

Instructions

- (1) Please read the instruction carefully. Also take this habit with you into the exam room.
- (2) Please read each question carefully and answer the questions straightforwardly. Always provide economic reasons at least a paragraph for your analysis, or a graph when necessary, even when the question does not indicate so.
- (3) Handing and submitting assignments are only available via BE Moodle.

Answering the questions and preparing answer sheets

- (1) Answers are to be handwritten, in either digital or analog form, in a blank canvas or any clean paper. Make sure that your handwriting is clearly visible and readable.
- (2) There is no need to rewrite the question. Just indicate the question number clearly for each of the answer, such as 1.a).
- (3) When done, for the digital case, collage all the pages into a single PDF file. For those who write on sheets of paper, take photo of all pages then convert all of them into a single PDF file as well.
- (4) **Name your PDF file as StudentID_YourNickname, such as 640123456_Bo.**

Submitting your answers

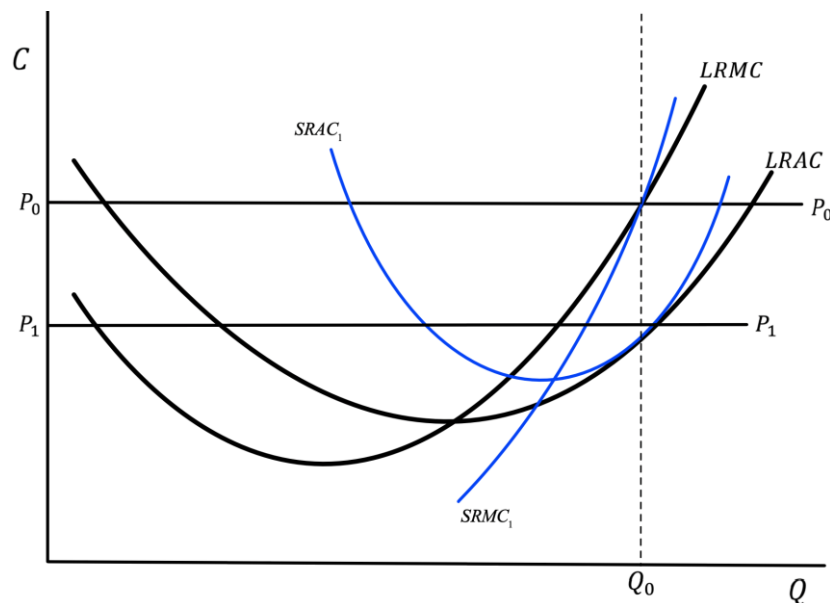
- (1) Make sure your file does not exceed 10MB. This is the maximum file size for BE Moodle upload.
- (2) Login to BE Moodle, head into the course, then the assignment topic.
- (3) Choose your file to submit. Done. There will be timestamp for your upload date and time, so please make sure to not submit later than that.

1. Two COVID-19 vaccines are available in Thailand, Sinovac and Pfizer priced at \$20 and \$40 respectively. Assumed that both vaccines are substitutes, answer the following questions clearly.

1.a) Draw a budget line for these two when a consumer has \$40 and indicate all the essential information on the graph, given that Sinovac is displayed on the horizontal axis while Pfizer is on the vertical axis.

1.b) If a consumer sees that Sinovac is an inferior good while Pfizer is a normal good and Sinovac price is slashed by a half, analyze how consumer's equilibrium changes disaggregating price effect into substitution effect and income effect and explain.

2. In a perfectly competitive market, suppose that every firm is in a long-run equilibrium where each firm receives an excess profit at a market equilibrium price P_0 and produces Q_0 as shown in the graph below.



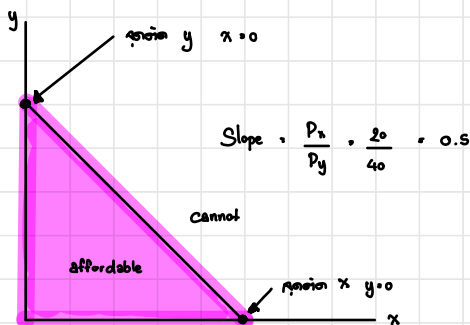
2.a) If the market equilibrium price decreases to P_1 , in the short run according to the given Short-Run cost curves $SRAC_1$ and $SRMC_1$, find the new Short-Run equilibrium quantity Q_1 and profit of the firm. State the equilibrium conditions.

2.b) Show that at the new Short-Run equilibrium quantity Q_1 , the profit earned according to the Long-Run cost curves $LRAC$ at Q_1 and price P_1 is higher than the profit in Short-Run found in 2.a).

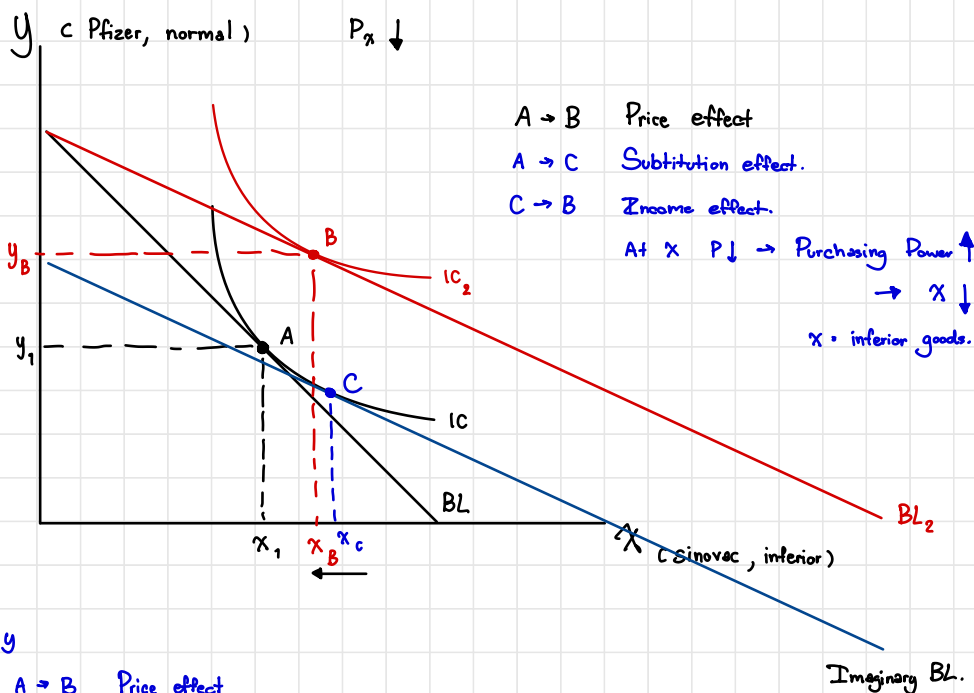
2.c) According to the Long-Run cost curves $LRAC$ and $LRMC$, find the equilibrium quantity the firm wants to produce at the new lower price P_1 , when there is no new seller entering the market. State the equilibrium conditions.

1a). Budget line : $M = P_1 X_1 + P_2 X_2$
 Sinovac = X
 Pfizer = Y

$$40 = 20X + 40Y$$



1b).



at Y

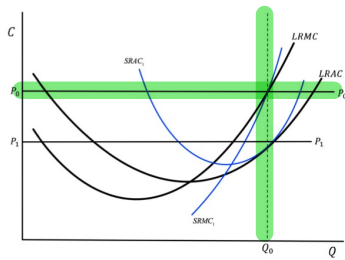
A → B Price effect
 A → C Sub effect
 C → B Income effect

$P \downarrow \rightarrow$ Purchasing Power $\uparrow \rightarrow Y \uparrow$ [from Y_C to Y_B]

Y = normal goods.

2. In a perfectly competitive market

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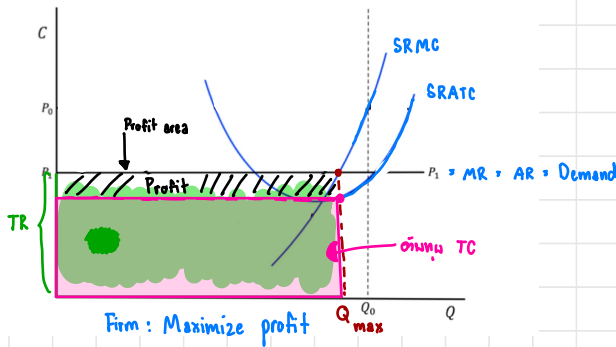


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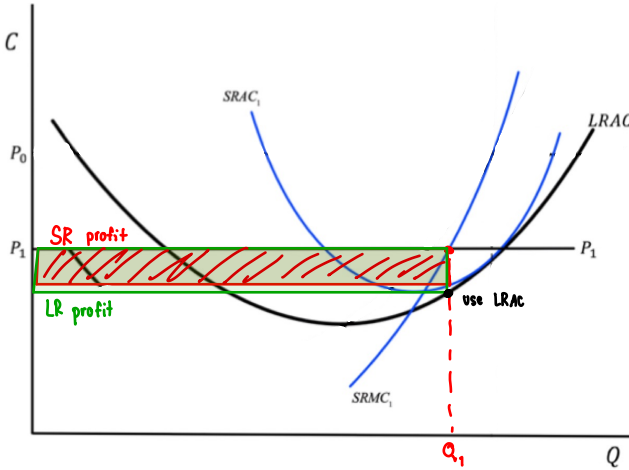
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2



2a) P_0 change to P_1 , $SRAC$, $SRMC$,
 $MR > MC$: increase production
 $MR < MC$: decrease production
 $MR = MC$: equilibrium
 $\downarrow$
 $P = MC$ equilibrium

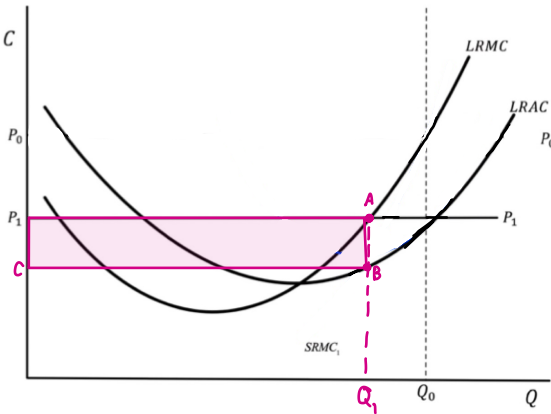
2b)



Start Q_1 [P , mc]

LR profit > SR profit

2c).



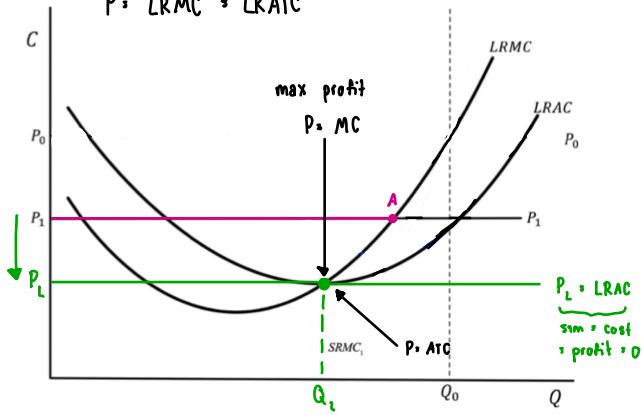
Start firm produces at Q_1 Profit = $\square$ PABC

Later competitor will enter the market

Market price $\downarrow$ = Profit $\downarrow$ = 0

Because profit = 0 competitor stop entering

$$P = LRMC = LRATC$$



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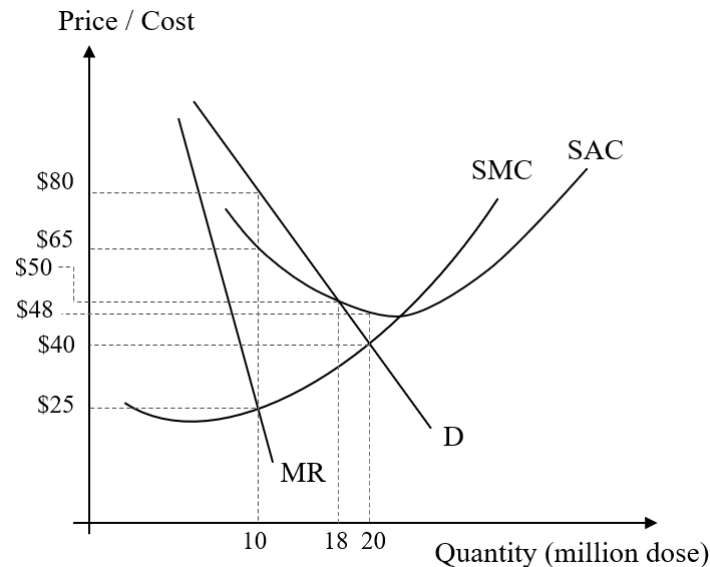
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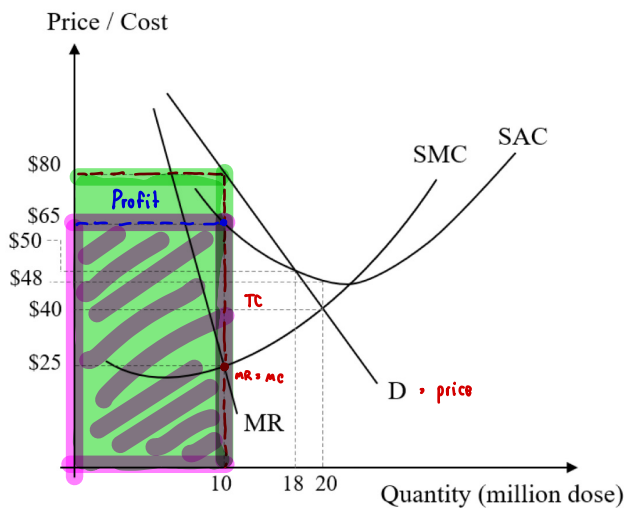
Assignment 3

Assigned on Nov 9th, 2021. To be submitted on Nov 18th, 2021 before midnight.

3. Thai government decides to import vaccines from J&J through the Government Pharmaceutical Organization (GPO). Supposed that GPO can act as a private monopoly firm, demand, revenue and cost of importing are displayed in the following graph in USD. Note that a single dose of J&J vaccine is sufficient to immunize COVID-19. Answer the following questions clearly.



- 3.a) If GPO wants to maximize profit, how many million doses should they import and at which price can be sold for each dose?
- 3.b) According to 3.a), how much is the total profit that GPO receives in million USD?
- 3.c) If the government decides to intervene and set a fair price, how many million doses GPO needs to import and how much the price to be set?
- 3.d) To achieve herd immunity with a new strategy, the target number of people privately vaccinated is 20 million people. How much **for a dose** that each person pays for the vaccine and how much does the government should subsidize **in total**?



monopoly = $\mu\gamma\alpha\mu\alpha\sigma$

3a) $MR = MC$ [maximize profit]

$$Q = 10 \quad P = 80$$

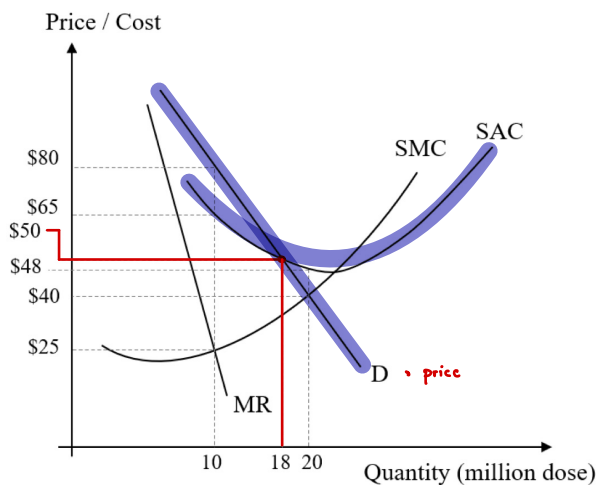
$$TR = P \cdot Q = 80 \times 10 = 800 \text{ M}$$

$$AC = 65 \$ \text{ per Unit}$$

$$TC = 65 \times 10 = 650 \text{ M}$$

$$\text{Profit} = 800 - 650 = 150 \text{ M}$$

3b). Profit = 150 M \$



3C). Monopoly $\rightarrow$ Price very high.

Government intervenes the market $\rightarrow$ Fair price. $\hookrightarrow$ $\text{c. } \text{បំបាត់បាត់បាត់បាត់}$

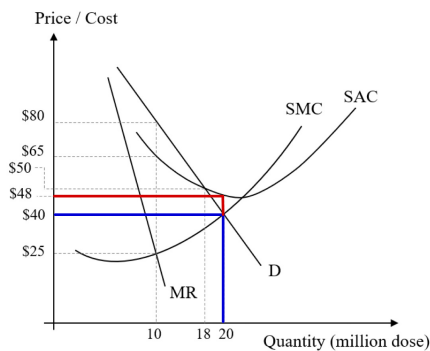
P វិលវិល Profit = 0

$P = AC$

[$\text{សម្រាប់បំបាត់បាត់បាត់}$]

Fair price = 50 Q = 18 #

3d.).



$P = 40$

$AC = 48$

Loss = $48 - 40 = 8 \$ / \text{dose}$

Loss = $8 \times 20 = 160 \text{ M.}\$$

Subsidy = 160 M.\$ #