

Quick View

Meaning of Supply

Supply means the quantity of a commodity which a firm or an industry is willing to produce at a particular price, during a given time period.

Factors Determining Supply

1. Prices of Inputs

In addition to the price of the product being the main factor as stated in the Law of Supply, the price of production inputs also plays a part. The lowest price at which a firm can sell a good without losing money is the amount of money that it costs to produce it. Producing a good or service involves taking inputs and applying a process to them to produce an output. The output is the finished good or service, and inputs are raw materials, labor, utilities, licensing fees, or even other goods. These inputs are also known as factors of production. If the price of inputs goes up, the cost of producing the good increases. And therefore at each price producers need to sell their good for more money. So an increase in the price of inputs leads to a decrease in supply. Similarly, a decrease in the price of inputs leads to an increase in supply.

2. Technology Used

Production of a good involves taking inputs, applying a process to them, and producing an output. Well, production technology is involved in the process part. Increases in the level of production technology can make that process more efficient. For example, imagine that you run a basic T-Shirt screen printing business out of your home. Now let's say you decide to invest in a workshop installed with the latest production technology. With this use of technology, the operation becomes more efficient and you are able to increase the supply of T-shirts. If you decide to expand even further, some added technological improvements might be warranted. This further increases your ability to supply t-shirts since it reduces your labor costs. By automating the process, reliance upon labor is lessened and those resources are released for utilization elsewhere.

3. Prices of Other Goods

Suppose a firm produces two goods X and Y. Also suppose, that the firm produces more of X than of Y because it is more profitable to produce X.

Now suppose that the price of good Y rises in the market. This makes the production of Good Y more profitable now. As a result, the firm diverts resources from production of good X to good Y. Thus, the supply of a good is also influenced by the prices of other goods in the market.

4. Taxes on Production

Government imposes various types of taxes on production. Some examples are excise, sales tax, customs duty, service tax, octroi. Imposition of a tax raises the cost of production. This results in the decrease of profit for the producer. This demotivates the producer to supply more. Lowering of tax on production has the opposite effect.

5. Own Price of the Good

There is a direct relation between the change in price of a good and the supply of that good. A producer is willing to produce more at higher prices.

6. Producer's Expectations

It doesn't just matter what is currently going on - one's expectations can also affect how much of a product one is willing and able to sell. For example, if your firm produces mp3 players and you hear that Apple will soon introduce a new iPod that has more memory and longer battery life, you (and other producers) may decide to hurry up and sell your players to stores before the new iPod comes out. When people decide to increase production/sales today, they are increasing the current supply for mp3 players because of what they EXPECT to happen in the future.

7. The Number of Producer's in the Market

As more or fewer producers enter the market this has a direct effect on the amount of a product that producers (in general) are willing and able to sell. More competition usually means a reduction in supply, while less competition gives the producer a opportunity to have a bigger market share with a larger supply.

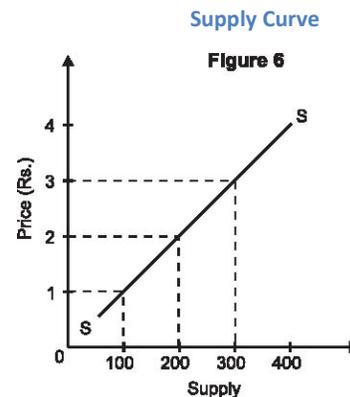
Law of Supply

This law states that 'other things remaining the same', an increase in the price of a commodity leads to an increase in its quantity supplied. Thus, more of a commodity is supplied at higher prices than at lower prices.

This law can be explained with the help of a supply schedule and curve.

A **supply schedule** is a table which shows the quantities of a commodity supplied at various prices during a given time period.

Price (Rs.)	Supply (Units)
1	100
2	200
3	300



As the price increases from Re. 1 to Rs. 3, the supply also rises from 100 units to 300 units, in response to the rising price.

What is the basis of the law of supply?

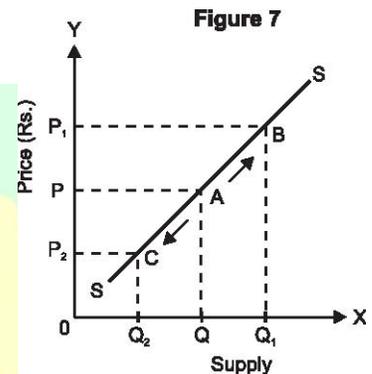
Other things remaining the same, an increase in price results in higher profits for the producer. The higher the price of the commodity, the greater are the profits earned by the firms and the greater is the incentive to produce more. Similarly when the price falls, profits decline, resulting in a decrease in quantity supplied of the commodity. Thus the price and quantity supplied of a commodity are directly related, other things remaining the same.

The **market supply schedule** of a good is merely the sum of supply schedules of all the producers of that good. All the producers taken together of a good make an industry. It can be defined as the table showing different quantities of a good, all the producers taken together of that good, are willing to sell at different prices, assuming no change in factors other than the prices influencing supply.

‘Change in supply’ versus ‘change in quantity supplied’

(‘shift of supply curve’ versus ‘movement along a supply curve’)

The supply of a commodity depends on its own price and 'other factors' like input prices, technique of production, prices of other goods, goals of the firm, taxes on the commodity etc.



Movement along a supply curve

The law of supply states the effect of a change in the own price of a commodity on its supply, other things remaining constant. The supply curve also carries the same assumption. Thus when other factors influencing supply do not change, and only the own price of the commodity changes, the change in supply takes place along the curve only. This is what movement along a supply curve means. A movement from one point to another on the same supply curve is also referred to as a change in quantity supplied”.

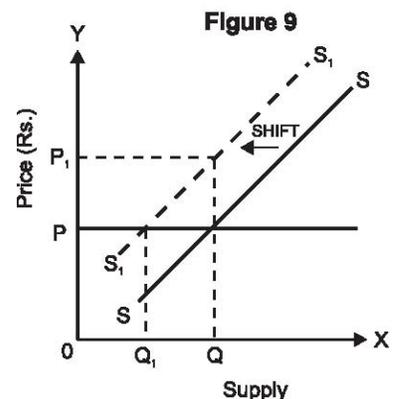
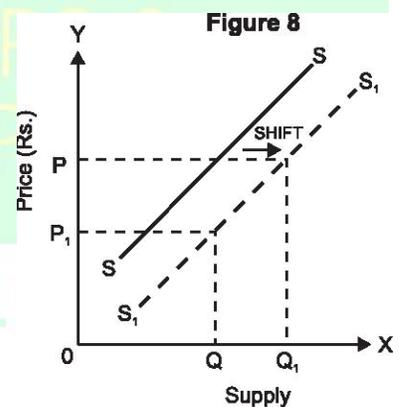
In figure 7, OQ is the quantity supplied at price OP. When the price rises to OP1 the quantity supplied increases to OQ1. Thus there is an upward movement along the supply curve from point A to B. **It is extension of supply.**

Similarly, when the price of a commodity falls from OP to OP2, there is a decrease in quantity supplied from OQ to OQ2 and thus a downward movement along the supply curve from A to C. **It is contraction of supply.**

Movements along the supply curve are caused by a change in the own price of the good only, other things remaining the same.

Shifts of the supply curve

When supply changes due to changes in factors other than the own price of the commodity, it results in a shift of the supply curve. This is also referred to as a “change in supply”.



An 'increase' in supply means more of the commodity is supplied at the same price. As a result the supply curve shifts to the right.

In **figure 8**, at price OP the previous supply was OQ which increased to OQ1. This also means that OQ units can now be supplied at a lower price OP1 with the new supply curve S1S1.

An 'increase' in supply can take place due to many reasons. For example, if the input prices fall or there is an improvement in technology, it will enable producers to produce and sell more at the same price resulting in a rightward shift of the supply curve.

A decrease in supply means less of the commodity is supplied at the same price, than previously. As a result, the supply curve shifts inwards to the left.

In **figure 9**, at price OP, previously OQ units were supplied which decreased to OQ1. This also means that OQ units can now be supplied at a higher price OP with the new supply curve SS

Shifts of the supply curve of a good are caused by a change in any one or more of the 'other factors' affecting supply, own price remaining unchanged. For example, if the input prices fall or there is a decrease in the prices of other related commodities, the producers supply more at the same price resulting in a rightward shift of the supply curve.

Difference in the Causes of Shift in the Supply

Increase in Supply (Rightward shift of Supply)	Decrease in Supply (Leftward shift of Supply)
1. Improvement in the technique of production	1. Technique of production becoming obsolete.
2. Fall in the price of related goods	2. Rise in price of related goods.
3. Fall in the cost	3. Rise in the cost
4. Fall in excise tax	4. Rise in excise tax

Difference between Increase and Expansion of Supply

Increase in Supply	Expansion (Extension) of Supply
1) It is shift of supply curve	1) It is movement along a supply curve.
2) Supply Curve shifts to the right.	2) There is an upward movement along the supply curve.
3) Favourable changes in the following factors lead to it: a) Improvement in technique of production b) Decrease in cost of production c) Fall in excise tax	3) It is due to the rise in the price of the commodity.
4) It is defined as rise in supply without any changes in price.	4) It is defined as the rise in supply at higher price of the good.

Difference between Decrease and Contraction of Supply

Decrease in Supply	Contraction of Supply
1. It is shift of supply curve.	1. It is movement along a supply curve.
2. Supply curve shifts to the left.	2. The consumer moves to the left on the same supply curve.
3. Unfavourable changes in the following factors lead to it: <ol style="list-style-type: none"> a. Obsolete technology. b. rise in cost of production c. rise in excise tax d. Rise in the price of related goods. 	3. It is due to fall in the price of the good.
4. It is defined as fall in supply at the same price of the good.	4. It is defined as the rise in supply at lower price of the good.

Elasticity of Supply

Meaning

It is the responsiveness of producers to changes in the price of their goods or services.

Over a short time period, firms may be able to increase output only slightly in response to an increase in prices. Over a longer period of time, the level of production can be adjusted greatly as production processes can be altered, additional workers can be hired, more plants can be built, etc. Therefore, elasticity of supply is expected to be greater with longer periods of time.

We would expect the supply elasticity of wheat to be very high as farmers can easily switch land that is used for wheat over to other crops such as corn or soybeans. On the other hand, an oil refinery cannot easily switch its production capacity over to another product, so low oil-refining margins do not reduce the quantity supplied by very much. Due to high capital costs, higher refining margins do not necessarily induce much greater supply. So the supply elasticity for oil refining is fairly low.

Measurement of Elasticity of Supply

a) Percentage Method

Supply elasticity is defined as the percentage change in quantity supplied divided by the percentage change in price. It is calculated as per the following formula:

$$E_s = \frac{\% \text{ Change in Quantity Supplied}}{\% \text{ Change in Price}}$$

The calculation of elasticity of supply is comparable to the calculation of elasticity of demand, except that the quantities used refer to quantities supplied instead of quantities demanded.

How Do We Interpret the Price Elasticity of Supply?

The price elasticity of supply is used to see how sensitive the supply of a good is to a price change. The higher the price elasticity, the more sensitive producers and sellers are to price changes. A very high price elasticity suggests that when the price of a good goes up, sellers will supply a great deal more of the good and when the price of that good goes down, sellers will supply a great deal less. A very low price elasticity implies just the opposite, that changes in price have little influence on supply.

Often you'll have the follow up question "Is the good price elastic or inelastic between \$9 and \$10". To answer that, use the following rule of thumb:

- If $E_s > 1$ then Supply is Price Elastic (Supply is sensitive to price changes)
- If $E_s = 1$ then Supply is Unit Elastic
- If $E_s < 1$ then Supply is Price Inelastic (Supply is not sensitive to price changes)

b) Geometric method

Three situations under geometric method are:

- Any straight line supply curve passing through the origin has value of elasticity equal to one.

Given price AD and the quantity supplied OD. Suppose, price changes to CE and quantity to OE.

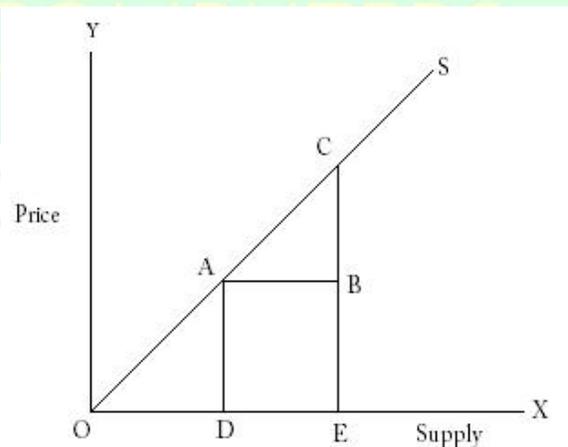
Therefore, $\Delta p = CB$ and $\Delta q = DE$.

$$\text{Given } E_s = \frac{p}{q} \times \frac{\Delta q}{\Delta p}$$

$$= \frac{AD}{OD} \times \frac{DE}{BC} = \frac{AD}{OD} \times \frac{AB}{BC}$$

Δs AOD and CAB are similar

$$\therefore E_s = \frac{AD}{OD} \times \frac{OD}{AD} \quad (\text{Because } \frac{AB}{BC} \times \frac{OD}{AD})$$



- ii) If Straight line supply curve goes through the quantity axis it is inelastic.
- iii) If a straight line goes through the price axis, it is elastic.

To show that E_p at A = $\frac{FD}{OD}$

Suppose, price rises from AD to CE.

$$\begin{aligned} \text{Given } E_s &= \frac{p}{q} \times \frac{\Delta q}{\Delta p} \\ &= \frac{AD}{OD} \times \frac{DE}{BC} = \frac{AD}{OD} \times \frac{AB}{BC} \quad (\text{Because } DE=AB) \end{aligned}$$

\triangle s AFD and CAB are similar.

$$\begin{aligned} \therefore E_s &= \frac{AD}{OD} \times \frac{FD}{AD} \quad (\text{Because } \frac{AB}{BC} = \frac{FD}{AD}) \\ &= \frac{FD}{OD} \end{aligned}$$

Note that since $FD > OD$, $E_s > 1$; since $FD < OD$, $E_s < 1$.

