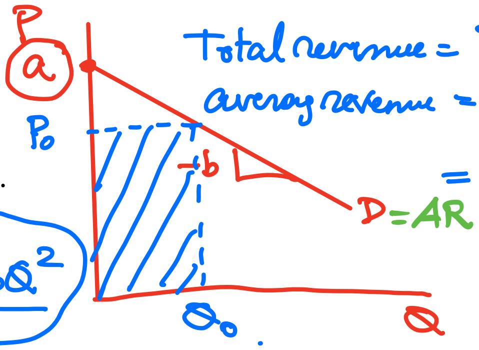
Chapter 20 Monopoly in Short Run

Monopoly is a market with
1. only one seller~~s~~ and many buyers,
2. the product is significantly different from others such that there is no close substitute.

Reasons for Monopoly—barriers to entry
1. Ownership of essential technology, patent, or raw materials
2. License
3. Large investment required
4. Economies of Scale

to be seen later.



Total revenue = $P_0 \cdot Q_0$

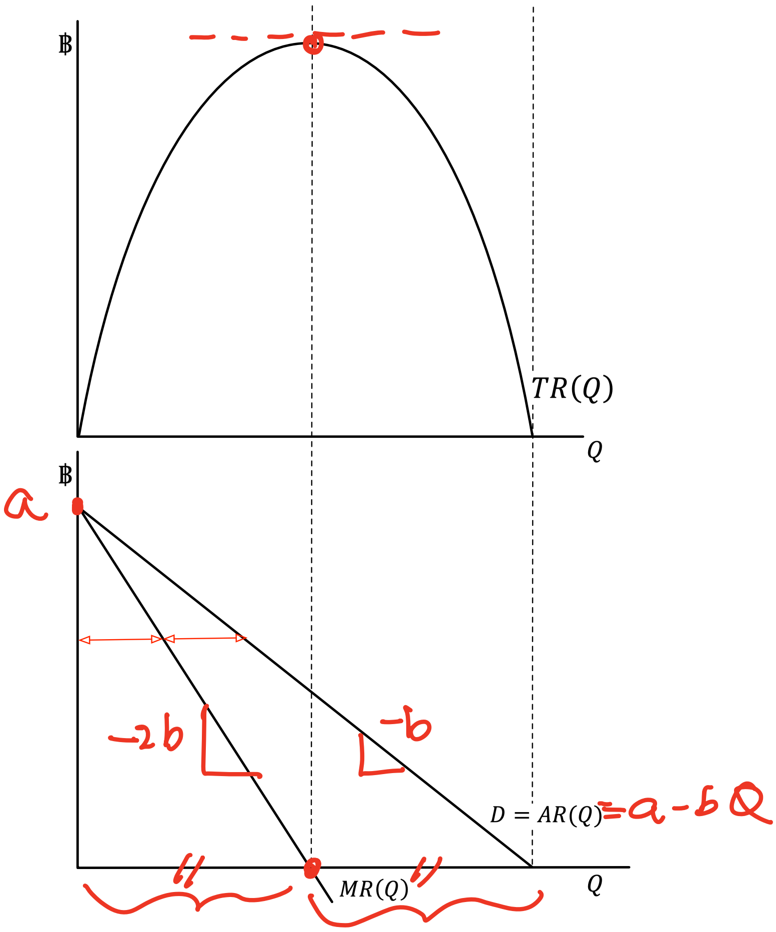
average revenue = $\frac{P_0 \cdot Q_0}{Q_0} = P_0$

- The monopoly faces the market demand $P = a - bQ$.
- Price is by definition the average revenue. $P = AR(Q)$. Thus, we have

$$TR(Q) = Q \cdot AR(Q) = Q(a - bQ) = aQ - bQ^2$$
$$MR(Q) = \frac{dTR(Q)}{dQ} = \boxed{a - 2bQ}$$

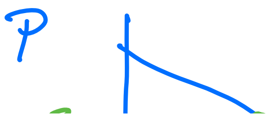
$AR(Q) = a - bQ$

- We can draw the graph of TR, AR and MR as follows.

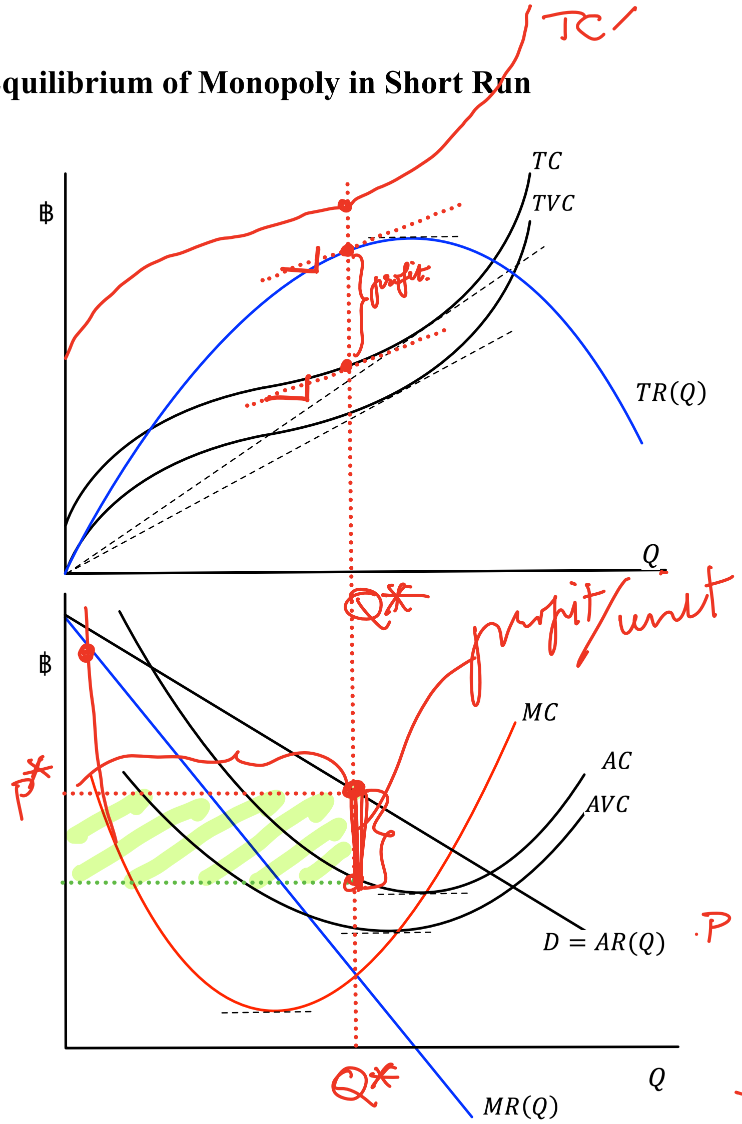


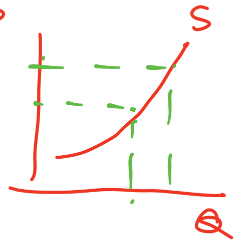
Note a monopoly can either choose a ~~price~~ quantity then the buyer decide what quantity to buy.

or the monopoly decide on the quantity and the buyers will decide what is the price the buyers are willing to buy this quantity according to the Demand



Equilibrium of Monopoly in Short Run





Equilibrium Conditions in Short Run: For a firm to maximize profit at Q^* if

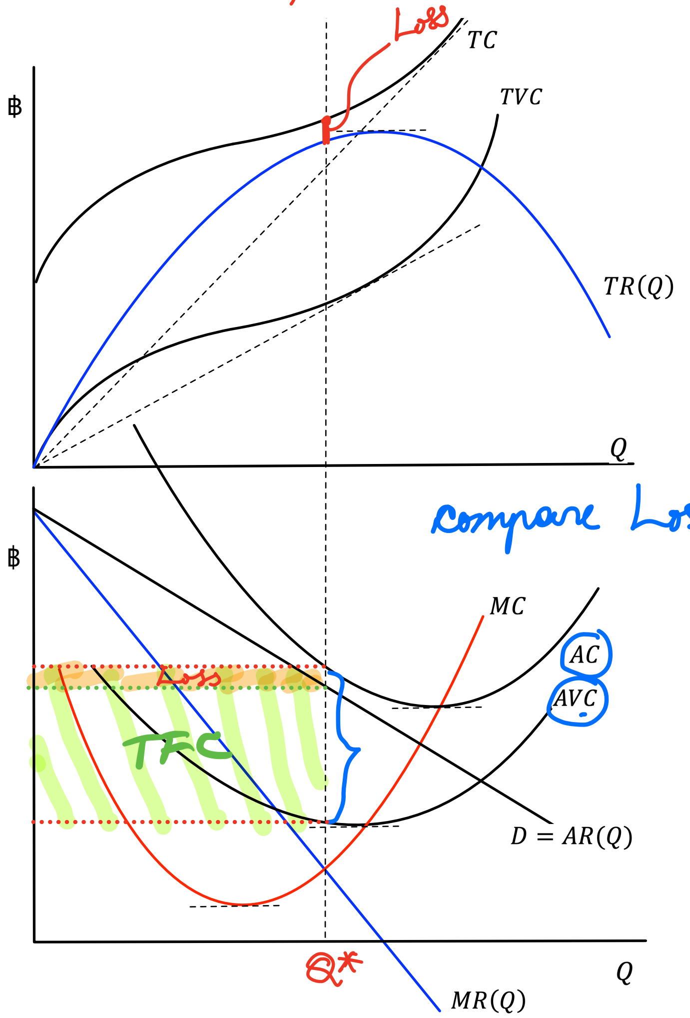
1) $MR(Q^*) = MC(Q^*)$
2) $slope\ of\ MR(Q^*) < slope\ of\ MC(Q^*)$.

negative . positive .

- In Perfect Competition, the firms's supply curve is MC curve from the minimum of AVC upward. Is there a supply curve for a Monopoly? No!

monopoly decides to sell only at Q* given this D(MR+AR) and MC.

- Can the Monopoly make~~s~~ a loss?



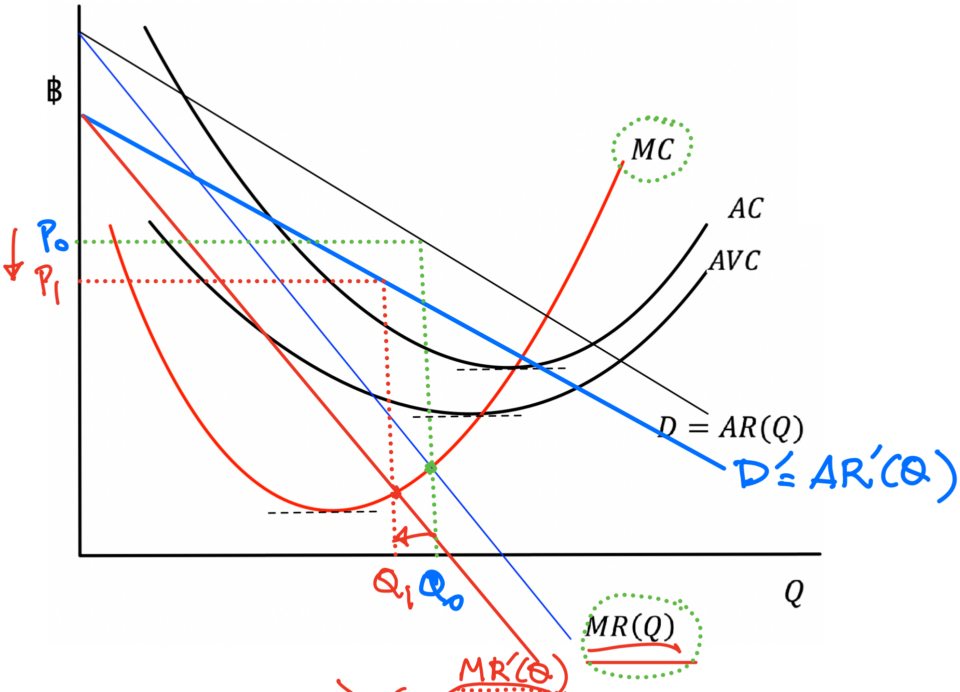
compare Loss & TFC.

- Do you think the monopoly will shut down because of this loss in Short Run?

Yes because TFC > Loss.

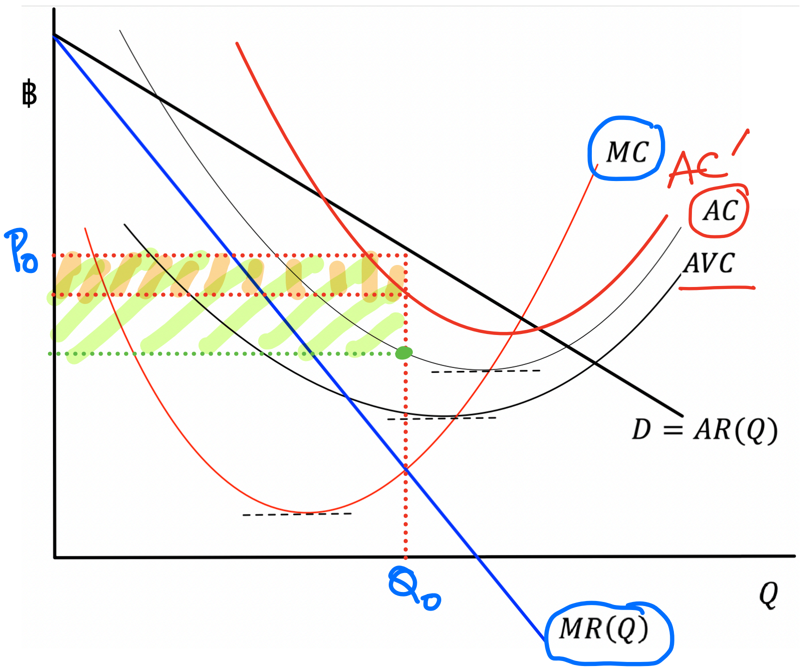
Changes in the Equilibrium of Monopoly in Short Run

1) Demand decreases (increases)



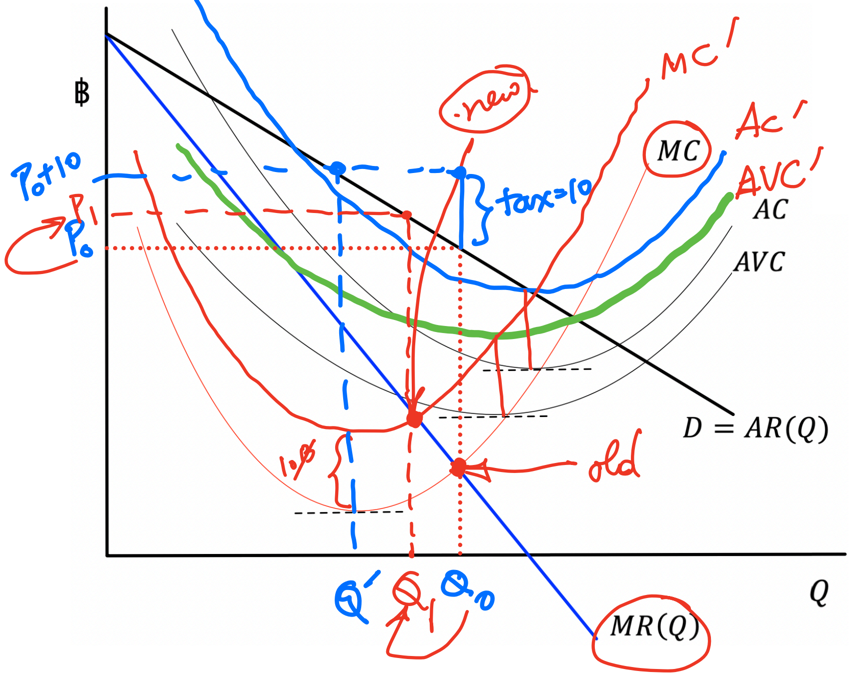
- Will the monopoly ~~increase~~/decrease its price?
- Will the monopoly ~~increase~~/decrease its quantity?
- Will the monopoly receive more/less profit? — check this yourself.

2) License Fee the Monopoly has to pay in one single lump sum. — TFC is higher.



- Will the monopoly change its price and quantity? No – same P_0 & Q_0.
- Will the monopoly receive ~~more~~/less profit?

3) Tax the monopoly has to pay 10 bahts/unit. With the monopoly power, can the monopoly push all the tax burden upon the buyers?

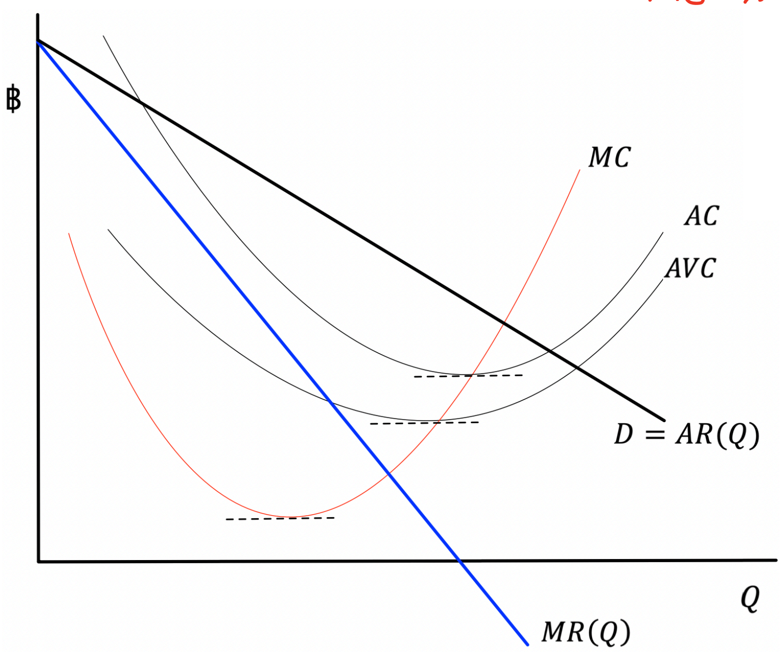


old price + quantity?
new price + quantity?

- Does the monopoly power allow the monopoly to set the price such that all the tax burden is on the buyers?
- Will the monopoly increase/~~decrease~~ its price?
- Will the monopoly ~~increase~~/decrease its quantity?
- Will the monopoly receive more/less profit?

4. The government gives a subsidy of 10 bahts/unit to the Monopoly.

MC + AC + ~~AVC~~ shift down vertically by 10฿



- With the monopoly power, can the monopoly keep all the subsidy benefit to himself?

- Will the monopoly increase/decrease its price?
- Will the monopoly increase/decrease its quantity?
- Will the monopoly receive more/less profit?
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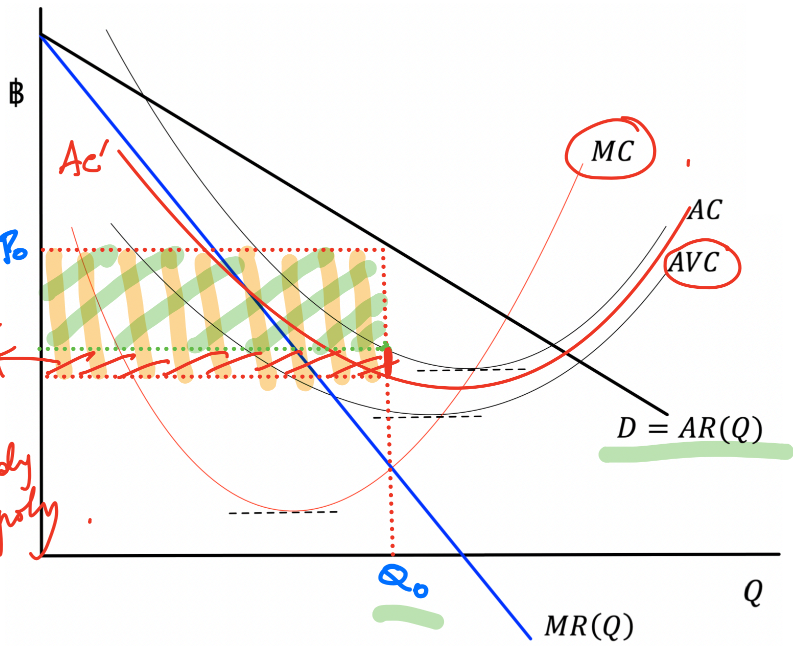
5. The government gives a lump sum subsidy of 10 m bahts to the Monopoly.

License Fee of spectrum collected from AIS, True, DTAC

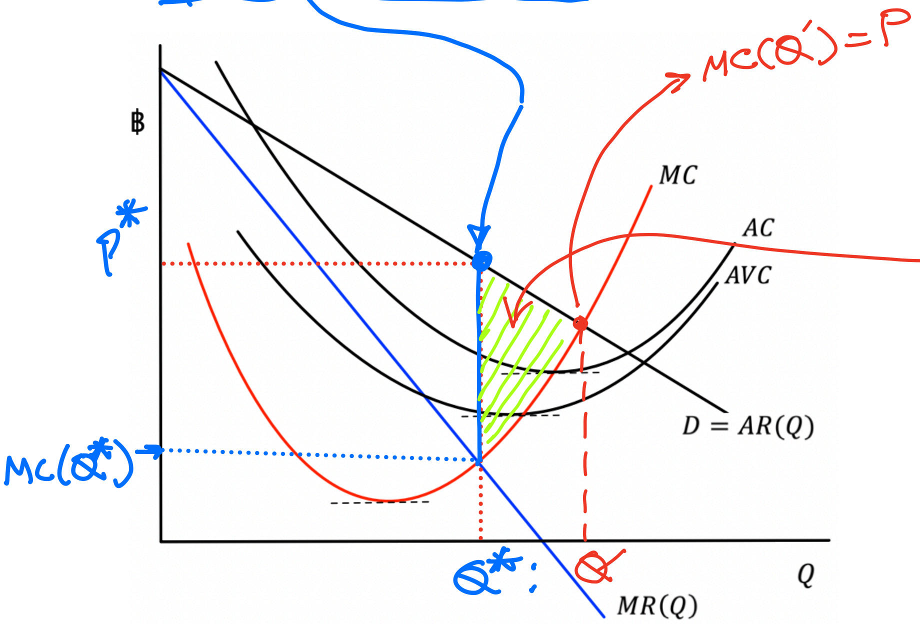


increase in profit = Total subsidy to monopoly

- Does this change the price and/or quantity the Monopoly wants to sell? No
- Can the Monopoly keep all the subsidy benefit?
- Will the monopoly increase/decrease its price?
- Will the monopoly increase/decrease its quantity?
- Will the monopoly receive more/less profit?

Deadweight Loss

- Given Market Demand = $AR(Q)$ with negative slope, we have $P = AR(Q) > MR(Q)$ at any quantity Q.
- At the equilibrium (Q^*, P^*), we have $MR(Q^*) = MC(Q^*)$.
- Thus $\boxed{P^* > MC(Q^*)}$.
- The value the buyers place on the last unit is more than the cost of producing the last unit.



Deadweight Loss due to monopoly.

In perfect competition
$P = MR = MC$.