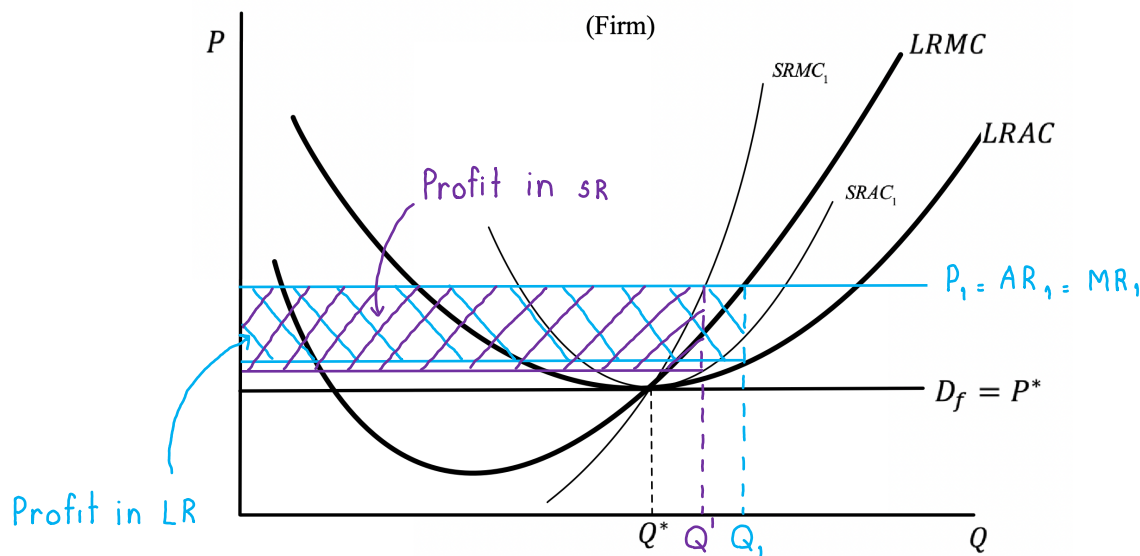


**HW#13 Due May 13, 2021**

Suppose that the market is in a Long-Run equilibrium where the price is at  $P^*$  and each firm produces  $Q^*$ . With the given  $SRMC_1$  and  $SRAC_1$  and  $LRMC$  and  $LRAC$ , the market price increases from  $P^*$  to  $P_1$ ,

- Show how the firm will change its output in Short Run and Long Run.
- Indicate the profit the firm receives in Short Run and Long Run.
- Explain why the profit in Long Run is bigger than profit in Short Run.



- In short run, the firm will increase its output from  $Q^*$  to  $Q'$ .  
In long run, the firm will increase its output from  $Q^*$  to  $Q_1$ .

- At  $Q'$ , LR profit  $>$  SR profit because  $LRAC$  is lower than  $SRAC$ .

So long run profit is maximized at  $Q_1$  where

- $MR(Q_1) = MC(Q_1)$

- $\text{slope } MR(Q_1) < \text{slope } LRM C(Q_1)$

$$LR \text{ profit at } Q_1 > LR \text{ profit at } Q' > SR \text{ profit at } Q'$$

or because in short run there is fixed cost while in long run not.