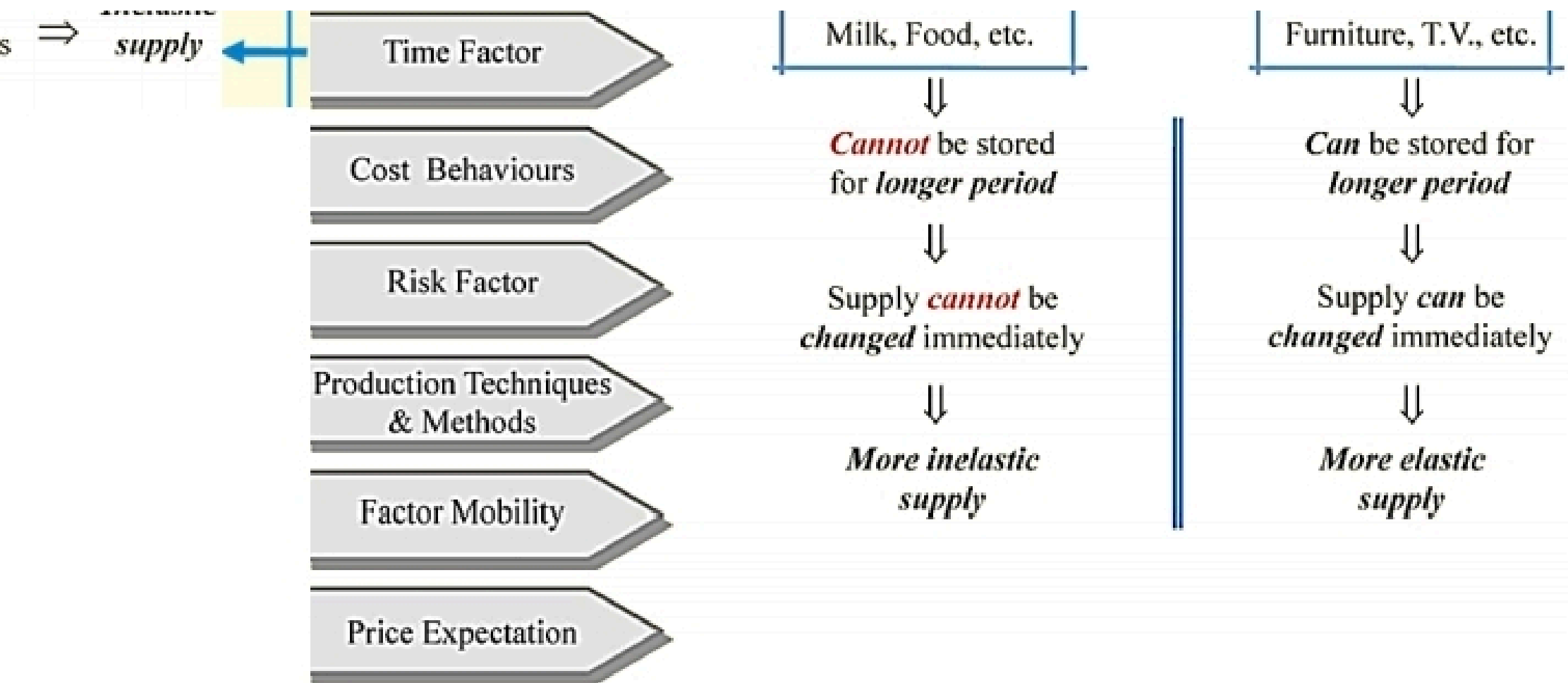


Originates from *quantity axis*

Perfectly Elastic



Originates from *price axis*



supply

Time Factor

Cost Behaviours

Risk Factor

Production Techniques & Methods

Factor Mobility

Price Expectation

Milk, Food, etc.

Cannot be stored for longer period

Supply cannot be changed immediately

More inelastic supply

Furniture, T.V., etc.

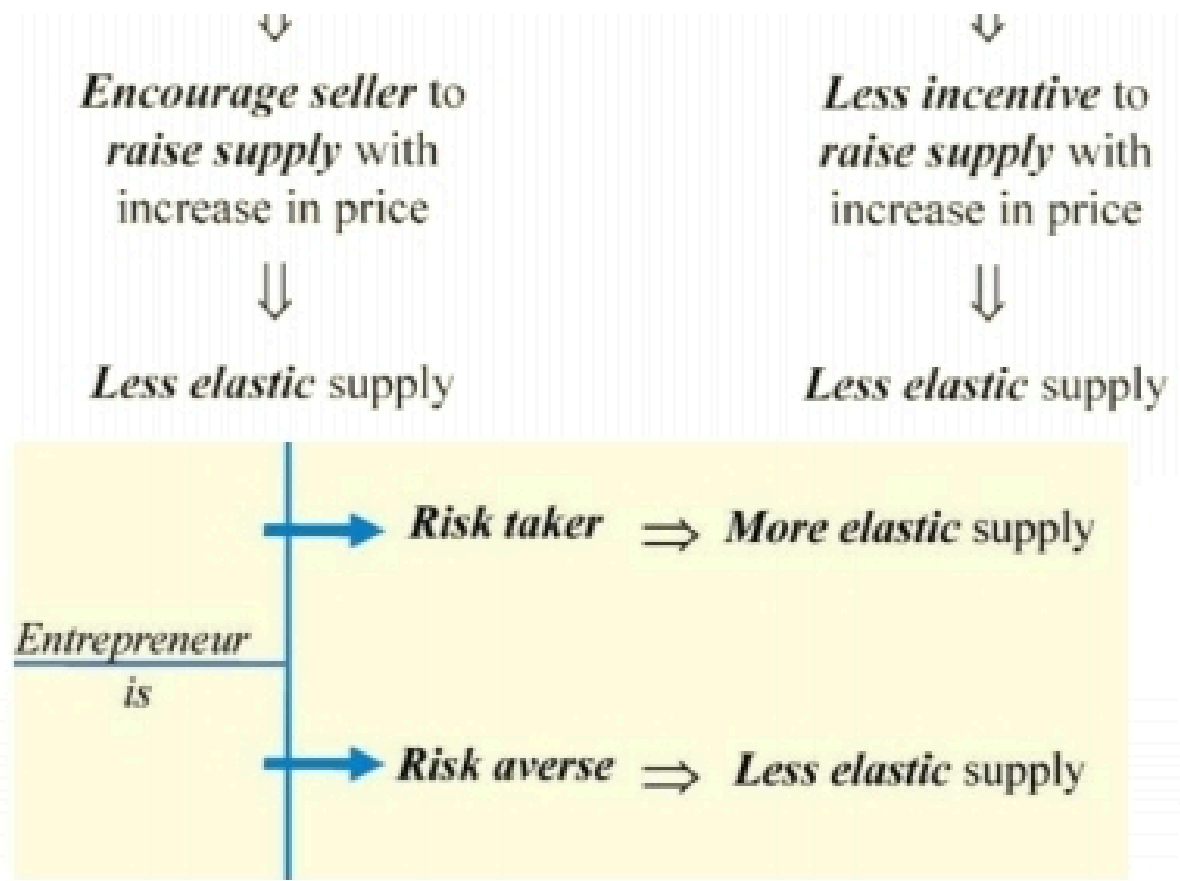
Can be stored for longer period

Supply can be changed immediately

More elastic supply

⇒ *Elastic* supply

⇒ *Inelastic* supply



1Q- When the price of a good rises from Rs 20 per unit to Rs 30 per unit, the revenue of the firm producing this good rises from Rs 100 to Rs 300. Calculate the price elasticity of supply

Solution:

Price (P)	Quantity (Q)	Total Revenue $= P \times Q$
$P_0 = 20$	$Q_0 = 5$	$TR_0 = 100$
$P_1 = 30$	$Q_1 = 10$	$TR_1 = 300$

<u>Given</u>
$P_0 = \text{Rs } 20$
$P_1 = \text{Rs } 30$
$TR_0 = \text{Rs } 100$
$TR_1 = \text{Rs } 300$

$$E_s = \frac{\frac{Q_1 - Q_0}{Q_0} \times 100}{\frac{P_1 - P_0}{P_0} \times 100}$$

$$\text{or, } E_s = \frac{10 - 5}{5} \times \frac{100}{30 - 20} \times \frac{100}{20}$$

$$\therefore \boxed{E_s = 2}$$

2Q- Commodities X and Y have equal price elasticity of supply. The supply of X rises from 400 units to 500 units due to a 20 percent rise in its price. Calculate the percentage fall in supply of Y if its price falls by 9 per cent.

Solution:

$$E_S^X = E_S^Y$$

$$\Rightarrow \frac{\% \text{ change in supply of } X}{\% \text{ change in price of } X} = \frac{\% \text{ change in supply of } Y}{\% \text{ change in price of } Y}$$

$$\Rightarrow \frac{\frac{Q_1^X - Q_0^X}{Q_0^X} \times 100}{20} = \frac{\% \text{ change in supply of } Y}{9}$$

$$\Rightarrow \frac{500 - 400}{400} \times 100 = \frac{\% \text{ change in supply of } Y}{9}$$

$$\Rightarrow 1.25 = \frac{\% \text{ change in supply of } Y}{9}$$

$$\Rightarrow \% \text{ change in supply of } Y = 11.25$$

Thus, with a fall in price of Y by 9%, the quantity of Y falls by 11.25 %

Given

$$Q_0^X = 400 \text{ units}$$

$$Q_1^X = 500 \text{ units}$$

$$\Delta P_X = 20\%$$

$$\Delta P_Y = 9\%$$