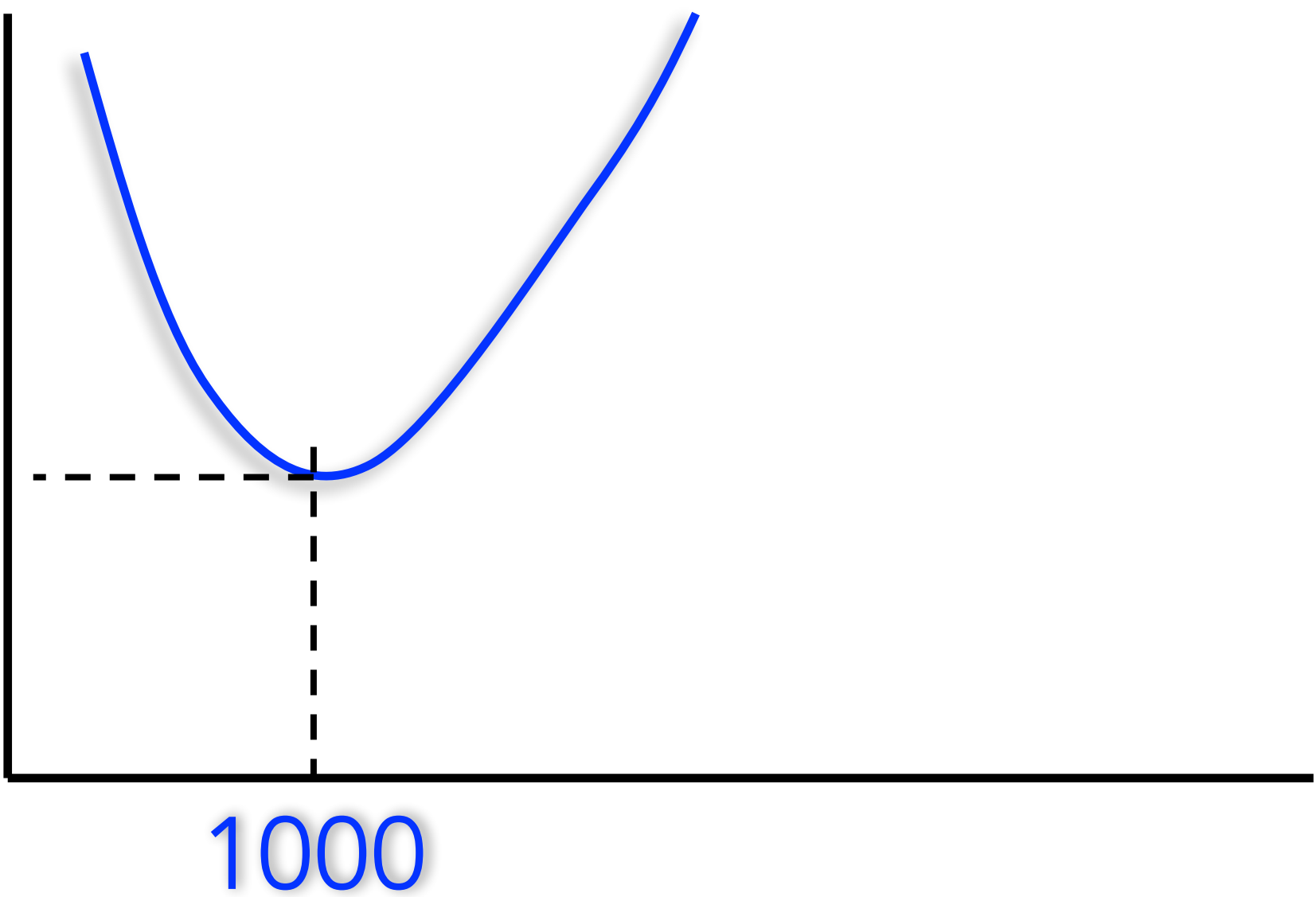
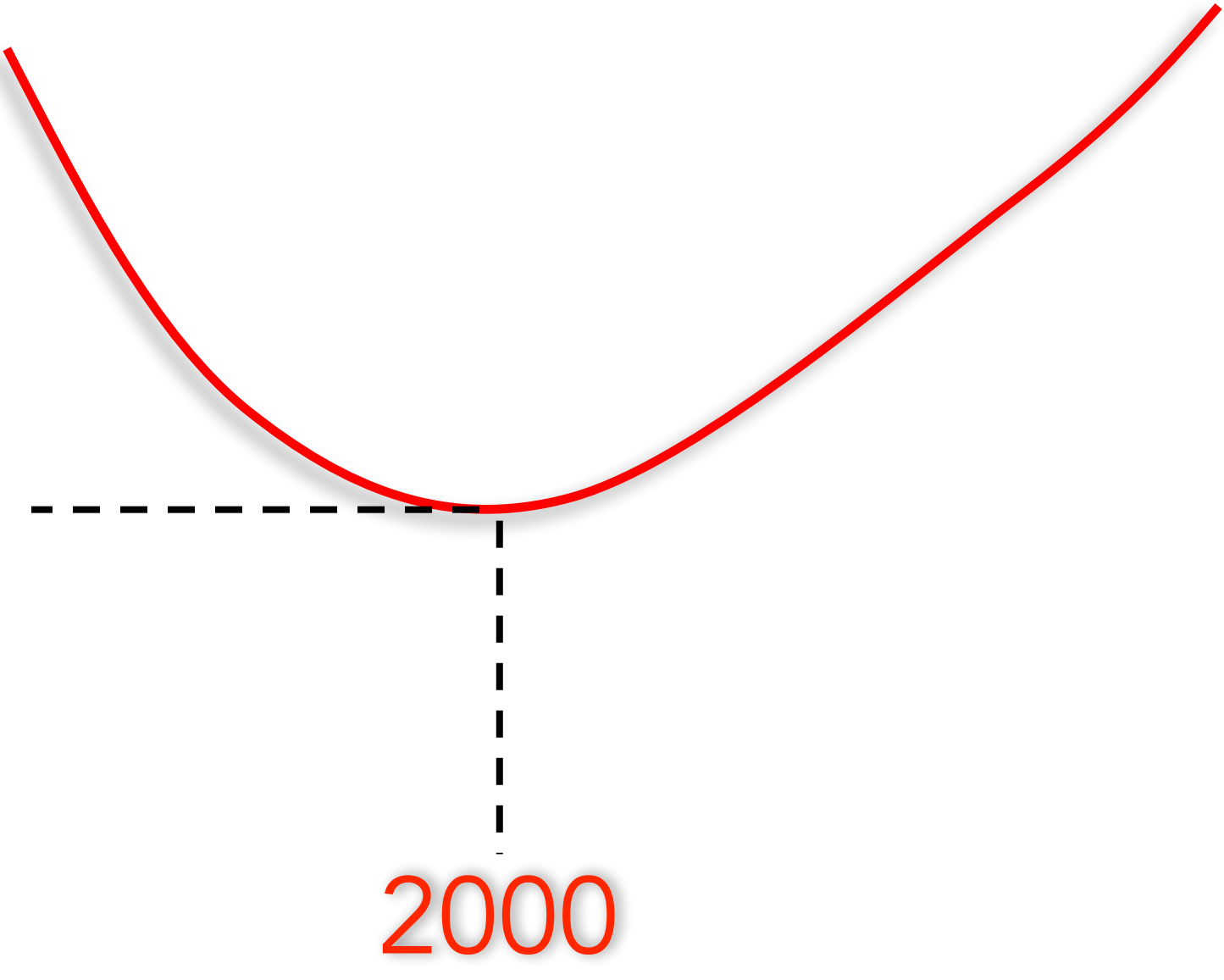
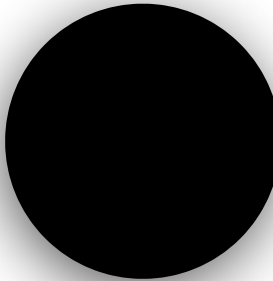
22

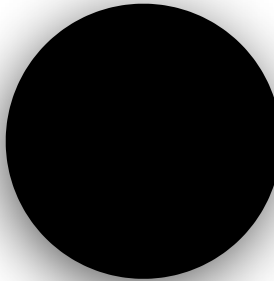
0.20


1000

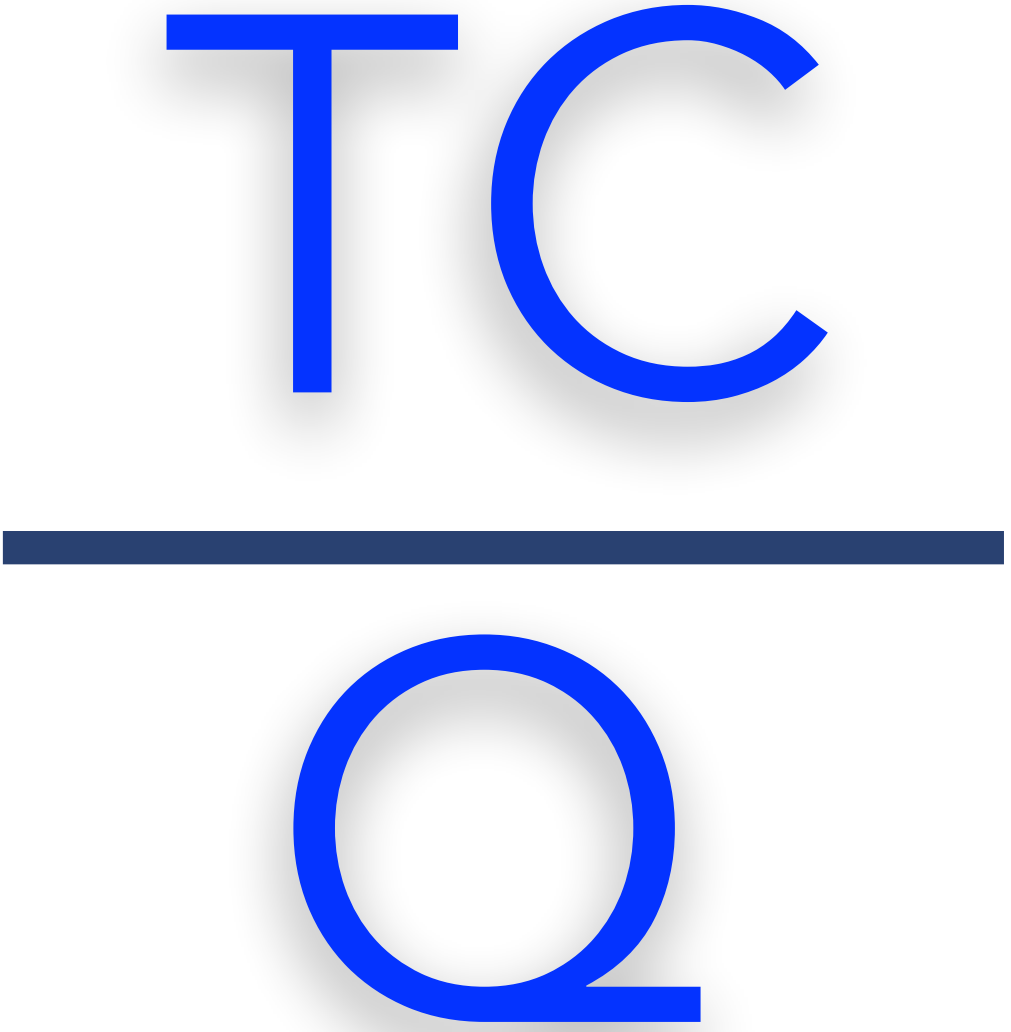

2000


ATC






ATC

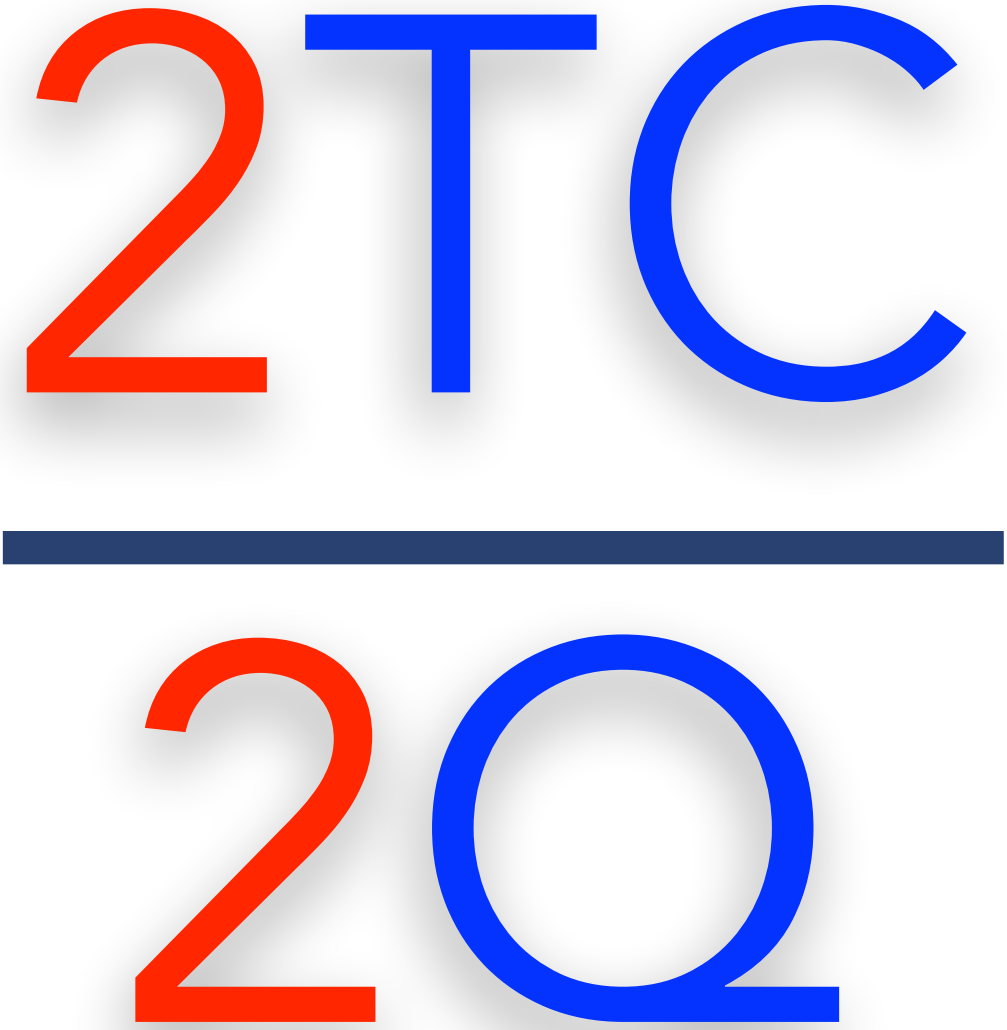

TC
Q


ATC =

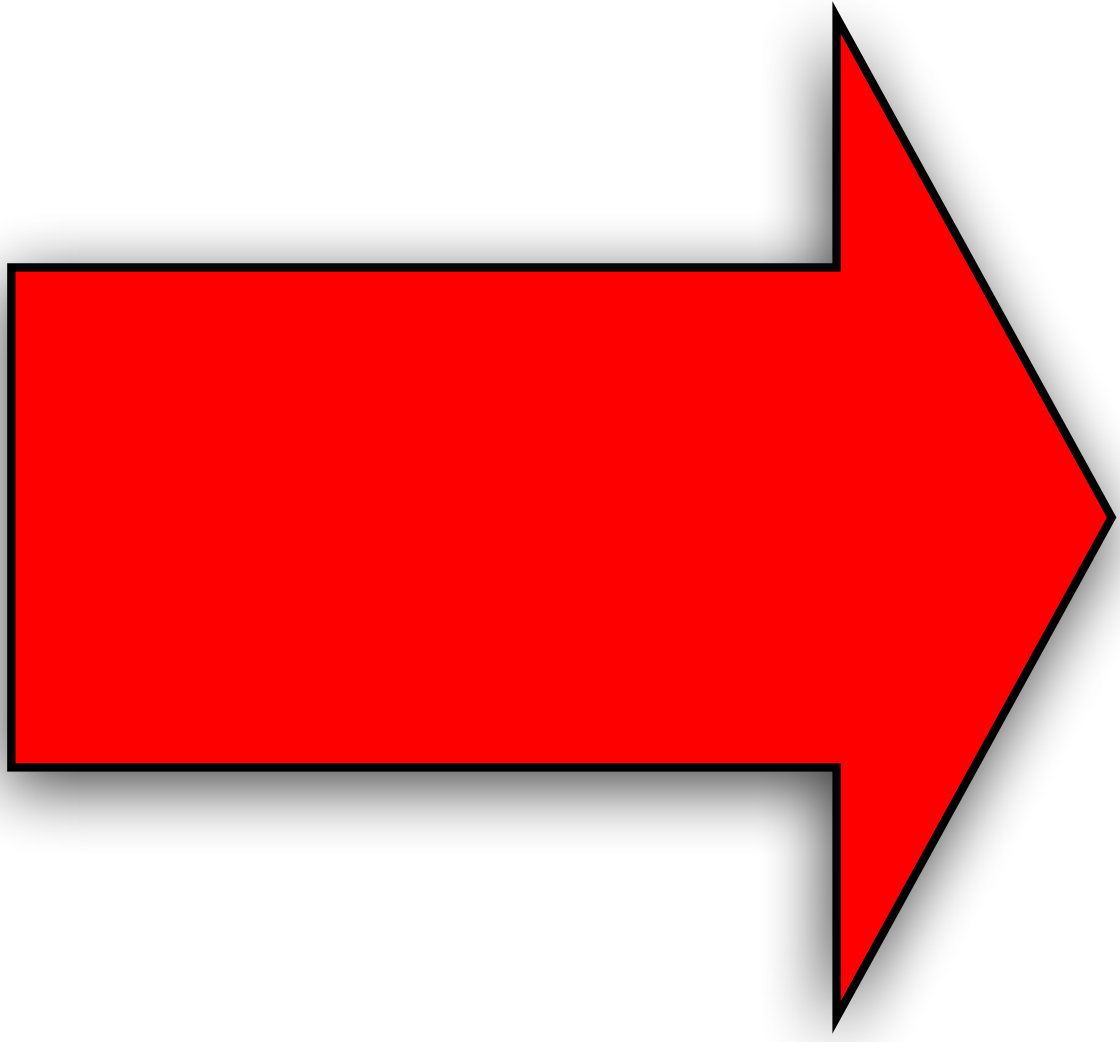

$0.20

Double Costs

Double Inputs


2TC
2Q

Double Output



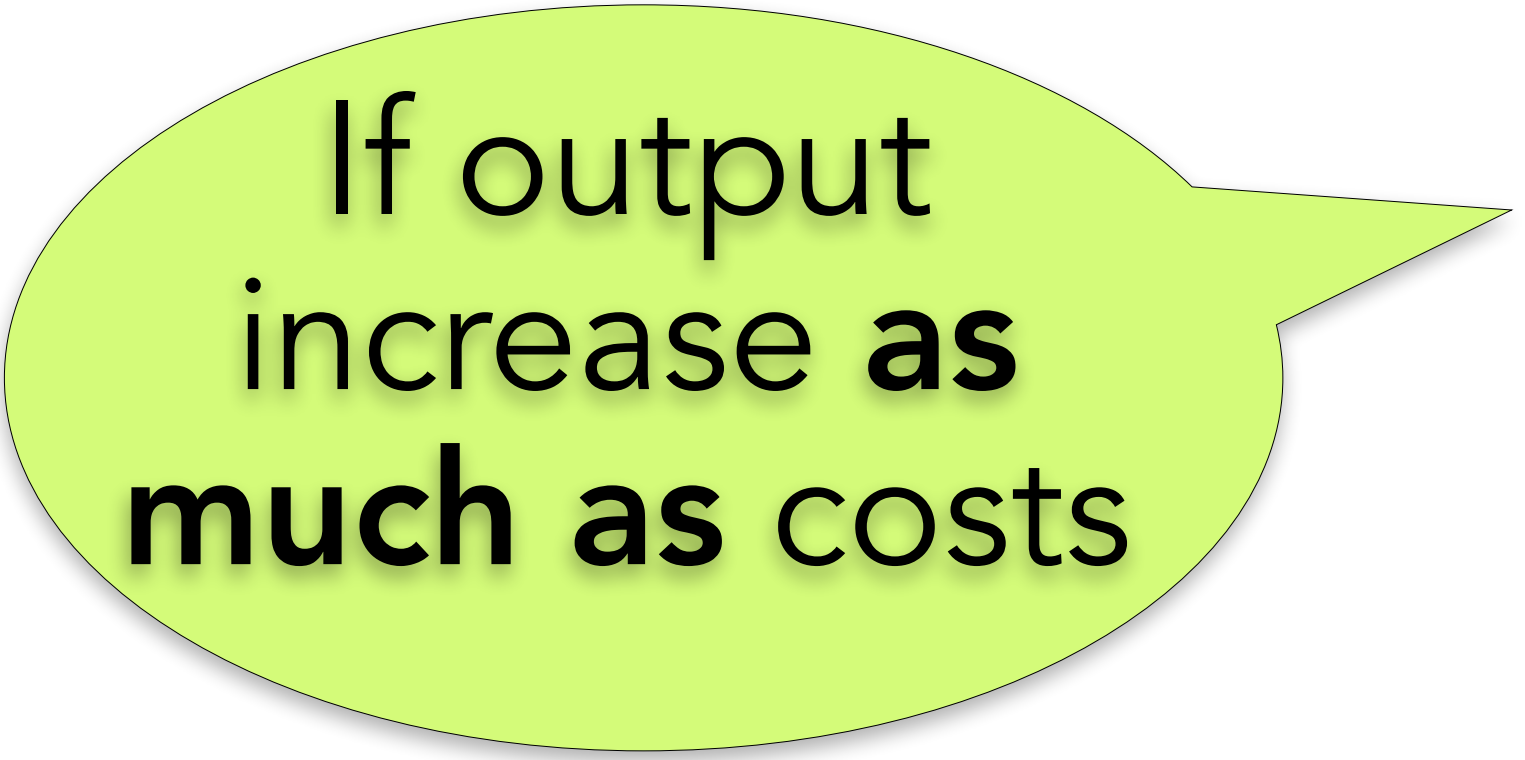

=ATC

$$= \frac{200}{1000}$$

$$= \frac{2(200)}{2(1000)}$$

ATC
Same

Costs remain the same with larger plant


If output increase **as much as** costs


$0.20

In a larger plant, if the firm use double the inputs, then costs also double

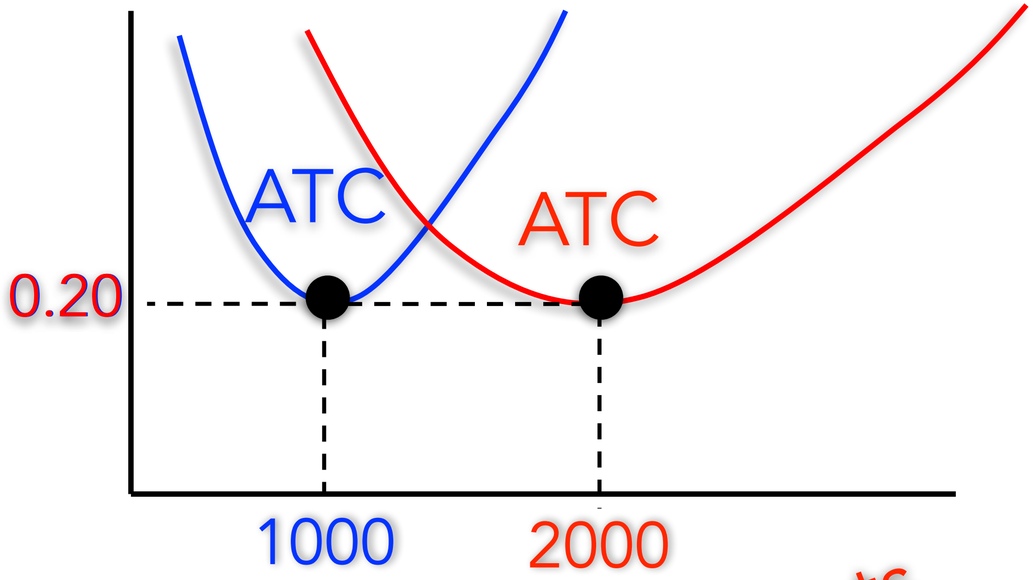
If the firm is already using the best technology, costs can not be reduced any further: output only doubles

Constant Returns to Scale

An example


0.20

Constant Returns to Scale



Costs remain the same with larger plant

$0.20

Double Inputs

Double Costs

$$ATC = \frac{TC}{200} \rightarrow \frac{2TC}{2Q} = \frac{2(200)}{2(1000)}$$

Double Output

If output increase **as much as** costs

$0.20

ATC Same

Constant Returns to Scale