CONCEPTS OF COST

CONCEPTS OF COST

THE TRADITIONAL THEORY OF COST

- Traditional theory of cost distinguishes between the short -run and the long- run. The short-run is the period during which some factor is fixed and in the long-run all factors become variable.
- **Short-Run Costs of the Traditional Theory:**
- Short- run is a period of time in which certain inputs cannot be changed regardless of the amount of output produced. Similarly there are other inputs known as variable inputs whose amount is amenable to change. A firm's short- run Total Costs(TC) are split up into groups- Total fixed costs(TFC) and Total variable costs(TVC).

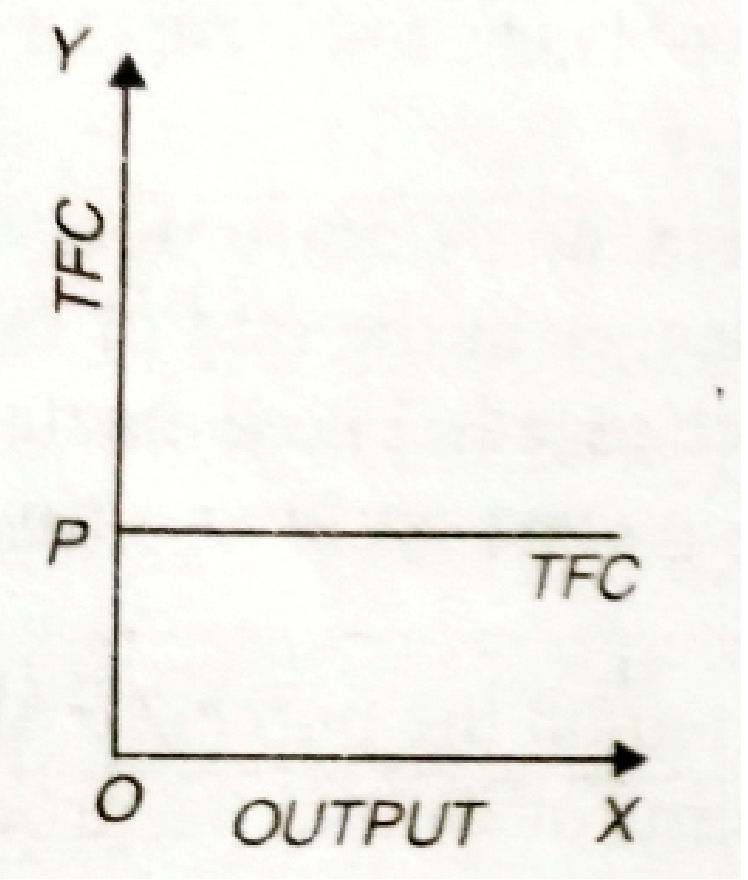
TC=TFC+TVC

CONCEPTS OF COST
TOTAL FIXED COST

- **Total Fixed Costs**: These are the costs incurred on factor –input which can not be changed in the short period . They remain unaffected by changes in the rate of output. Even when the output is reduced to zero , these costs continue unchanged .Fixed costs are also known as supplementary costs or overhead costs. It includes :
- Salaries and wages of permanent staff.
- Depreciation of machinery,
- Rent,
- Interest on long term debts,
- Allowances for depreciation,

CONCEPTS OF COST
Total Fixed Cost

- TFC Curve is graphically denoted by a straight line parallel to the output axis. In this figure, TFC Curve runs parallel to X-axis showing that this cost is invariant to changes in the level of output. OP is the total fixed cost at zero output and it remains the same throughout.



CONCEPTS OF COST
TOTAL VARIABLE COST

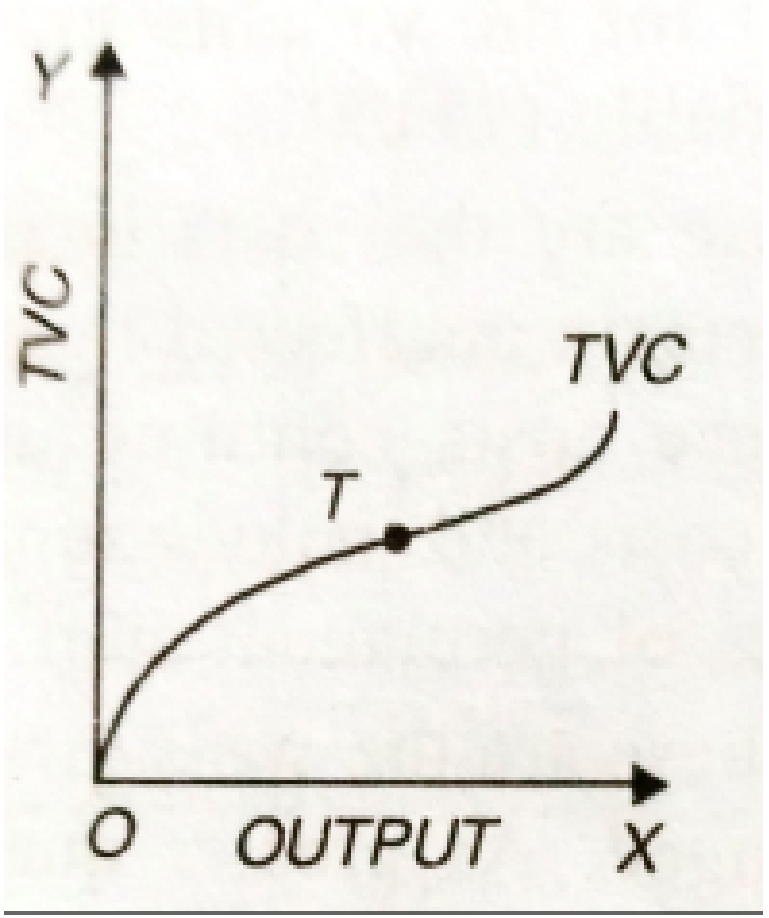
- Total Variable Cost(TVC)
- TVC refers to total money expenses incurred on the variable factor inputs like raw materials, power, fuel, water, transport and communication etc., They changed when output is changed. As greater quantity of output is produced ,more raw materials are required and possibly more labour has to be used . These costs fall to zero when output is zero .Variable costs are also known as Prime Costs or Direct Costs. It includes:
- Cost of raw material.
- Wages of casual workers.
- Expenses on Fuel, Power and Transportation
- Depreciation of capital equipment which depends upon the rate of output.

CONCEPTS OF COST

TOTAL VARIABLE COST

TVC Curves start from the origin showing that TVC is zero when output is zero.In the traditional theory of the firm, the total variable cost (TVC) has an inverse-S-shape which reflects the law of variable proportions. According to this law, at the initial stages of production with a given plant ,as more of the variable factors is employed ,its productivity increases and the average variable cost falls .This continues until the optimal combination of the fixed and variable factor is reached . Beyond this point as increased quantities of the variable factor are combined with the fixed factor the productivity of the variable declines.

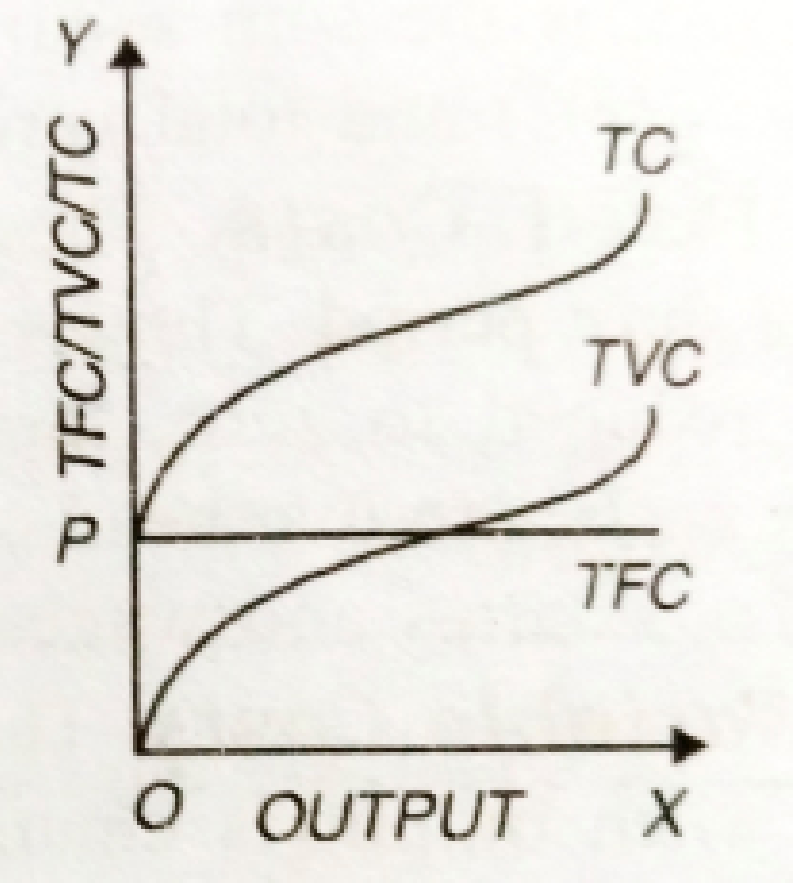
FIGURE



CONCEPTS OF COST

TOTAL COST

- TOTAL COST: Total costs(TC) is the sum total of total fixed cost (TFC)and total variable cost(TVC), corresponding to a given level of output.
- Figure shows that at every level of output ,TC equals TFC plus TVC. Thus TC Curve has the same shape as TVC but is everywhere above TVC at a height determined by the level of TFC. Thus by adding TFC and TVC we obtain TC of the firm. Difference between TC and TVC is constant, because of which TC and TVC are parallel to each other. And the difference between TC and TVC is equal to TFC which is constant.



CONCEPTS OF COST

Behaviors of Total Fixed Cost, Total Variable Cost and Total Cost

Behaviors of Total Fixed Cost, Total Variable Cost and Total Cost is explained with the help of following table

OUTPUT	TFC(Rs.)	TVC(Rs.)	TC(Rs.)=TFC+TVC
0	60	0	60
1	60	100	160
2	60	180	240
3	60	240	300
4	60	340	400
5	60	500	560
6	60	720	780

CONCEPTS OF COST

- **SHORT-RUN AVERAGE COSTS**
- **AVERAGE COST(AC):** Per unit cost of producing a commodity is termed as Average Cost. Average Total Cost or Average Cost is total cost divided by total units of output..
- ATC or AC=$\frac{TC}{q}$,
- In short –run period ,TC=TFC+TVC
- By dividing both side by q,
- $\frac{TC}{q}=\frac{TFC+TVC}{q}$,

Or,AC=$\frac{TFC}{q}+\frac{TVC}{q}$

Or, AC=AFC+AVC

CONCEPTS OF COST
AVERAGE COST(AC)

QUANTITY	TOTAL COST(Rs.)	AVERAGE COST(Rs.) =TC/q
1	160	160
2	240	120
3	300	100
4	400	100
5	560	112
6	780	130

CONCEPTS OF COST

- **FIXED AND VARIABLE COMPONENTS OF AC**

- **AVERAGE FIXED COST(AFC):** This is computed by dividing the Total Fixed Cost by the total Output.
- **AFC=$\frac{TFC}{q}$;TFC=Total fixed cost,q=Quantity of output.**
- As the output of a firm increases ,AFC will tend to decline continuously. This is obvious from the very definition of fixed costs which are costs that do not change with output even the firm produces nothing , ten or twenty units , the TFC remains the same.

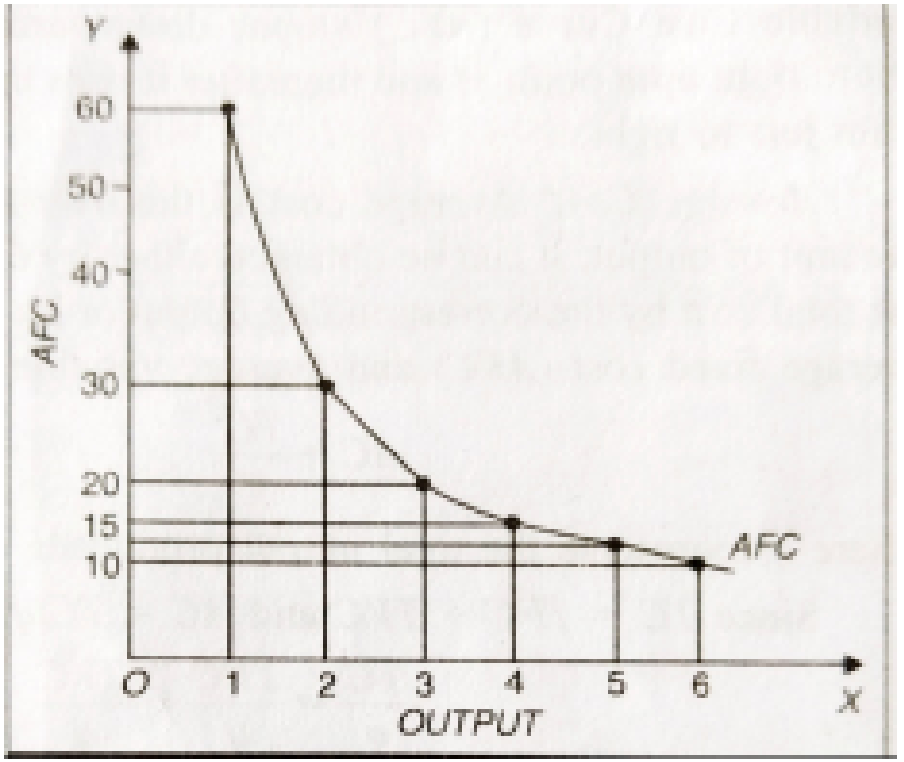
CONCEPTS OF COST

- **AVERAGE FIXED COST**

QUANTITY	TFC(Rs.)	AFC(Rs.)=TFC/q
1	60	60
2	60	30
3	60	20
4	60	15
5	60	12
6	60	10

CONCEPTS OF COST

- Graphically AFC is shown by a falling curve. It slopes downward from left to right because total fixed cost is constant ,i.e.,AFC falls with increase in production. Initially AFC falls sharply and later on it falls slowly.AFC never touches any axis.i.e., AFC takes the shape of a rectangular hyperbola.AFC can never be zero and AFC X Q at any level of output is same. Because, AFC X Q=TFC.



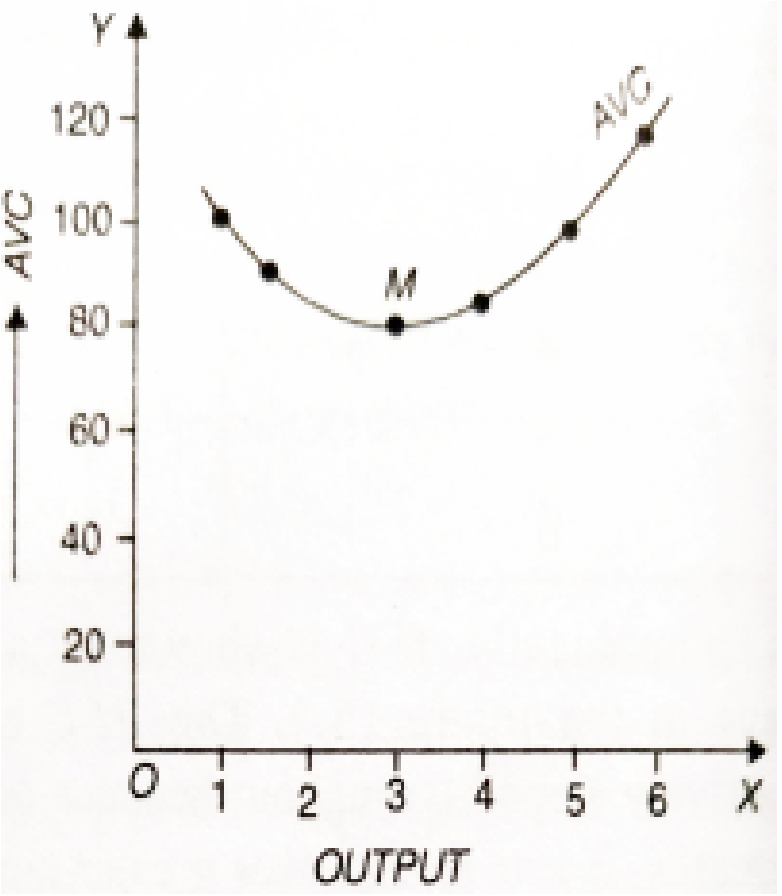
CONCEPTS OF COST
AVERAGE VARIABLE COST

- The Average Variable Cost(AVC) is obtained by dividing the total variable cost(TVC) with the corresponding level of output.
- $AVC=\frac{TVC}{q}$;TVC= Total Variable Cost,q= quantity of output.

QUANTITY(q)	TVC(RS.)	AVC(Rs.)=TVC/q
1	100	100
2	180	90
3	240	80
4	340	85
5	500	100
6	720	120

CONCEPTS OF COST

- AVC is U shape curve which means short- run average variable cost falls initially as the productivity of variable factors increases and AVC reaches minimum when the production plant is operated optimally(with the optional combination of fixed and variable factors) and after that AVC rises. In this figure , We find that AVC Curve slopes downward from left to right upto point M and thereafter it rises upwards from left to right.



CONCEPTS OF COST

AC CURVE AS A SUMMATION OF AFC AND AVC

- AC=AFC+AVC,
- The AC Curve is also U-shaped as is shown in the figure . Over the range of values for which both AFC and AVC decline ,AC must decline as well. But even after AVC turns up, the continuous decline in AFC causes AC to continue to decline. Finally ,however , the increase in AVC outweighs the decline in AFC.AC, therefore, reaches its minimum point(E) and starts increasing thereafter.
- AC Curve is vertical summation of AFC and AVC Curve. For example ,At output level OQ, AFC=QA,AVC=QB(or CA),
- AC=QA+QB(=CA)=QC. AC is similarly estimated for other levels of output.
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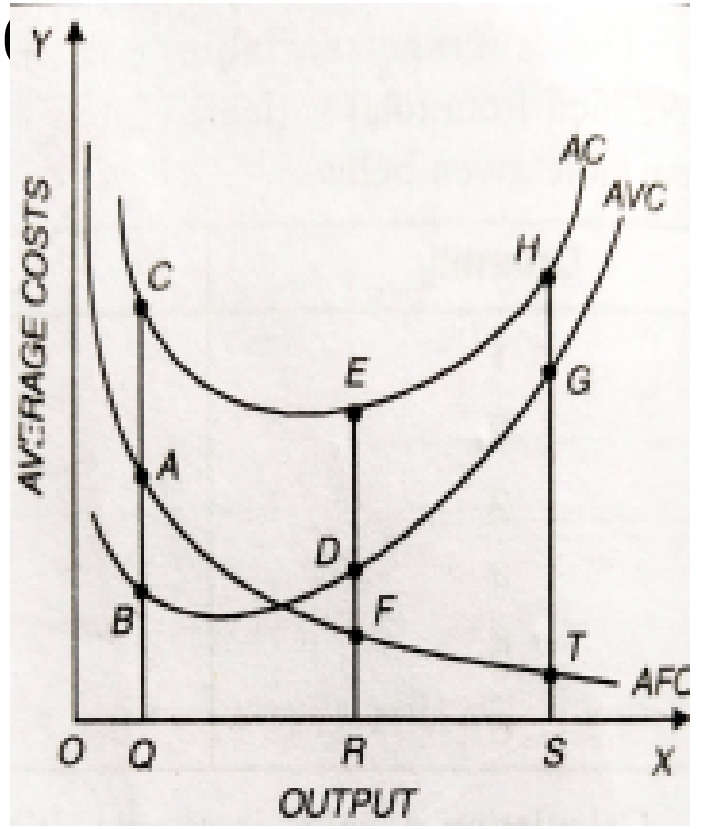

- To be Continued…..