

O. P. JINDAL SCHOOL, RAIGARH (CG) 496 001

Phone : 07762-227042, 227293, (Extn. 227001 - 49801, 02, 04, 06); Fax : 07762-262613; e-mail: opjsraigarh@jspl.com; website : www.opjsrgh.in

Types of Costs

Fixed Costs (FC) -The costs which don't vary with changing output. Fixed costs might include the cost of building a factory, insurance and legal bills. Even if your output changes or you don't produce anything, your fixed costs stays the same.

Variable Costs (VC) - Costs which depend on the output produced. For example, if you produce more cars, you have to use more raw materials such as metal. This is a variable cost.

Semi- Variable Cost. Labour might be a semi-variable cost. If you produce more cars, you need to employ more workers; this is a variable cost. However, even if you didn't produce any cars, you may still need some workers to look after empty factory.

Total Costs (TC) = Fixed Costs + Variable Costs

Marginal Costs – Marginal cost is the cost of producing an extra unit. If the total cost of 3 units is Rs.1550, and the total cost of 4 units is Rs.1900. The marginal cost of the 4th unit is Rs.350.

Opportunity cost – Opportunity cost is the next best alternative foregone. If you invest Rs.1 crore in developing a cure for pancreatic cancer, the opportunity cost is that you can't use that money to invest in developing a cure for skin cancer.

Economic Cost. Economic cost includes both the actual direct costs (accounting costs) plus the opportunity cost. For example, if you take time off work to a training scheme. You may lose a weeks pay Rs 5000, plus also have to pay the direct cost of Rs.1200. Thus the total economic cost = Rs. 6200.

Accounting Costs – This is the monetary outlay for producing a certain good. Accounting costs will include your variable and fixed costs you have to pay.

Sunk Costs. These are costs that have been incurred and cannot be recouped. If you leave the industry you cannot reclaim sunk costs. For example, if you spend money on advertising to enter an industry, you can never claim these costs back. If you buy a machine, you might be able to sell if you leave the industry.

Money Cost:

'Money Cost' is the monetary expenditure on inputs of various kinds. It is the total money expenses incurred by a firm in producing a commodity. They include wages and salaries of labour; cost of raw-material, expenditure on machines and equipment, depreciation and obsolescence charges on machines, building and other capital goods; rent on building; interest on capital invested and borrowed ; normal profits of business, expenses on power, light, fuel, advertisement and transportation, insurance charges and all types of taxes.

The money cost includes both: (a) Implicit Costs (b) Explicit Costs

Difference between the Explicit and Implicit Costs:

1. Difference between the two is that the former can be measured in terms of money value, whereas the latter is in terms of imputed values.
2. The former is contractual payment whereas the second is the price paid to himself.

Producer's Equilibrium

Equilibrium refers to a state of rest when no change is required. A firm (producer) is said to be in equilibrium when it has no inclination to expand or to contract its output. This state either reflects maximum profits or minimum losses.

There are two methods for determination of Producer's Equilibrium:

1. Total Revenue and Total Cost Approach (TR-TC Approach)
2. Marginal Revenue and Marginal Cost Approach (MR-MC Approach)

It must be noted that scope of syllabus is restricted to "Producer's Equilibrium by MR- MC Approach". Still, for better understanding, "Producer's Equilibrium by TR-TC approach" is given.

Total Revenue-Total Cost Approach (TR-TC Approach):

A firm attains the stage of equilibrium when it maximises its profits, i.e. when he maximises the difference between TR and TC. After reaching such a position, there will be no incentive for the producer to increase or decrease the output and the producer will be said to be at equilibrium

Two essential conditions for producer's equilibrium are:

The difference between TR and TC is positively maximized;

Total profits fall after that level of output.

The first condition is an essential condition. But, it must be supplemented with the second condition. So, both the conditions are necessary to attain the producer's equilibrium.

Producer's Equilibrium (When Price remains Constant):

When price remains same at all output levels (like in case of perfect competition), each producer aims to produce that level of output at which he can earn maximum profits, i.e. when difference between TR and TC is the maximum. Let us understand this with the help of Table 8.1, where market price is fixed at Rs. 10 per unit:

Table 8.1: Producer's Equilibrium (When Price remains Constant):

Output (units)	Price (Rs.)	TR (Rs.)	TC (Rs.)	Profit = TR-TC (Rs.)	Remarks
0	10	0	5	-5	Profit rises with increase in output
1	10	10	8	2	
2	10	20	15	5	
3	10	30	21	9	
4	10	40	31	9	Producer's Equilibrium
5	10	50	42	8	Profit falls with increase in output
6	10	60	54	6	

According to Table 8.1, the maximum profit of Rs. 9 can be achieved by producing either 3 units or 4 units. But, the producer will be at equilibrium at 4 units of output because at this level, both the conditions of producer's equilibrium are satisfied:

1. Producer is earning maximum profit of Rs. 9;
2. Total profit falls to Rs. 8 after 4 units of output.

In Fig.8.1, Producer's equilibrium will be determined at OQ level of output at which the vertical distance between TR and TC curves is the greatest. At this level of output, tangent to TC curve (at point G) is parallel to TR curve and difference between both the curves (represented by distance GH) is maximum.

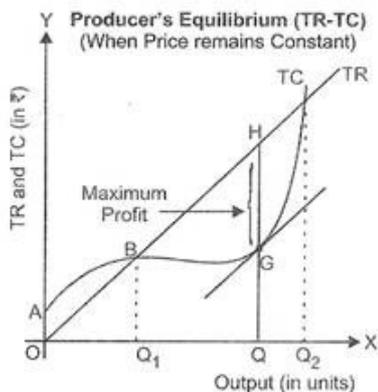


Fig. 8.1

At quantities smaller or larger than OQ, such as OQ_1 or OQ_2 units, the tangent to TC curve would not be parallel to the TR curve. So, the producer is at equilibrium at OQ units of output.

Producer’s Equilibrium (When Price Falls with rise in output):

When price falls with rise in output (like in case of imperfect competition), each producer aims to produce that level of output at which he can earn maximum profits, i.e. when difference between TR and TC is the maximum. Let us understand this with the help of Table 8.2:

As seen in Table 8.2, producer will be at equilibrium at 4 units of output because at this level, both the conditions of producer’s equilibrium are satisfied:

Table 8.2: Producer’s Equilibrium (When Price Falls with rise in output):

Output (units)	Price (Rs.)	TR (Rs.)	TC (Rs.)	Profit = TR-TC (Rs.)	Remarks
0	10	0	2	-2	Profit rises with increase in output
1	9	9	5	4	
2	8	16	9	7	
3	7	21	11	10	
4	6	24	14	10	Producer’s Equilibrium
5	5	25	20	5	Profit falls with increase in output
6	4	24	27	-3	

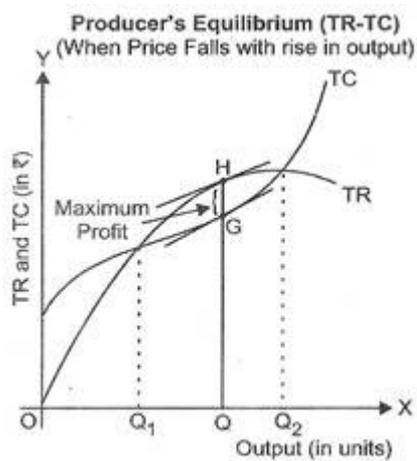


Fig. 8.2

Producer is earning maximum profit of Rs. 10; Total profits fall to Rs. 5 after 4 units of output. In Fig. 8.2, producer’s equilibrium will be determined at OQ level of output at which the vertical distance between TR and TC curves is the greatest. At this level of output, tangent to TR curve (at point H) is parallel to the tangent to TC curve (at point G) and difference between both the curves (represented by distance GH) is maximum.

Practice Questions

QUESTION SET– I Defend or refute the following statements. Write ‘yes’ or ‘no’ with reason:

1. Production function is only a technical relationship between physical inputs and physical output.
2. A producer strikes his equilibrium when the difference between TR and TC is maximised.
3. TP is maximum only when $MP = 0$.
4. MP can be negative, but not the AP.
5. Law of variable proportions must operate, even when all factors of production are variable.
6. AP and MP tend to be U-shaped.
7. Stage of increasing returns (when MP is increasing) is economically redundant, because the producer will not strike his equilibrium in this stage.
8. The producer strikes his equilibrium only when MP is diminishing.
9. In the short period, production is done only by using the variable factors.
10. Law of variable proportions operates only if factor ratio happens to change.
11. Stages of production are the consequences of the law of variable proportions.
12. Fixed cost is constant even when output is zero.
13. Variable cost is incurred before production is started.
14. Fixed cost must be greater than variable cost when output is zero.
15. Variable cost reduces as output increases.
16. Average fixed cost curve is a rectangular hyperbola.
17. Average variable cost tends to fall, stabilise and rise as output increases.
18. Total fixed cost is indicated by a vertical straight line.
19. Marginal cost includes both fixed cost and variable cost.
20. Average cost includes both fixed cost and variable cost.
21. Total cost is the sum total of marginal costs

QUESTION SET–II Write your comment on each of the following statements in a sentence or two:

1. MP must cut AP from its top.
2. If AP is rising, MP must also rise.
3. TP must rise as more and more units of a variable factor are combined with the fixed factor.
4. Increasing returns to a factor occur because the variable factor is abundantly used in production.
5. Diminishing returns to a factor occurs because fixed factor cannot be used as much as the variable factor
6. It is more profitable for the producer to be in a stage of increasing returns than the stage of diminishing returns
7. In a state of equilibrium, firm's MC should be rising

QUESTION SET III - Complete the following sentences:

1. In a state of equilibrium, the producer maximises _____
2. Break-even point occurs when _____
3. Shut-down point occurs when _____
4. MP is the rate of _____
5. $MP = 0$, when _____.
6. TP starts declining when _____
7. During short period, production can be increased _____
8. During long period, production can be increased _____.
9. $TFC =$ _____
10. $TVC =$ _____
11. $TC =$ _____.
12. ATC is U-shaped, because of _____
13. AFC is a rectangular hyperbola because _____.
14. ATC and AVC never intersect each other, because _____
15. Area under MC curve = TVC, because _____
16. ATC is always above AVC, because _____

HOTS (Higher Order Thinking Skills)

1. Draw a diagram showing that $MR = MC$ when the difference between TR and TC is maximum.
2. Find TP when 10 units of the variable factor are combined with 05 units of the fixed factor and MP remains constant at 10 units
3. At the existing level of output, $MP = AP = 10$ units. Would AP be equal to MP when production is increased and law of variable proportions is in operation?
4. Why should TP be maximum when $MP = 0$.
5. Why a situation of increasing returns to a factor not sustainable? Give two reasons.