

Instructions:

- Assigned date is Thursday the 18th, Feb 2021. Due date is Thursday the 25th, Feb 2021 before class at 08.00 AM.
 - Submission is only received through BE Moodle platform as PDF file.
 - Name your file as StudentID_nickname, such as 1234567489_Bo.
 - There is no need to rewrite the question into your answer sheets, however, indicate clearly question and item number.
 - Write your nickname and student ID on top-right corner of the first page.
 - For those who do not have a digital device to write on, you can write your answers in sheets of paper, take pictures, convert them to PDF and merge them into a single file.
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1. Suppose that a baker can produce muffins and cupcakes. If she uses all her resources on producing muffins, she can bake 120 muffins. If she produces only cupcakes, she can bake 100 cupcakes.

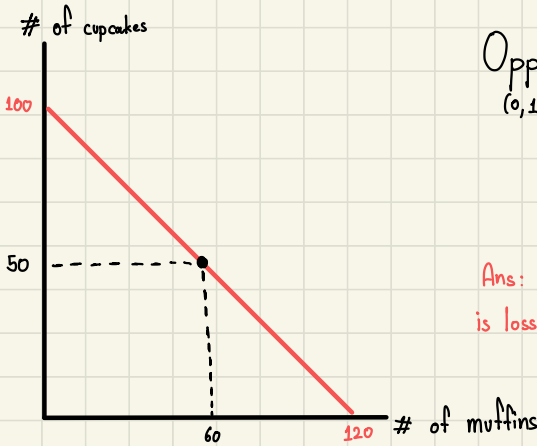
(a) Draw the Production Possibility Curve of this baker, where the x-axis represents the quantity of muffins and y-axis represents the quantity of cupcakes. Assume that the PPC is a straight line. What is the opportunity cost of each cupcake?

(b) With her available resources, can this baker make 60 cupcakes and 50 muffins? Justify your answer.

(X) If the baker learns a new technique and now the maximum quantity of muffins she can produce is 150 muffins, while the maximum quantity of cupcakes she can produce is still 100 cupcakes, *ceteris paribus*. Will the opportunity cost of each cupcake increase or decrease, and by what amount? Illustrate the change of the Production Possibility Curve of this baker.

1. Suppose that a baker can produce muffins and cupcakes. If she uses all her resources on producing muffins, she can bake 120 muffins. If she produces only cupcakes, she can bake 100 cupcakes.

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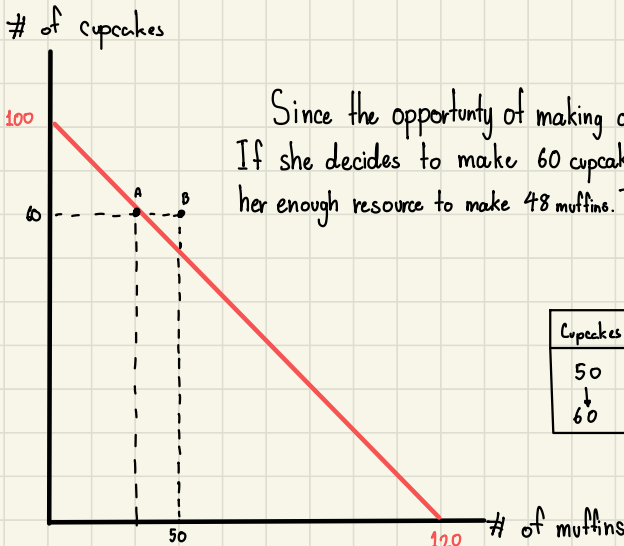


Opportunity cost =
 $(0, 120) \rightarrow (50, 80)$

Cupcakes	muffins
+50	-60
= <u>+1</u>	= <u>-1.2</u>

Ans: opportunity cost of making each cupcake is loss of 1.2 muffins

(b) With her available resources, can this baker make 60 cupcakes and 50 muffins? Justify your answer.

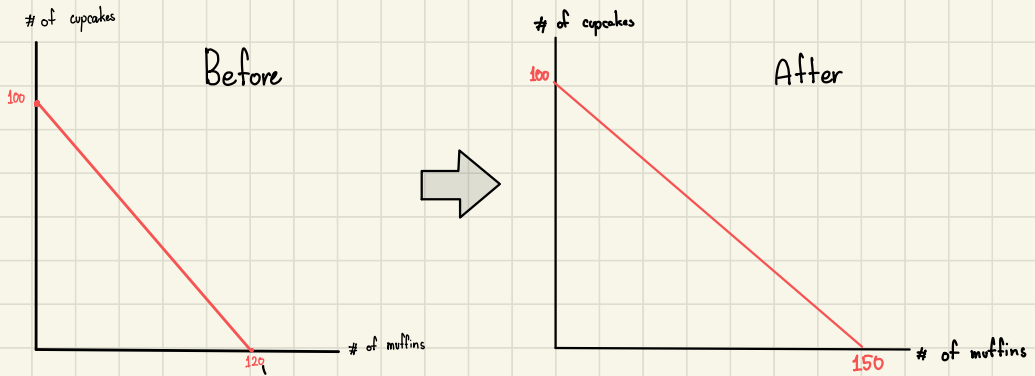


Since the opportunity of making one cupcake is 1.2 muffins
 If she decides to make 60 cupcake. With available resources, It would only leave her enough resource to make 48 muffins. Therefore, it is impossible to achieve with this current resources

Cupcakes	muffins
50	60
↓	↓
60	48

+10 - 12

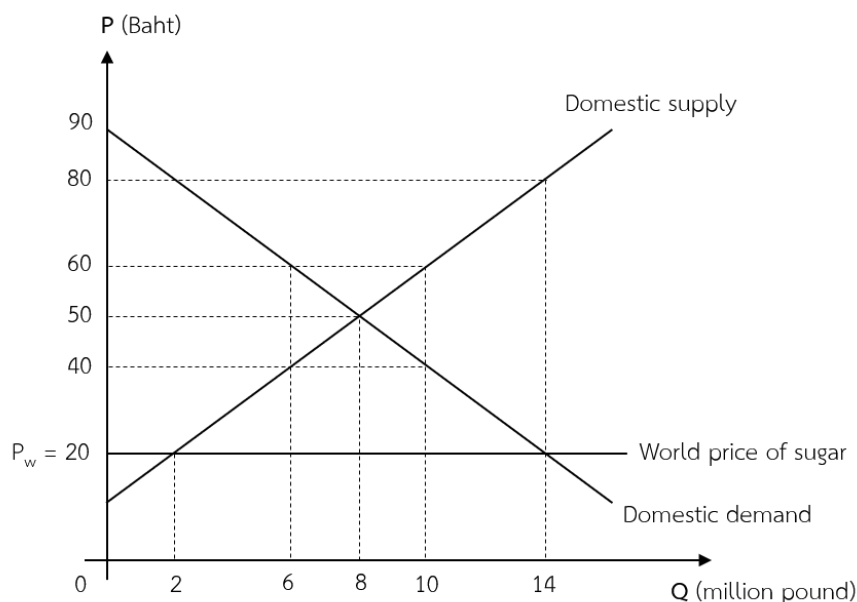
(X) If the baker learns a new technique and now the maximum quantity of muffins she can produce is 150 muffins, while the maximum quantity of cupcakes she can produce is still 100 cupcakes, *ceteris paribus*. Will the opportunity cost of each cupcake increase or decrease, and by what amount? Illustrate the change of the Production Possibility Curve of this baker.



Before she learns this new technique. She can produce either 100 cupcakes or 120 muffins. Which means that the opportunity cost of making cupcakes is 1.2 muffins.

Later, she learns this technique which increases her production of muffins to 150 muffins, but production of cupcakes remain the same at 100 cupcakes. This means that the opportunity cost of cupcakes increase from 1.2 \rightarrow 1.5 muffins.

2. Supposed that sugar is traded freely in the world market, Thai people consume domestically produced sugar while the rest is imported. Given that world market price is 20 baht per pound and the government decides to set domestic ceiling price equally to the world price, below graph shows domestic demand, supply and world price level. Answer the following questions.



(a) Supposed that Thailand takes world price, how many pounds of sugar is imported at the world price level?

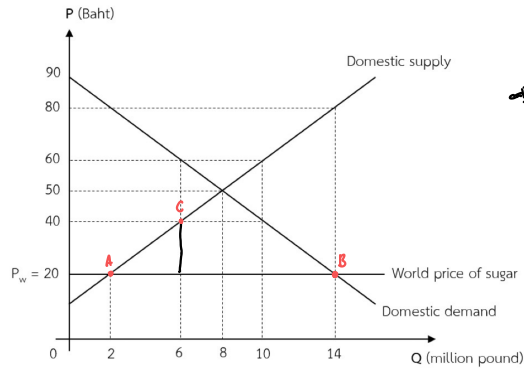
(b) If the government further decides to collect an import unit tax of 20 baht per pound and the price after tax becomes 40 baht per pound,

(c) How much of the sugar is domestically produced in Thailand after tax?

(d) After the import tax is imposed, compute the change in consumer surplus. Also highlight the change in consumer surplus in the provided graph. Are the domestic consumers better off or worse off? Clearly explain your answer.

(e) Compute the government revenue from the import tax and identify its area in the provided graph. Clearly explain why the area identified above represents the government revenue from the import tax.

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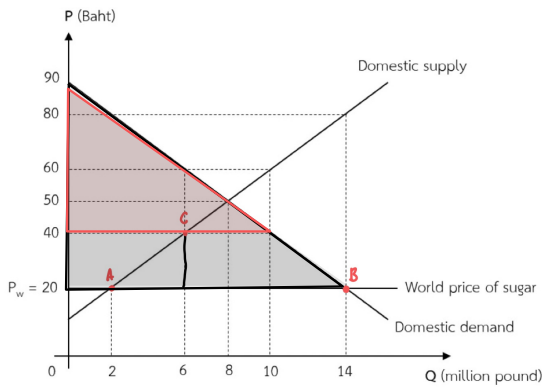
Domestically, at this current price. Thailand supplier are willing to supply sugar at 2 millions pound. (point A)
 However, at this current price. Thailand consumer demand for sugar is at 14 millions pound. (point B)
 Therefore, the rest of sugar need to be imports for 12 million pounds.

(b) If the government further decides to collect an import unit tax of 20 baht per pound and the price after tax becomes 40 baht per pound,

(c) How much of the sugar is domestically produced in Thailand after tax?

After the unit tax policy is implemented. Price after tax is now at 40 baht per pounds.
 Higher price encourage supplier to supply more which domestically increases quantity supply from 2 million pound to 6 million pound.

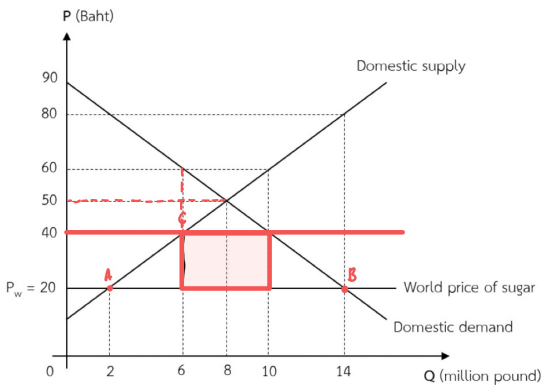
(d) After the import tax is imposed, compute the change in consumer surplus. Also highlight the change in consumer surplus in the provided graph. Are the domestic consumers better off or worse off? Clearly explain your answer.



Before the tax is imposed the consumer surplus are fill in black. Later on when the taxation policy is imposed. Price after tax increase to 40 baht per pound. This change are filled in red.

In this situation, domestic consumers are worse off since they are forced to pay more when purchasing sugar from abroad. Some might not be able to purchased at all if their willingness to pay is lower than 40 baht per pound.

(e) Compute the government revenue from the import tax and identify its area in the provided graph. Clearly explain why the area identified above represents the government revenue from the import tax.



* Area filled in red is gov. revenue

The price after tax of sugar is 40 baht pound. As the graph shown that the domestic supply of sugar is 6 million pound. However, the quantity demanded for 40 baht sugar is 10 million pound. This shown that apart from 6 million pound from domestic supplier, the rest 4 million need to be import from abroad. If the government import tax is 20 baht per pound. By importing 4 million pound of sugar, the government revenue would be 4 million \times 20 which is 80 million baht.

3. Suppose that the quantity demanded for sweetened green tea at Thammasat University is 5,000 bottles per month at the price 20 baht per bottle. Suppose further that the university imposes an excise tax of 5 baht per bottle so that the new price is 25 baht per bottle. At this new price, the quantity demanded drops to 3,000 bottles per month.

(a) Use POINT elasticity to calculate the price elasticity of demand at the NEW price.

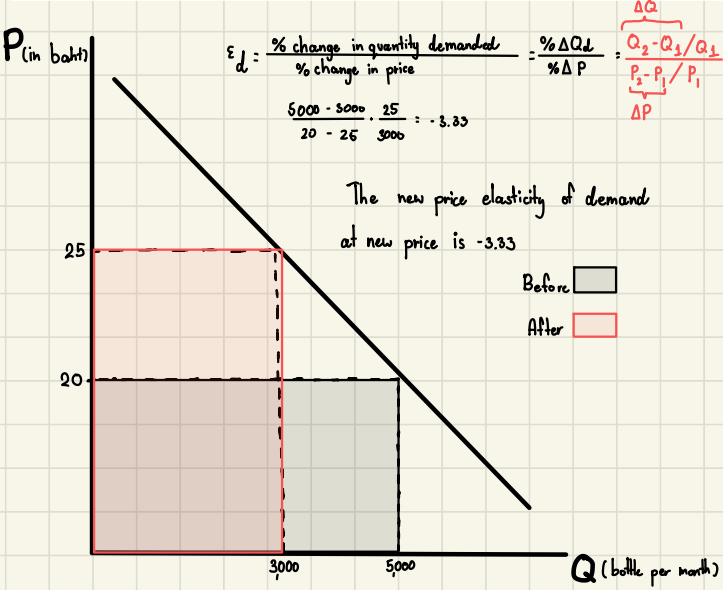
(b) Without any calculation, would the total sale revenue from selling sweetened green tea at Thammasat University decrease or increase? Explain by using the concept of price elasticity of demand.

(c) Suppose that, as a result of imposing this tax on green tea, the quantity demanded for “Super Drink” increases from 2,500 to 3,000 bottles per month, all else constant. Calculate the cross-price elasticity of demand for “Super Drink”, with respect to the price of sweetened green tea.

(d) From part (c), are sweetened green tea and Super Drink complements or substitutes? Explain.

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In this case, the total revenue when the price changed would decrease since the new price elasticity of demand is over 1. This shows that the demand of 'sweetened green tea' at Thammasat university is elastic. Therefore, the percentage of decrease in Quantity demanded would be greater than the percentage of increase in price. Resulting in the decrease in revenue when the price is raised

- $x > 1$ elastic
- $x = 1$ perfectly elastic
- $x < 1$ inelastic

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$$\epsilon_c = \frac{\% \text{ change in quantity demand}}{\% \text{ change in another commodity price}} = \frac{\% \Delta Q_d}{\% \Delta P_b}$$

$$\frac{3000 - 2500}{25 - 20} \cdot \frac{20}{2500} = 0.8$$

Ans. Cross-price elasticity of demand for "Super Drink", with respect to the price of "Sweetened Green Tea" is 0.8

(d) From part (c), are sweetened green tea and Super Drink complements or substitutes? Explain.

Sweetened green tea and Super drink are considered as substitute goods since when sweetened green tea price goes up, consumers substitute to super drink instead. As the fact indicates that when sweetened green tea price increases 20 to 25 baht per bottle, the quantity demanded from super drink increases from 2500 to 3000 bottles per month.

If both goods are complements for each other, when the price of another commodity increase, the quantity demanded of its complement would decrease.

4. Consider a liquor market in a country, answer the following questions. If you have any specific assumption, please state them clearly within each item.

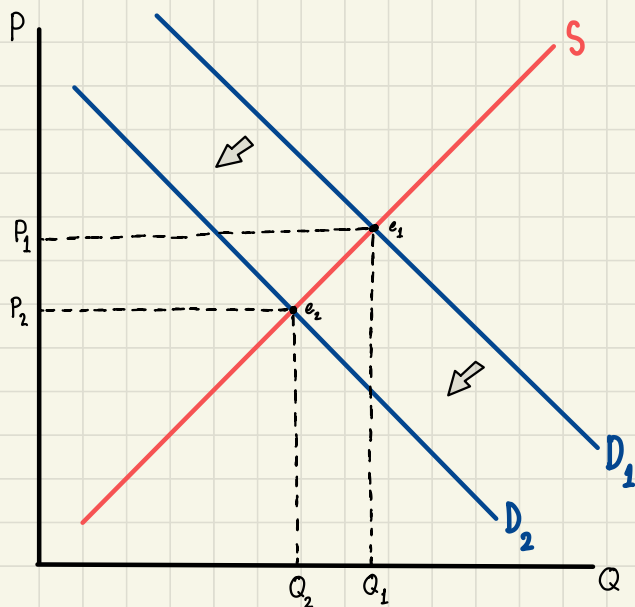
(a) Supposed that a Health Foundation which is an independent organization decides to put up a campaign showing how bad can alcoholic beverages affect health condition in long-term through several big billboards, what do you think will happen to this market, equilibrium price and quantity. Support your claim with economic reasoning.

(b) If the government decides to collect unit tax on sellers, show that how would this affects equilibrium price and quantity. Provide a clear explanation with support of a diagram.

(c) There are two groups of liquor consumers: the alcoholic and the occasional drinkers. Does the unit tax affect both groups the same or differently. Provide a clear explanation with support of diagrams.

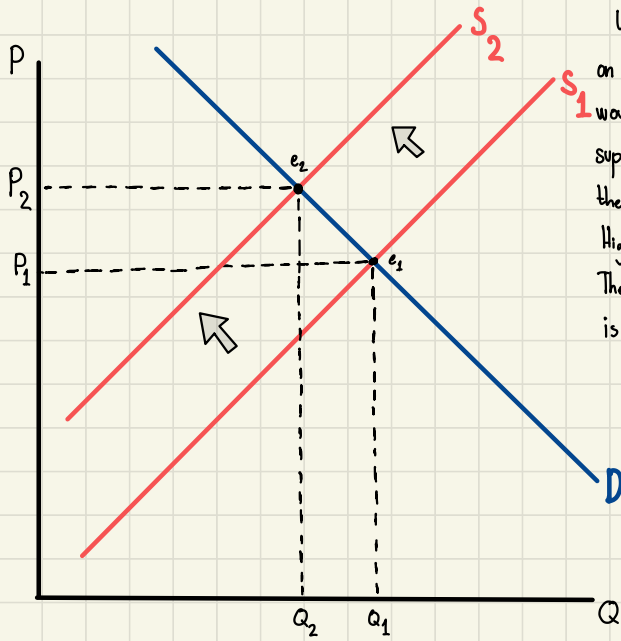
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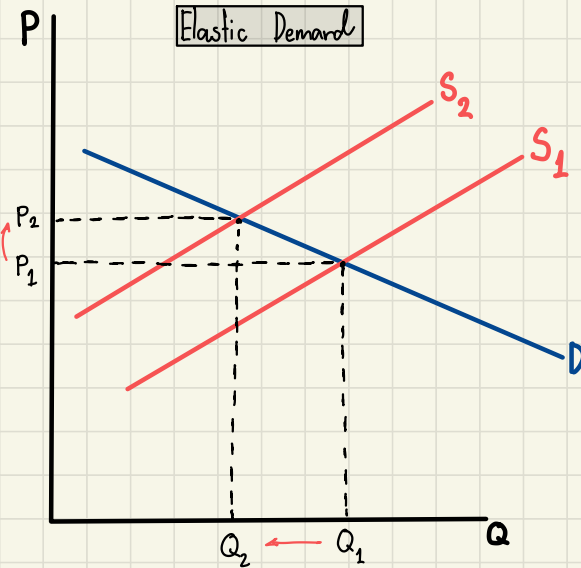
If the health foundation decides to put up a campaign showing how bad the alcoholic beverages affect health through billboards. Some people might drink less or stop drinking which would shift the demand curve for alcoholic beverages down. At the same price, there would be less quantity demanded. In order to remain at the equilibrium, price decreases from P_1 to P_2 . Quantity demanded decreases from Q_1 to Q_2 . The new market equilibrium price and quantity demanded is now at e_2 .

(b) If the government decides to collect unit tax on sellers, show that how would this affects equilibrium price and quantity. Provide a clear explanation with support of a diagram.



When the government decides to collect unit tax on sellers. The cost of production for making each product would increase. With higher cost of production, supplier can supply less which shift the supply curve up. With less supply the price of the product goes up from P_1 to P_2 . Higher price reduces the quantity demanded from Q_1 to Q_2 . The new market equilibrium price and quantity demanded is now at e_2 .

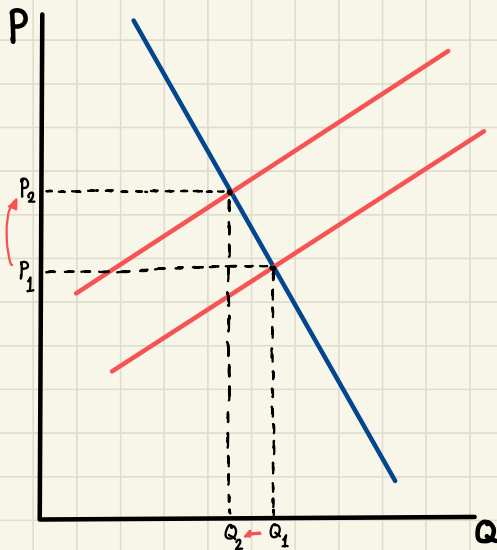
(c) There are two groups of liquor consumers: the alcoholic and the occasional drinkers. Does the unit tax affect both groups the same or differently. Provide a clear explanation with support of diagrams.



Occasional drinkers

If the consumers is a group of occasional drinkers there demand is going to be elastic since they don't consider alcoholic beverages as necessity goods. When the unit tax policy is implemented causing the price to increase. It doesn't have that much effect on occasional drinkers since they can just stop drinking, reduce the amount or substitute to another beverages instead. As the graph shown, the price increase a little while the quantity demand decrease by a lot. In this case, sellers hold larger tax burden compared to consumers.

Inelastic Demand



Alcoholic drinkers

If the consumers is a group of alcoholic drinkers there demand is going to be inelastic since alcoholic are addicted to alcoholic beverages so they consider alcoholic beverages as necessity goods. When the unit tax policy is implemented causing the price to increase. Alcoholic are still going to purchase with little effect on quantity demand. As the graph shown, the price increase by a lot while the quantity demand decrease by a little. In this case, buyers hold larger tax burden compared to sellers.