

Exercise 1

1. You are considering the number of hamburgers that you plan to order. Based on the following table, complete the table and answer the following questions.
 - a. How many units of hamburgers should you order? Why?
 - b. Suppose you decide to order 2 hamburgers. Is this underallocation or overallocation? Explain.
How much is your deadweight loss?
 - c. Suppose you decide to order 5 hamburgers. Is this underallocation or overallocation? Explain.
How much is your deadweight loss?

Quantity	Total Benefit	Marginal Benefit	Total Cost	Marginal Cost	Total Net Benefit
1 st		80		20	
2 nd		60		20	
3 rd		40		20	
4 th		20		20	
5 th		0		20	

2. With diagrams, explain the differences between tariff and quota. Also, explain the impact on domestic stakeholders (consumers, producers, and government), i.e., who is better off and who is worse off? Why?
3. Consider an exporting country. Analyze welfare effect on all stakeholders when its government impose “Export Tax”, i.e., per-unit tax imposed on the exported good. Draw a diagram(s) and provide complete analysis on who gain(s) and who lose(s).
4. A “small”, open economy is engaging in international trade. Its domestic demand curve is given by $P = 100 - Q$ and its domestic supply curve is given by $P = Q$. The world price of the good is 20\$. Answer the following questions.
 - a. What does it mean for a country to be “small”? What implication of being “small” has on the world supply curve?
 - b. Is this economy either an exporting or important country? Why? How many units of the goods is the country is currently importing or exporting?
 - c. Now suppose the government decides to intervene. If the country is importing, the government will impose import tariff of 10\$ per unit. If the country is exporting, the government will impose export subsidy of 10\$ per unit. Calculate
 - i. Domestic consumer and producer surplus after the intervention
 - ii. Either subsidy cost or tariff revenue
 - iii. Deadweight loss from the intervention.

1. You are considering the number of hamburgers that you plan to order. Based on the following table, complete the table and answer the following questions.

a. How many units of hamburgers should you order? Why?

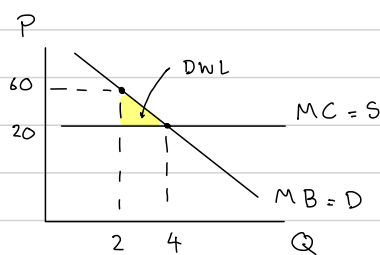
Quantity	Total Benefit	Marginal Benefit	Total Cost	Price	TB-TC
				Marginal Cost	Total Net Benefit
1 st	80	80	20	20	60
2 nd	140	60	40	20	100
3 rd	180	40	60	20	120
4 th	200	20	80	20	120
5 th	200	0	100	20	100

4 because at 4th unit $MB = MC$ to maximise surplus, but at 5th unit $MB < MC$ so should not consume

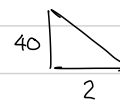
b. Suppose you decide to order 2 hamburgers. Is this underallocation or overallocation? Explain.

How much is your deadweight loss?

Underallocation because MB (demand) $>$ MC (Supply)
Meaning that there is some demand that is not being fulfilled by supply



$DNL = \text{Area of}$



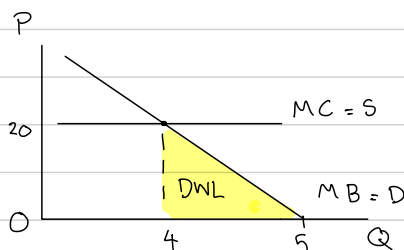
$$= \frac{1}{2} \times 2 \times 40$$

$$= \underline{\underline{40}}$$

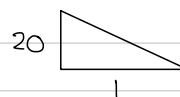
c. Suppose you decide to order 5 hamburgers. Is this underallocation or overallocation? Explain.

How much is your deadweight loss?

Overallocation because MB (demand) $<$ MC (Supply)
Meaning that some supply was produced that has no demand for it



$DNL = \text{Area of}$

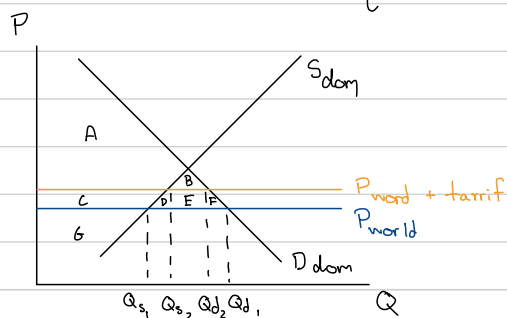


$$= \frac{1}{2} \times 20 \times 1$$

$$= \underline{\underline{10}}$$

2. With diagrams, explain the differences between tariff and quota. Also, explain the impact on domestic stakeholders (consumers, producers, and government), i.e., who is better off and who is worse off? Why?

Tariff: increase price on imported goods so that they are closer or equal to domestic price.

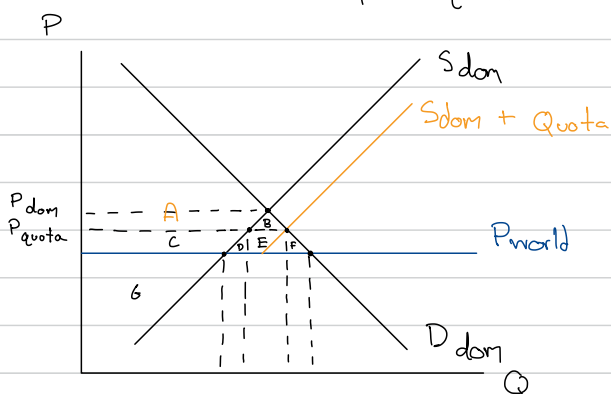


	w/o tariff	w/ tariff	Δ
CS	ABCDEF	AB	-C-D-E-F
PS	G	CG	+C
Gov	$\emptyset$	E	+E
TS	ABCDEF G	ABCEG	-D-F

Domestic producers and government are better-off because producers can sell at a higher price and gov can collect tariff from imported goods.

Consumers are worse-off because they have to pay for more expensive goods & services

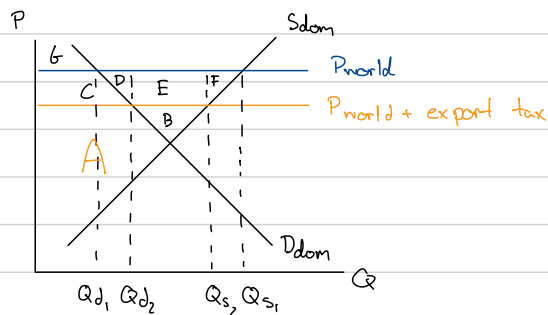
Quota: License given to firms for the rights to import goods. Thus increase supply bc firms can buy goods at P_{world} and at a higher P_{quota}



	w/o quota	w/ quota	Δ
CS	ABCDEF	AB	-C-D-E-F
PS	G	GC	+C
Gov	$\emptyset$	E	+E
TS	ABCDEF G	ABCEG	-D-F

Domestic producers and government are better-off because producers can buy at P_{world} and sell at P_{quota} . Gov receives quota revenue
 Consumers are worse-off because they have to pay for more expensive goods & services

3. Consider an exporting country. Analyze welfare effect on all stakeholders when its government impose "Export Tax", i.e., per-unit tax imposed on the exported good. Draw a diagram(s) and provide complete analysis on who gain(s) and who lose(s).



	w/o export tax	w/ export tax	Δ
CS	G	CG	C
PS	ABCDEF	AB	-C-D-E-F
Gov	$\emptyset$	E	E
TS	ABCDEFG	ABCGE	-D-F

Gov is better-off because revenue from tax.

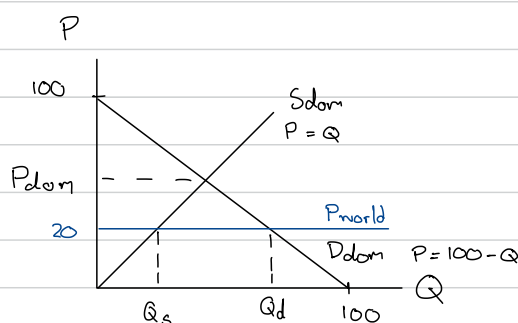
Consumers are better off because export tax lower the prices of goods & services

Producer are worse-off because they have to sell at a lower price

4. A "small", open economy is engaging in international trade. Its domestic demand curve is given by $P = 100 - Q$ and its domestic supply curve is given by $P = Q$. The world price of the good is 20\$.

Answer the following questions.

- a. What does it mean for a country to be "small"? What implication of being "small" has on the world supply curve?



being a small country means that the country's imports are insignificant relatively to the world. So any change in import's quantity will not affect world price.

- b. Is this economy either an exporting or important country? Why? How many units of the goods is the country is currently importing or exporting?

Yes, an import economy because $P_{world} < P_{dom}$, meaning that consumers would rather buy imported goods because they are cheaper than domestically-produced goods.

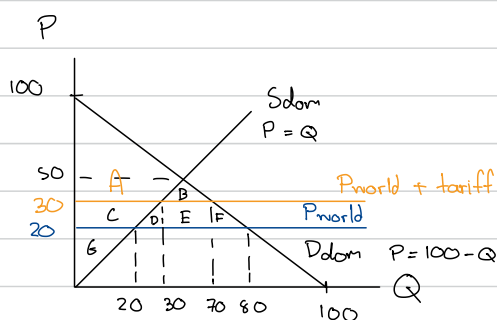
Amount of import = $Q_d - Q_s$ at $P = \$20$ (P_{world})

$$\begin{aligned} P &= 100 - Q_d & P &= Q_s \\ 20 &= 100 - Q_d & Q_s &= 20 \\ Q_d &= 80 \end{aligned}$$

$$\text{Import} = 80 - 20 = 60 \text{ units}$$

- c. Now suppose the government decides to intervene. If the country is importing, the government will impose import tariff of 10\$ per unit. If the country is exporting, the government will impose export subsidy of 10\$ per unit. Calculate

- i. Domestic consumer and producer surplus after the intervention



$$\begin{aligned} CS &= A + B \\ &= \frac{1}{2} \times 70 \times (100 - 30) \\ &= \underline{\underline{2,450}} \end{aligned}$$

$$\begin{aligned} PS &= C + E \\ &= \frac{1}{2} \times 30 \times 30 \\ &= \underline{\underline{450}} \end{aligned}$$

$$\begin{aligned} P_{dom} &\rightarrow P = 100 - Q \quad ; \quad P = Q \\ P &= 100 - P \\ P &= 50 \end{aligned}$$

$$\begin{aligned} \text{New } Q_s &\rightarrow P = Q_s \\ Q_s &= 30 \end{aligned}$$

$$\begin{aligned} \text{New } Q_d &\rightarrow P = 100 - Q_d \\ 30 &= 100 - Q_s \\ Q_d &= 70 \end{aligned}$$

- ii. Either subsidy cost or tariff revenue

$$\begin{aligned} \text{Tariff revenue} &= E \\ &= (70 - 30)(30 - 20) \\ &= \underline{\underline{400}} \end{aligned}$$

iii. Deadweight loss from the intervention.

$$DWL = D + F$$

$$= \frac{1}{2} (10)(10) \times 2 = \underline{\underline{100}}$$