

Chapter 20 Monopoly in Short Run

Monopoly is a market with

1. only one sellers and many buyers,
2. the product is significantly different from others such that there is no close substitute.

Reasons for Monopoly—barriers to entry

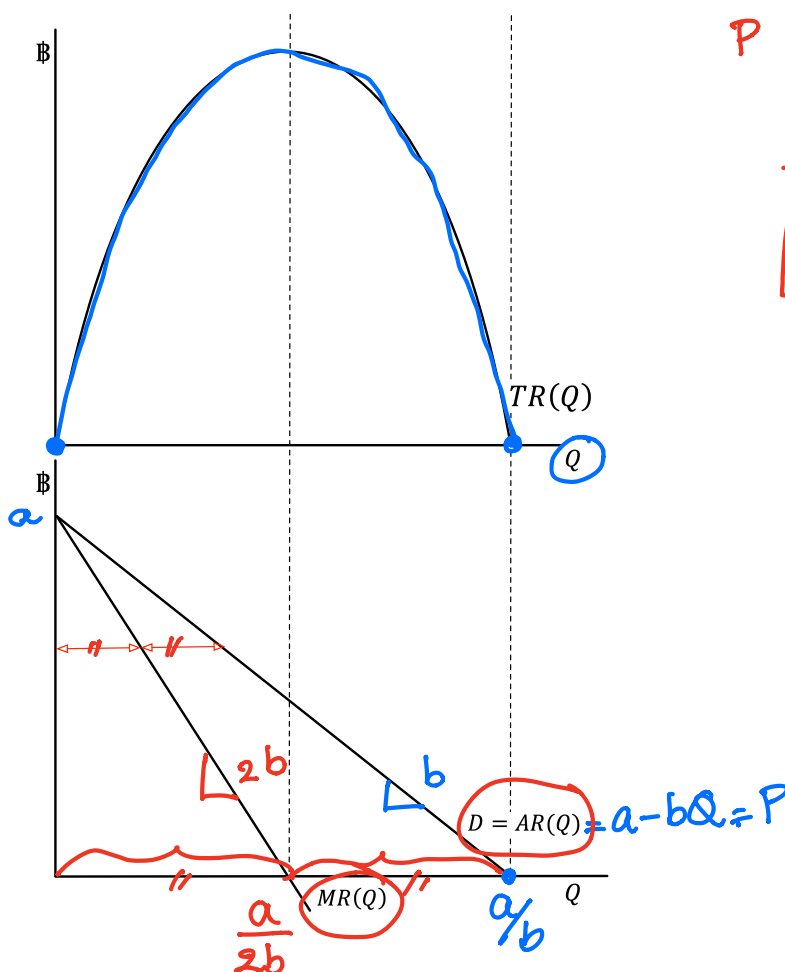
1. Ownership of essential technology, patent, or raw materials
2. License
3. Large investment required
4. Economies of Scale

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

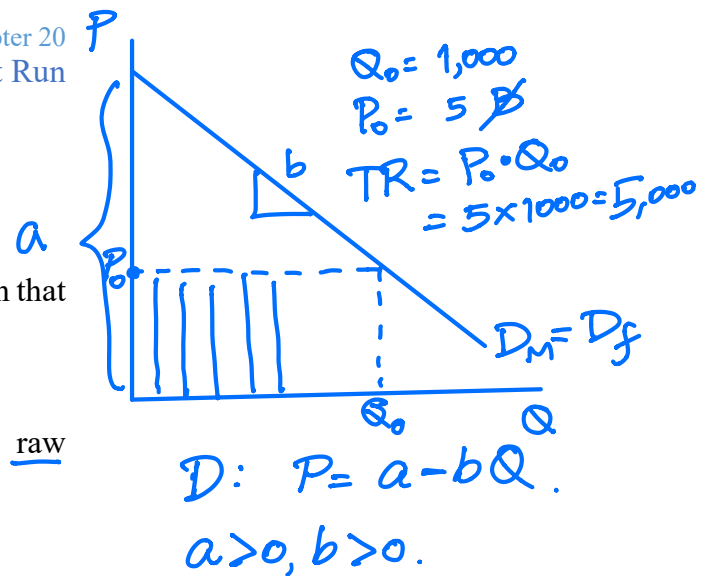
$$TR(Q) = Q \cdot AR(Q) = Q(a - bQ) = aQ - bQ^2$$

$$MR(Q) = \frac{dTR(Q)}{dQ} = a - 2bQ$$

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



Market = Firm



firm in Perfect Competition

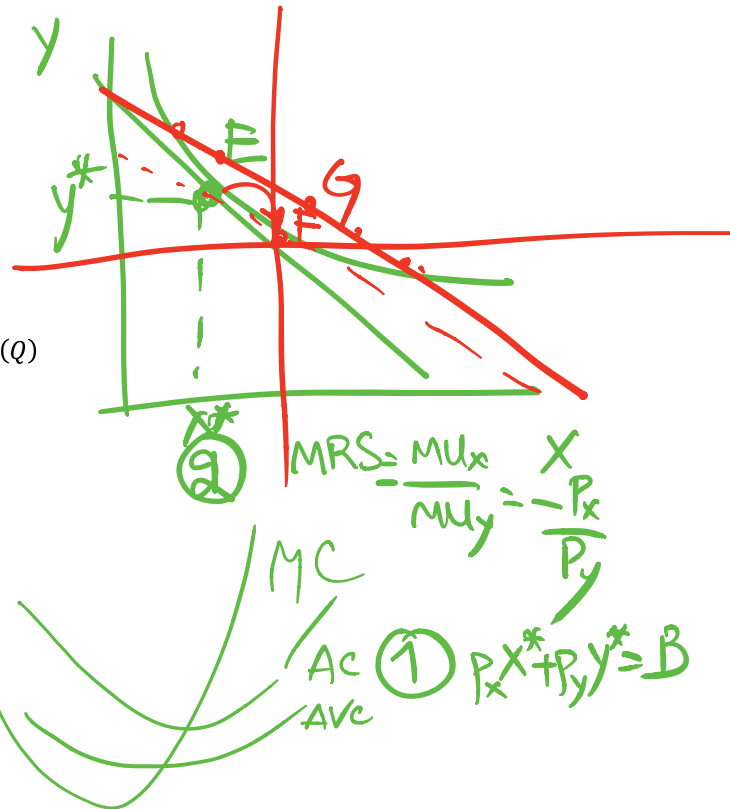
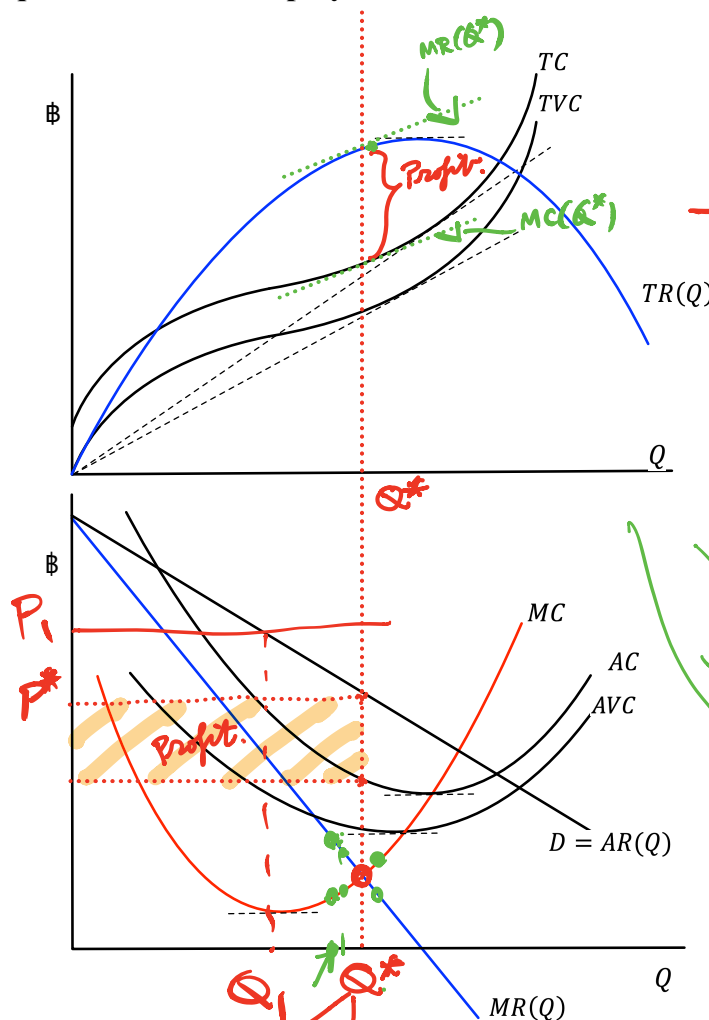


$$AR(Q) = a - bQ$$

$$P=0, Q = \frac{a}{b}$$

$$MR(Q) = a - 2bQ$$

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) $\text{slope of } MR(Q^*) < \text{slope of } MC(Q^*)$

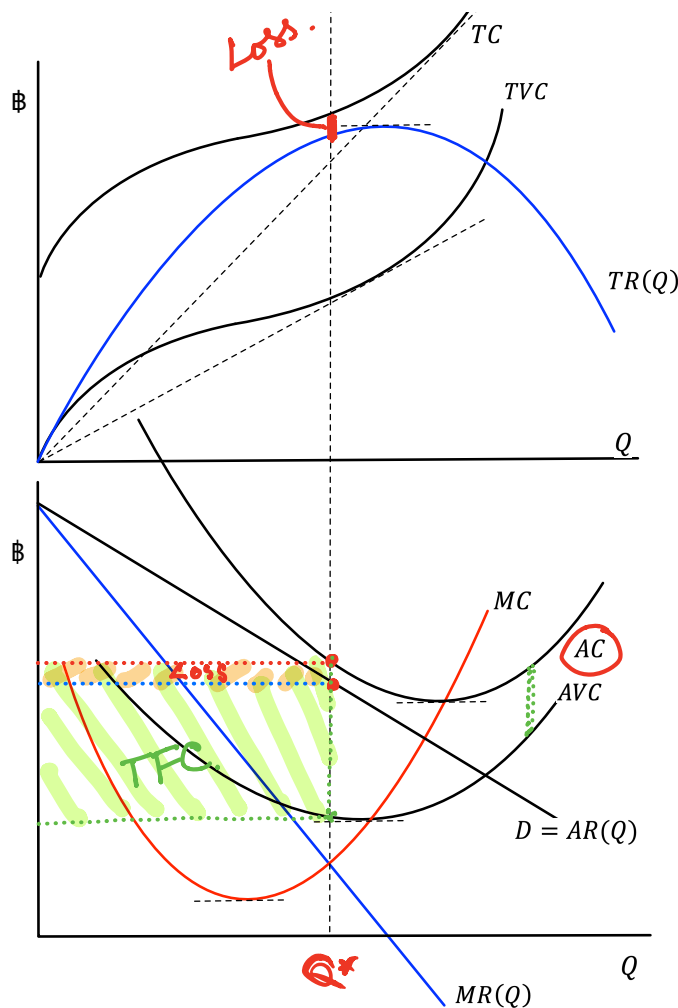
- In Perfect Competition, the firm's supply curve is MC curve from the minimum of AVC upward. Is there a supply curve for a Monopoly?

- There is no Supply curve of Monopoly in SR. - because the monopoly will take the given market D (= Monopoly's D). and decide on P^* and Q^* given his cost curves MC, AC, AVC

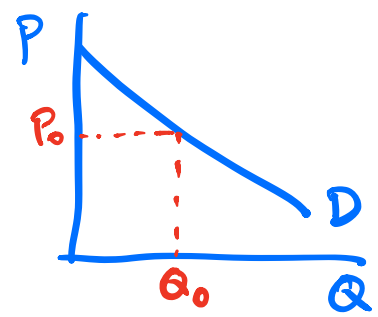
Monopoly can set either P or Q , not both.

set $P = P_0$, then the buyers will buy according to the D curve.
set $Q = Q_0$ the buyers will buy at P_0 .

- Can the Monopoly makes a loss?



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

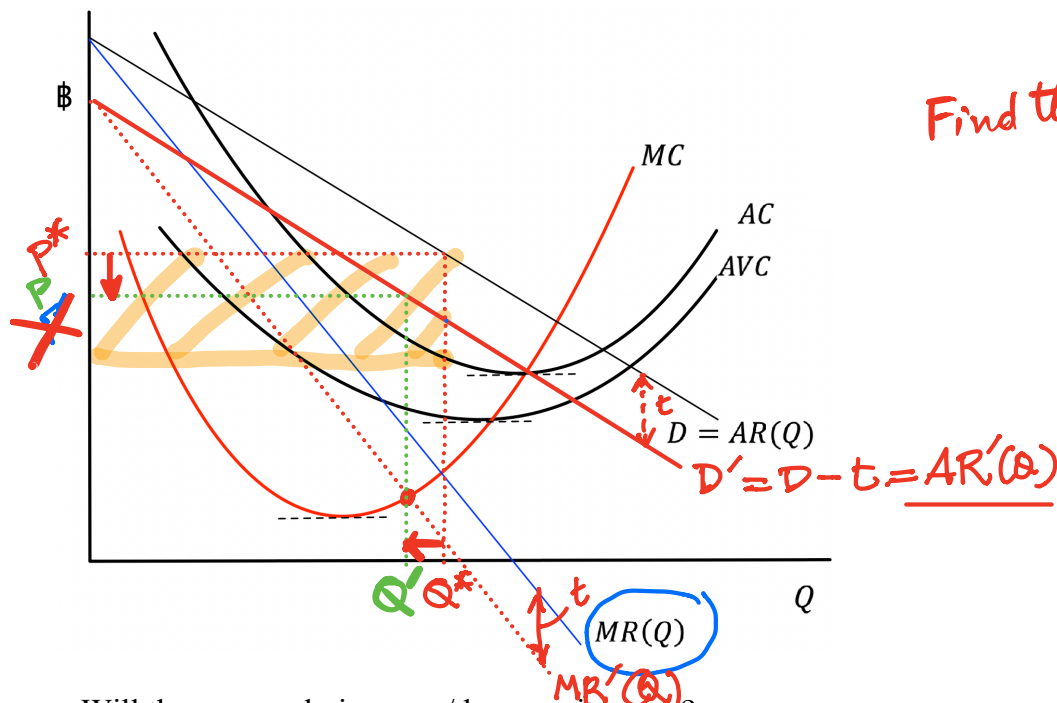


at Q^* ① $MR(Q^*) = MC(Q^*)$
 ② $\text{slope } MR(Q^*) < \text{slope } MC(Q^*)$
 $\therefore$ max profit $\Leftrightarrow$ min Loss.

In this graph
 $\text{Loss} < \text{TFC}$.
 the monopoly will continue

Changes in the Equilibrium of Monopoly in Short Run

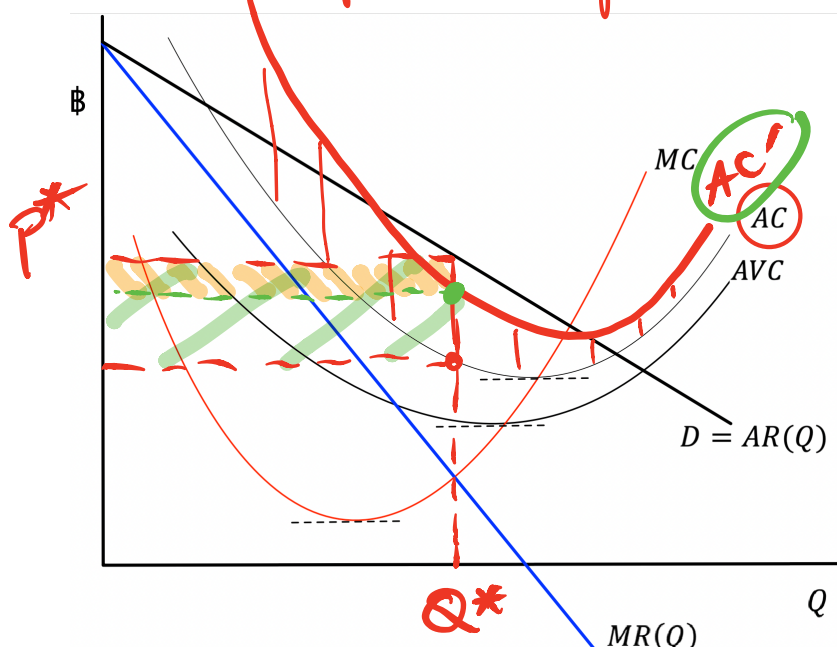
- 1) Demand decreases - *because of tax = t /unit on buyers.*



- Will the monopoly ~~increase~~/decrease its price?
- Will the monopoly ~~increase~~/decrease its quantity?
- Will the monopoly receive more/less profit?

- 2) License Fee the Monopoly has to pay in one single lump sum.

Mobile phone service providers - focus of spectrum. - fixed 800 MHz. - does not change with Q.



30 Bp
Q.

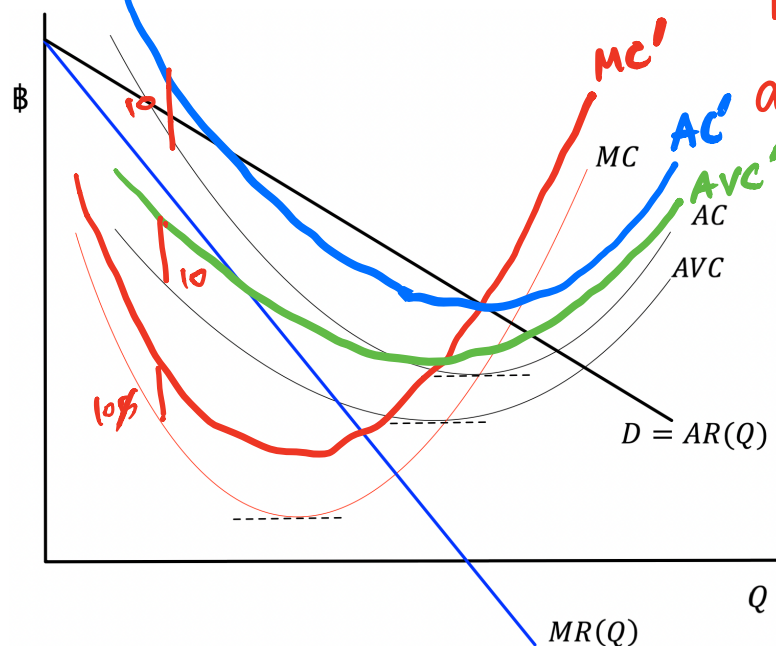
MC + AVC do not change.

- Will the monopoly change its price and quantity?
- Will the monopoly receive more/less profit?

No change in P^ + Q^* .*

less profit = old profit - new profit = Lump Sum Fee.

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?

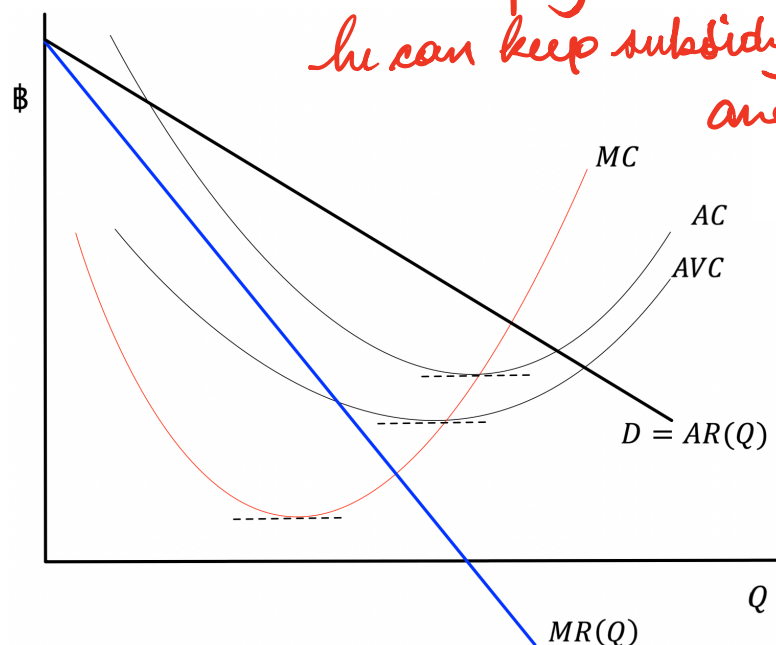


Find the initial eq Q^*, P^*
and find the new eq Q', P'
Compare old & new profit.

- 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?

negative tax.

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



- Since Monopoly can set any price,
he can keep subsidy all to himself
and does not decrease the price.
Is this true?

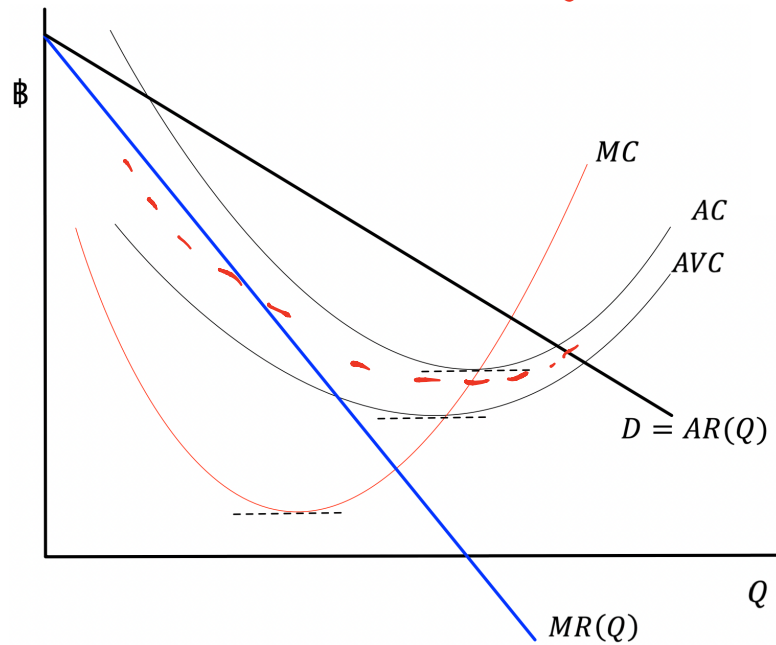
- With the monopoly power, can the monopoly keep all the subsidy benefit to himself?

- Will the monopoly increase/decrease its price?
- Will the monopoly increase/decrease its quantity?
- Will the monopoly receive more/less profit?
-

5. The government gives a lump sum subsidy of 10 m bahts to the Monopoly.

opposite of case #2.

No change in price & quantity?



- Does this change the price and/or quantity the Monopoly wants to sell?
- 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 $P^* > MC(Q^*)$.
- The value the buyers place on the last unit is more than the cost of producing the last unit.

