

Law of Supply

Supply refers to the quantity of produced goods available for sale or brought to the market for sale. Supply is to be differentiated from Production. While production refers to the total quantity produced, supply refers to those quantity that is available for sale from the total production.

Law of Supply is associated with production analysis. It explains the positive relationship between the price of a commodity and the supply of that commodity. For example, if the price of cloth increases, the supply of cloth will also increase. This is due to the fact that when price rises, it is profitable to increase the production and hence supply increases.

Law of Supply describes a direct relation between price of a good and the

Definition

The Law of Supply can be stated as:

"Other things remaining the same, if the price of a commodity increases its quantity supplied increases and if the price of a commodity decreases, quantity supplied also decreases".

Supply Function

The supply of a commodity depends on the factors such as price of commodity, price of labour, price of capital, the state of technology, number of firms, prices of related goods, and future price expectations and so on. Mathematically the supply function is

$$Q_s = f (P_x, P_r, P_f, T, O, E)$$

Where Q_s = Quantity supplied of x commodity

P_x - Price of x Commodity

P_r - Price of related goods

P_f - Price of factors of production

T- Technology

O - Objective of the producer

E - Expected Price of the commodity.

Assumptions

Law of Supply is based on the following assumptions.

- There is no change in the prices of factors of production
- There is no change in price of capital goods
- Natural resources and their availability remain the same
- Prices of substitutes are constant
- There is no change in technology
- Climate remains unchanged
- Political situations remain unchanged
- There is no change in tax policy

Explanation

Suppose that the supply function is

$$Q_s = f(P) \text{ or } Q_s = 20P$$

P is an independent variable. When its value changes, new values of Q_s can be calculated.

Supply Schedule

A supply schedule shows the different quantities of supply at different prices. This information is given in the supply schedule given below.

Table

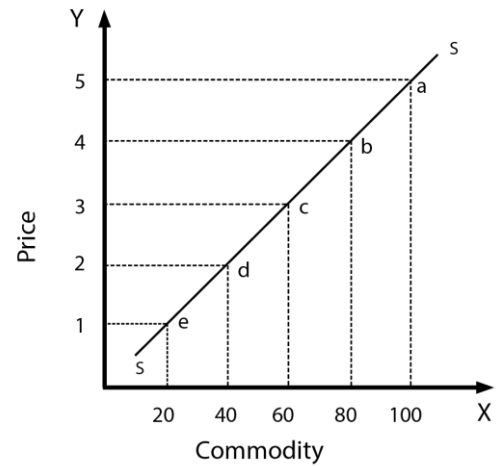
Price (P)	Supply (Q_s)
1	20
2	40
3	60
4	80
5	100

$$Q_s = 20P$$

Diagram

Supply Curve

A supply curve represents the data given in the supply schedule. As the price of the commodity increases, the quantum supplied of the commodity also increases. Thus the supply curve has a positive slope from left to right.



The quantum supplied of commodity x is represented on X-axis. And the price of the commodity is represented on the Y-axis. The points such as e, d, c, b and a on the supply curve SS', represent various quantities at different prices.

Factors determining supply

1. Price of the commodity

Higher the price, larger the supply. Price is the incentive for the producers and sellers to supply more.

2. Price of other commodities

The supply of a commodity depends not only upon its price but also price of other commodities. For instance if the price of commercial crops like cotton rise, this may result in reduction in cultivation of food crops like paddy and so its supply.

3. Price of factors

When the input prices go up, this result in rise in cost and so supply will be affected.

4. Price expectations

The expectation over future prices determines present supply. If a rise in price is anticipated in future, sellers tend to retain their produce for future sale and so supply in present market is reduced.

5. Technology

With advancement in technology, production level improves, cost declines and as a result supply level increases.

6. Natural factors

In agriculture, natural factors like monsoon, climate etc., play a vital role in determining production level.

7. Discovery of new raw materials

The discovery of new raw materials which are cheaper and of high quality tends to increase supply of the product.

8. Taxes and subsidies

Subsidies for inputs, credit, power etc. encourage the producers to produce more. Withdrawal of such incentives will hamper production. Taxes both direct and indirect kill the ability and willingness to produce more.

9. Objective of the firm

When the goal of the firm is sales maximisation or improving market share, the supply of the product is likely to be higher.

Elasticity of Supply

Elasticity of supply may be defined as *the degree of responsiveness of change in supply to change in price on the part of sellers.*

Mathematically is expressed as:

Elasticity of supply = proportionate change in supply / proportionate change in price

$$e_s = \frac{\Delta Q_s / Q_s}{\Delta P / P} \quad ; \quad e_s = \frac{\Delta Q_s}{\Delta P} \times \frac{P}{Q_s}$$

Where Q_s represents the supply, P represents price, Δ denotes change.

Types of Elasticity of Supply

There are five types of elasticity of supply.

1. Relatively elastic supply (see Diagram A)

The co-efficient of elastic supply is greater than 1 ($e_s > 1$). One percent

change in the price of a commodity causes more than one per cent change in the quantity supplied of the commodity.

2. Unitary elastic supply (see Diagram B)

The coefficient of elastic supply is equal to 1 ($e_s = 1$). One percent change in the price of a commodity causes an equal (one per cent) change in the quantity supplied of the commodity.

3. Relatively inelastic supply (see Diagram C)

The coefficient of elasticity is less than one ($e_s < 1$). One percent change in the price of a commodity causes a less than one per cent change in the quantity supplied of the commodity.

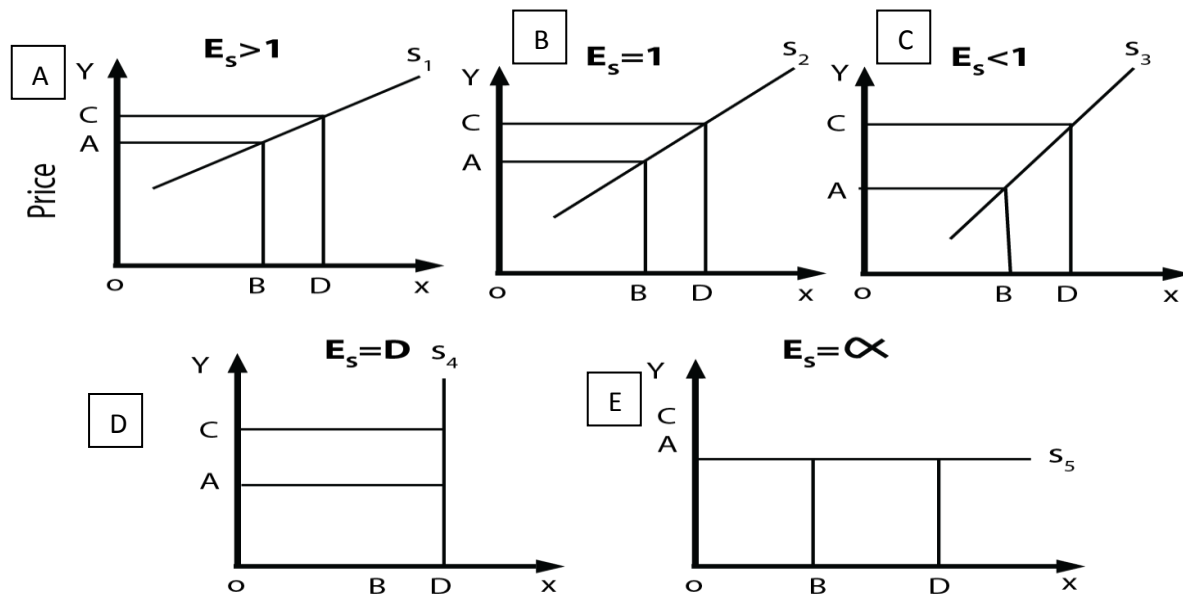
4. Perfectly inelastic supply (see Diagram D)

The coefficient of elasticity is equal to zero ($e_s = 0$). A unit change in the price of a commodity causes no change in the quantity supplied of the commodity.

5. Perfectly elastic supply (see Diagram E)

The coefficient of elasticity of supply is infinity. ($e_s = \infty$). One percent change in the price of a commodity causes an infinite change in the quantity supplied of the commodity.

Diagram



Factors governing elasticity of supply

1. Nature of the commodity

Durable goods can be stored for a long time. So, the producers can wait until they get a high price. So, when the price increases, larger quantity of goods can come to market. The elasticity of supply of durable goods is high. But perishables are to be sold immediately. So, when price increases, larger quantity cannot come to market. So perishables have low elasticity of supply.

2. Cost of production

When production is subject to either constant or increasing returns, additional production and therefore increased supply is possible. So elasticity of supply is greater. Under diminishing returns, increase in output leads to high cost. So elasticity of supply is less.

3. Technical condition

In large scale production with huge capital investment, supply cannot be adjusted easily. So elasticity of supply is lesser. Where capital equipment is less and technology simple, the supply is more elastic.

4. Time factor

During very short period when supply cannot be adjusted, elasticity of supply is very low. In short period, variable factors can be added and so supply can be adjusted to some extent. So elasticity of supply is more. In long period, even the fixed factors can be added and also elasticity of supply is highly elastic.

Conclusion

Production takes place with the view to fulfilling the demands of the consumers. Production has to necessarily expand in size and improve in quality.

/// Notes Compiled for Classroom discussion and reading purposes only ///

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