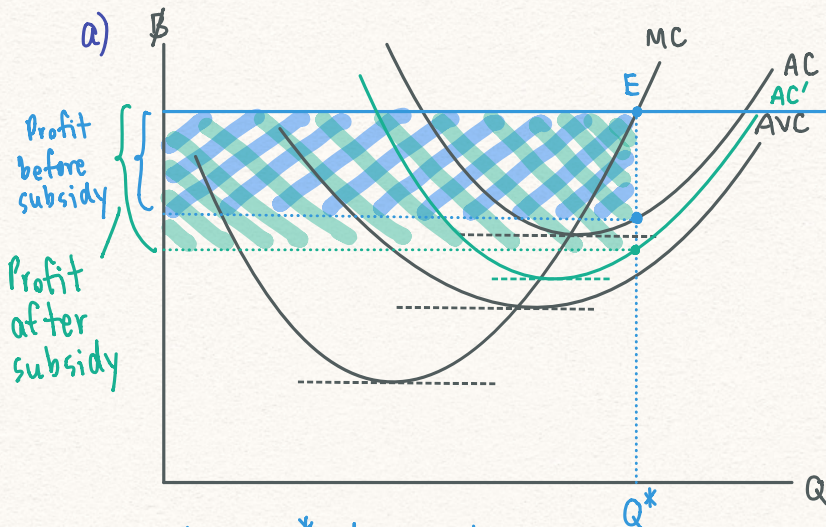


HW#11, Due May 6, 2021 Analyze the case the firm receives subsidy for the following two different cases to find out how the firm's quantity and profit change.

a) The government gives a lump sum subsidy of 20,000 bahts to each firm.

b) Suppose that the firm was producing 1,000 units and the government gives a subsidy of 20 bahts/unit so the total subsidy is also 20,000 bahts if the firm does not change its production of 1,000 units. Do you think, to maximize its profit with the subsidy of 20 bahts/unit, the firm will increase/decrease its production from 1,000 units? Does the firm receive higher profit? Does the firm receive more/less subsidy than 20,000 bahts?

TFC is lower
TVC unchanged
↓
MC unchanged



$$P_0 = AR_0 = MR_0$$

$$TC(Q) = TFC(Q) + TVC(Q)$$

$$TC'(Q) = TFC'(Q) + TVC'(Q)$$

$$\frac{d}{dQ} TC'(Q) = \frac{d}{dQ} [TFC(Q) - 20,000 + TVC(Q)]$$

$$\frac{TFC'(Q)}{Q} = \frac{TFC(Q)}{Q} - \frac{20,000}{Q}$$

$$AFC'(Q) = AFC(Q) - \frac{20,000}{Q}$$

Eq. quantity Q^* does not change because MC & MR do not change.

- Q^* still satisfies the eq. conditions

1) $MR(Q^*) = MC(Q^*)$

2) Slope $MR(Q^*) = 0 < \text{slope } MC(Q^*)$

- But profit increases = the amount of lower fixed cost = 20,000

• The firm does not change the quantity to produce

and the firm received more profit equal to the given subsidy. #

