CHAPTER 8 : PROFIT MAXIMIZATION & COMPETITIVE SUPPLY

MARKET STRUCTURE

MONOPOLISTIC COMPETITION

PERFECTLY COMPETITIVE
- MANY BUYERS & MANY SELLERS
- NON-DIFFERENTIATED PRODUCTS (HOMOGENEOUS PRODUCTS)
- FREE ENTRY & FREE EXIT
- PERFECT INFORMATION

MANY SELLERS, MANY BUYERS
- DIFFERENTIATED PRODUCTS
- ROLE OF ADVERTISING

OLIGOPOLY
MARKET W/ A FEW SELLER
- GAME THEORY
- PRICING STRATEGIES

MONOPOLY
- MANY BUYERS W/ SINGLE SELLER
- UNIQUE PRODUCT W/O SUBSTITUTES
- BARRIERS TO ENTRY
- INFORMATION MAY NOT BE PERFECT

ADVERTISING — PERSUASIVE ADVERTISING

EE481

• PROFIT MAXIMIZATION BY FIRM

$$\max_q \pi(q) = TR(q) - TC(q)$$

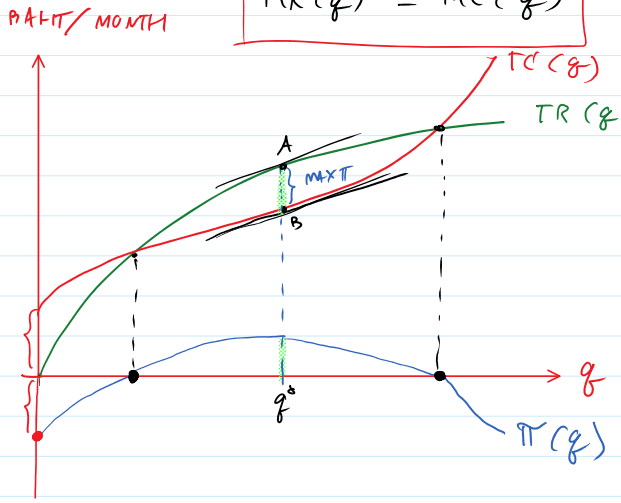
F.O.N.C :

$$\frac{\partial \pi(q)}{\partial q} = \frac{\partial TR(q)}{\partial q} - \frac{\partial TC(q)}{\partial q} = 0$$

$$= MR(q) - MC(q) = 0$$

$$\boxed{MR(q^*) = MC(q^*)}$$

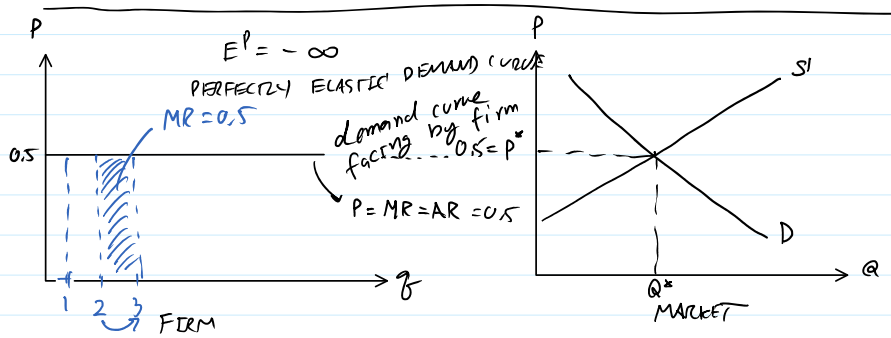
GOLDEN RULE OF PROFIT MAXIMIZATION



SLOPE OF TR CURVE — SLOPE OF MR CURVE

AT q^* : $MR(q^*) = MC(q^*)$

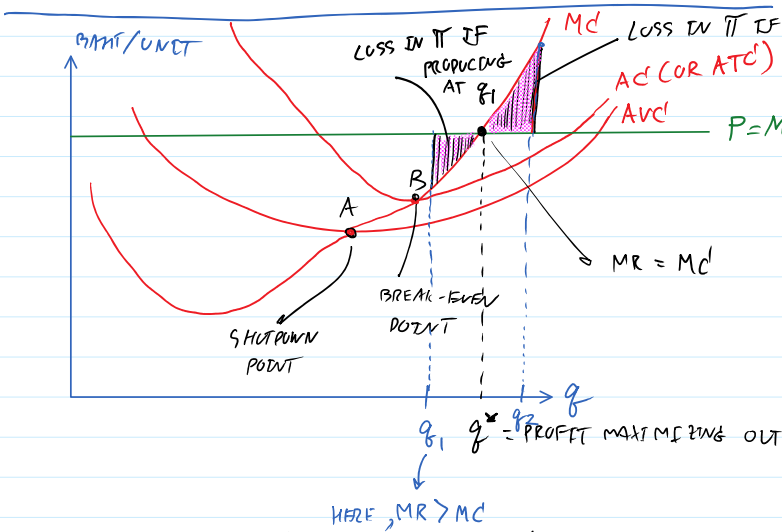
SHAPE OF INDIVIDUAL DEMAND CURVE PERCEIVED BY A COMPETITIVE FIRM



P	q	TR	MR	AR = TR/Q
0.5	0	0		0
0.5	1	0.5	0.5	0.5/1 = 0.5
0.5	2	1	0.5	1/2 = 0.5
0.5	3	1.5	0.5	1.5/3 = 0.5
0	4	2	0.5	2/4 = 0.5

$P = MR = AR$!

PROFIT MAXIMIZATION BY A COMPETITIVE FIRM



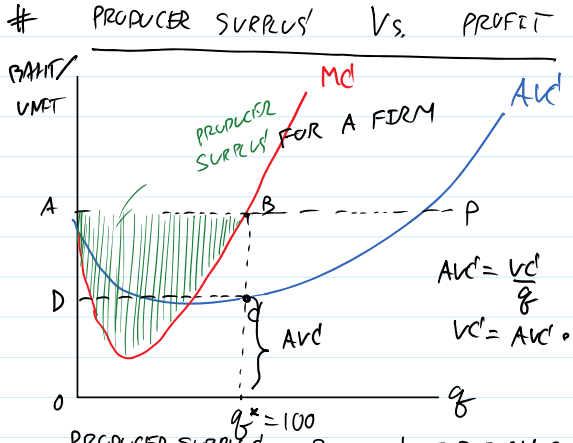
- TC
- $MC = \frac{dTC}{dq}$
- $AC = \frac{TC}{q}$
- $TC = FC + VC$
- $\frac{TC}{q} = \frac{FC}{q} + \frac{VC}{q} \Rightarrow AC = AFC + AVC$

q^* = PROFIT MAXIMIZING OUTPUT LEVEL.

HERE, MR > MC

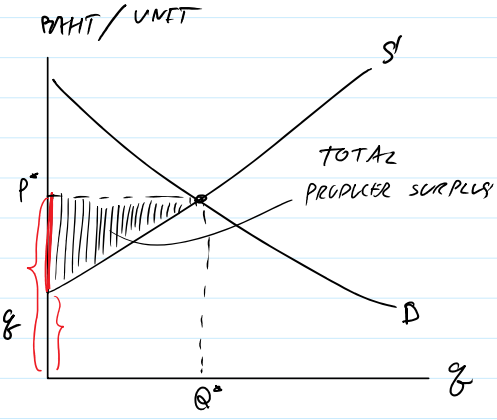
SHUTDOWN IF $P < AVC$ OR $TR < VC$

PRODUCER SURPLUS VS. PROFIT



$AVC = \frac{VC}{q}$

$VC = AVC \cdot q$



TOTAL PRODUCER SURPLUS = SUM OF ALL SELLERS' PS.

NOTE: PS = P − COST

PRODUCER SURPLUS = $P - MC$ FOR EACH SELLER

PS = AREA BELOW THE MARKET PRICE AND ABOVE THE MARGINAL COST RECEIVED BY A FIRM

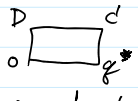
PS CAN BE REPRESENTED BY ▭ ABCD ! (WHY?)

B/C THE RELATIONSHIP BETWEEN MC AND AVC:

SUM OF ALL MARGINAL COSTS UP TO q^* = VARIABLE COSTS OF PRODUCING q^*

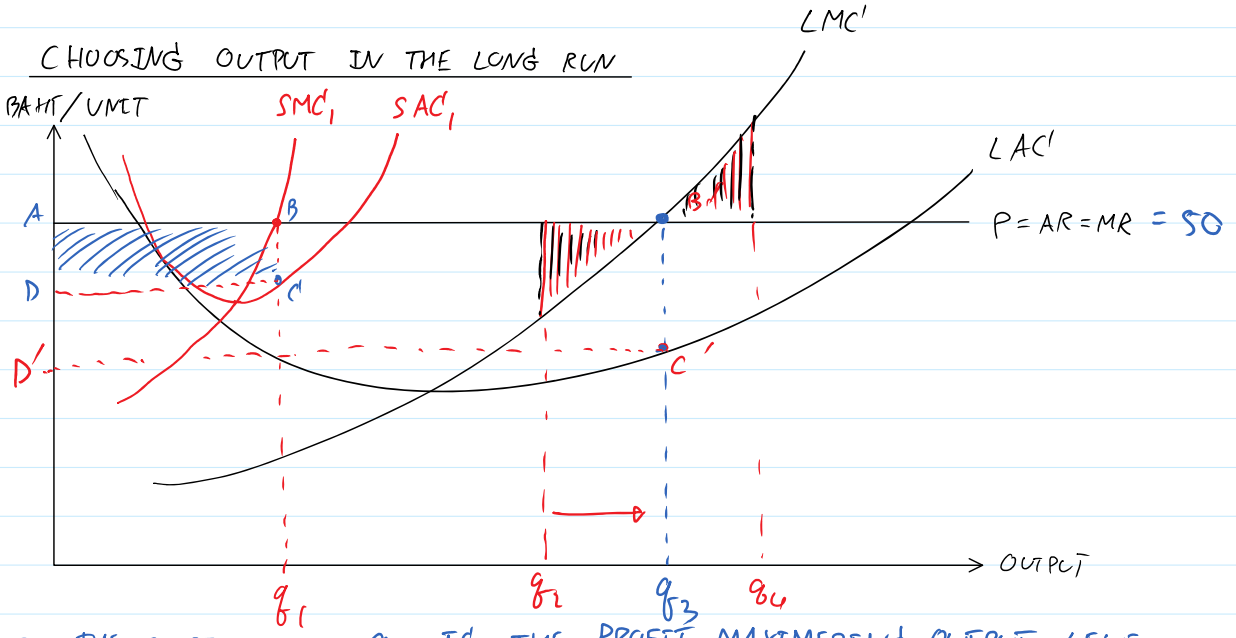
↓

AREA



RECALL THAT $MC = \frac{dVC}{dQ}$!

CHOOSING OUTPUT IN THE LONG RUN

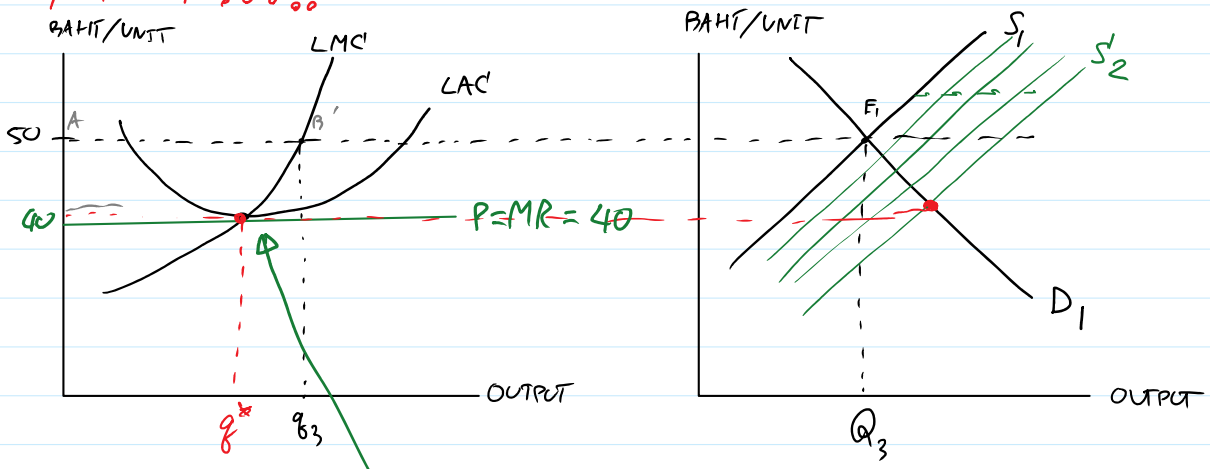


IN THE SHORT RUN, q_1 IS THE PROFIT MAXIMIZING OUTPUT LEVEL WHERE $SMC'_1 = MR = P$.

ABC'D = PROFIT IN THE SHORT RUN.

IN THE LONG RUN, IF P REMAINS AT 50 BAHT/UNIT, THE MANAGER WILL WANT TO EXPAND HIS OUTPUT TO PRODUCE AT q_3 WHERE LMC' = MR AND OBTAIN HIGHER PROFIT TO □ AB'C'D'.

W/ ENTRY .....



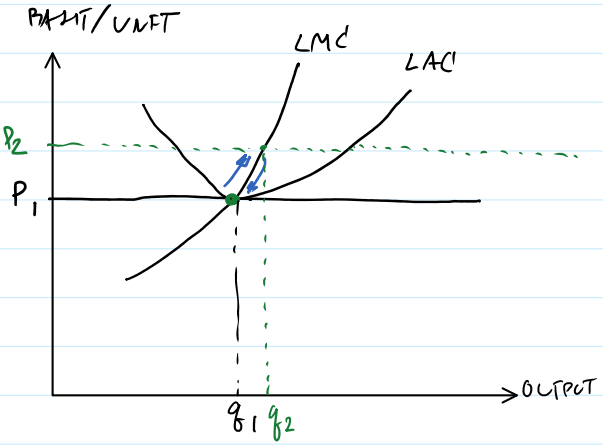
W/ ENTRY, NEW RIVALS ENTER TO THE MARKET, SHIFTING THE MARKET SUPPLY CURVE TO THE RIGHT. ENTRY STOPS WHEN EXCESS PROFIT (OR ECONOMIC PROFIT) DISAPPEARED ($\pi_{EC} = 0$).

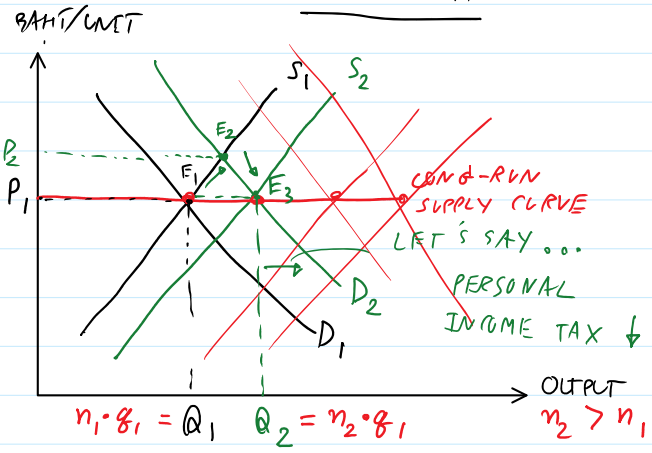
- LONG RUN EQUILIBRIUM OCCURS AT A PRICE OF 40 BAHT
- NO MORE INCENTIVE TO ENTER OR EXIT

So IN LONG RUN EQUILIBRIUM : $P = LMC' = \text{MINIMUM OF } LAC' = MR$

THE INDUSTRY'S LONG RUN SUPPLY CURVE

3 TYPES: ① CONSTANT-COST INDUSTRY ⇒ INDUSTRY WHOSE LONG-RUN SUPPLY CURVE IS HORIZONTAL





W/ LONG-RUN INDUSTRY SUPPLY CURVE WHICH IS HORIZONTAL, IT IMPLIES THAT INPUT PRICES (i.e, w AND r) DOES NOT INCREASE EVEN THOUGH PRODUCERS COMPETE TO USE MORE INPUTS TO PRODUCE MORE OUTPUT IN RESPONSE TO AN INCREASE IN DEMAND.

(READ PINDYCK PAGE 315-316)

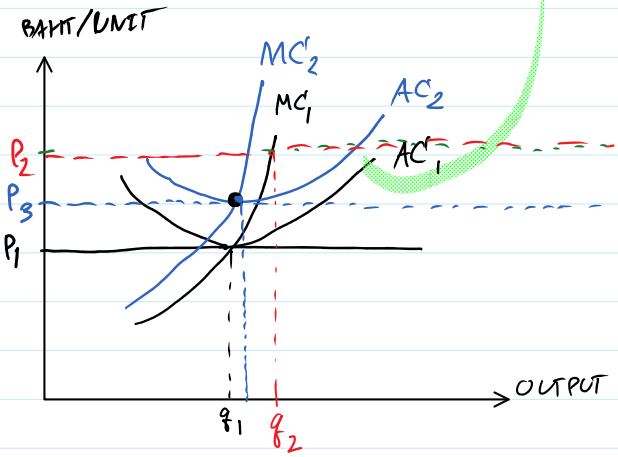
② INCREASING-COST INDUSTRY: INDUSTRY WHOSE LONG-RUN SUPPLY CURVE IS UPWARD SLOPING (WHY?)

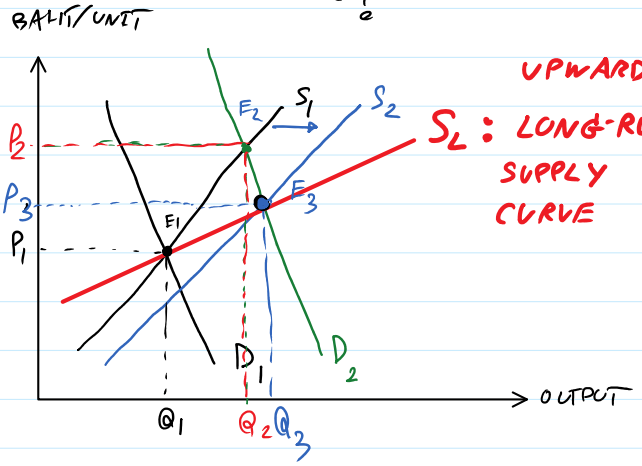
B/C WHEN FIRMS COMPETE FOR MORE LABOR AND/OR MORE CAPITAL, IT CAUSES w ↑ AND/OR r ↑.

SO, AS COST OF PRODUCTION RISES, TO ENCOURAGE THEM TO PRODUCE MORE, MKT PRICE MUST BE HIGHER!

REFERS TO "THE UPWARD SHIFTS OF THE LONG-RUN AVERAGE COST CURVE AND LONG-RUN MC CURVE."

NOTE: UPWARD SLOPING LR SUPPLY CURVE IS THE OUTCOME.





UPWARD SLOPING S_L: LONG-RUN SUPPLY CURVE

DEMAND INCREASES → P ↑ FROM P_1 → P_2 → MORE FIRMS ENTER (SUPPLY CURVE SHIFTS TO

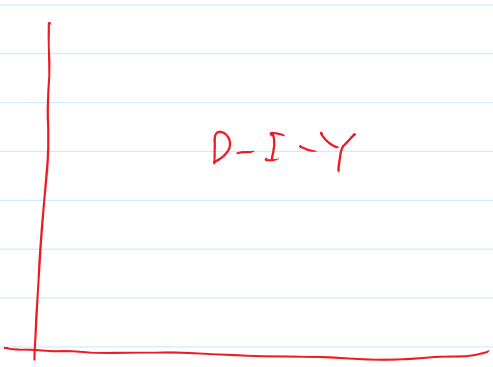
THE RIGHT)

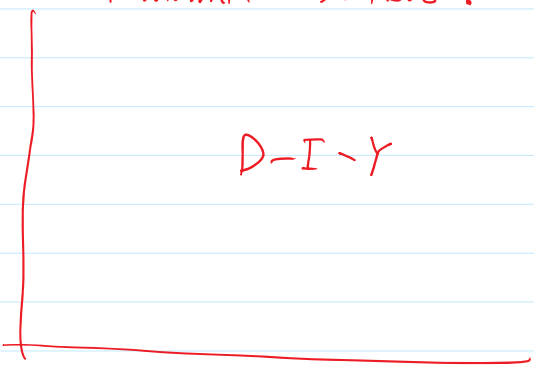
COMPETING FOR MORE INPUTS → $w\uparrow$ AND/OR $r\uparrow$ → AC AND MC CURVE SHIFT UPWARD

NEW LONG-RUN EQUILIBRIUM OCCURS AT A HIGHER PRICE, P_3 (NOT P_1, INITIAL EQUILIBRIUM PRICE)

IN OTHER WORDS, TO ENCOURAGE PRODUCERS TO PRODUCE MORE, THEY NEED TO BE COMPENSATED W/ A HIGHER PRICE AS A RESULT OF INCREASE IN PRICE OF INPUTS.

③ DECREASING-COST INDUSTRY: INDUSTRY WHOSE LONG-RUN SUPPLY CURVE IS DOWNWARD SLOPING.





DO: DRAW. EXPLAIN. GIVE EXAMPLE. (CONSULT PINDYCK & GOOGLE)

DUE DATE: WED 18 OCTOBER 2017 IN CLASS,

AVOID PLAGIARISM!!! (EXPLAIN BY YOUR OWN WORDS)