Producer’s Surplus

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Producer’s Surplus: Meaning

- Alfred Marshall in his famous work ‘Principles of Economics’ explained the concept of producer’s surplus. This concept measures the benefit that sellers receive from participating in the market. Therefore, producer’s surplus measures the welfare of the producer.
- Producer surplus is the benefit that producers receive over his cost of providing goods against what he is paid for that good. It means the producer’s surplus is the amount a seller is paid minus the cost of production.
- So, it is the difference between the actual price received by sellers and the cost of producing a product.

Producer's Surplus: Meaning

- It can be measured by using the following formula.

Producer's Surplus (P.S) = Amount Received by Seller or Actual Price Paid to Seller- Minimum Supply Price or Cost of Seller

- For example, if a seller wants to sell a car at Rs. 35, 00,000 but the actual price of the car in the market is Rs. 45, 00,000. Here, the producer's surplus is Rs. (45, 00,000-35, 00,000) = Rs. 10, 00,000.

Producer's Surplus: Assumptions

The concept of producer's surplus is based on the following assumptions.

- *The producer is rational*
- *The market is perfectly competitive*
- *The price of the product remains constant*
- *The units of the good are homogeneous*

Based on the above assumptions, it can be seen as the difference between what producers are willing and able to supply a good for and the price they actually receive.

Producer’s Surplus: Example

- In the case of multi-unit sales, the producer’s surplus is the difference between the actual market price and the price at which the producer is ready to sell (minimum supply price or marginal cost) for each of the units of sale.
- The supply curve reflects the minimum supply price or marginal cost of every unit of production.
- The following table helps to get the concept of the producer’s surplus more clearly.

Producer's Surplus: Example

Units	Minimum Supply Price or Marginal Cost or Cost of Production	Actual Price Received or Market Price of the Product	Producer's Surplus
1	1	5	4
2	2	5	3
3	3	5	2
4	4	5	1
5	5	5	0
Total	**15**	**25**	**10**

In the table, at the expected price of Rs.1, the producer is ready to sell his output. He wants to sell the second, third, fourth, and fifth units of output at the price of Rs. 2, Rs.3, Rs.4, and Rs.5 respectively. When the market price is Rs. 5 then the producer gets Rs. 25 from the market by supplying 5 units but he is ready to supply such 5 units at Rs. 15. So his surplus from the selling of 5 units is Rs. (25-15) = Rs. 10

Producer’s Surplus: Example

Suppose the given market supply function is Q=-100+10P. If the price of the product in the market is Rs. 20, then calculate the producer’s surplus.

Solution: We can measure the producer surplus from the given infiltration as;

Given the supply function is Q=-100+10P and the market price is Rs. 20

When P=20, then Q= -100+10*20= 100 Units

Producer’s Surplus: Example

To calculate the producer’s surplus, we have to calculate the lowest price of the product. At the lowest price, the seller's supply will be zero. Therefore, calculating minimum price requires,

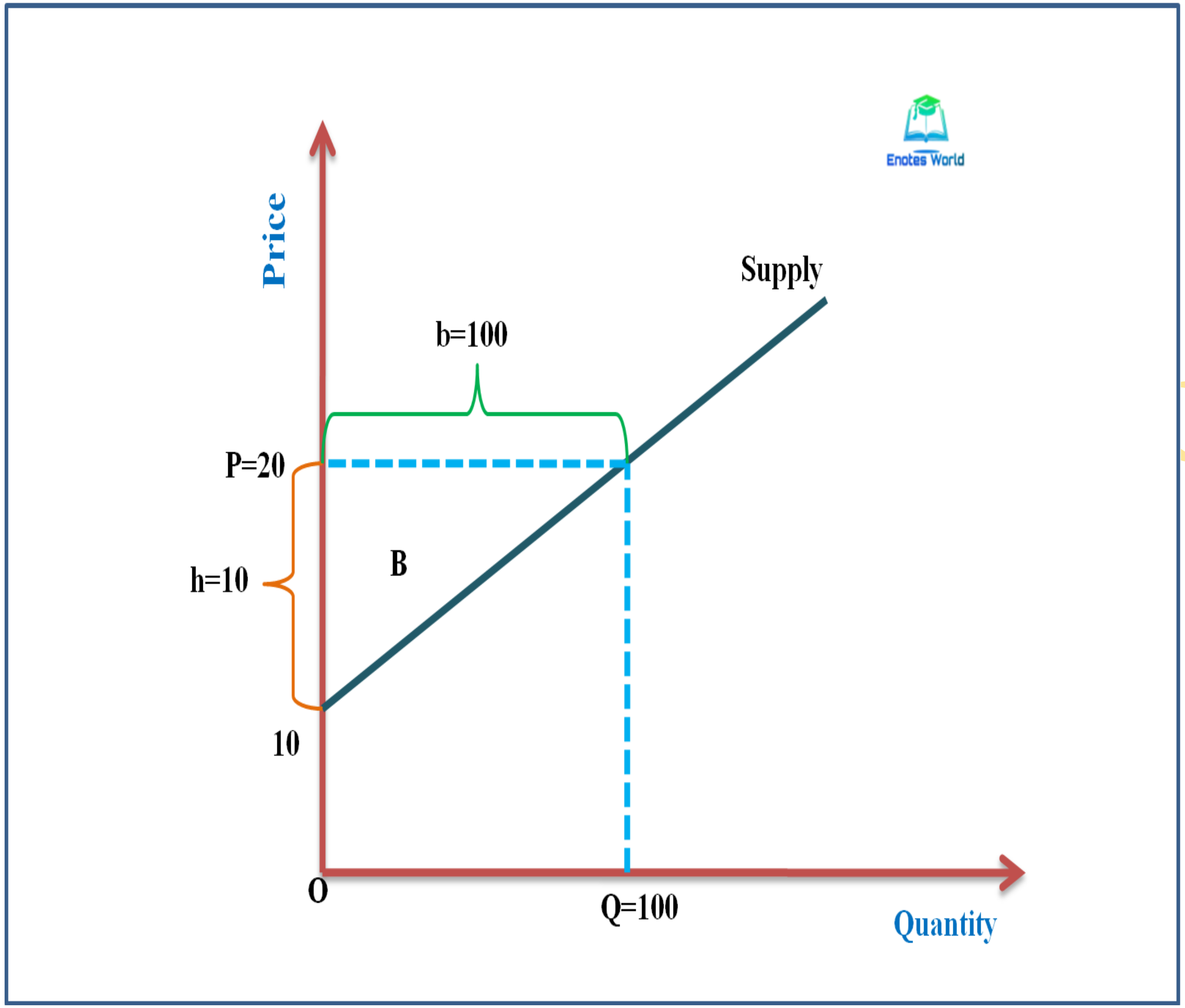
Or, $0=-100+10P$

Or, $10P=100$

Or, $P=10$

Thus, the minimum price or minimum supply price is Rs. 10. The information obtained here can be shown in the following diagram.

Producer's Surplus: Example



From the diagram we can calculate the producers' surplus as;

Producer's Surplus= Area of triangle B

= ½*b*h = ½*100*10= 500

Thus the value of producer surplus is 500 when the market price is Rs.20 and the supply function is Q=-100+10P.

Producer’s Surplus

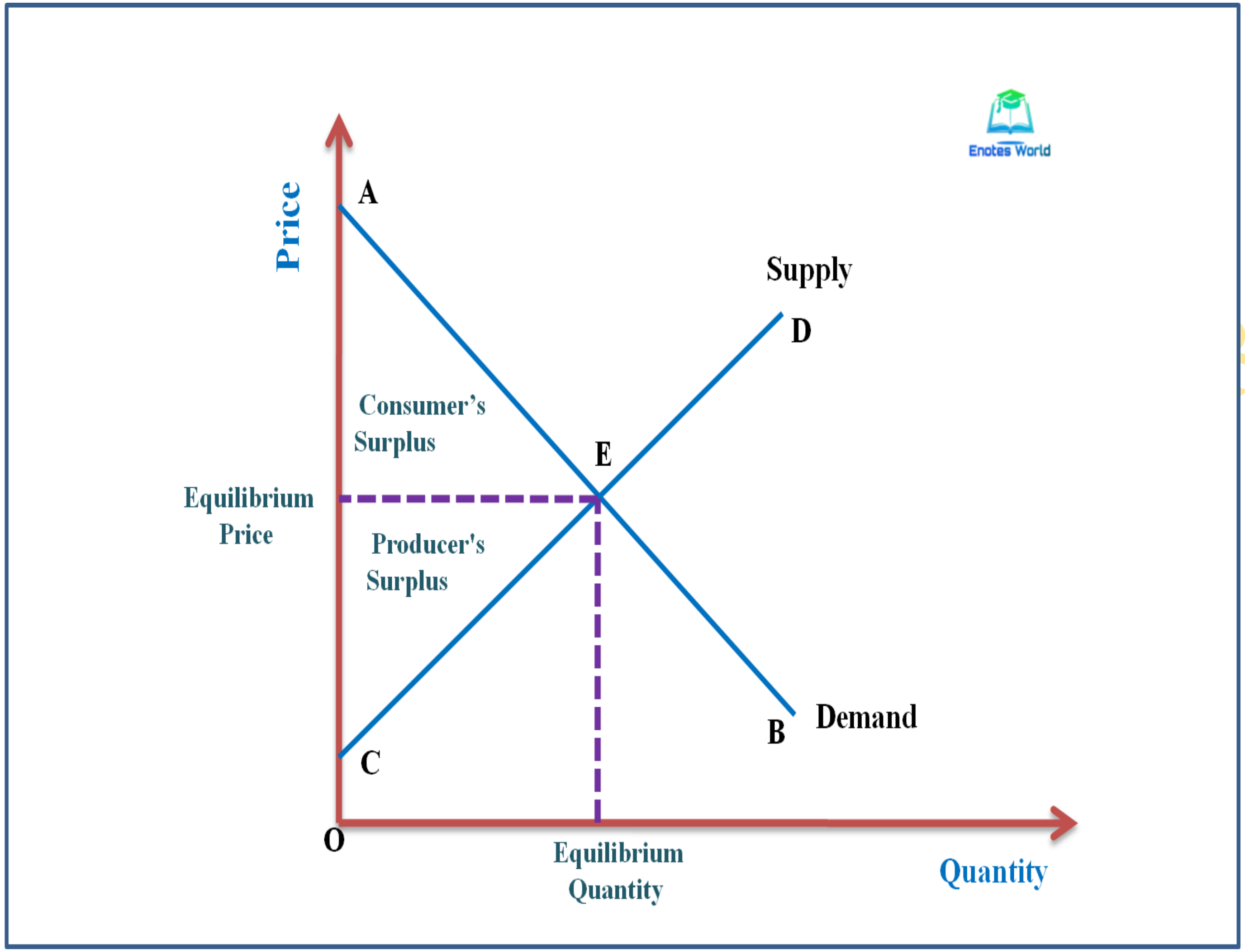
- The value of producer’s surplus is also never negative. It is because the producer does not sell at the price lower than its minimum supply price or marginal cost of the production.
- If the market price is higher than the minimum supply price then the seller will encourage selling more and more sellers will participate in the market. If the price is lower then there will be low participation of sellers such that the producer’s surplus decreases.
- So the producer’s surplus increases with an increase in market price and vice versa.

Total Surplus

- Total surplus can be defined as the sum of consumer surplus and producer surplus.
- For the policymakers or planners, total surplus (summation of consumer surplus and producer surplus) is one of the ways to measure the efficient allocation or economic well-being of the society.
- The larger amount of these two shows the better off people in the society.
- We use both consumer surplus and producer surplus to measure the welfare of the society.

Thus, Total surplus= (Value to buyers-Amount paid by buyers) + (Amount received by sellers-Cost to sellers)

Total Surplus



The figure shows consumer surplus and producer surplus when a market reaches equilibrium by interacting demand and supply. The entirety part involving the supply and demand curves to the interaction point of demand-supply (equilibrium point) depicts the total surplus in the market.

The competitive market maximizes the value of the total surplus.

References and Suggested Readings

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