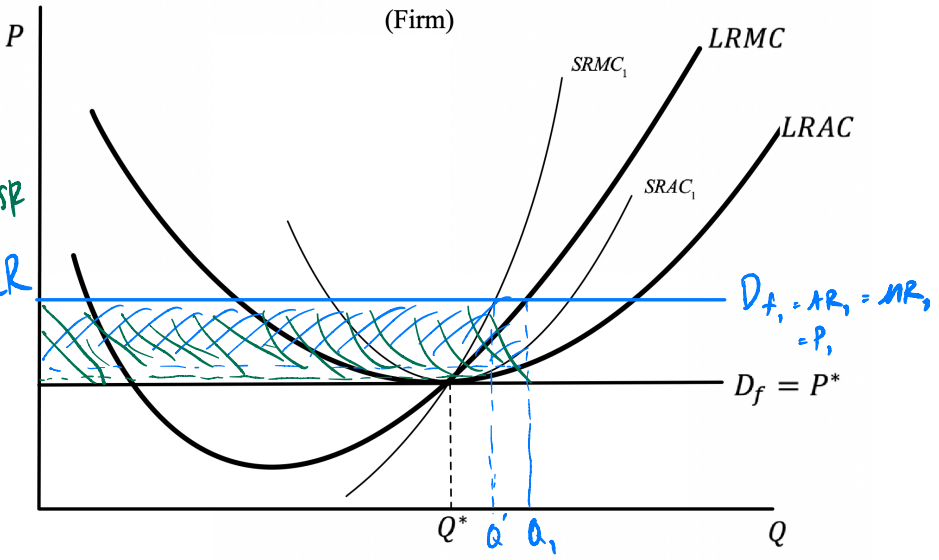


**HW#13 Due May 13, 2021**

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.

• = profit in SR  
 • = profit in LR



In short run : output increases from  $Q^*$  to  $Q'$

In long run : output increases from  $Q^*$  to  $Q_1$

At  $Q'$ , LR profit > SR profit since LRAC is lower than SRAC

However, the profit at  $Q'$  is not maximum in LR because

$MR(Q') > LRAC(Q')$ . Profit is maximized at  $Q_2$  where

$MR(Q_2) = LRMC(Q_2)$  and slope  $MR(Q_1) < \text{slope } LRMC(Q_2)$

$\therefore$  LR profit at  $Q_1 > LR$  profit at  $Q' > SR$  profit at  $Q'$