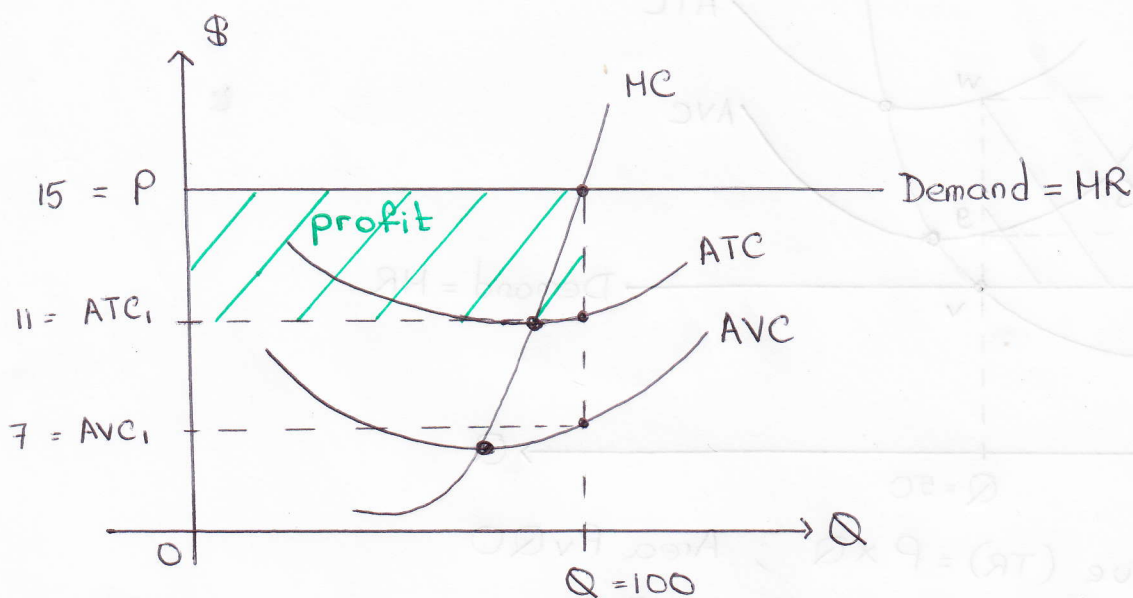


Perfect Competition Short-run Scenarios:-

(1) Firms make profit



* Remember :-
MC crosses
ATC and AVC
at the
minimum
points.

$$\begin{aligned} TR &= P \times Q \\ &= 15 \times 100 \\ &= 1500 \end{aligned}$$

$$\begin{aligned} TC &= ATC_1 \times Q \\ &= 11 \times 100 \\ &= 1100 \end{aligned}$$

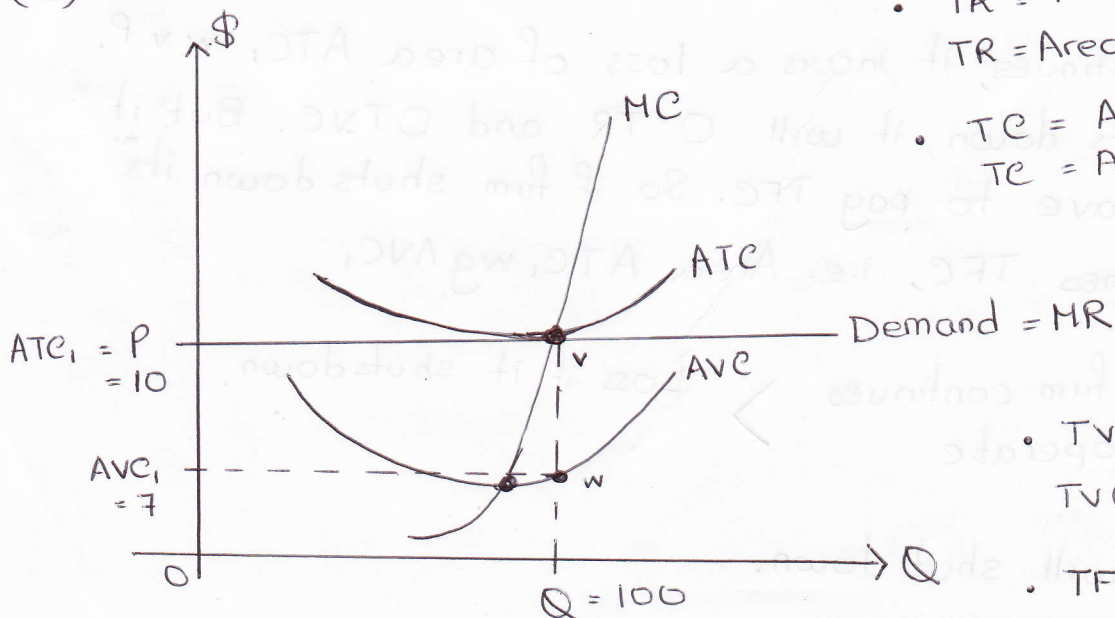
$$\begin{aligned} \text{Profit} &= TR - TC \\ &= 1500 - 1100 \\ &= 400 \end{aligned}$$

$$\begin{aligned} TVC &= AVC_1 \times Q \\ &= 7 \times 100 \\ &= 700 \end{aligned}$$

$$\begin{aligned} TFC &= TC - TVC \\ &= 1100 - 700 \\ &= 400 \end{aligned}$$

Firm will continue to operate in the market because it is making positive economic profit / supernormal profit.

(2) Firms make 0 Profit



$$\bullet TR = P \times Q$$

$$TR = \text{Area } P_v Q O$$

$$\bullet TC = ATC_1 \times Q$$

$$TC = \text{Area } P ATC_1 v Q O$$

$$TR = TC$$

$$\therefore \pi = TR - TC$$

$$\pi = 0$$

$$\bullet TVC = AVC_1 \times Q$$

$$TVC = \text{Area } AVC_1 w Q O$$

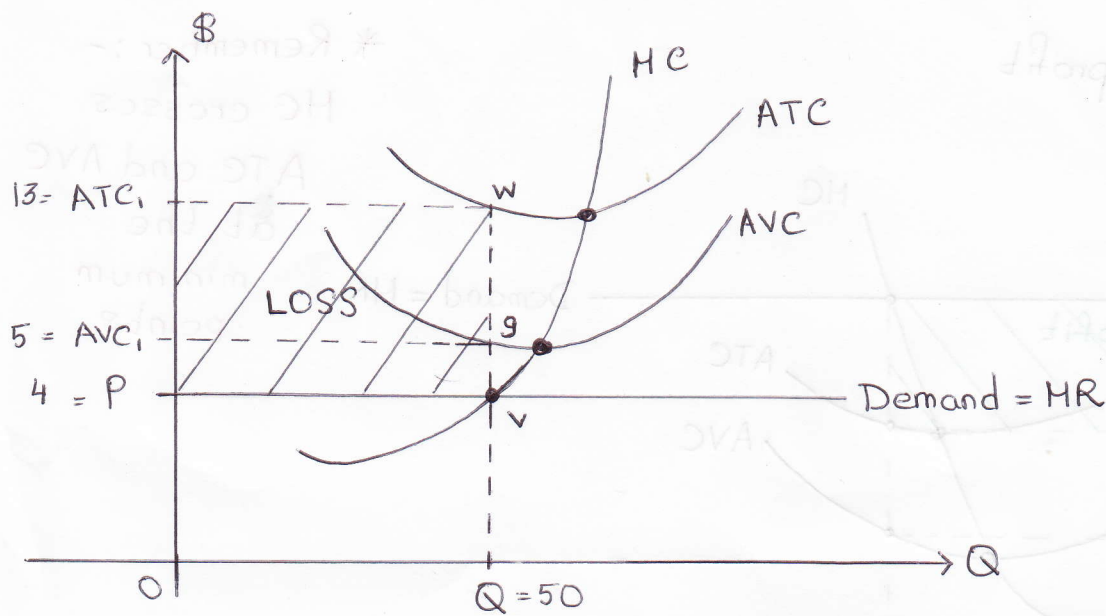
$$\bullet TFC = TC - TVC$$

$$= \text{Area } P ATC_1 v Q O$$

$$- \text{Area } AVC_1 w Q O$$

Firm will continue to operate in the market because it earns enough revenue to cover both TVC & TFC.

(3) Firms make loss; Shut-down.



Total Revenue (TR) = $P \times Q$; Area $P_v Q O$

TC = $ATC_1 \times Q$; Area $ATC_1 w Q O$

$\pi = TR - TC$

$\pi = \text{Area } P_v Q O - \text{Area } ATC_1 w Q O \rightarrow$ The difference is -ve
 \therefore Firm makes a LOSS.

$TVC = AVC_1 \times Q$; Area $AVC_1 g Q O$

$TFC = TC - TVC$

$TFC = \text{Area } ATC_1 w Q O - \text{Area } AVC_1 g Q O = \text{Area } ATC_1 w g AVC_1$

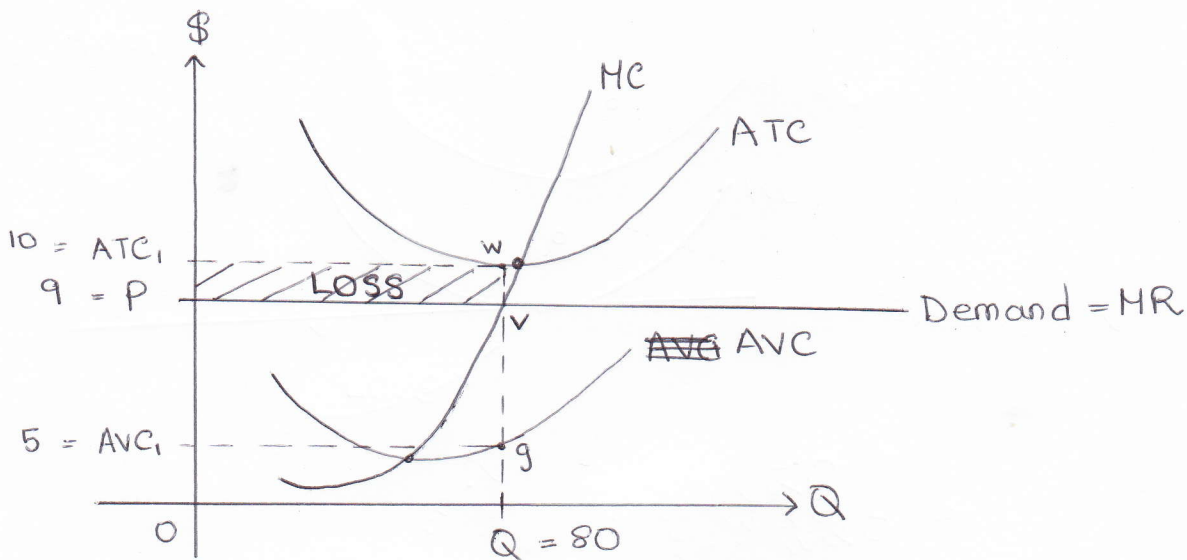
- Firm will immediately shut down.
- Firm's TR is only able to cover TVC partially, and cannot cover TFC at all.

- If firm continues, it incurs a loss of area $ATC_1 w v P$.
 If firm shuts down, it will 0 TR and 0 TVC. But it will still have to pay TFC. So if firm shuts down its loss becomes TFC, i.e. Area $ATC_1 w g AVC_1$

Loss if firm continues to operate > Loss if it shuts down.

\therefore Firm will shut down.

(4) Firm makes loss; Continues to operate in short-run



$$TR = P \times Q ; \text{Area } PvQO$$

$$TC = ATC_1 \times Q ; \text{Area } ATC_1 wQO$$

$$\pi = TR - TC$$

$$\pi = \text{Area } PvQO - \text{Area } ATC_1 wQO \rightarrow \text{difference is -ve} \\ \therefore \text{firm makes LOSS}$$

$$TVC = AVC_1 \times Q ; \text{Area } AVC_1 gQO$$

$$TFC = TC - TVC$$

$$TFC = \text{Area } ATC_1 wQO - \text{Area } AVC_1 gQO \\ = \text{Area } ATC_1 wg AVC_1$$

- If firm continues to operate, it will incur a loss of Area $ATC_1 w v P$.
At this state, firm is able to cover all TVC and a part of TFC.
- If firm shuts down, its $TR = 0$, $TVC = 0$, but $TC = TFC$.
So firm's loss will be TFC if it shuts down, i.e. Area $ATC_1 wg AVC_1$.

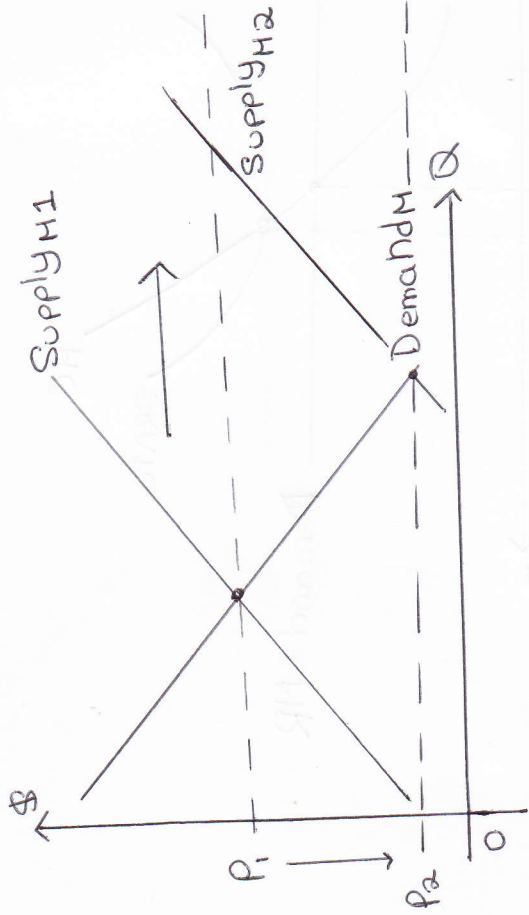
Loss if firm continues to operate

Loss if firm shuts down.

\therefore Firm will continue to operate in the short-run.

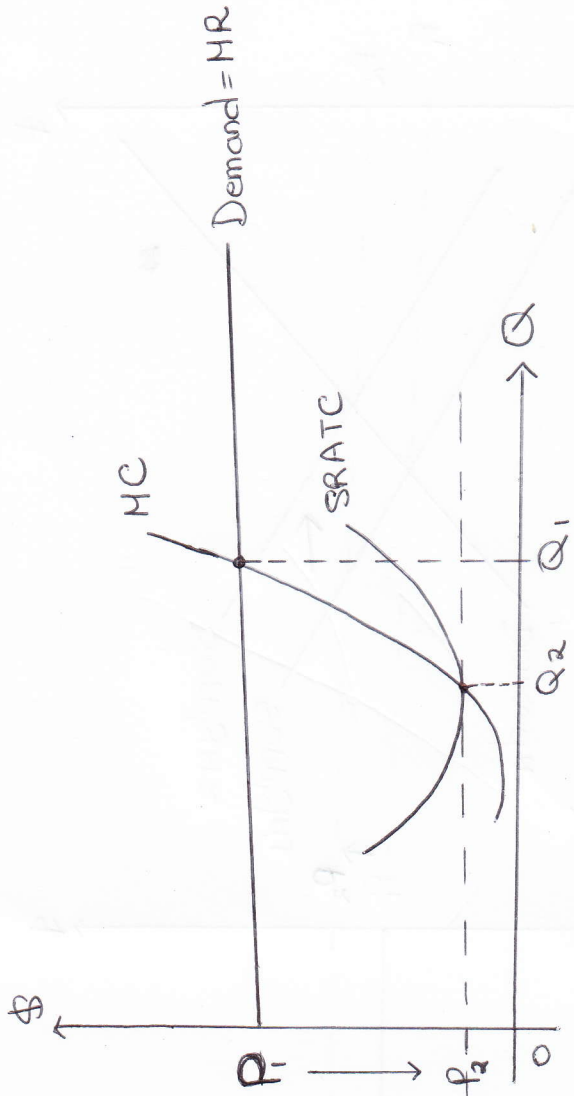
Transition from Short-run to Long-run

Case 1: Firms make positive Economic Profit in the Short-run



Market

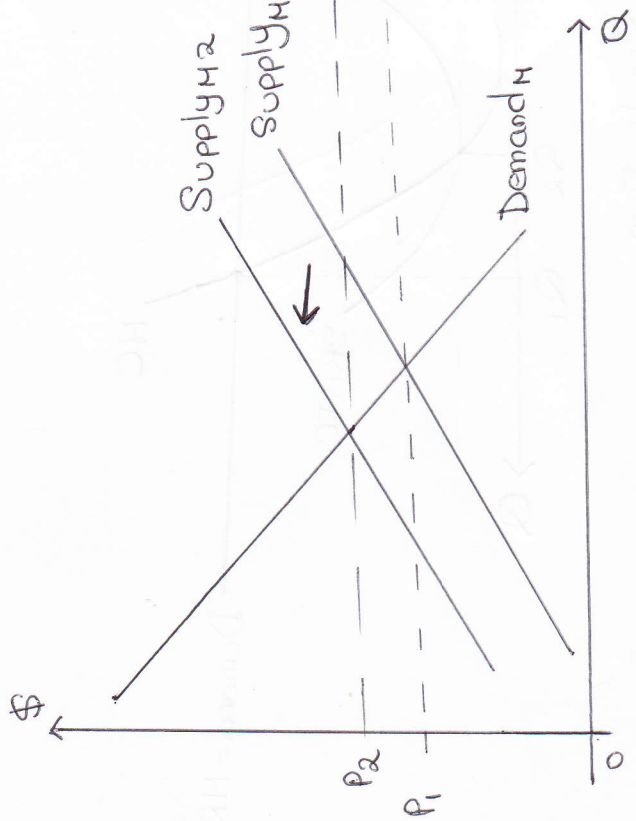
$\therefore \text{Price}_2 = \text{Demand} = \text{HR} = \text{MC} = \text{SRATC}$
 Firms only make normal profit



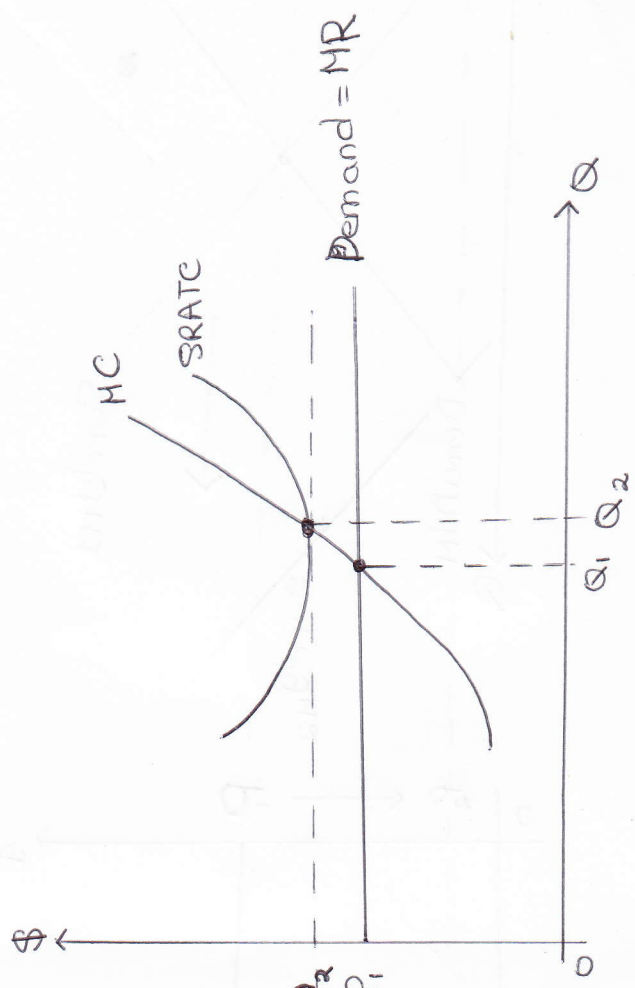
Single Firm

* Firms also adjust their plant size so it can produce at minimum cost.

Case 2: Firms make loss in the Short-Run



Market



Single Firm

- Some firms that were making loss in the SR will leave the market.
- $P_2 = \text{Demand} = \text{MR} = \text{MC} = \text{SRATC}$