

# International Trade and Public Policy

Gary N. Petmecky

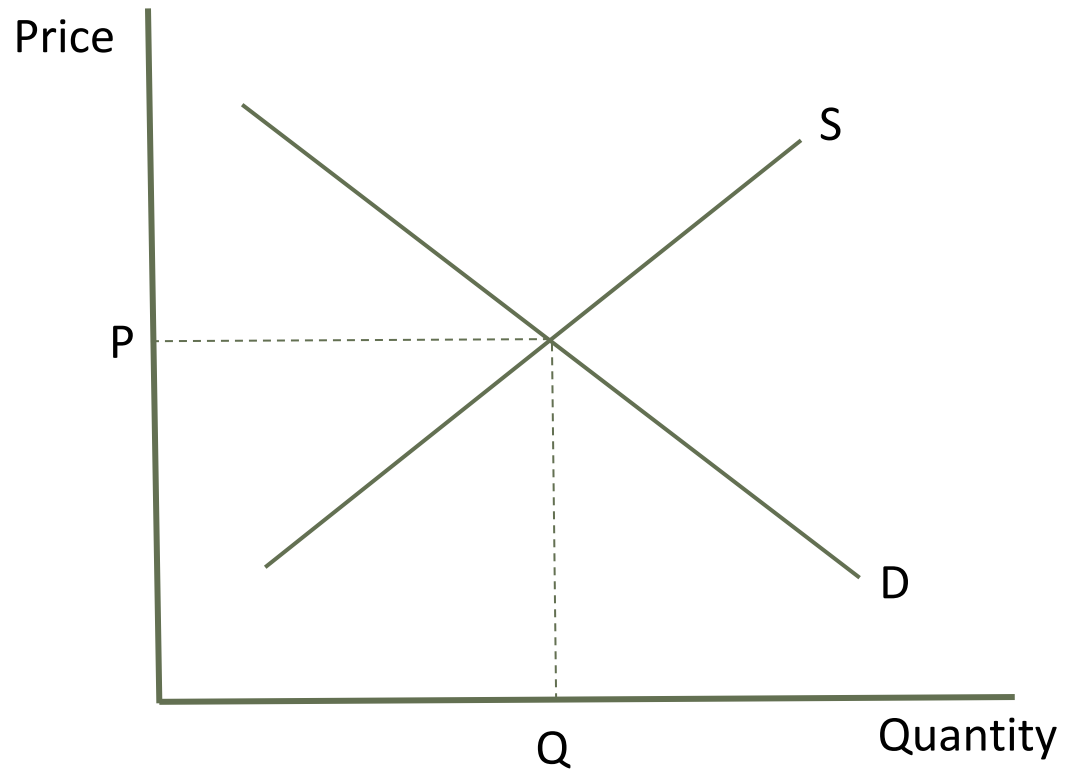
Parkview High School (Lilburn, Ga)

# Government Interventions in the Market

Market: : an institution or mechanism, which brings together buyers ("demanders") and sellers ("suppliers") of particular goods and services.

# Equilibrium

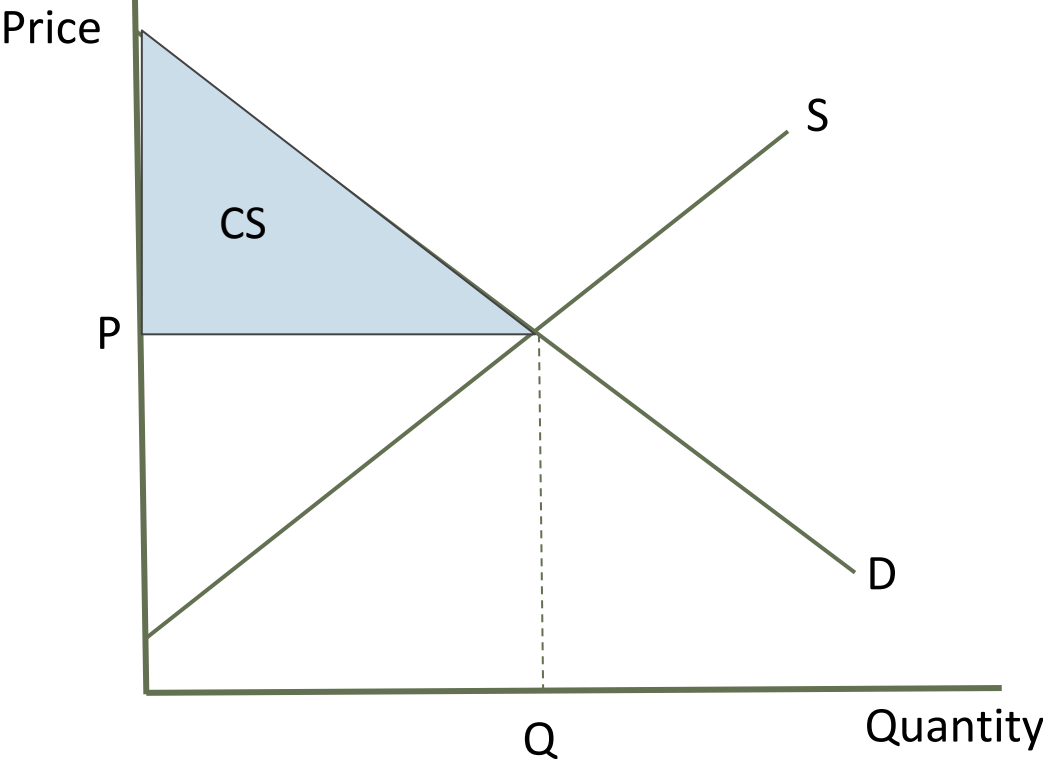
The price at which the quantity demanded equals the quantity supplied is called the equilibrium price.



# Consumer Surplus

CS is the difference between the price the consumer is willing to pay for a good and the price they have to pay for the good.

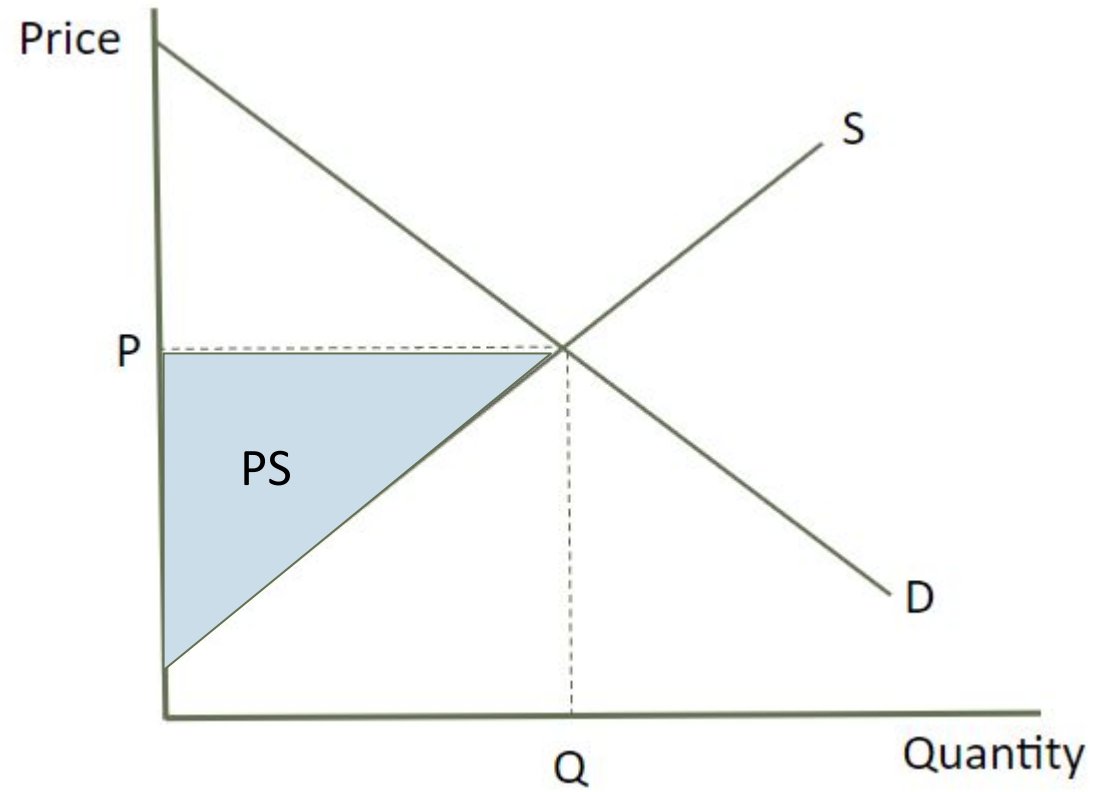
# Consumer Surplus



# Producer Surplus

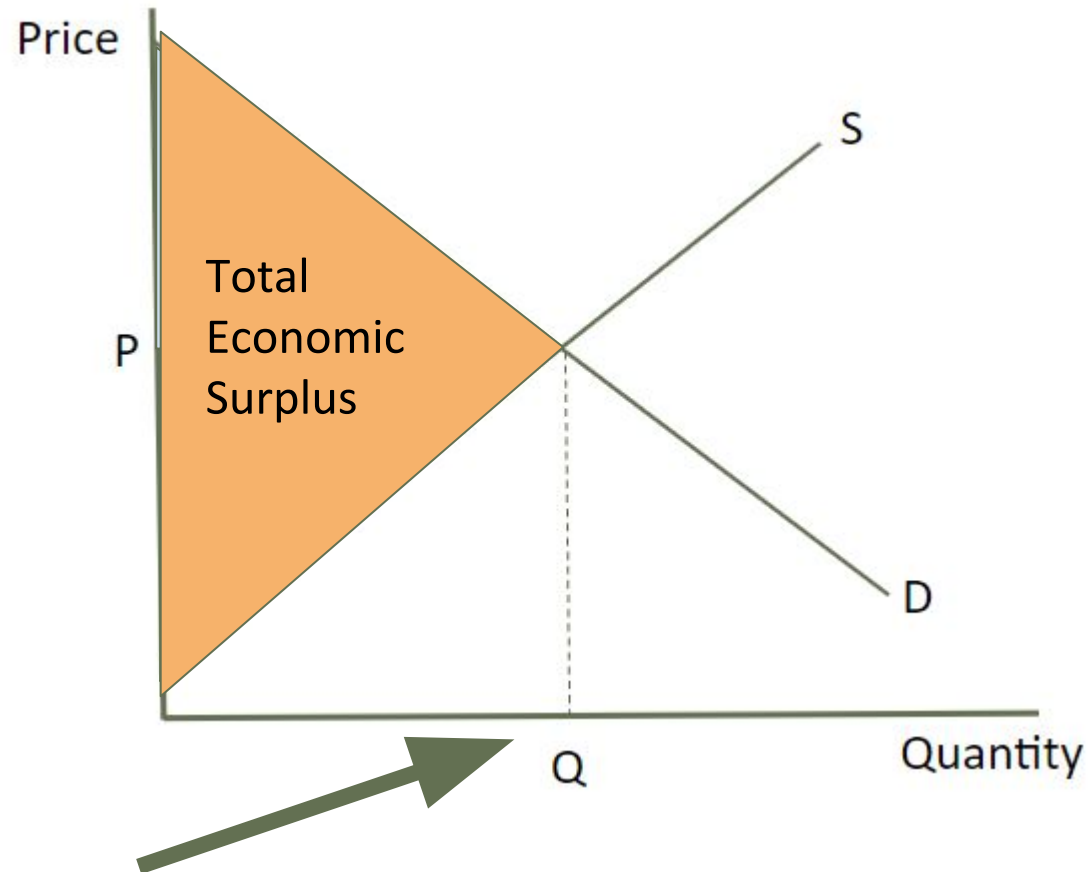
PS is the difference between the price the seller is willing to sell a good for and the price they receive for the good.

# Producer Surplus



# Equilibrium

CS + PS is Total Economic Surplus.



When total surplus is maximized, we are producing at the Socially Optimal Output



# Government Policies

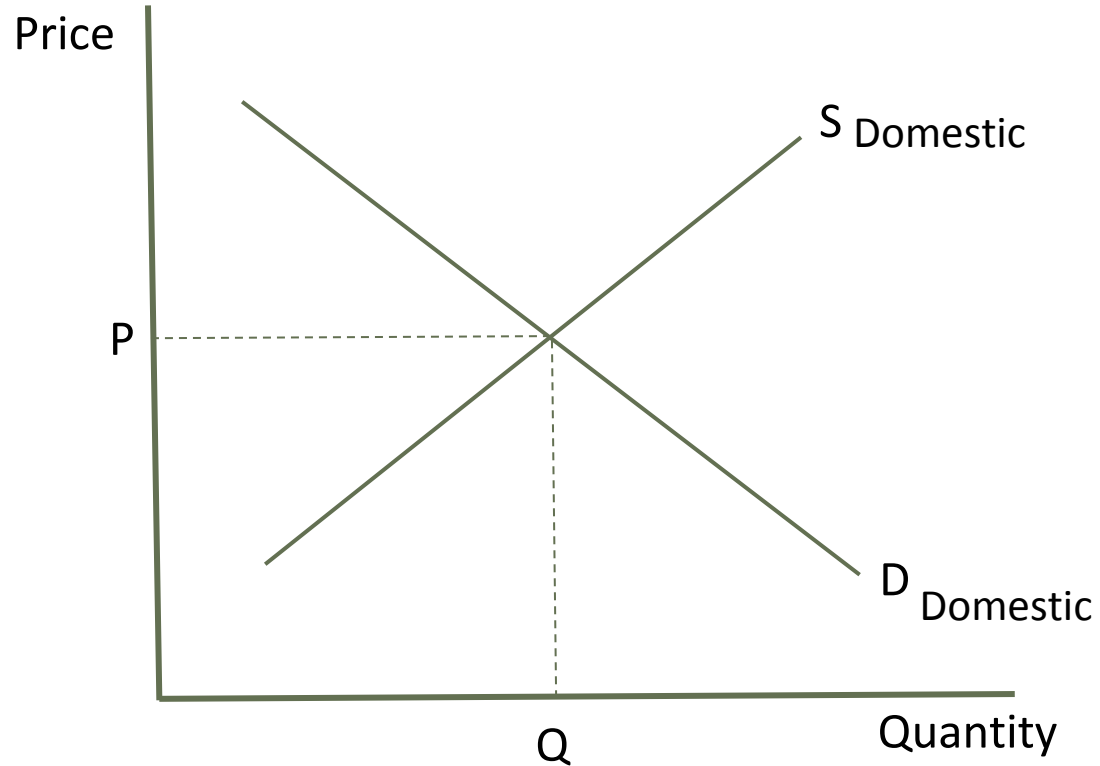
EK: Equilibria in competitive markets may be altered by the decision to open an economy to trade with other countries; equilibrium price can be higher or lower than under autarky, and the gap between domestic supply and demand is filled by trade. Opening an economy to trade with other countries affects consumer surplus, producer surplus, and total economic surplus.

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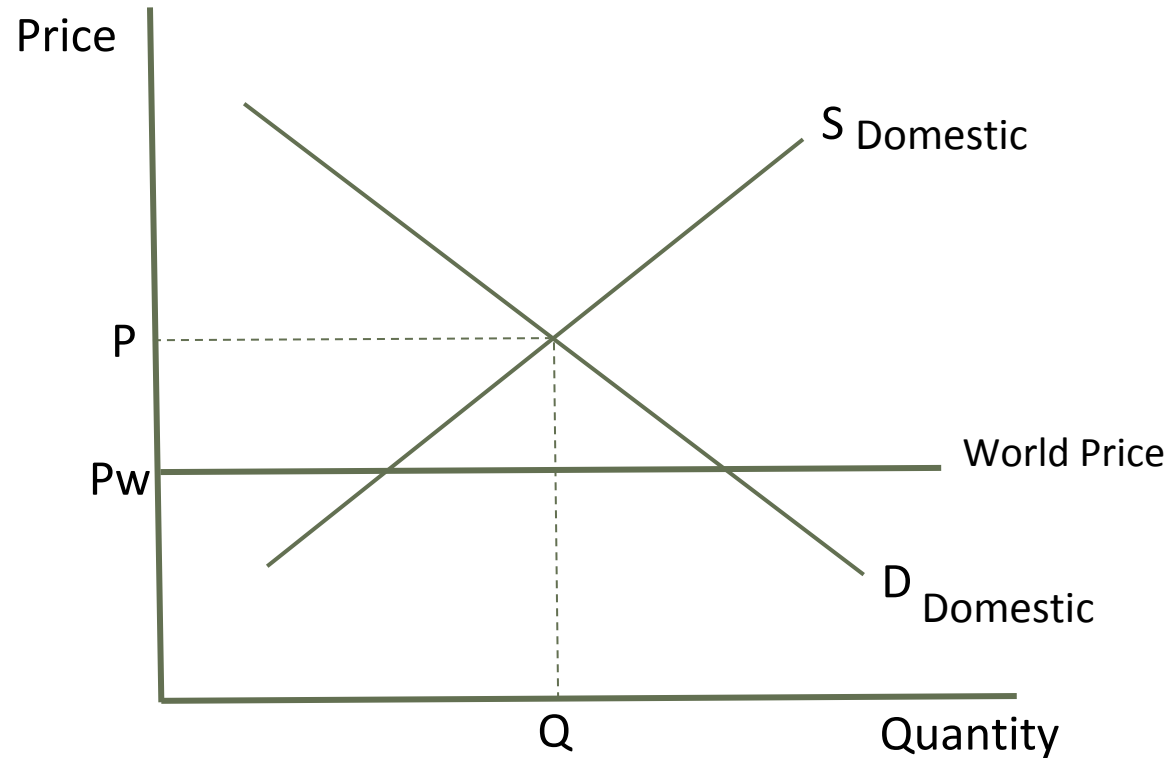
# Equilibrium

Autarky means a closed economy (no international trade).



# Equilibrium

An open economy means that this market is open to international trade.

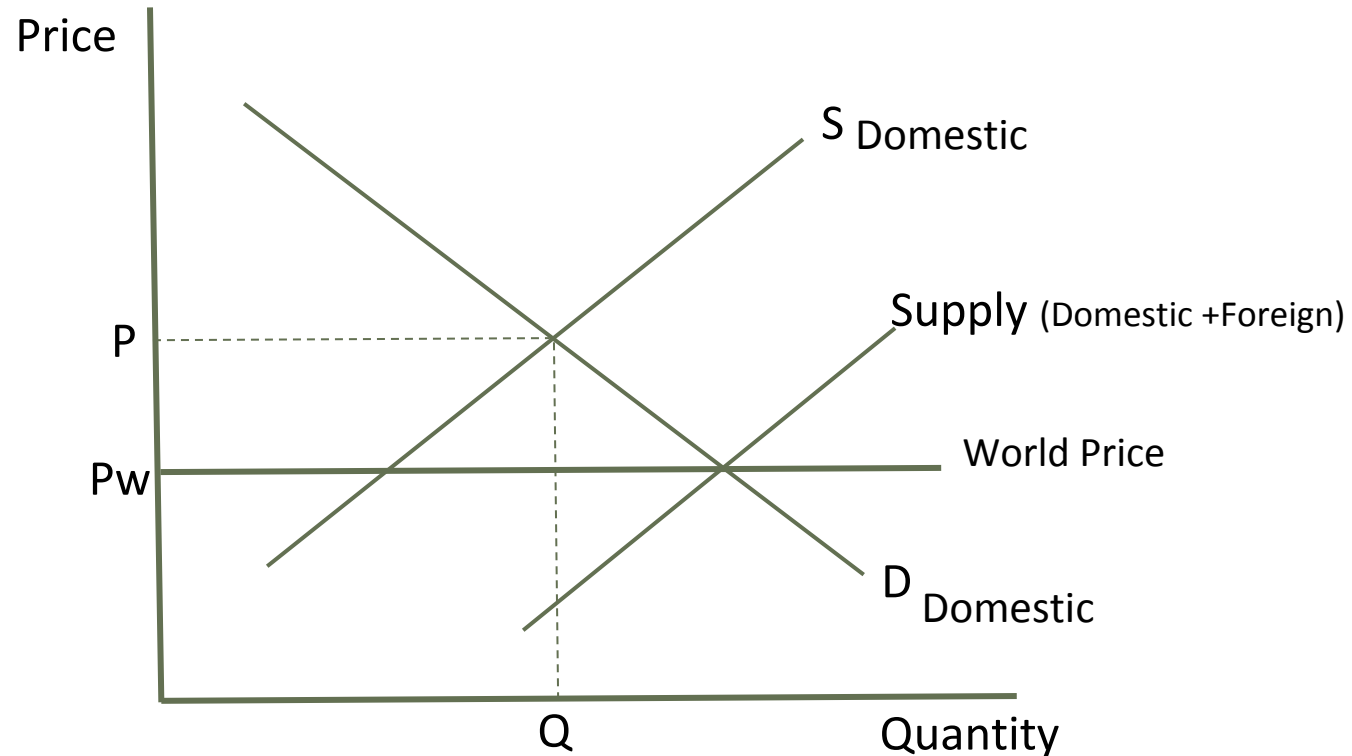


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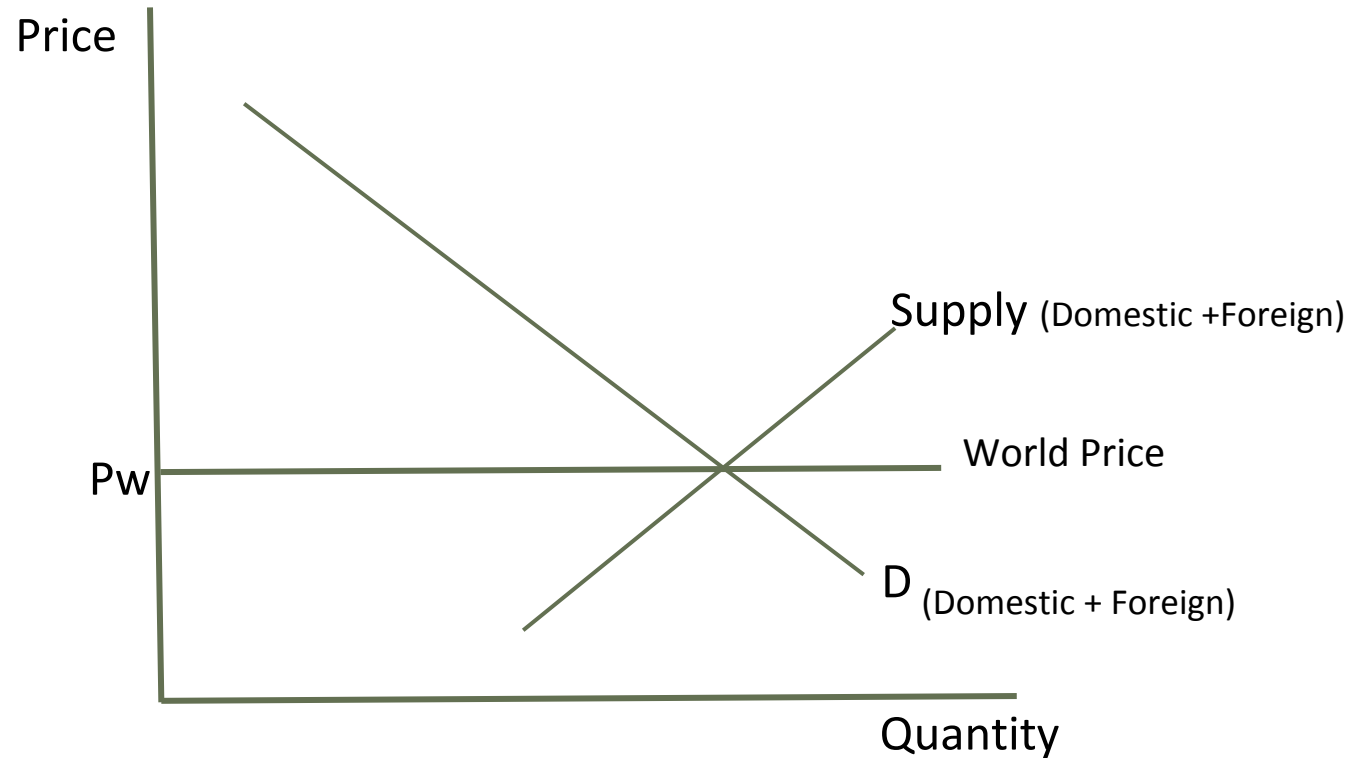
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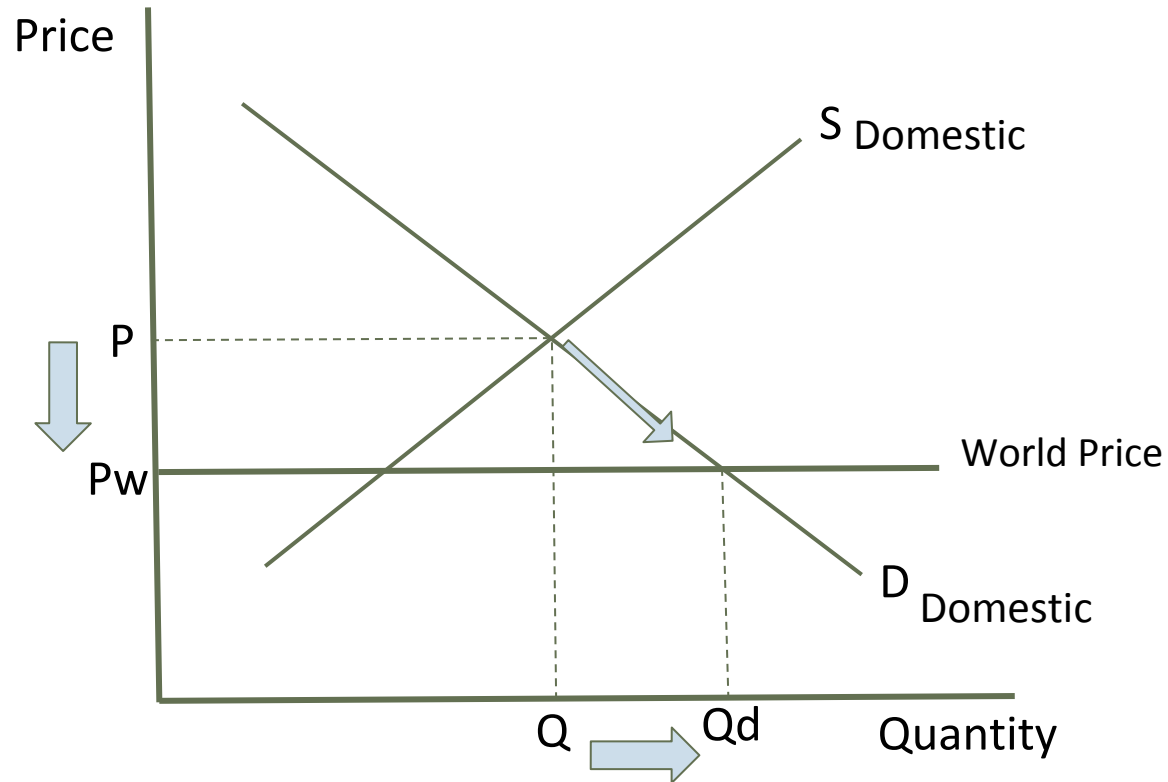
# Equilibrium

Where does the world price come from?



# Equilibrium

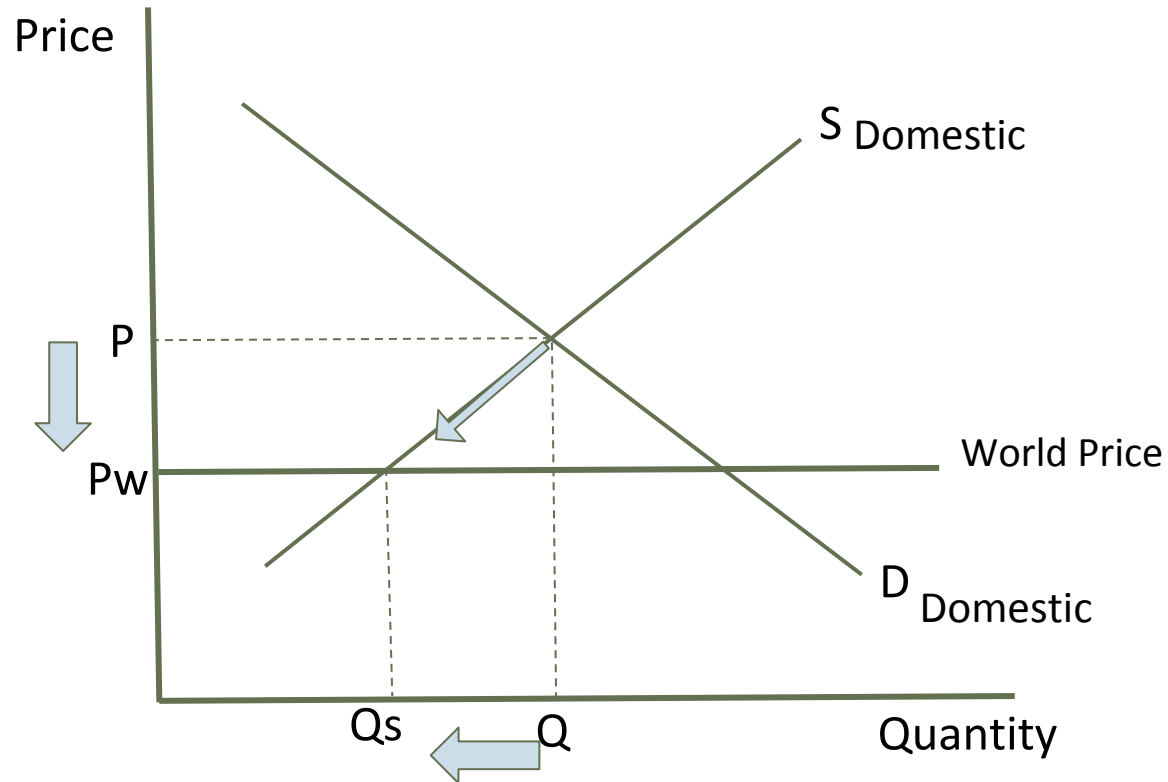
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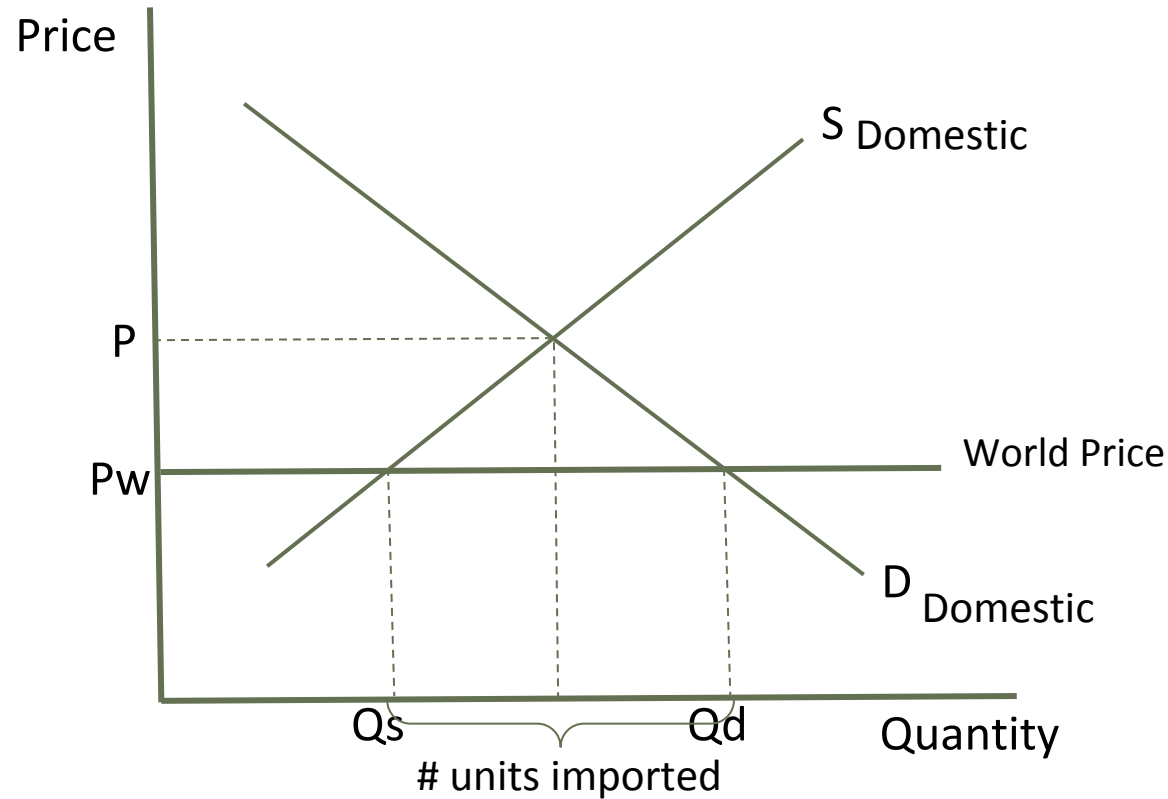


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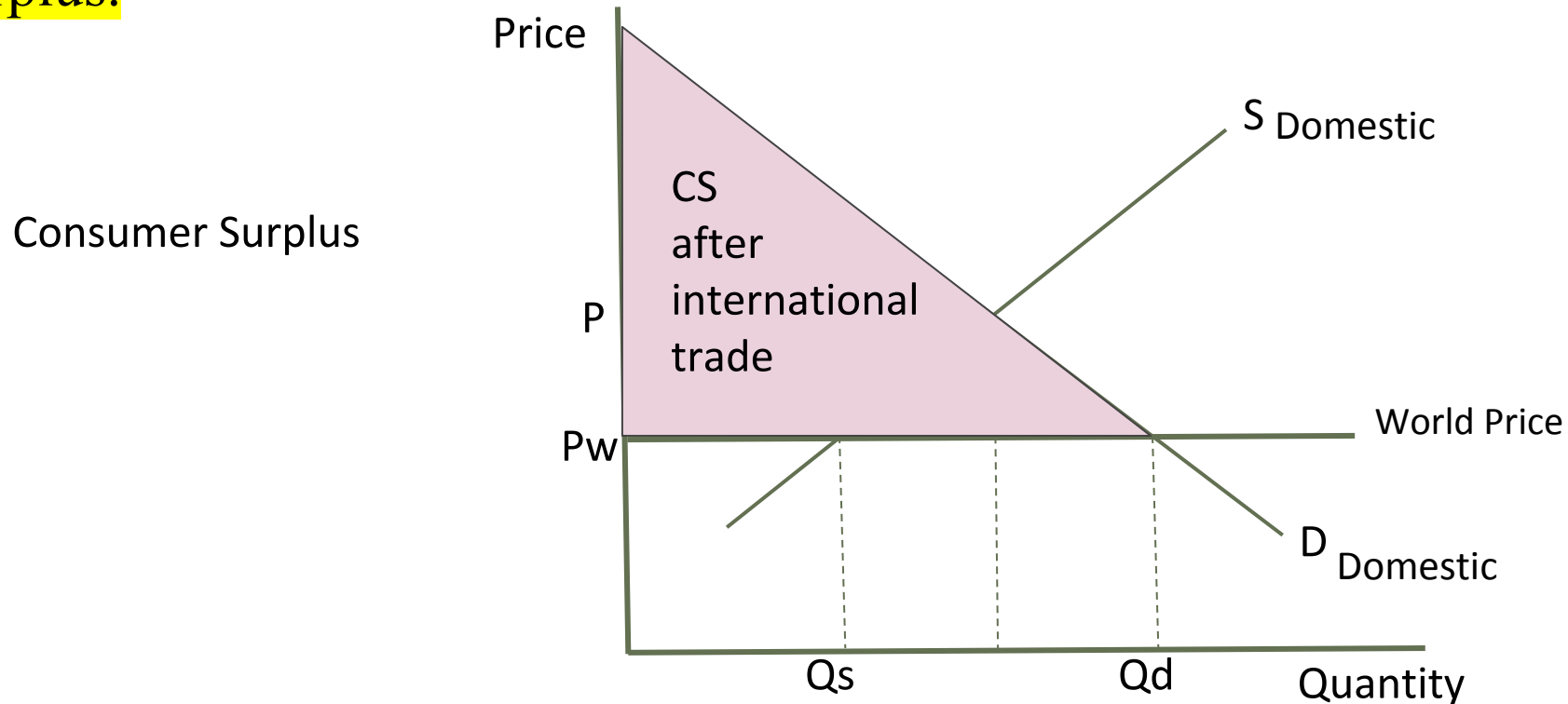


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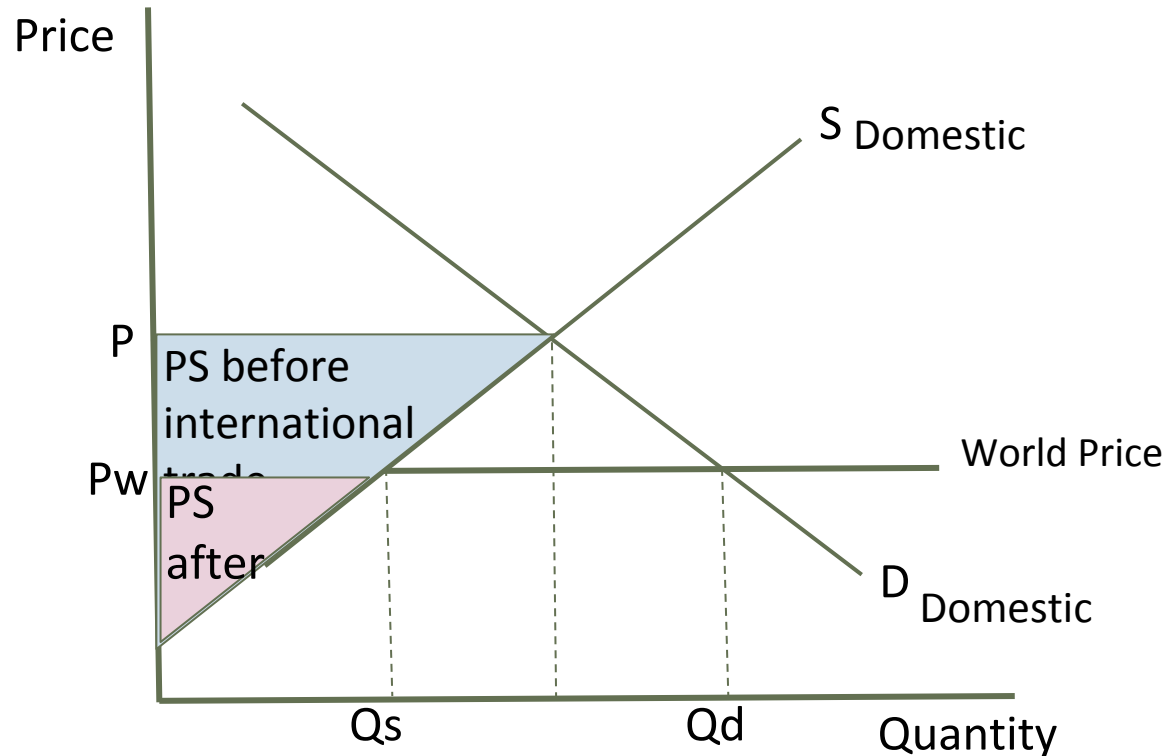
$Q_d - Q_s$  is number of units imported.

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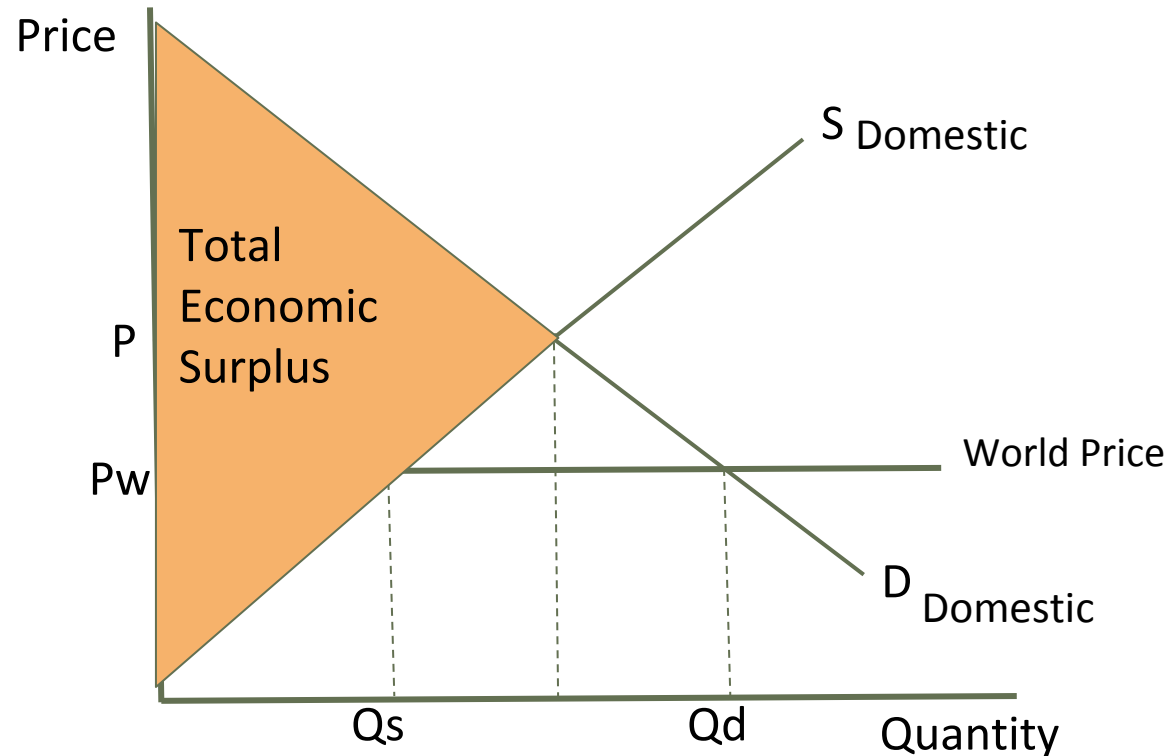
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Producer Surplus



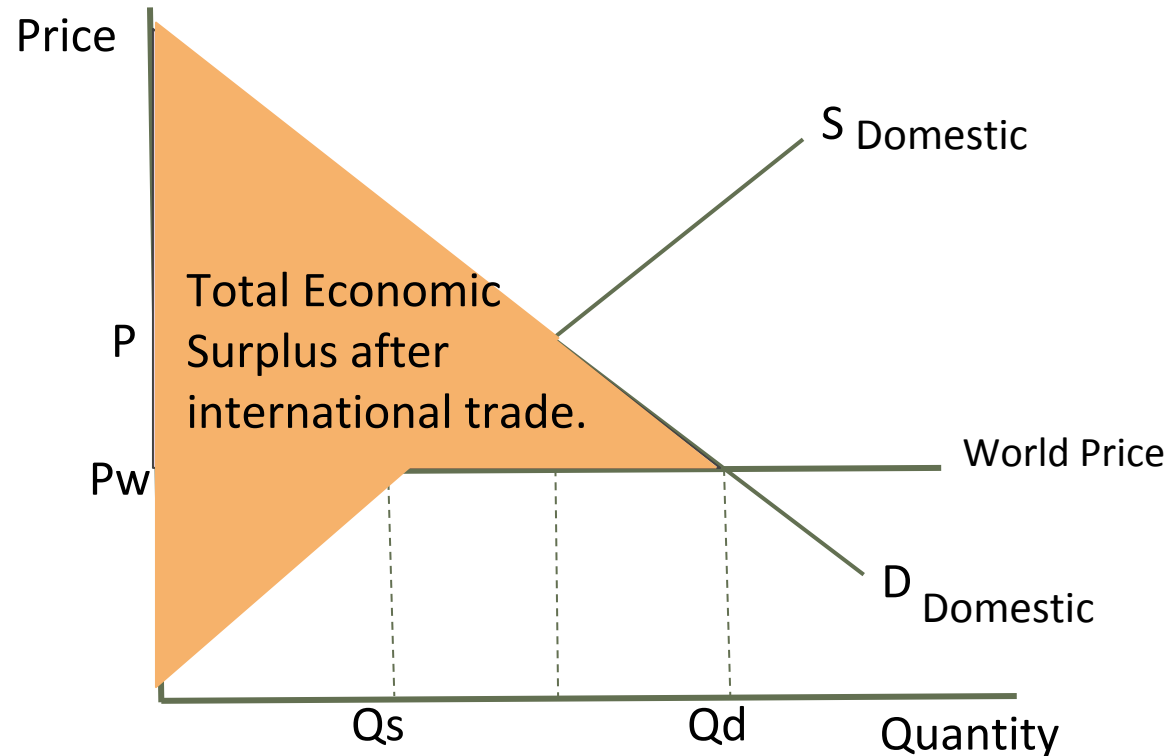
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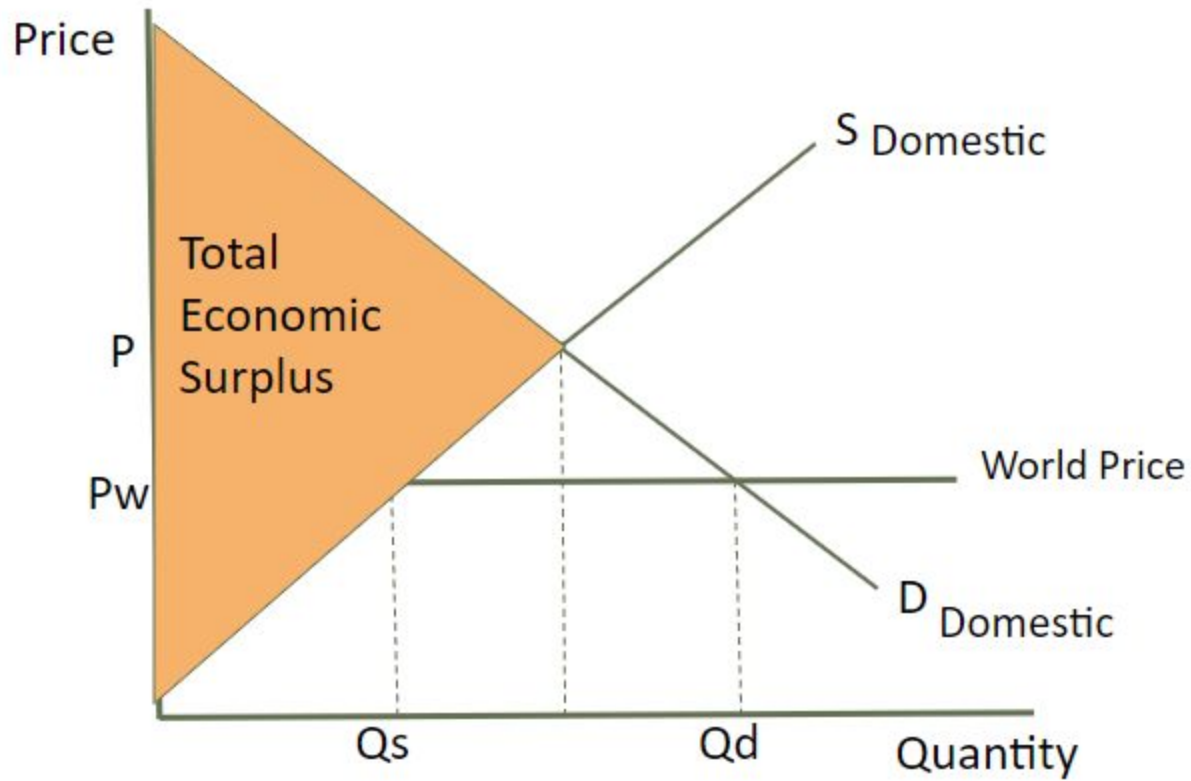
Total Economic Surplus =  
CS + PS



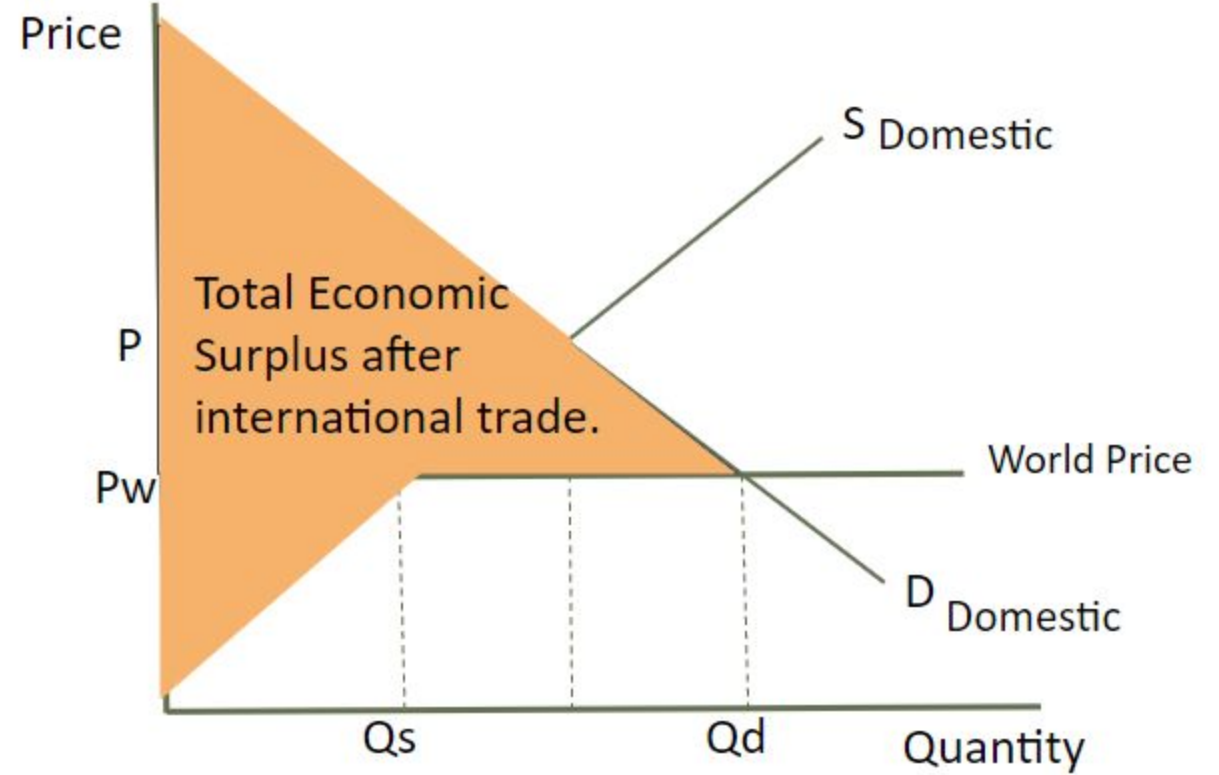
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Total Economic Surplus After International Trade





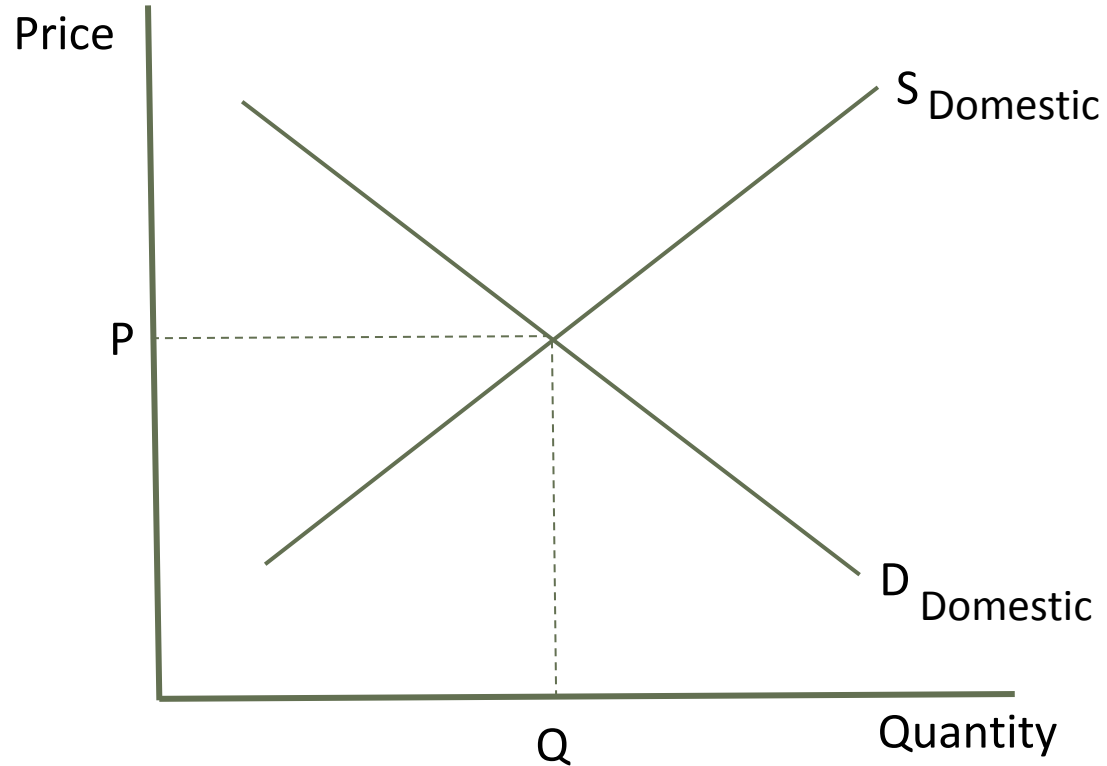
Before International Trade



After International Trade

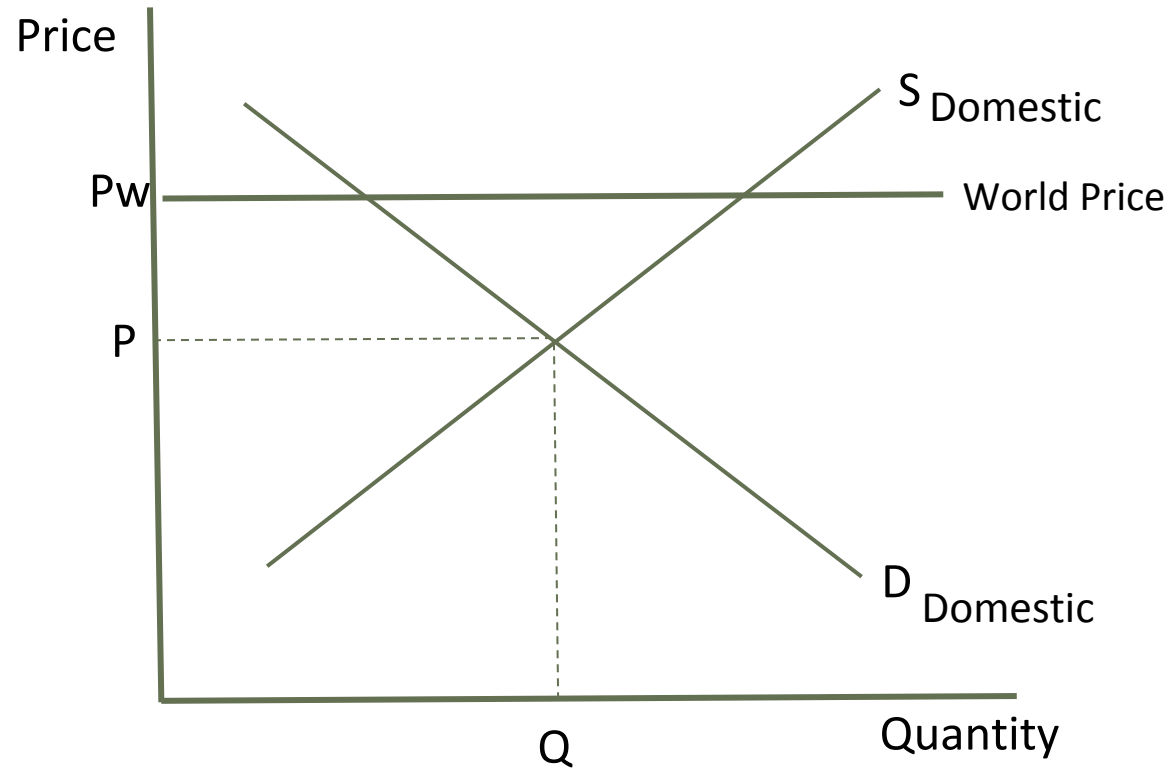
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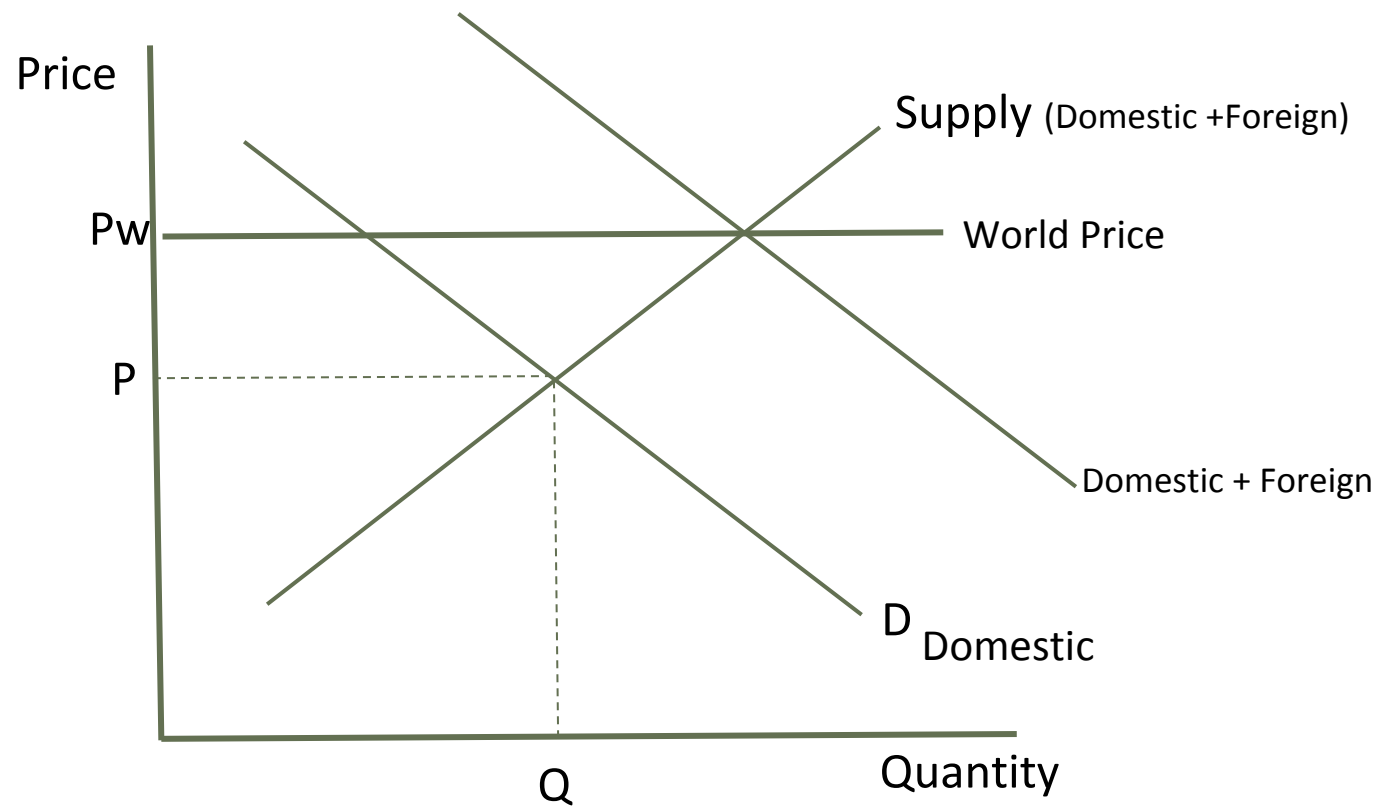
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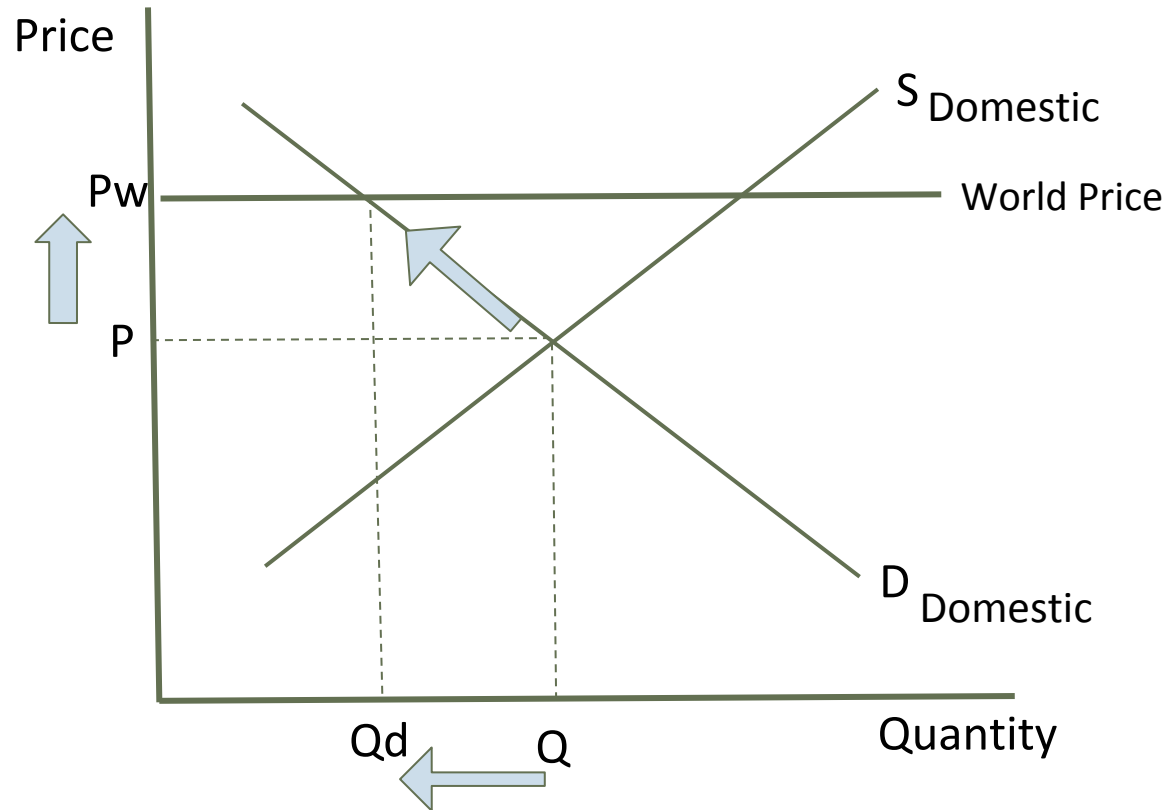
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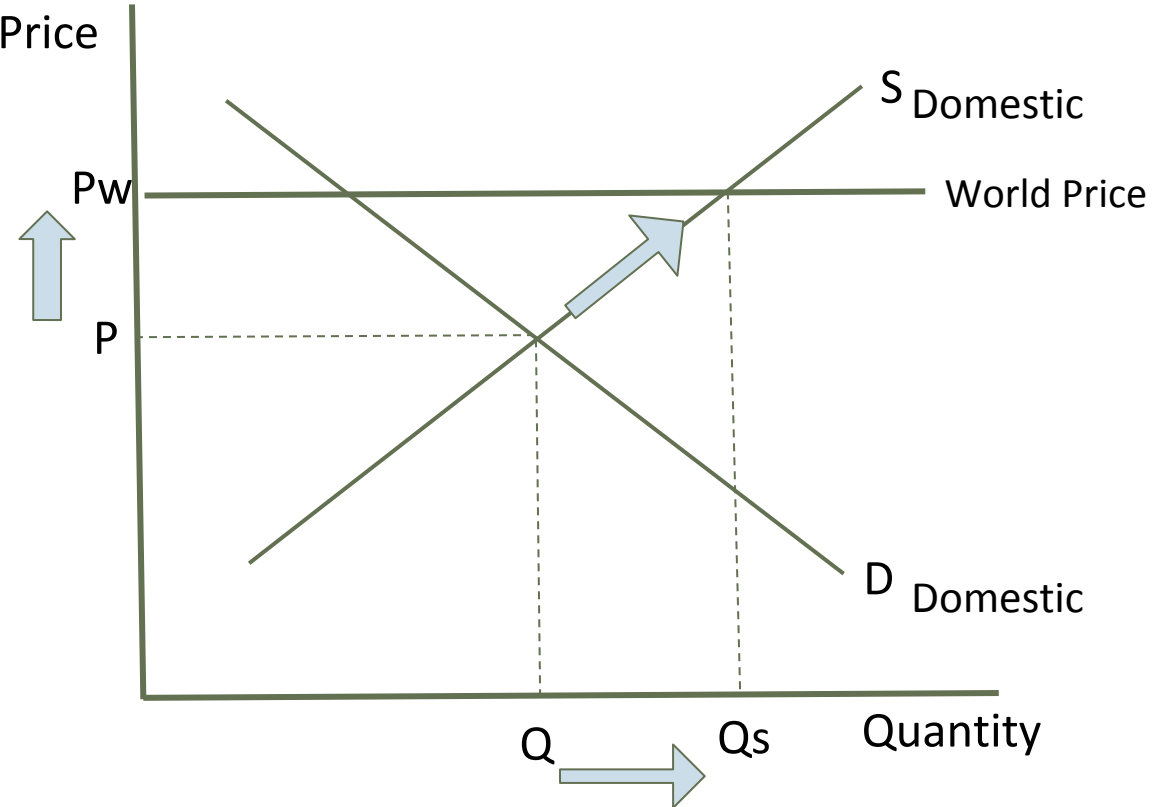
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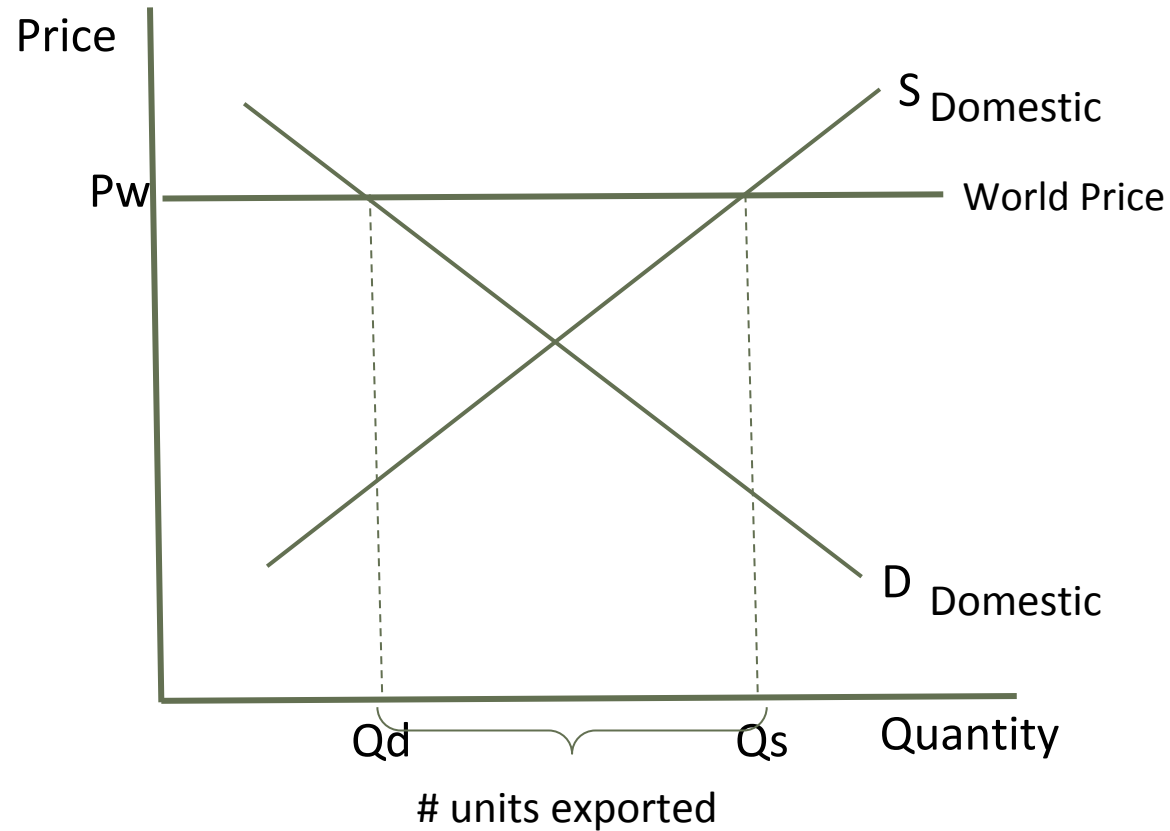
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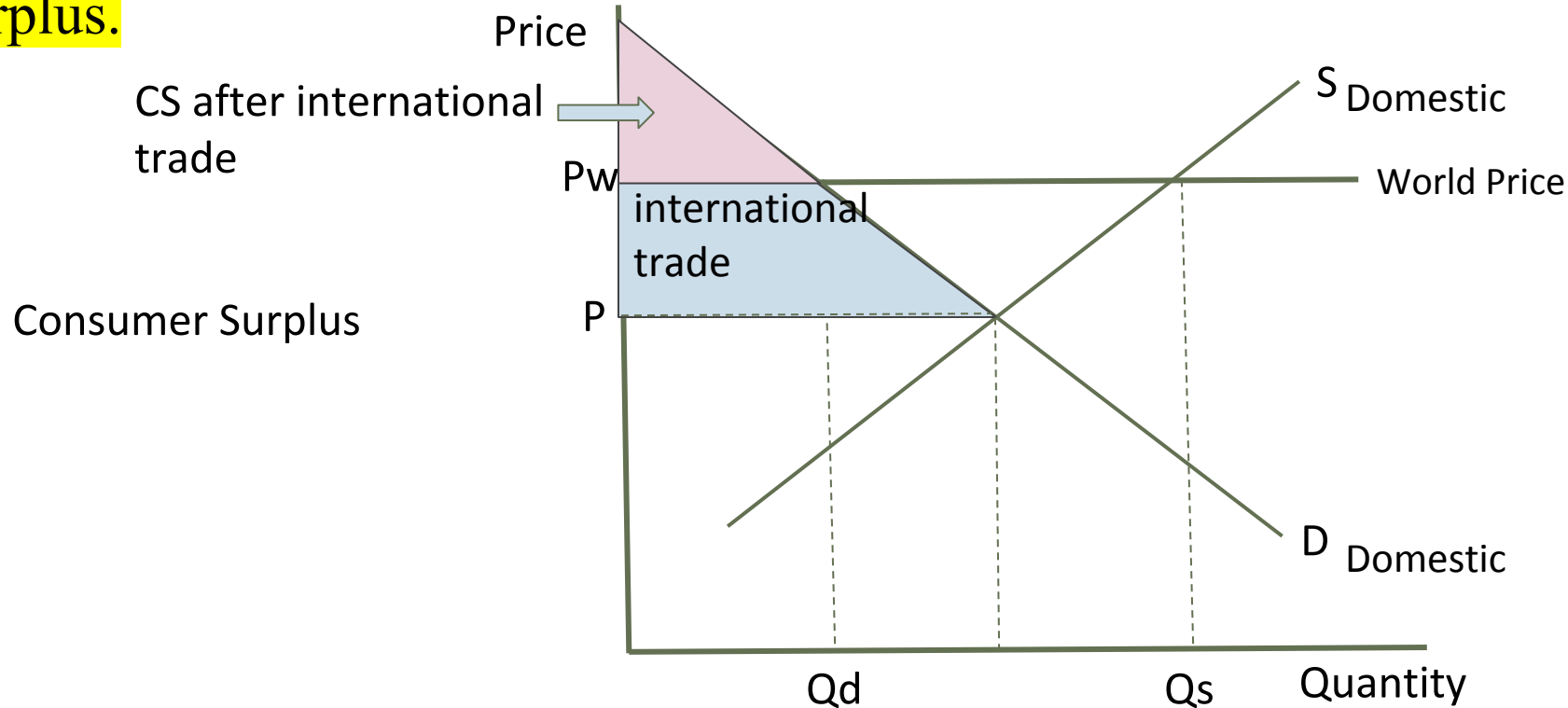


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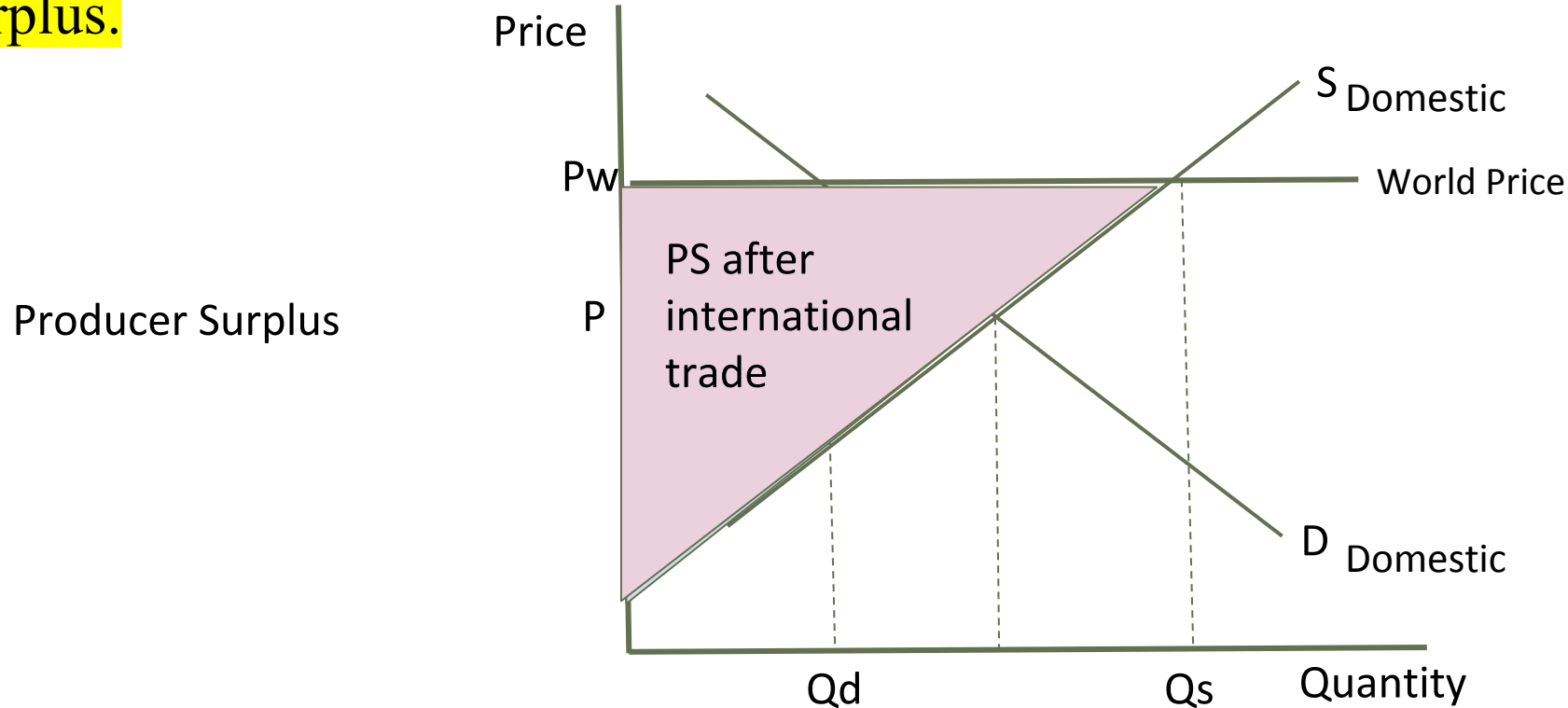


$Q_s - Q_d$  is number of units exported.

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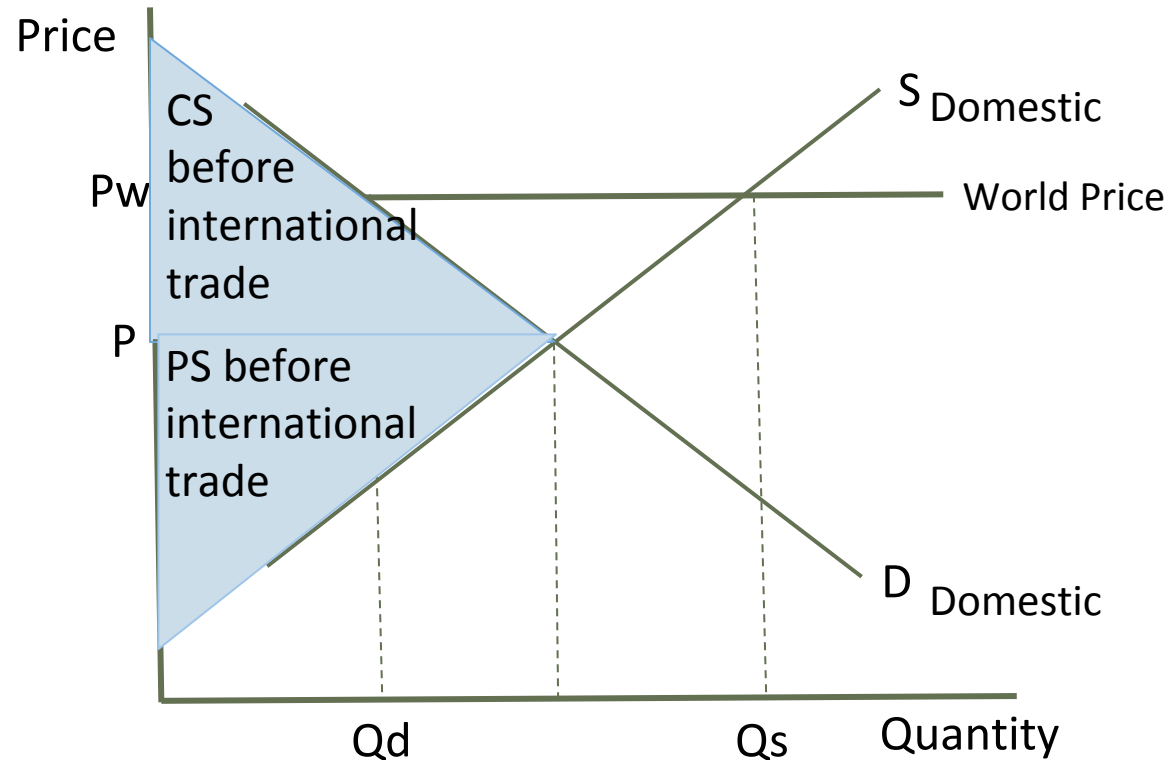
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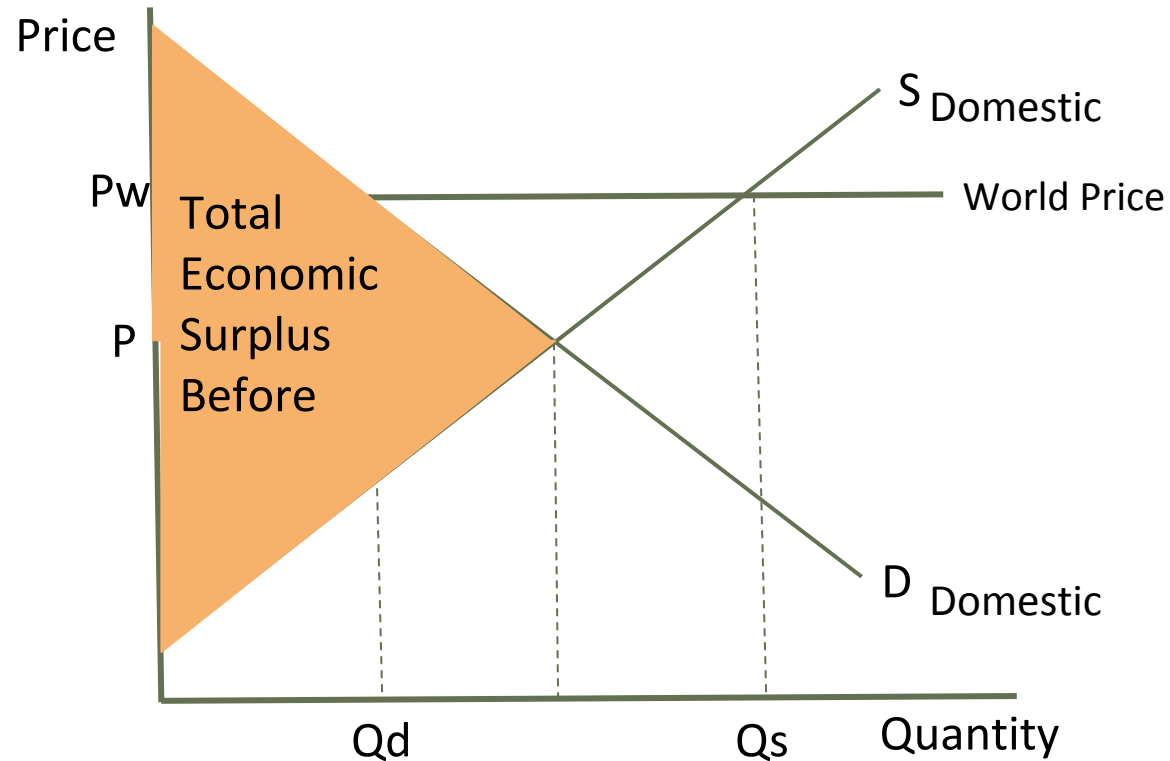
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Total Economic Surplus =  
CS + PS

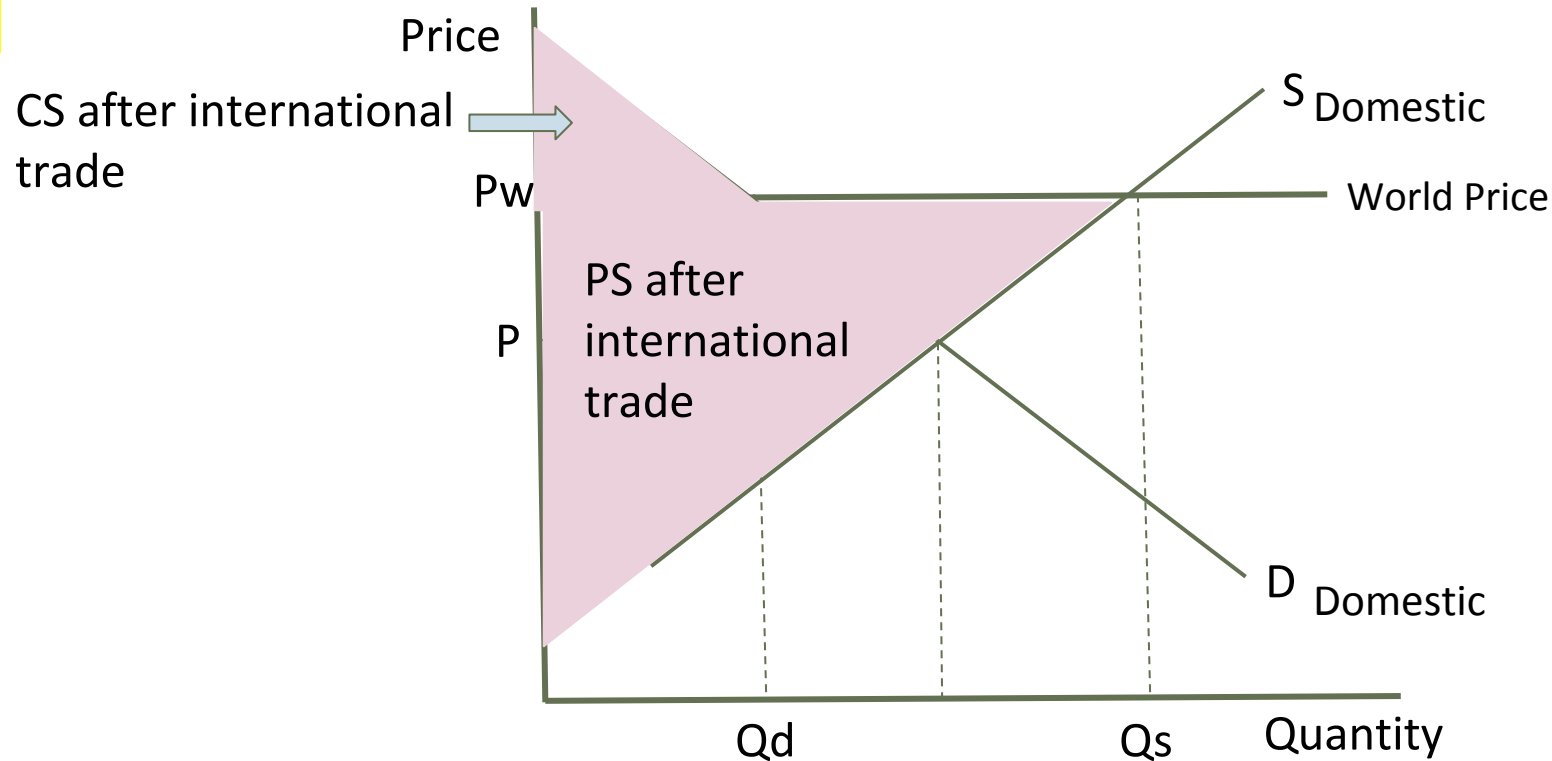


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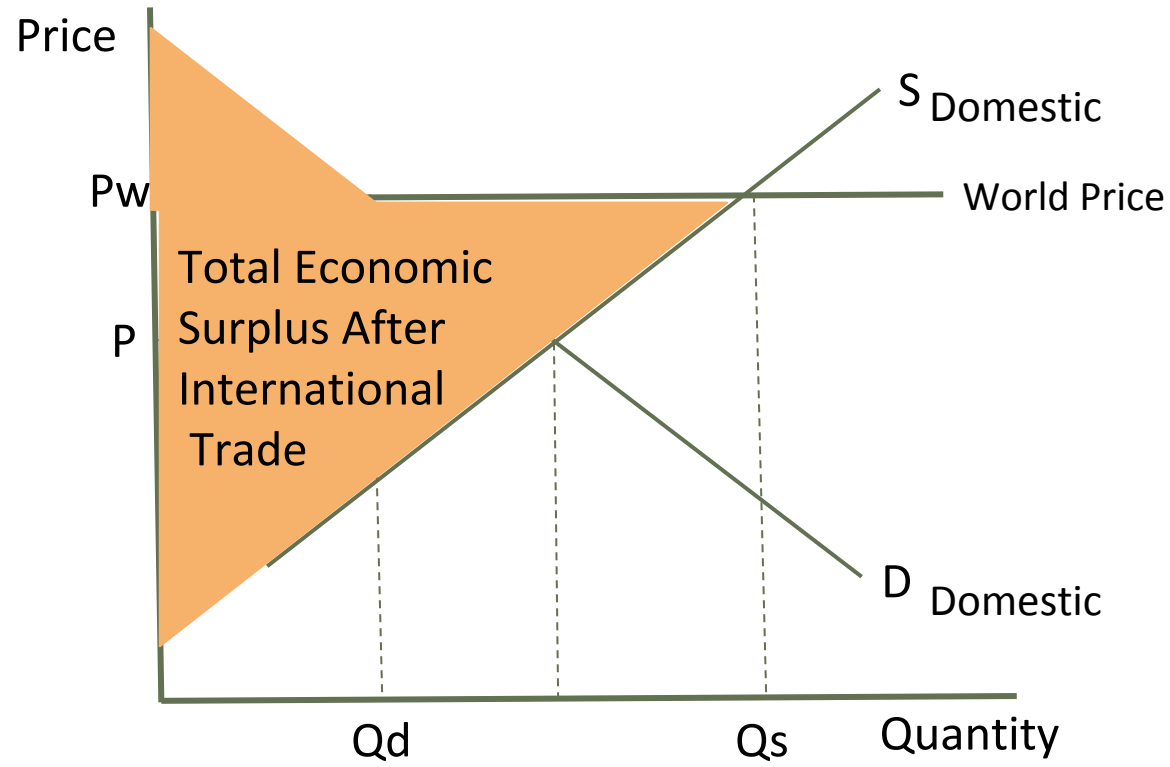


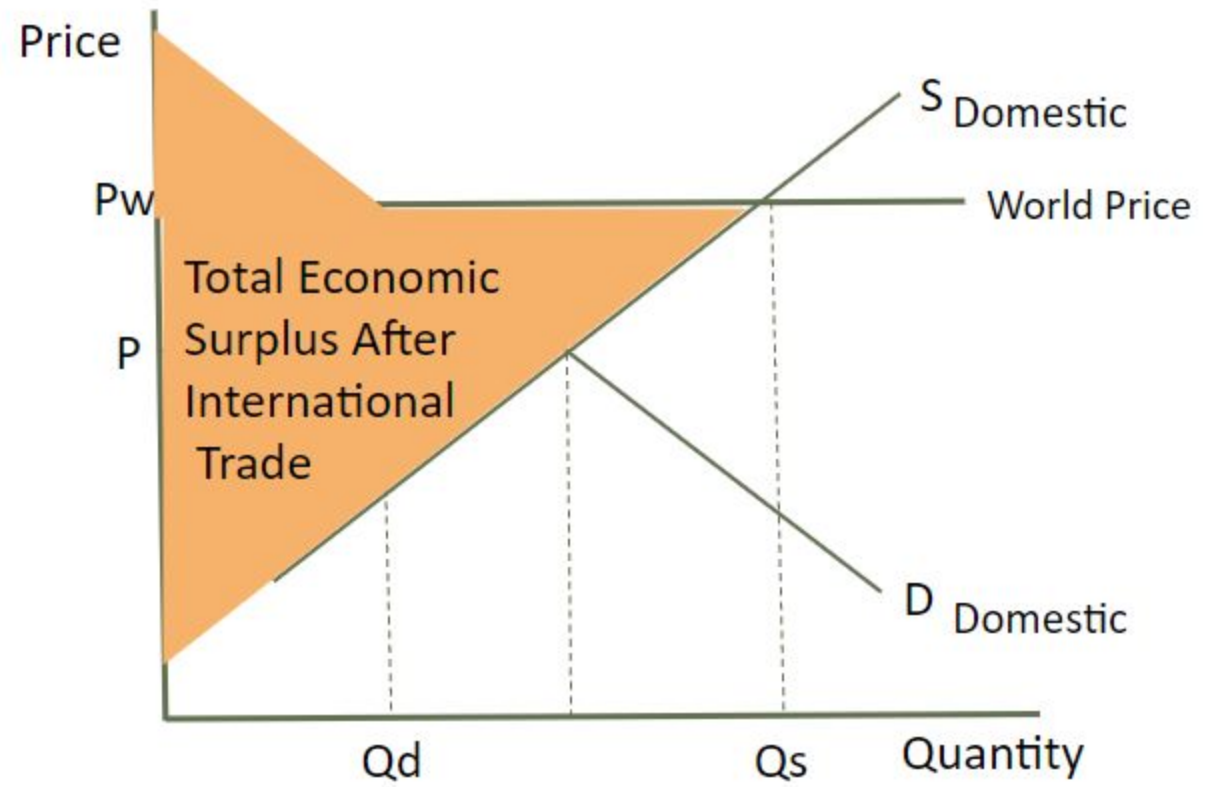
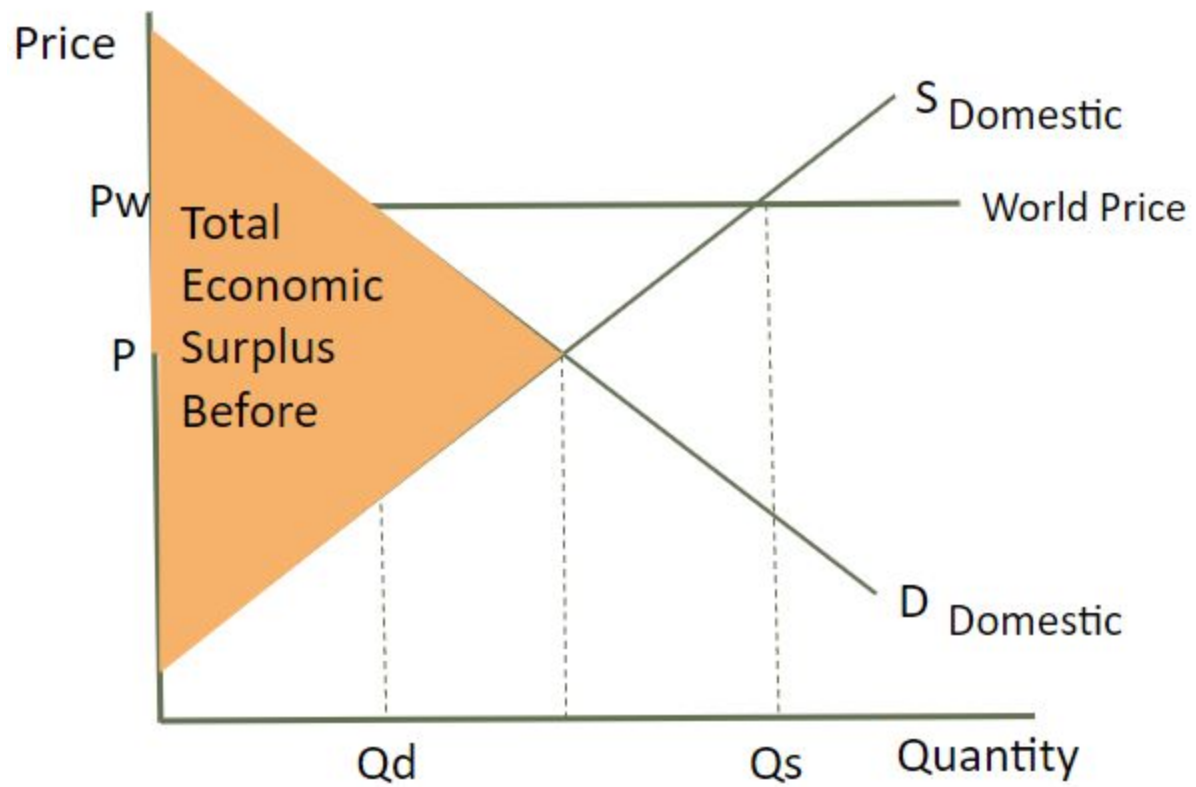
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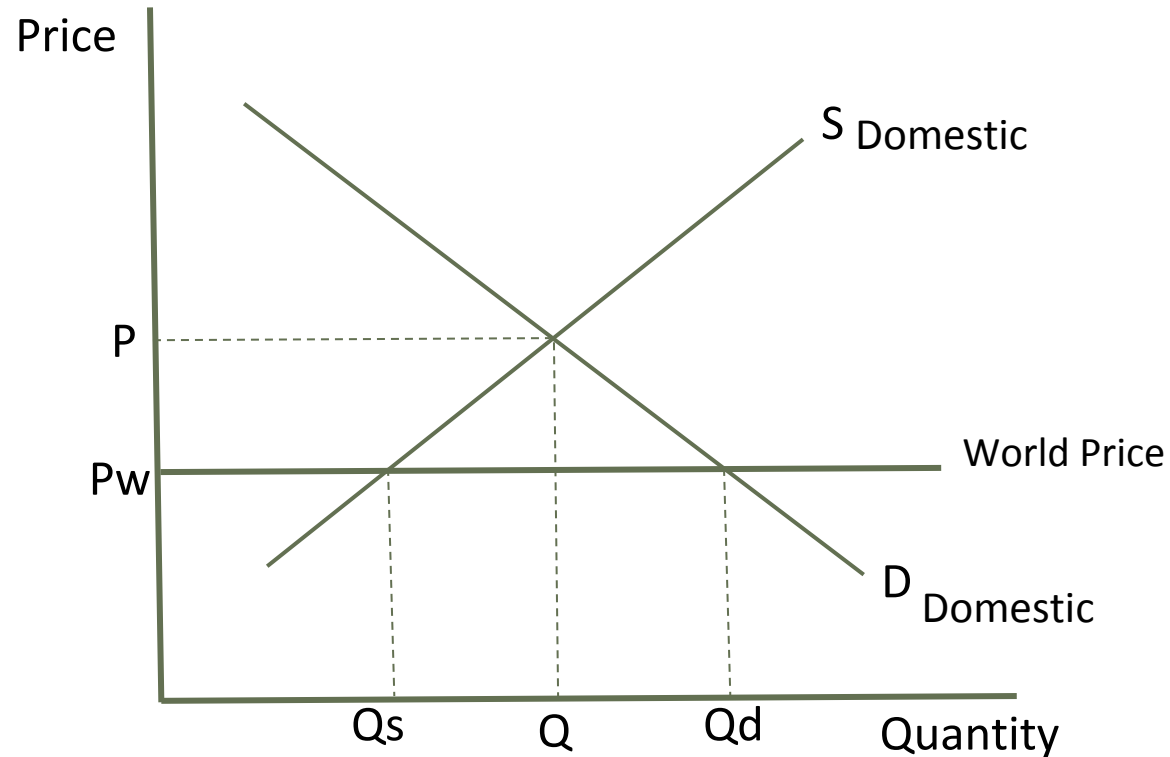
# Tariffs

EK: Tariffs, which governments sometimes use to influence international trade, affect domestic price, quantity, government revenue, and consumer surplus and total economic surplus.

A tariff is a tax on **imported** goods and services.

# Tariffs

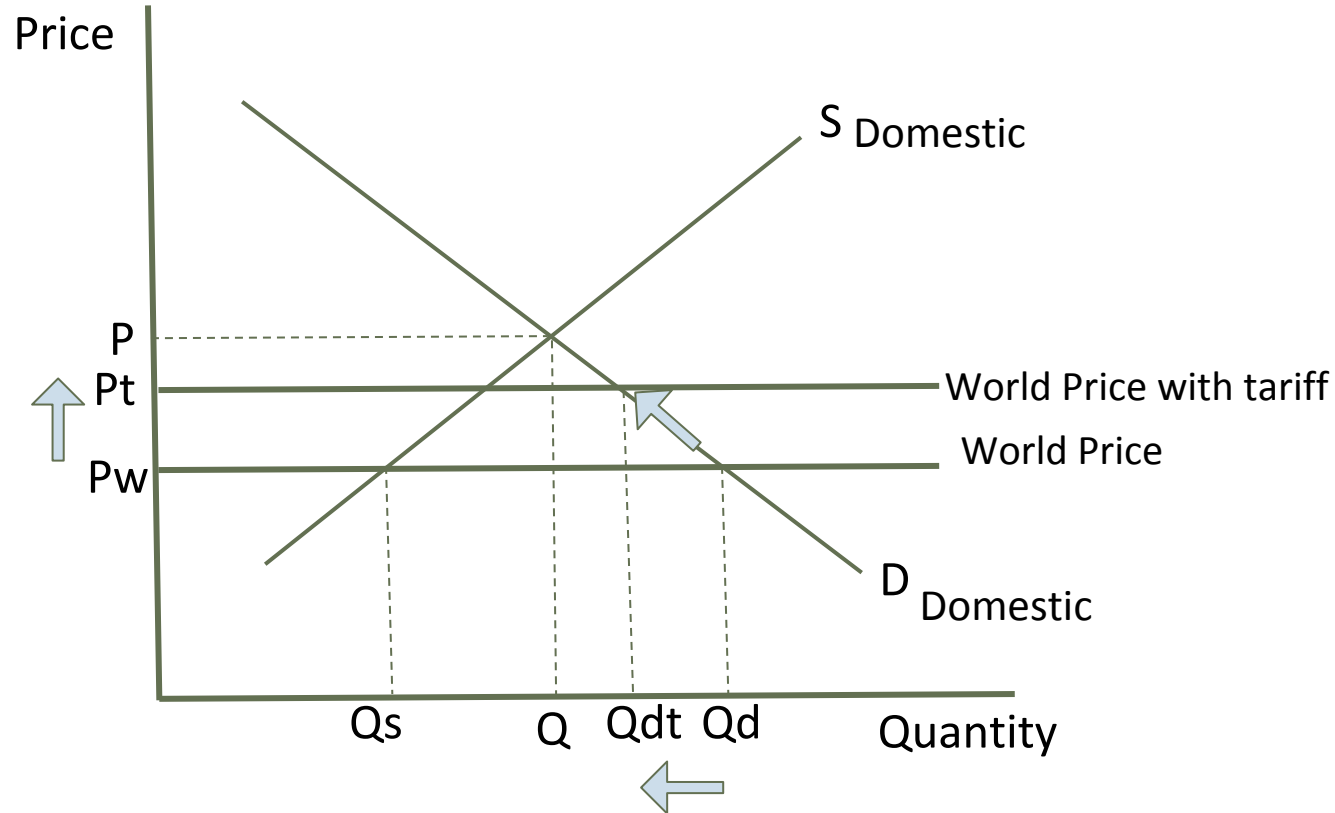
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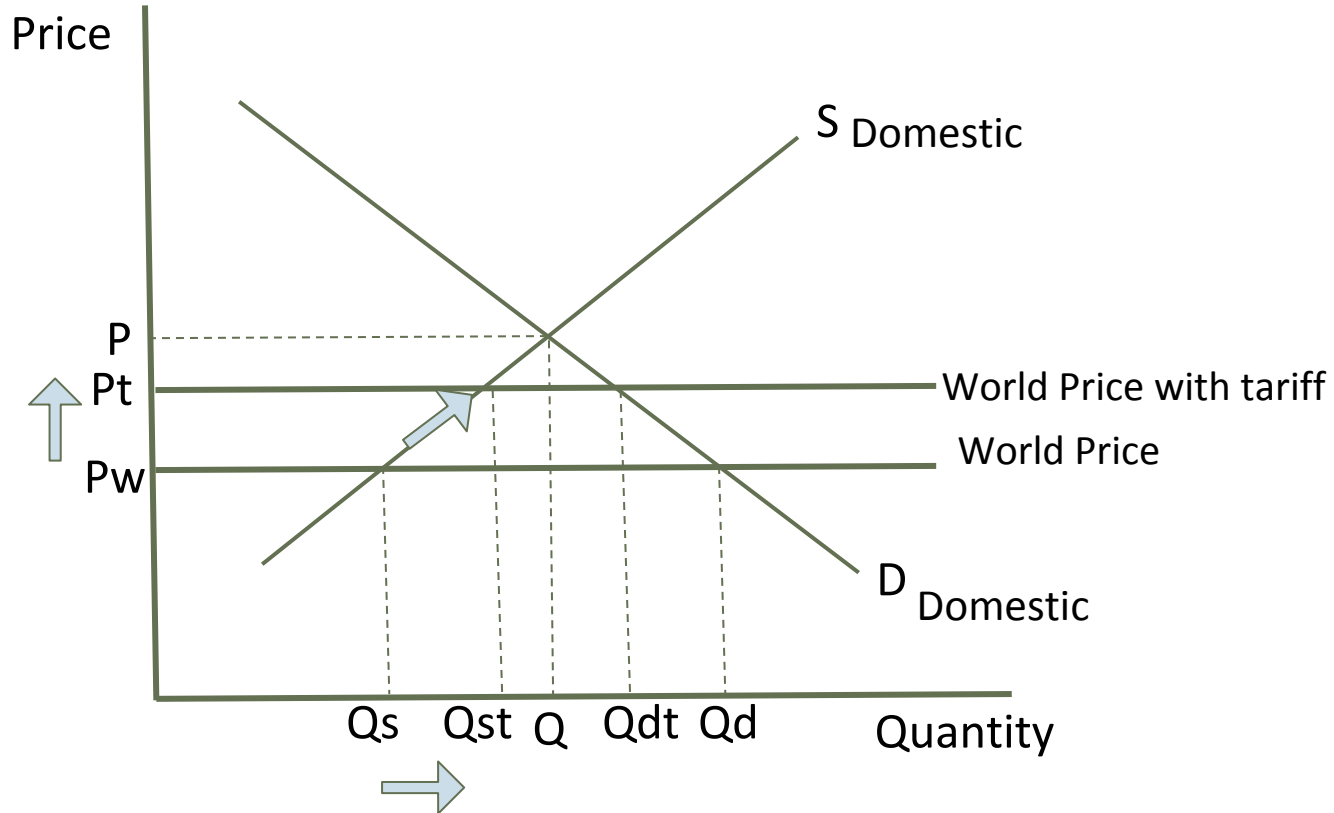
$P_t - P_w$  is the amount of the tariff





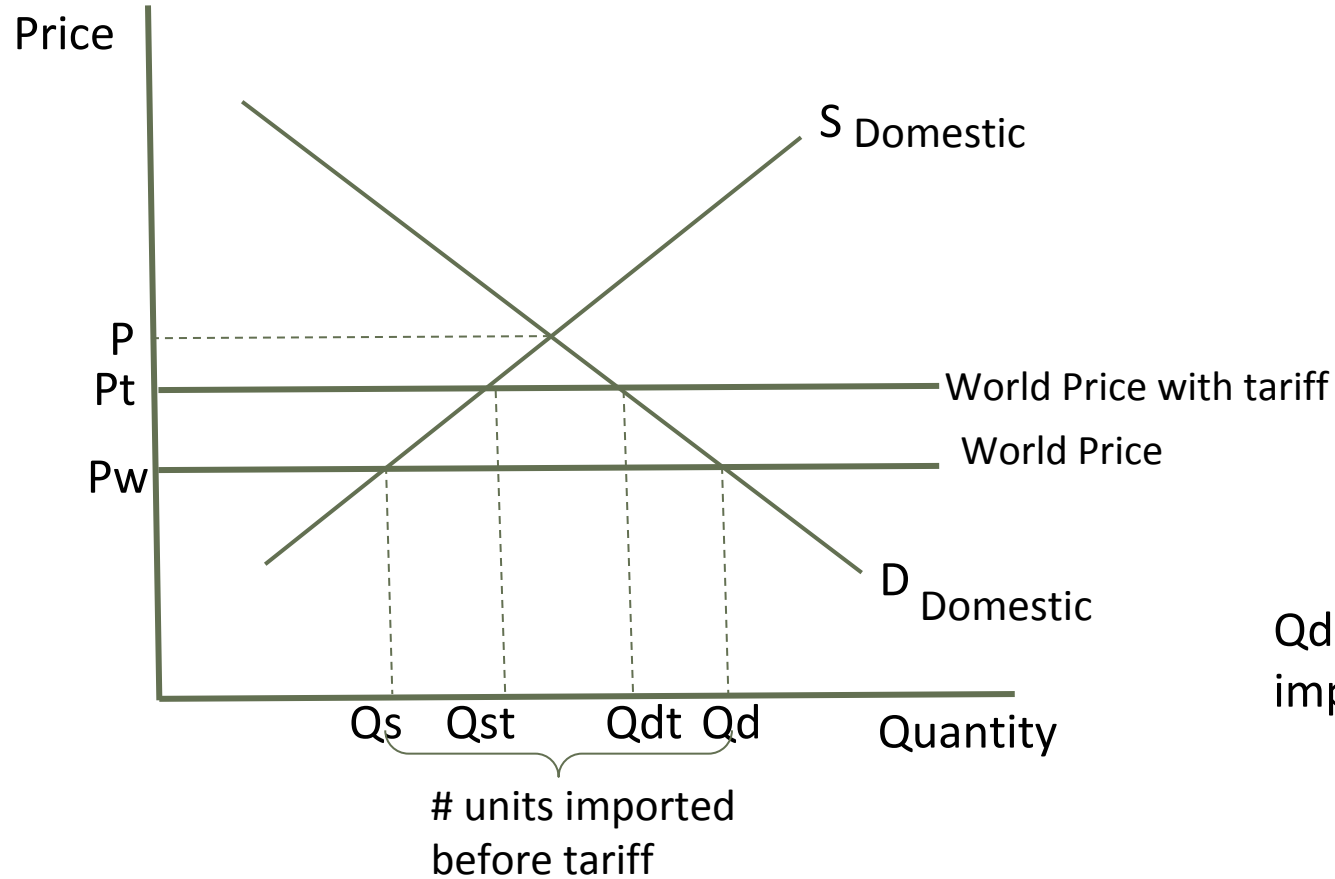
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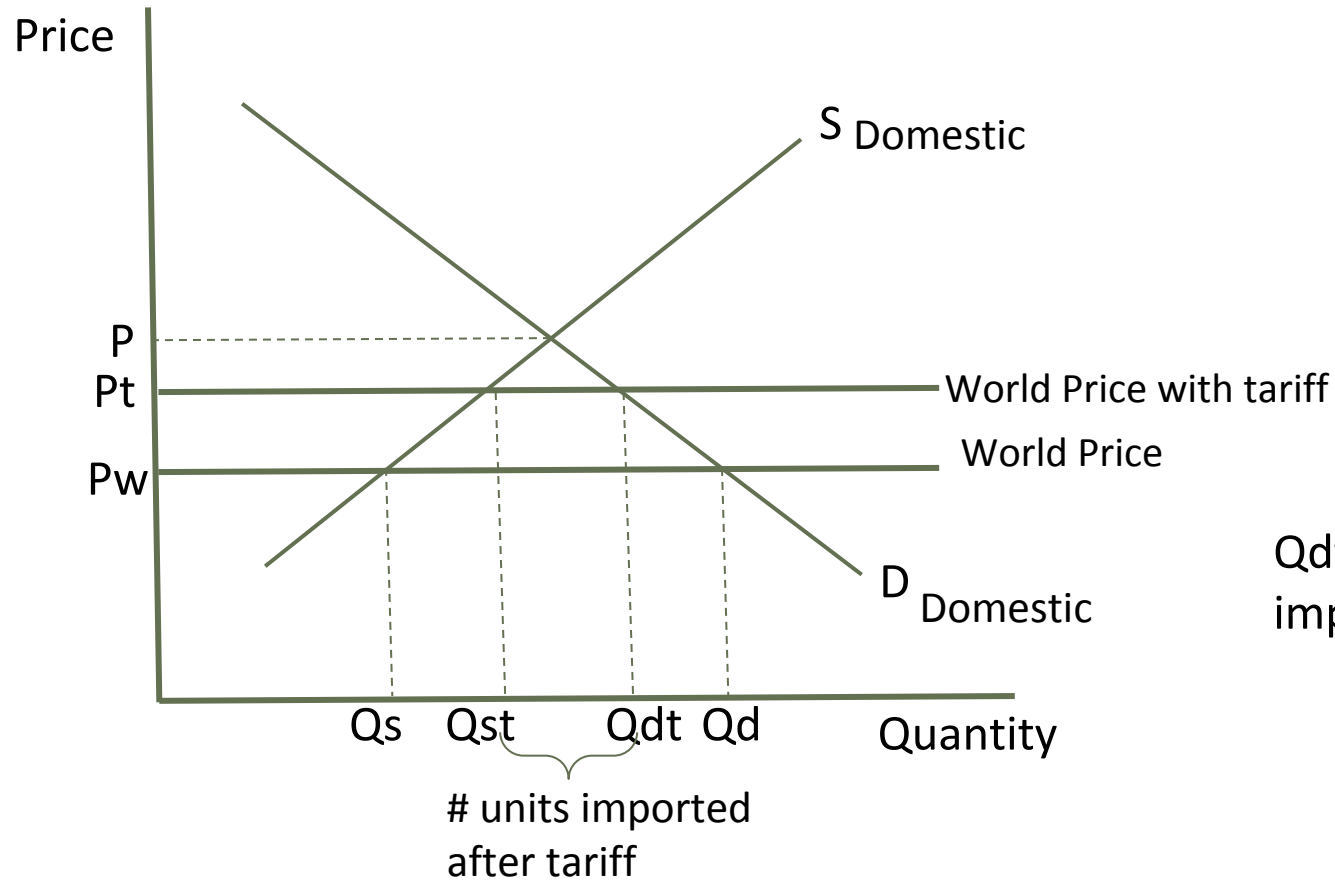
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$Q_d - Q_s$  is number of units imported before the tariff.

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$Q_{dt} - Q_{st}$  is number of units imported after the tariff.

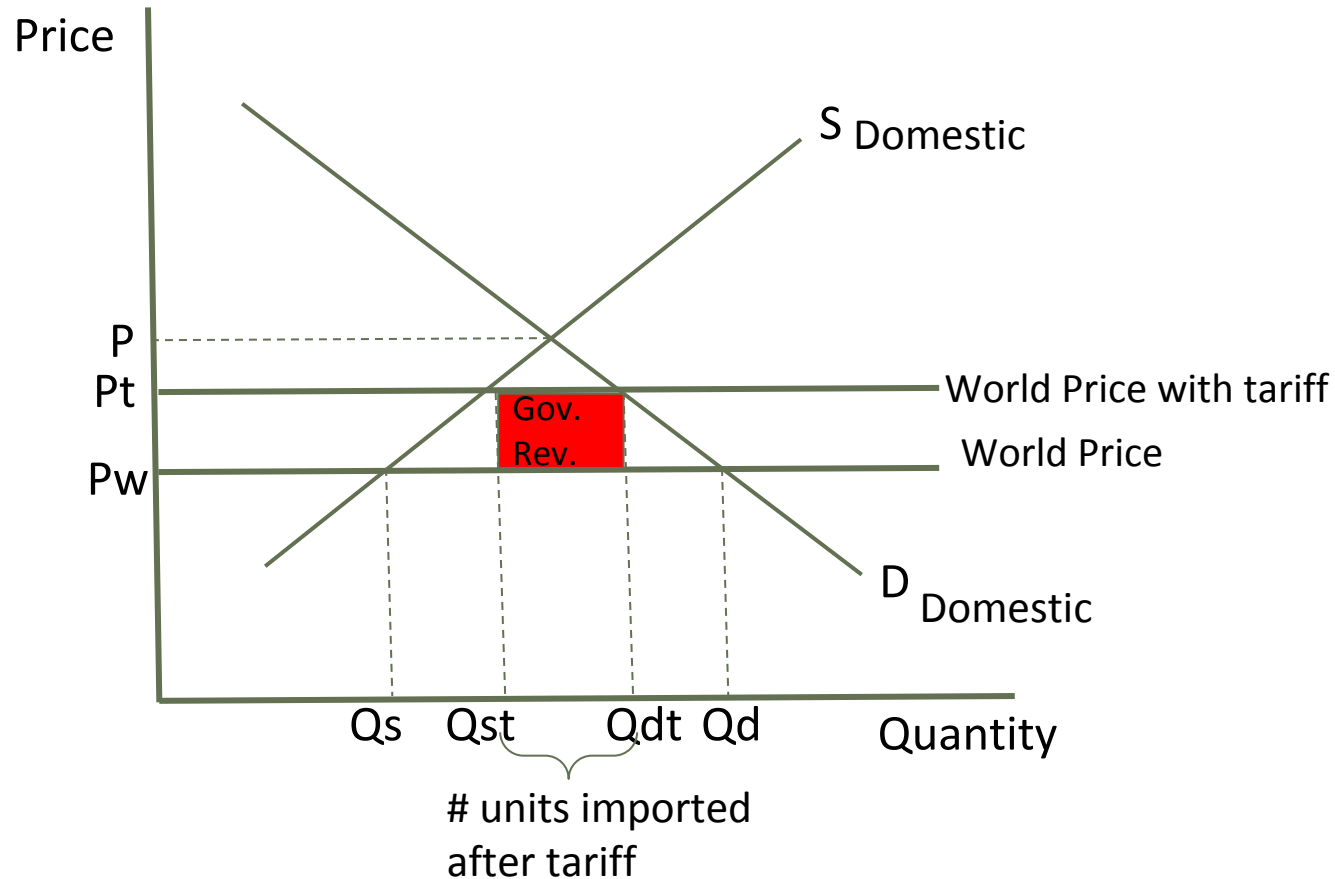
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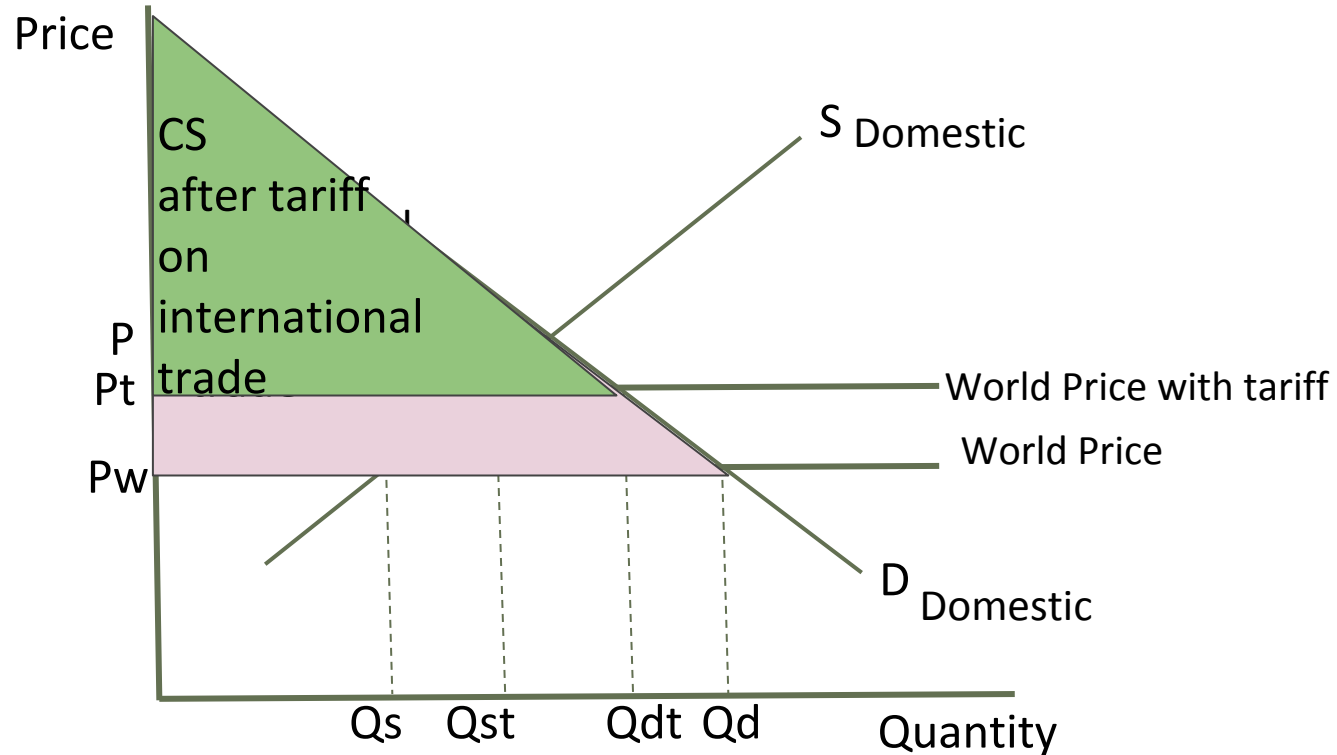
Tariff is only on imported goods and services

Government Revenue  
 $(P_t - P_w) (Q_{dt} - Q_{st})$



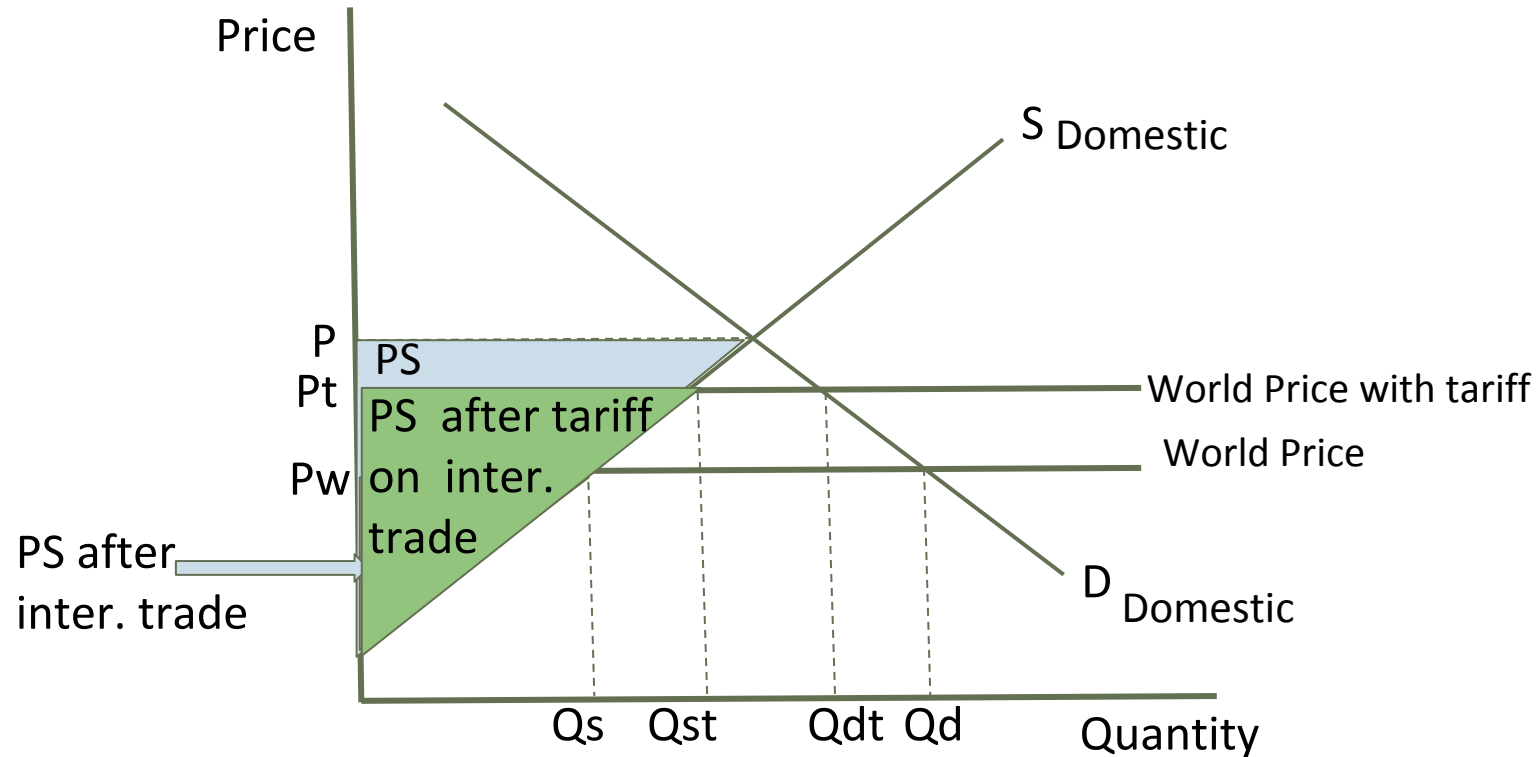
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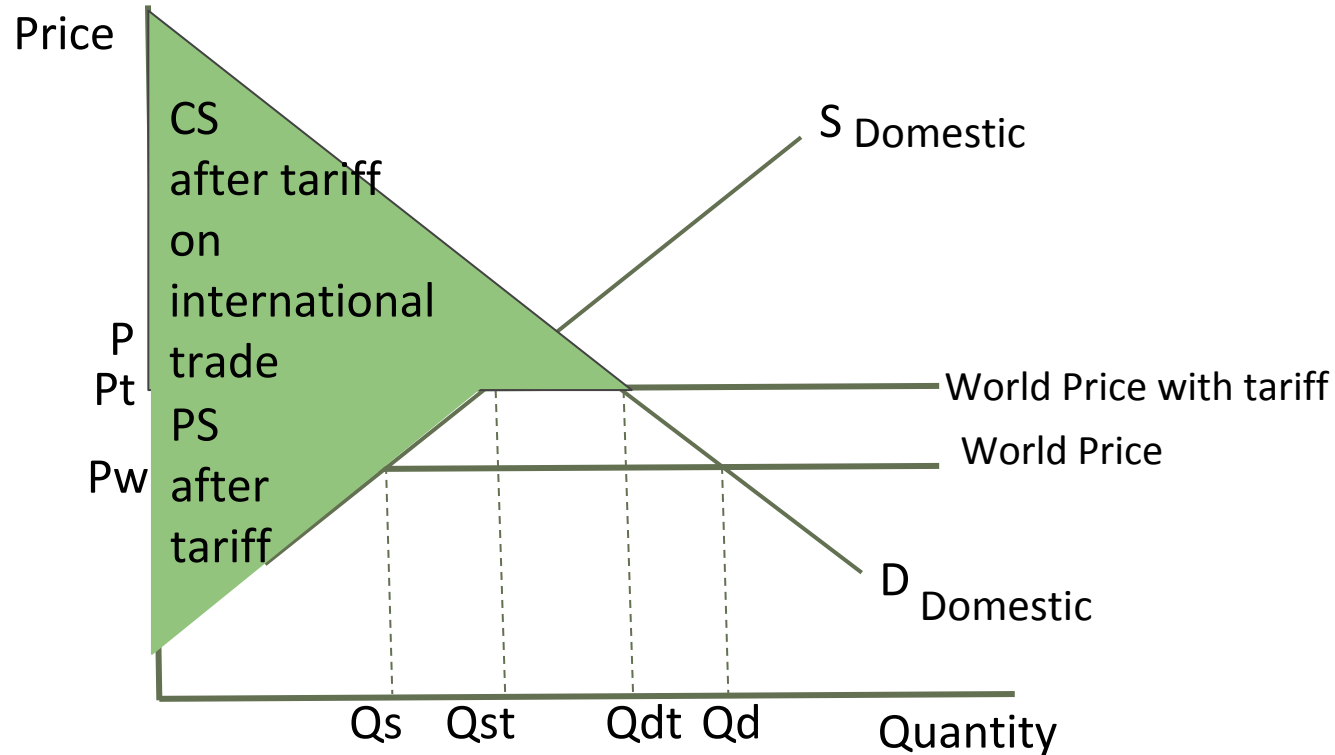
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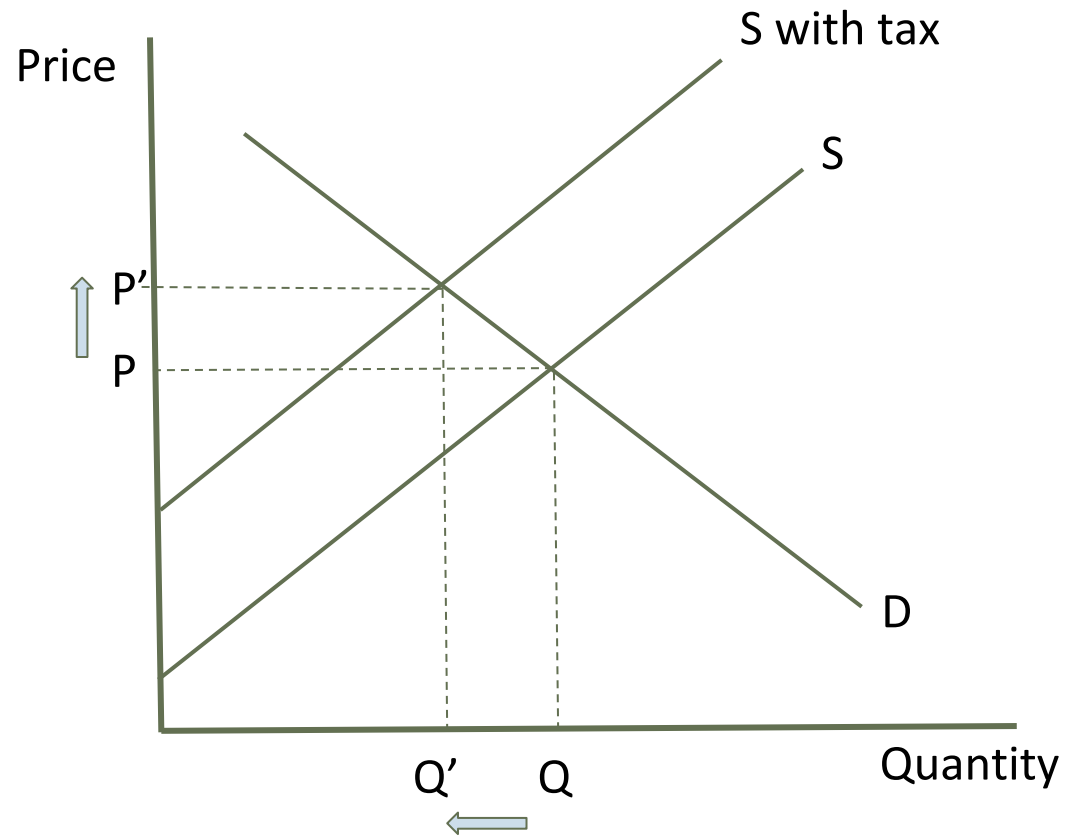
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Total Economic Surplus =  
CS + PS + \_\_\_\_\_

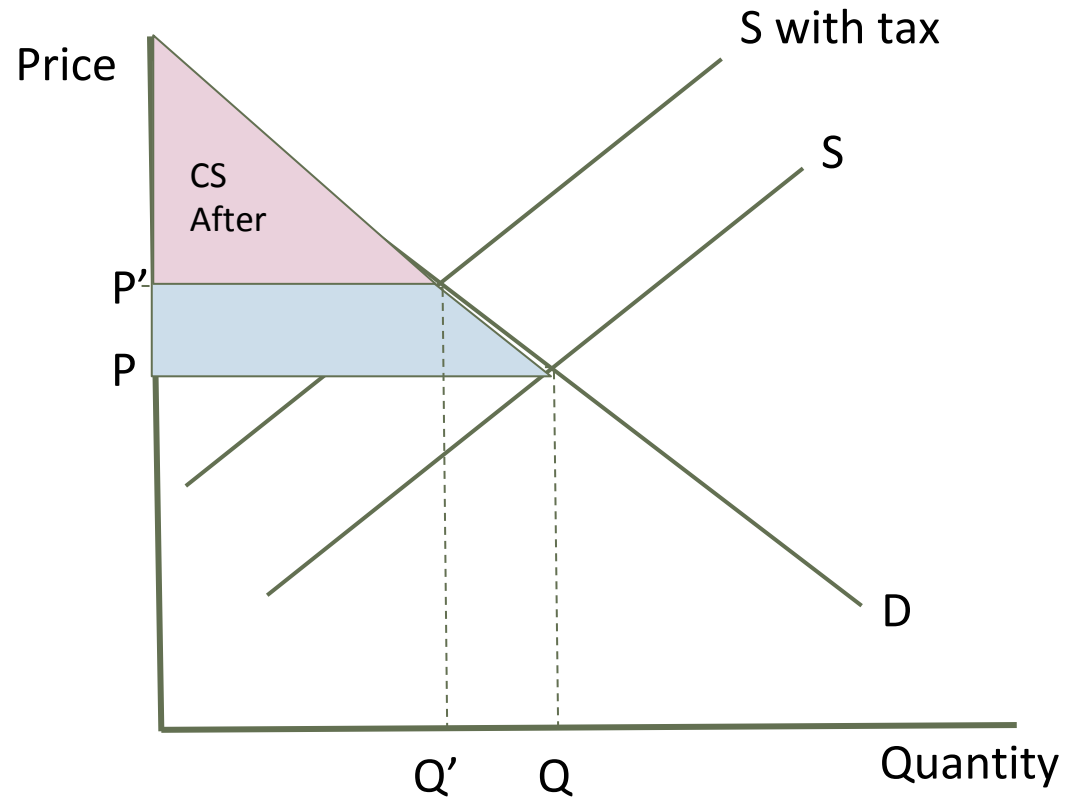


# Quick Review of Per Unit Tax

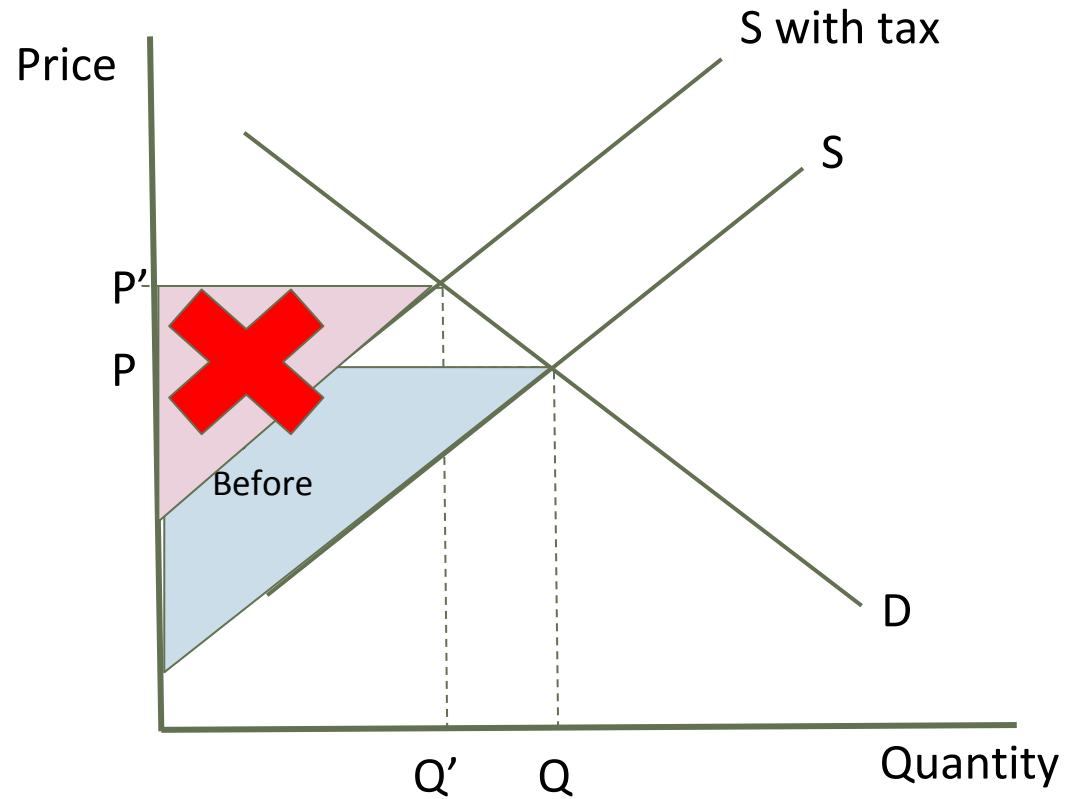




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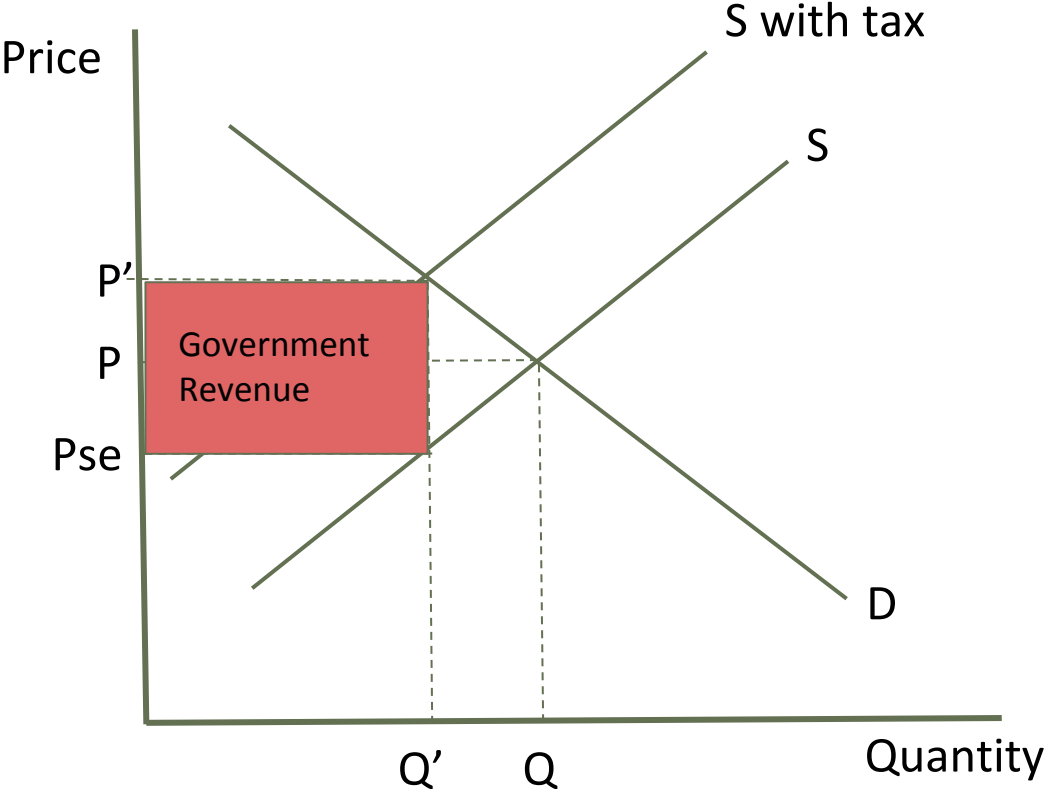


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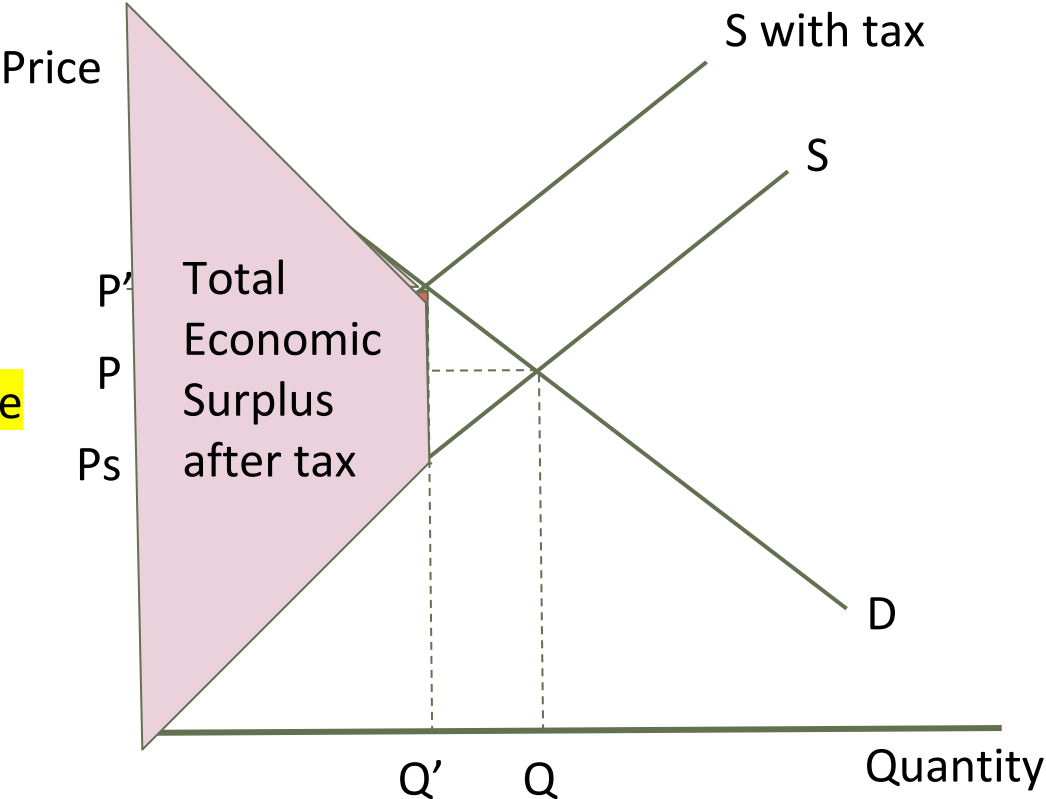
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$(P' - P_{se})Q'$  is  
Government Revenue



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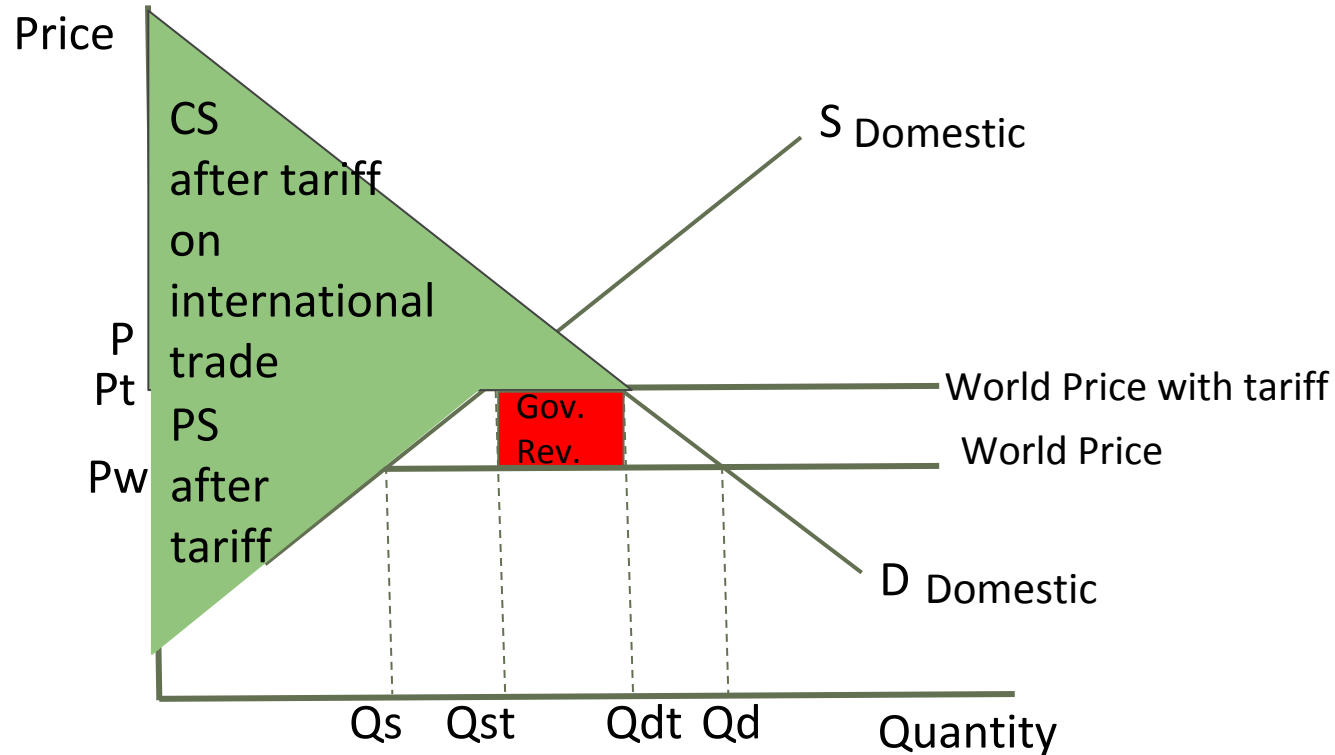
Total Surplus is  
CS + PS + **Government Revenue**



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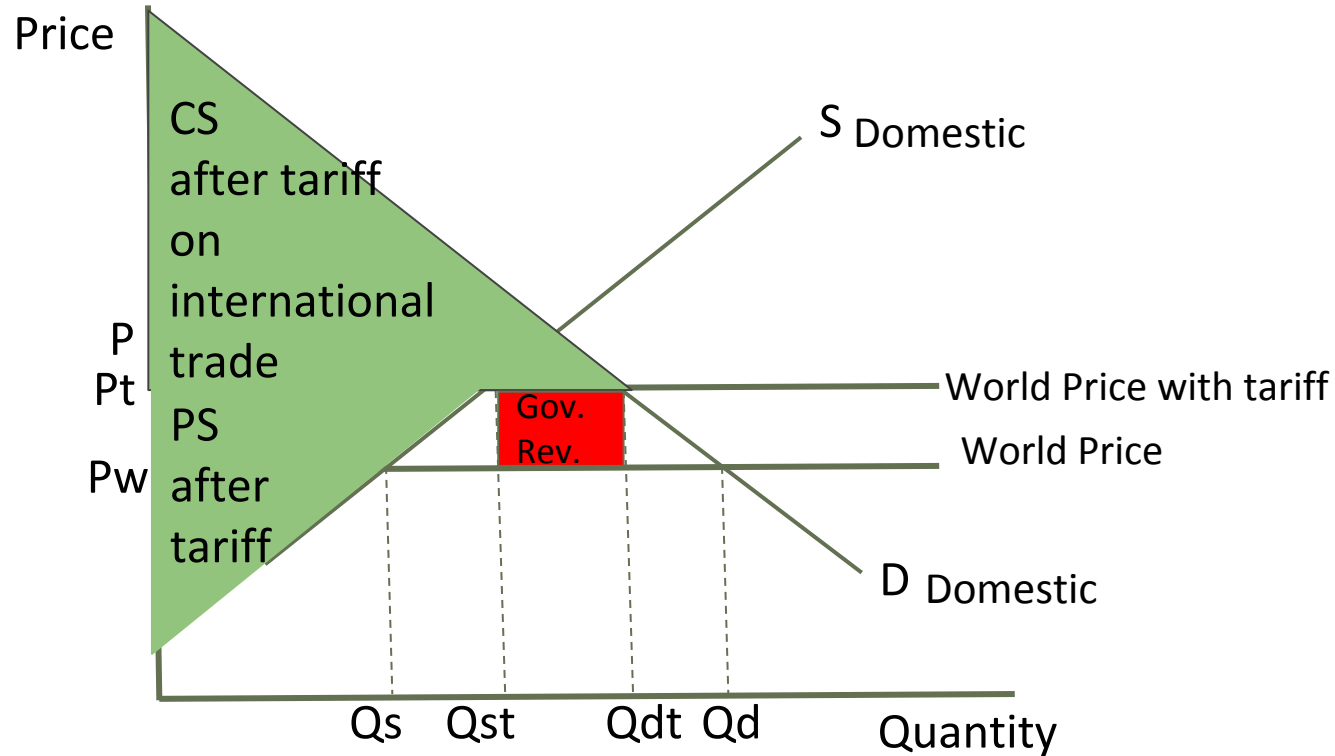
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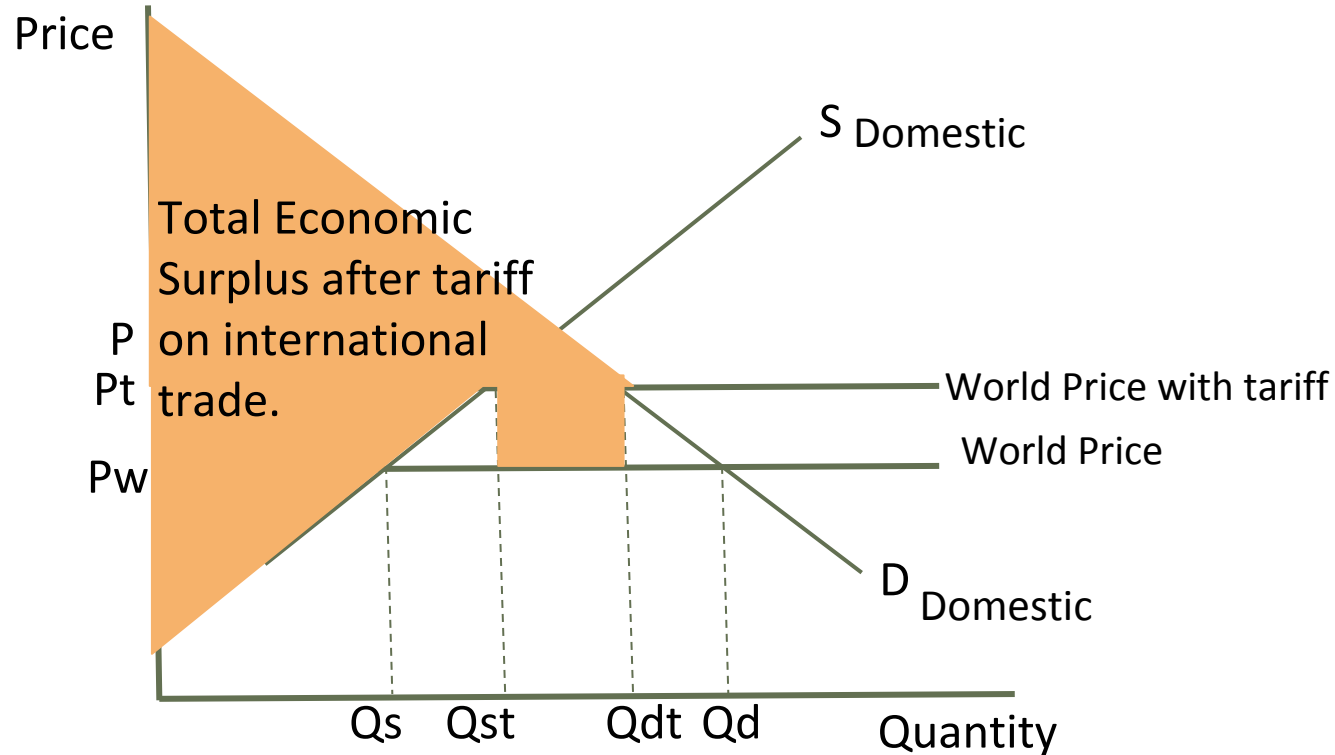
Total Economic Surplus =  
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# Tariffs

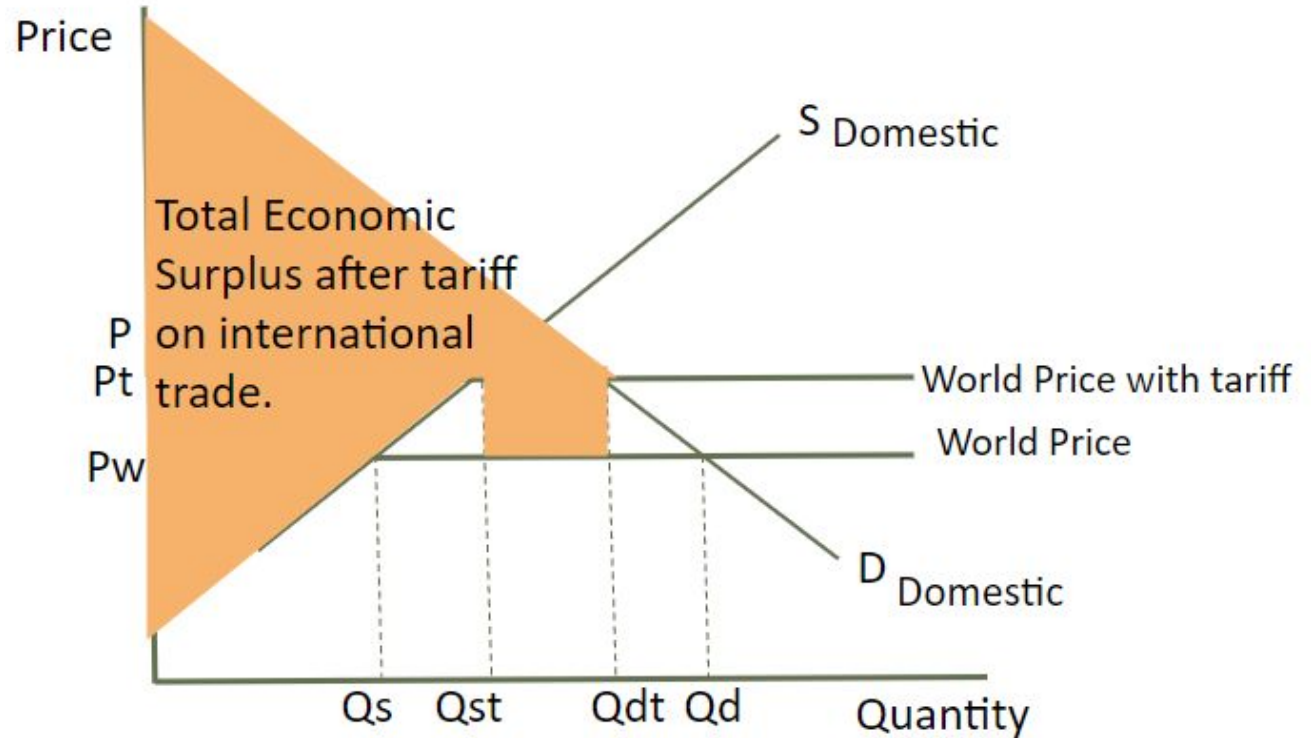
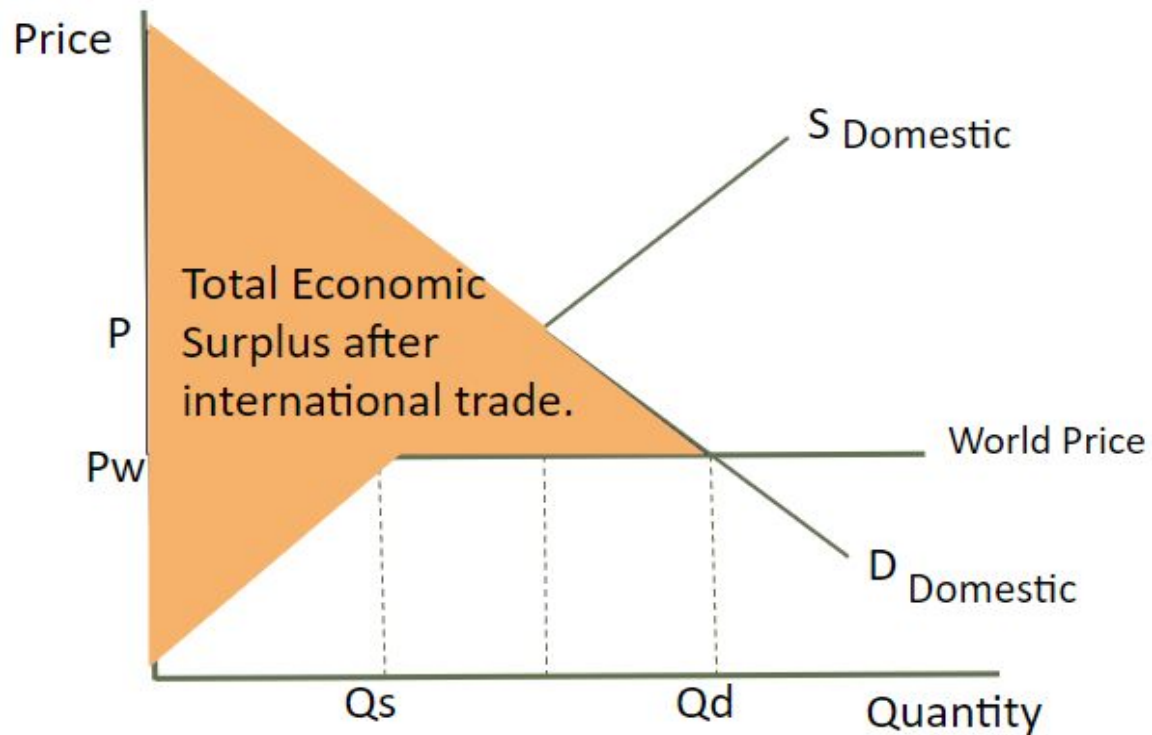
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$$\text{Total Economic Surplus} = \text{CS} + \text{PS} + \text{Gov. Revenue}$$



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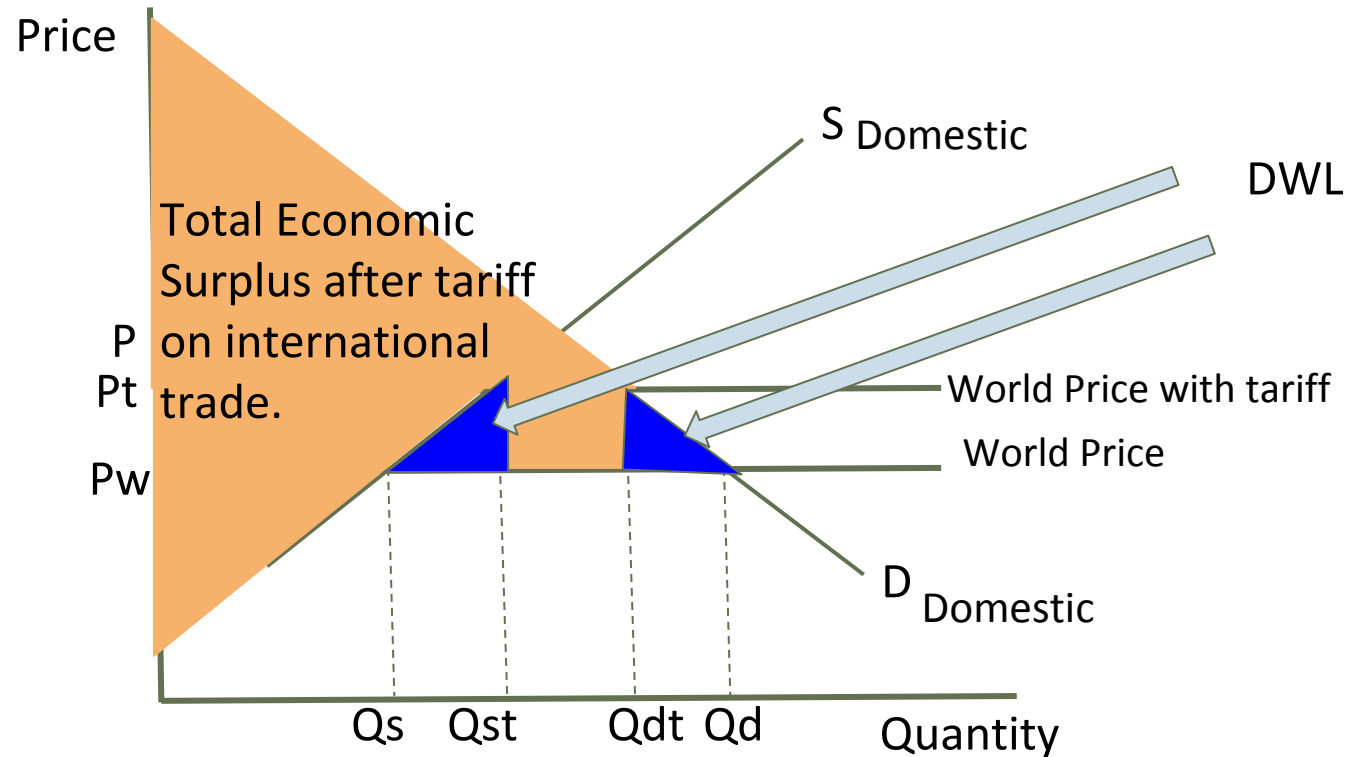


# Tariffs

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DWL is the loss of surplus.

The tariff took away some of the consumer surplus that was there before.



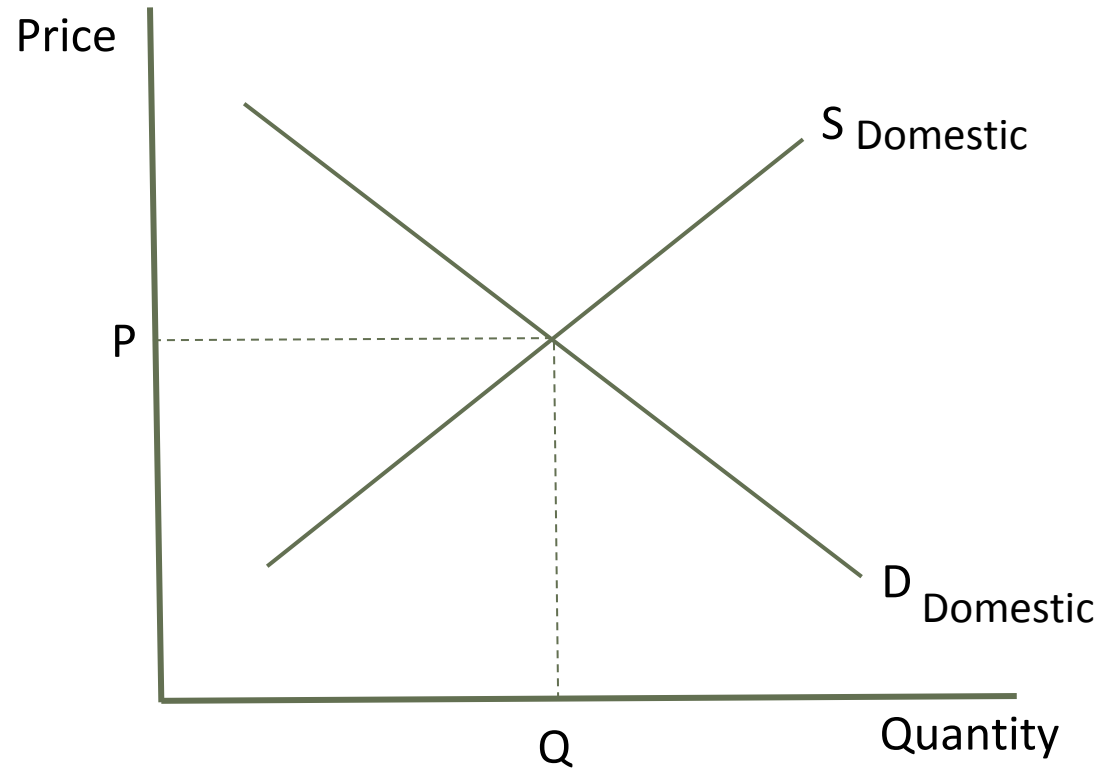
# Import Quota

EK: Quotas can be used to alter quantities produced and therefore affect price, consumer surplus, and total economic surplus.

The graphing of quotas is beyond the scope of the course and the AP Exam, but understanding how quotas affect quantities produced is within the scope.

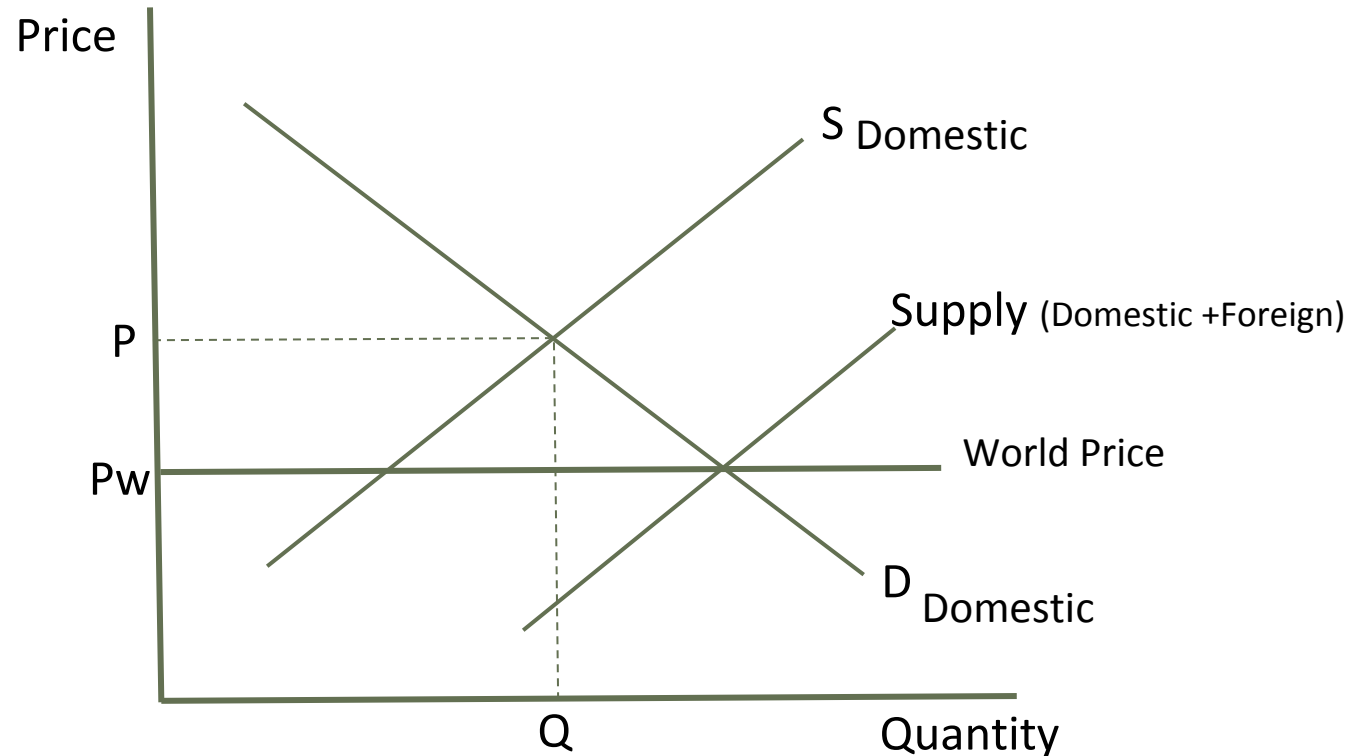
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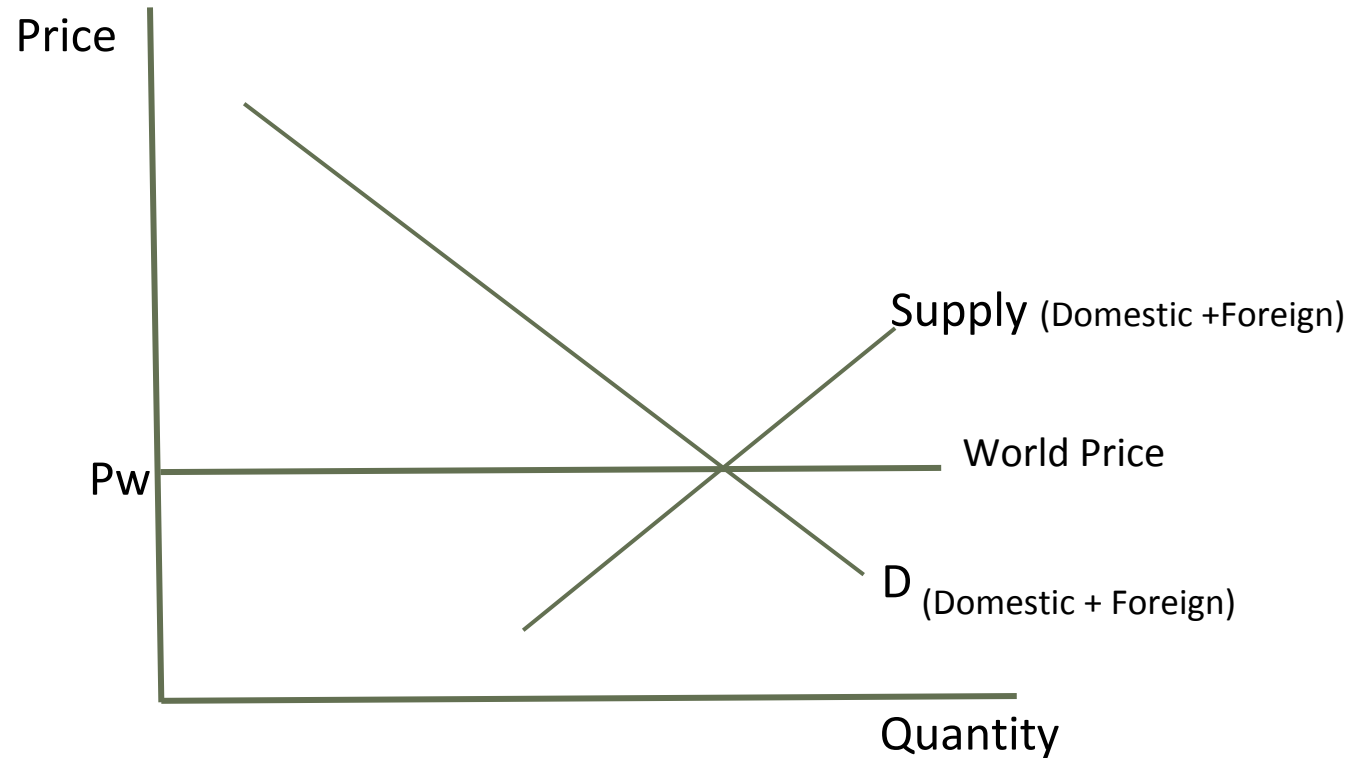
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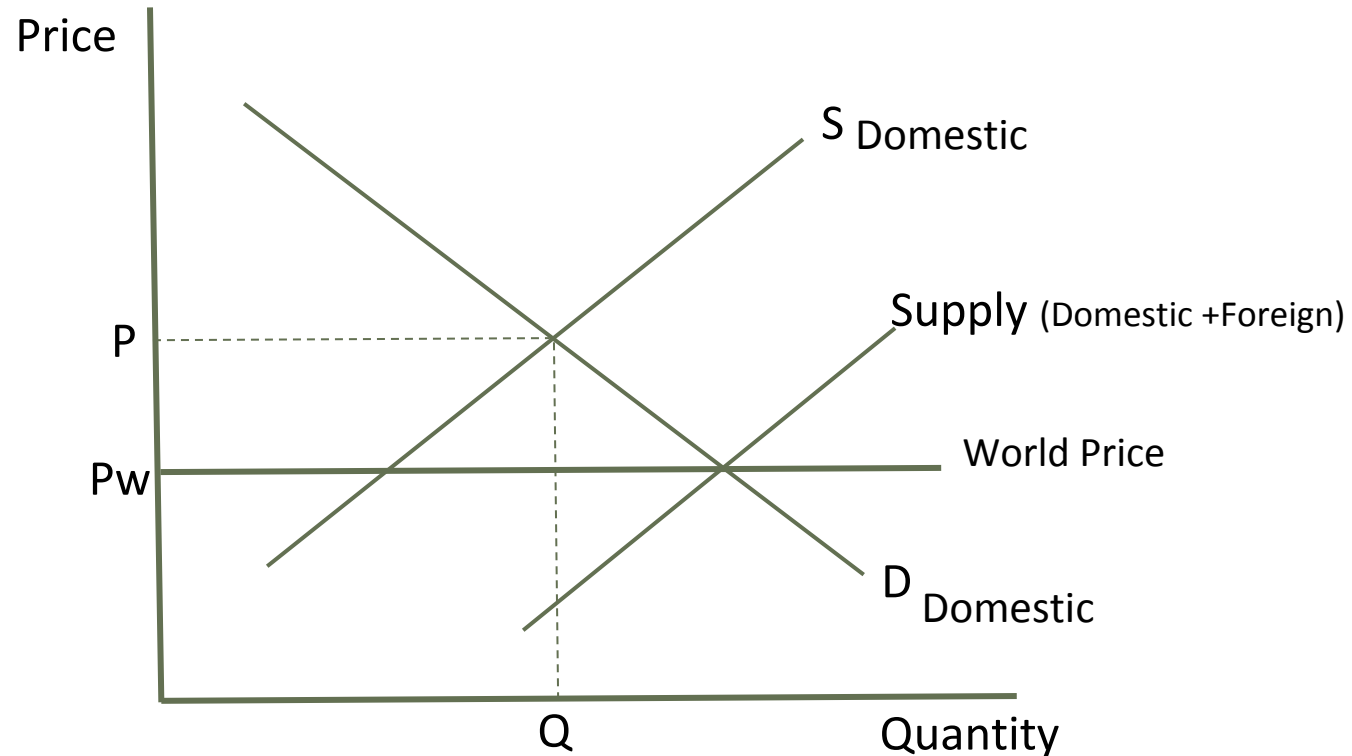
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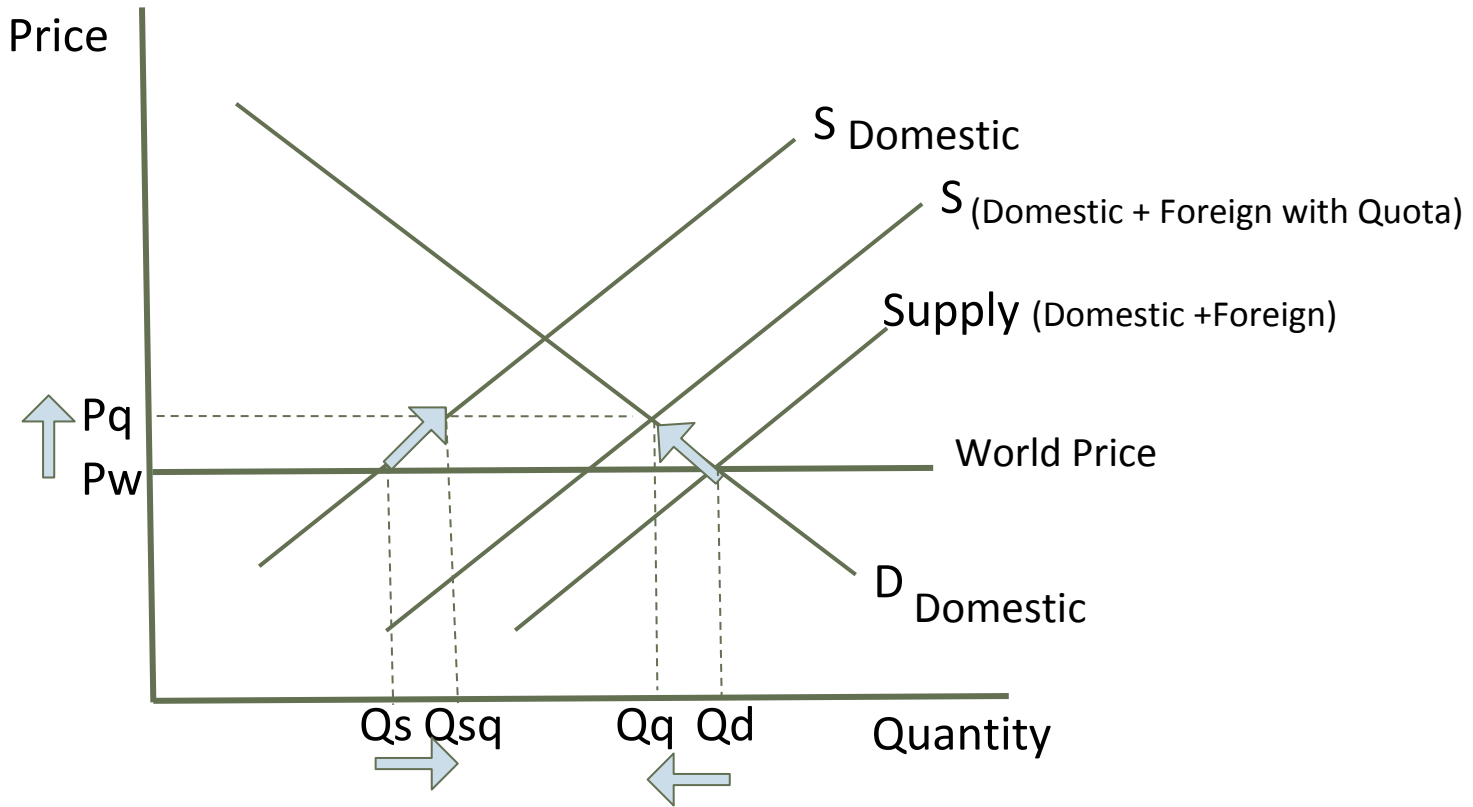
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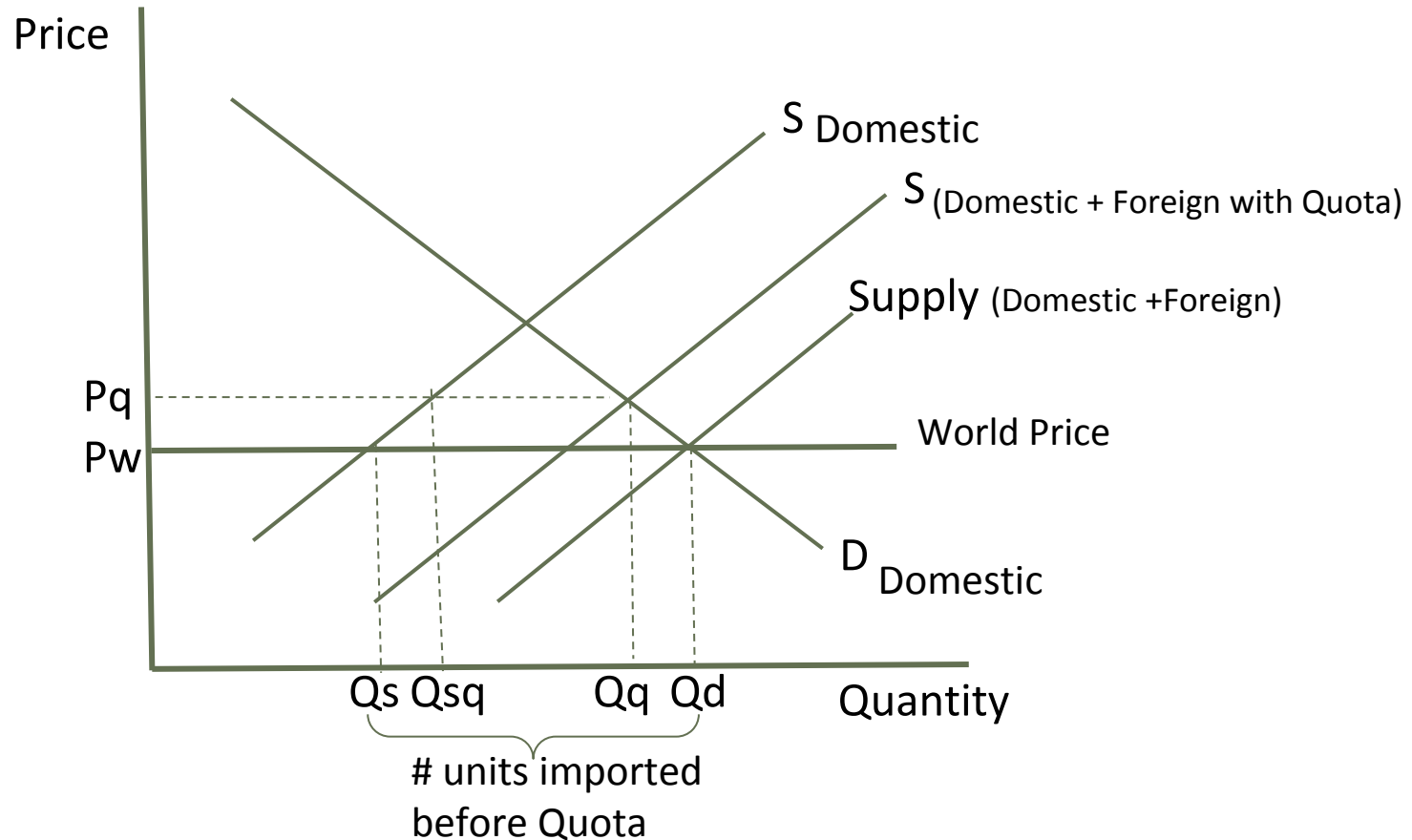
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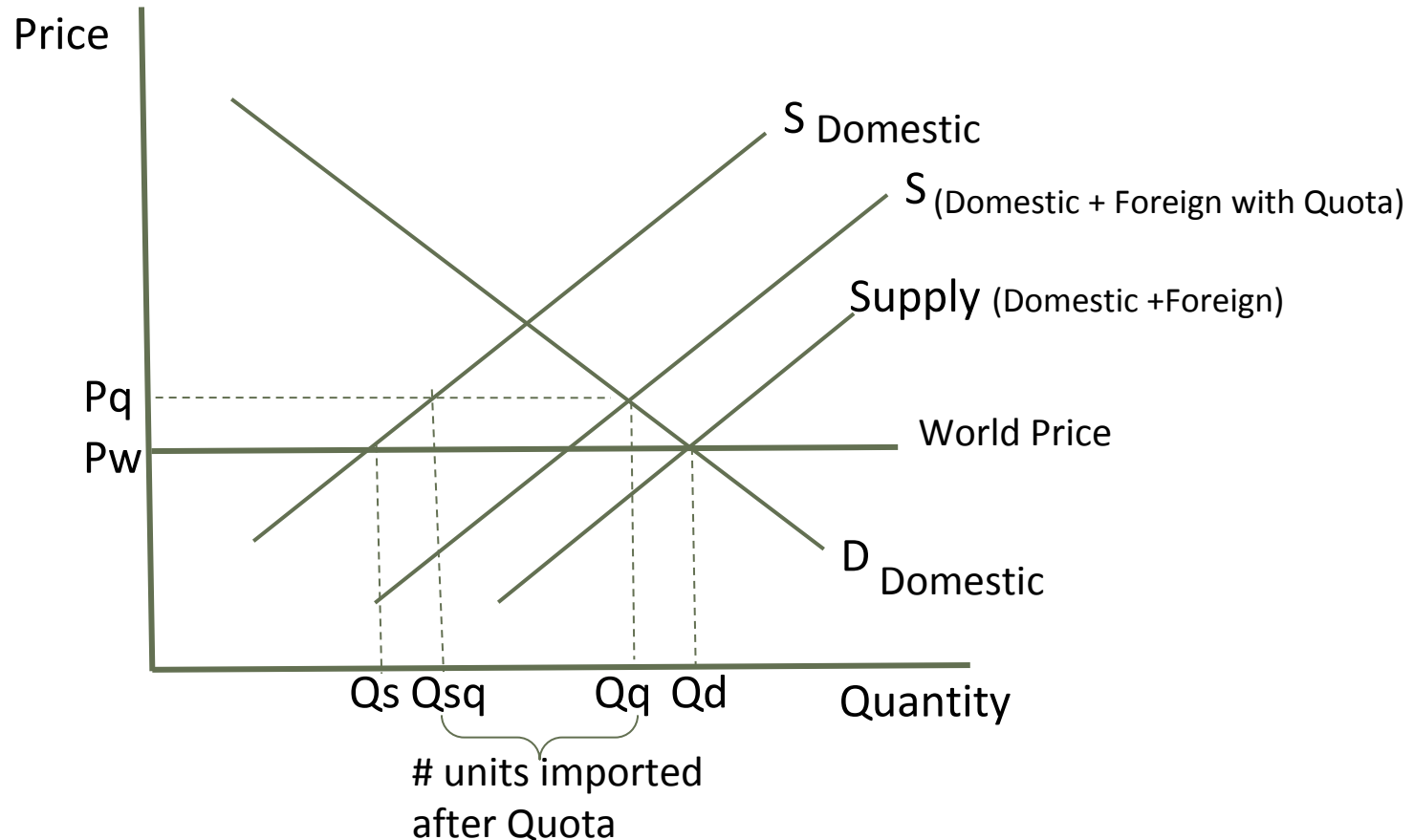


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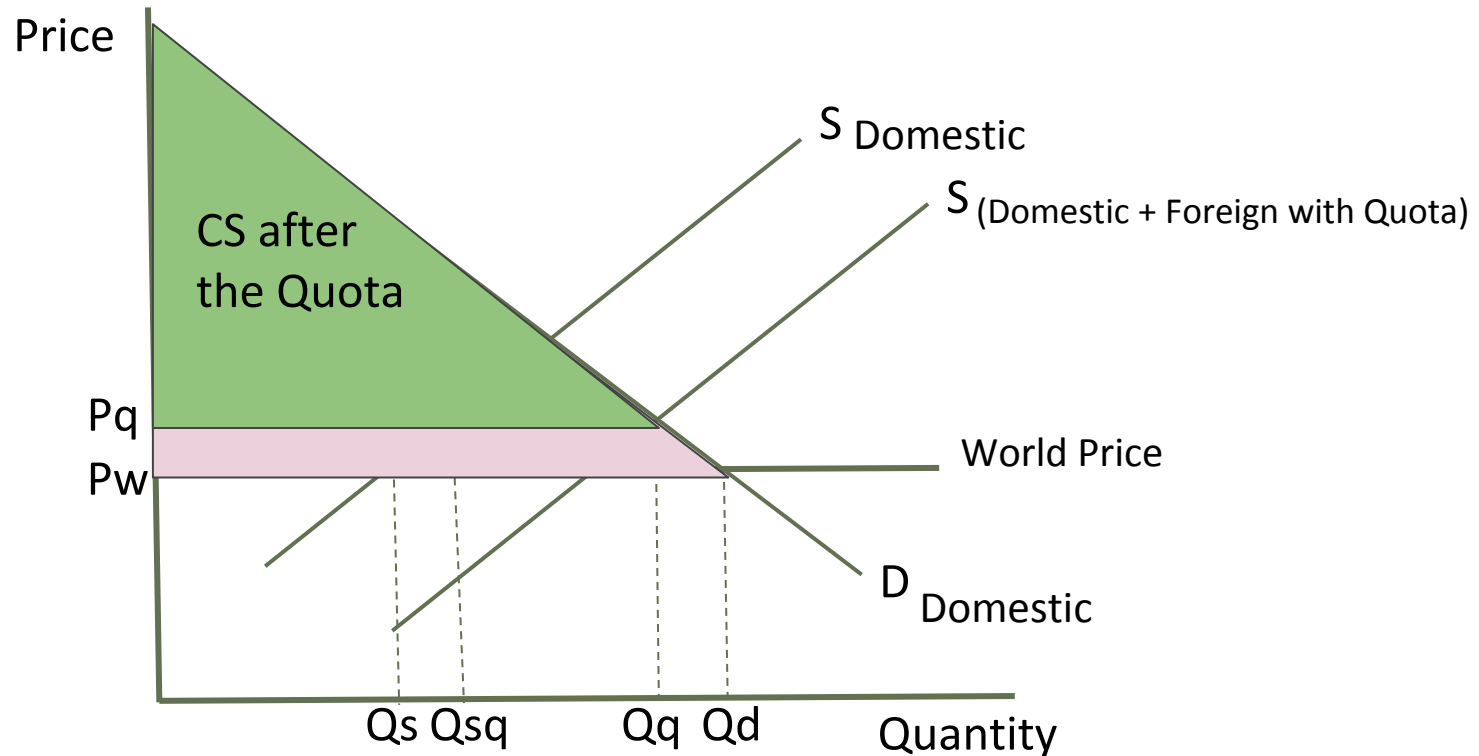
Quantity produced domestically will increase from  $Q_s$  to  $Q_{sq}$

Price will increase from  $P_w$  to  $P_q$



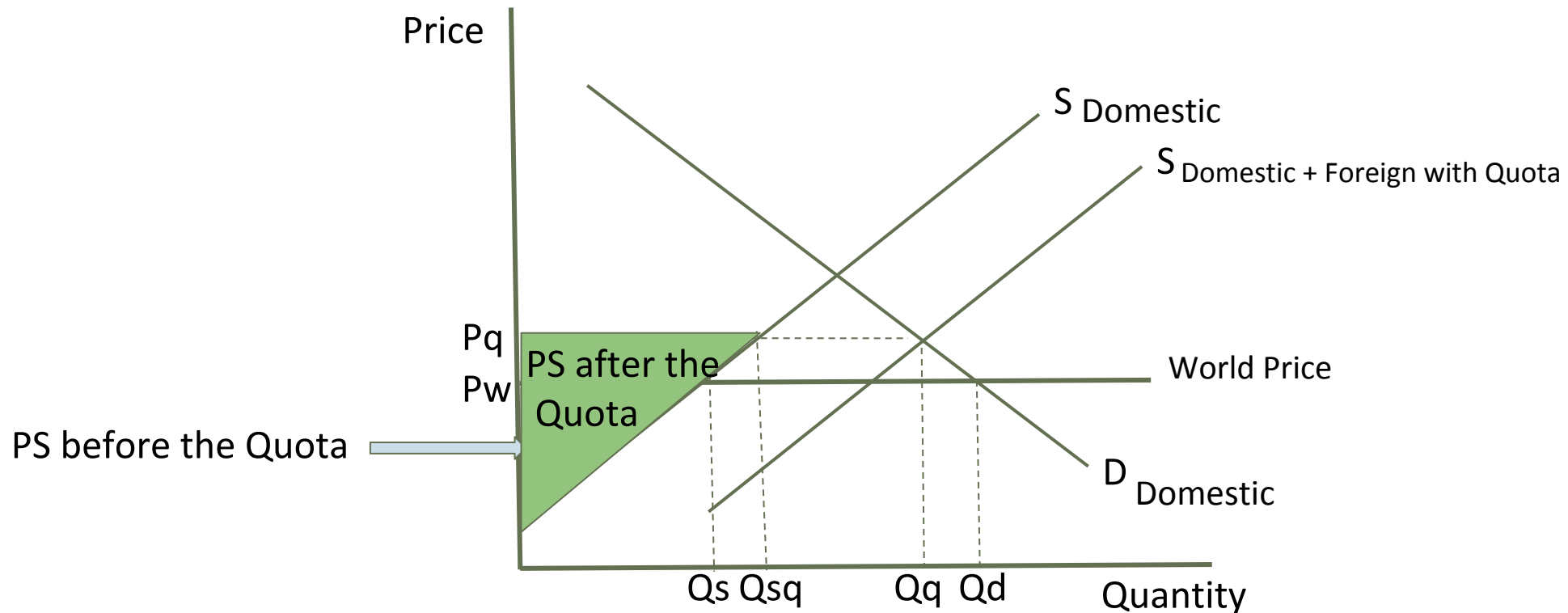
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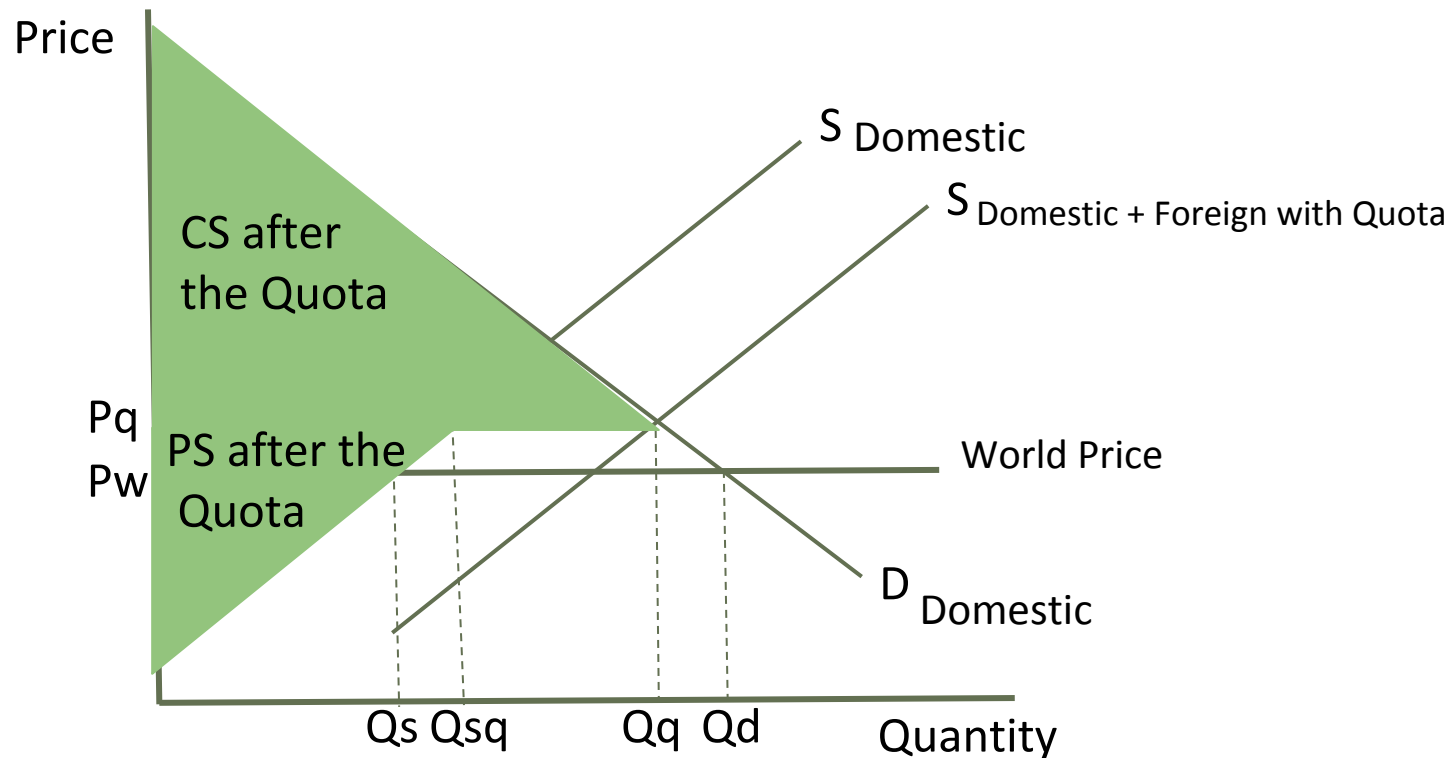
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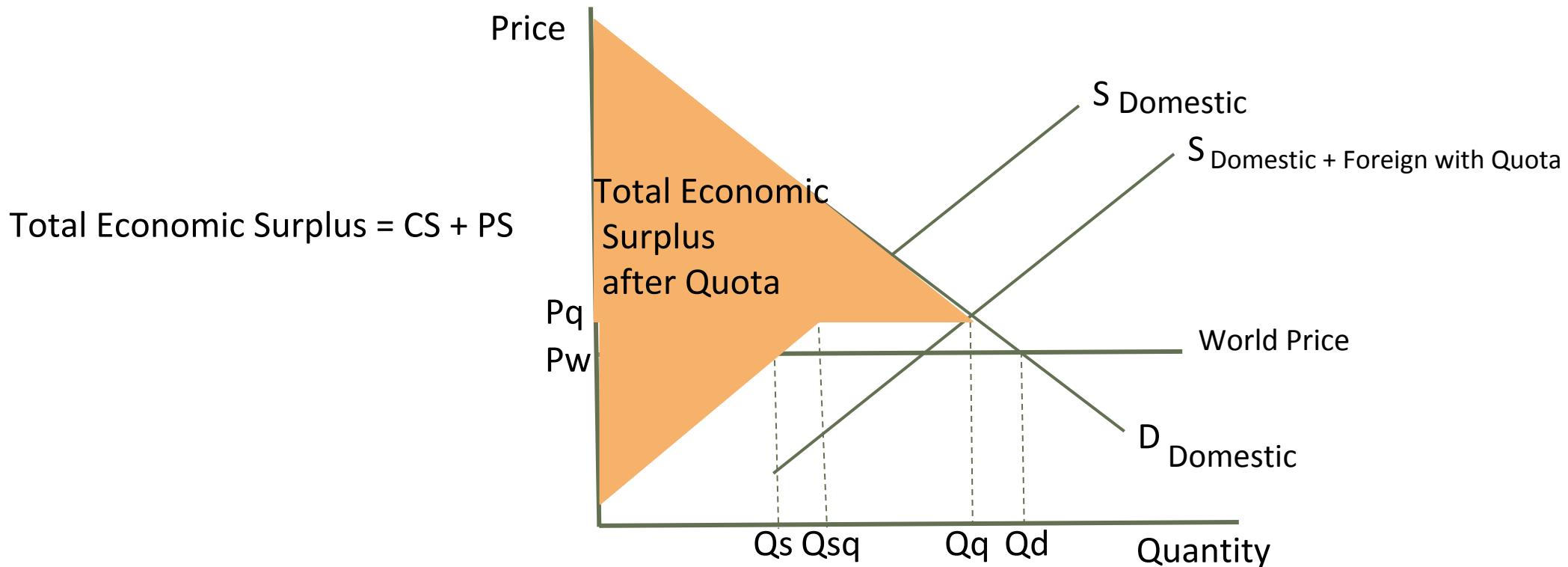
# Import Quota

EK: Quotas can be used to alter quantities produced and therefore affect price, consumer surplus, and total economic surplus.



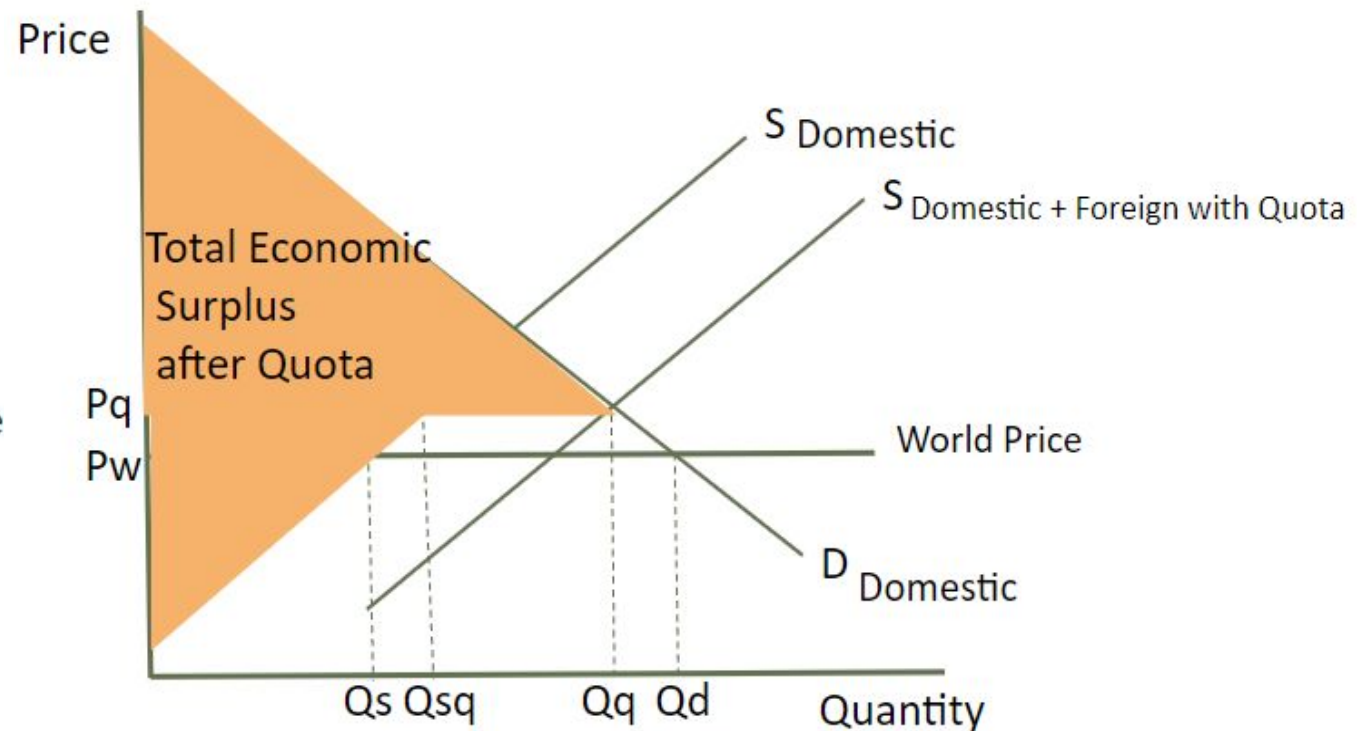
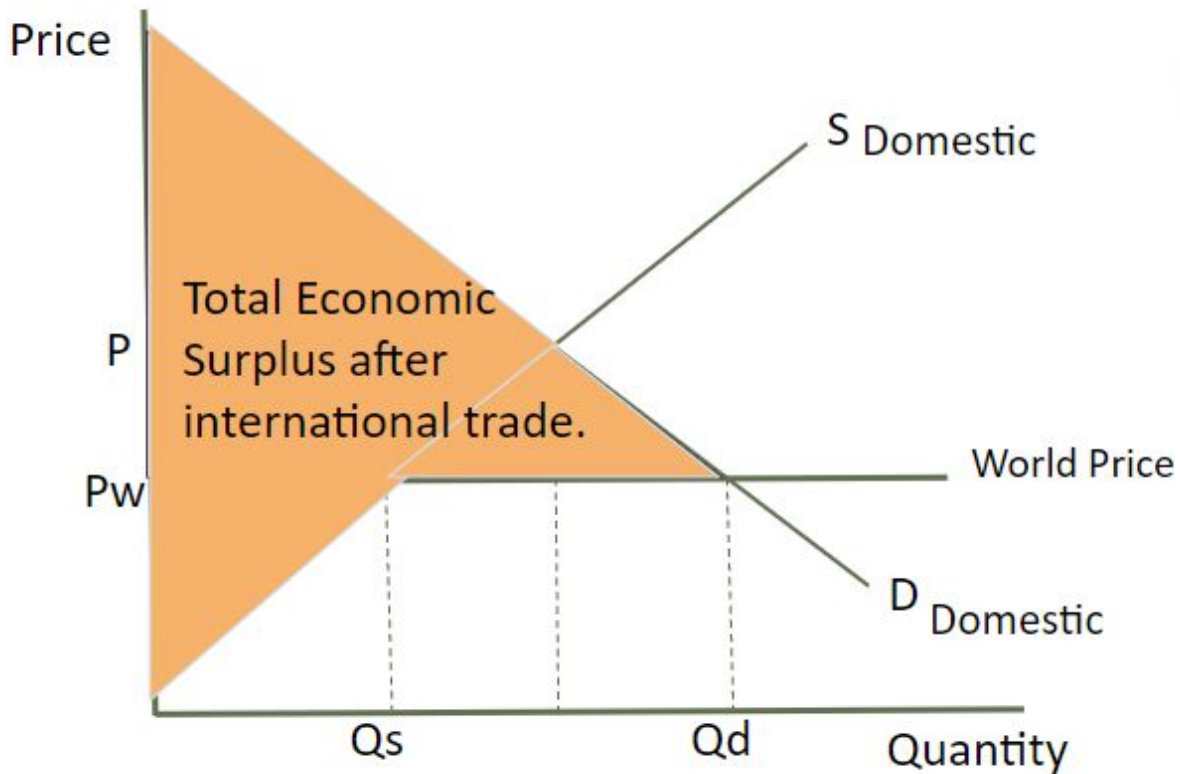
# Import Quota

EK: Quotas can be used to alter quantities produced and therefore affect price, **consumer surplus, and total economic surplus.**



# Import Quota

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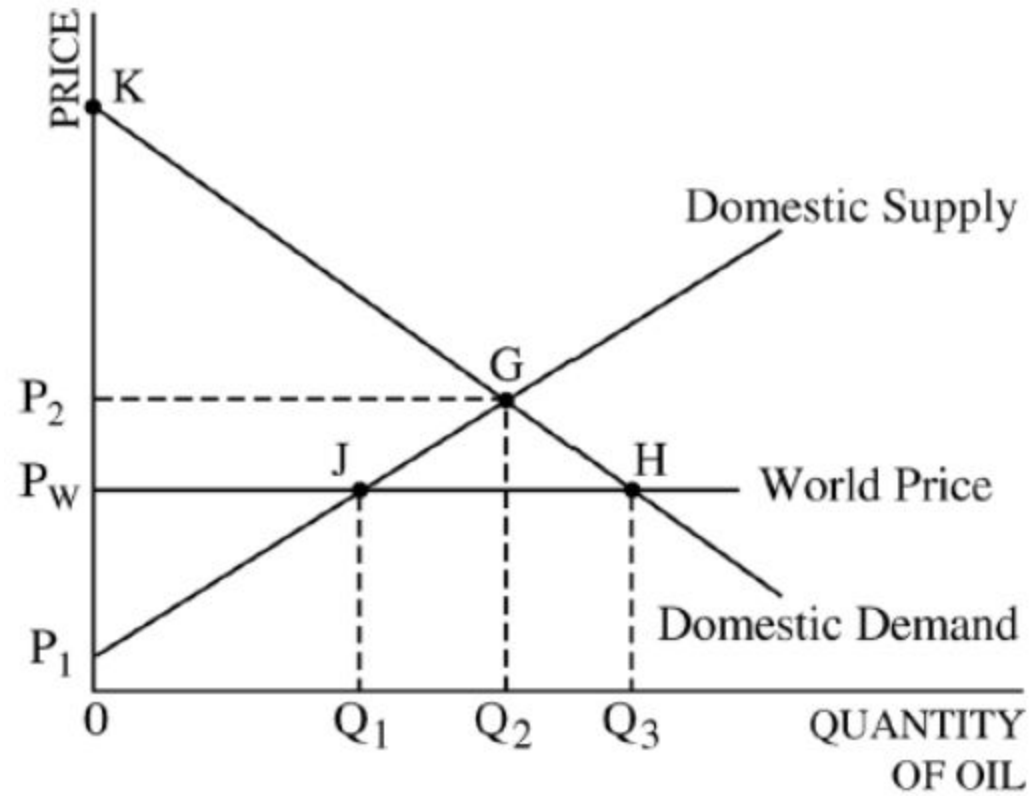
# Import Quota

EK: Quotas can be used to alter quantities produced and therefore affect price, consumer surplus, and total economic surplus.

The graphing of quotas is beyond the scope of the course and the AP Exam, but understanding how quotas affect quantities produced is within the scope.

# Practice Questions

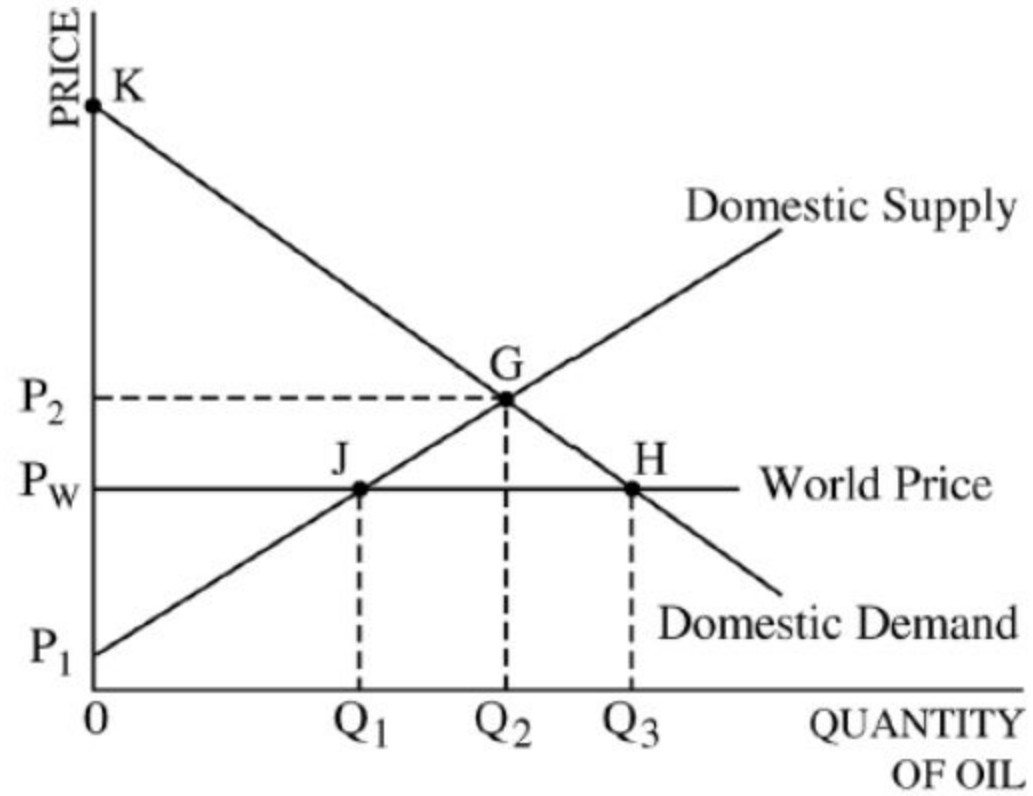




a. Identify the following before international trade occurs.

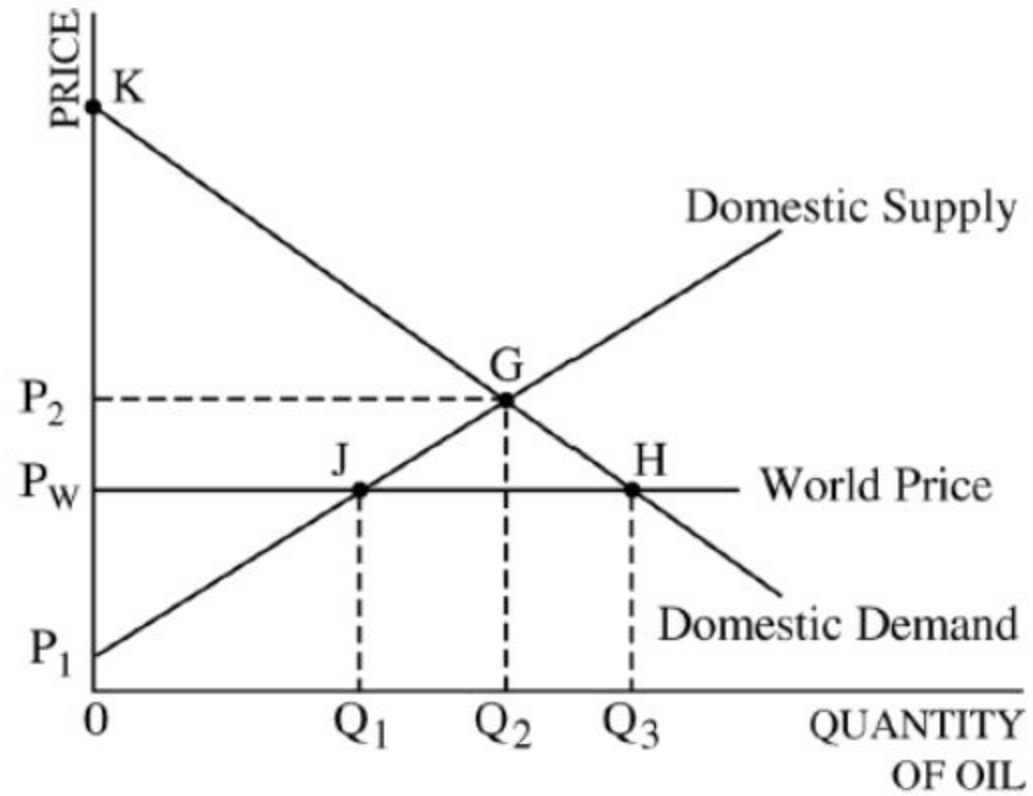
i. Price of oil in the United States market  $P_2$

ii. Quantity of oil produced in the United States  $Q_2$



b. Now assume that the United States begins to import oil at the world market price of  $P_w$ . Identify the quantity imported by the United States.

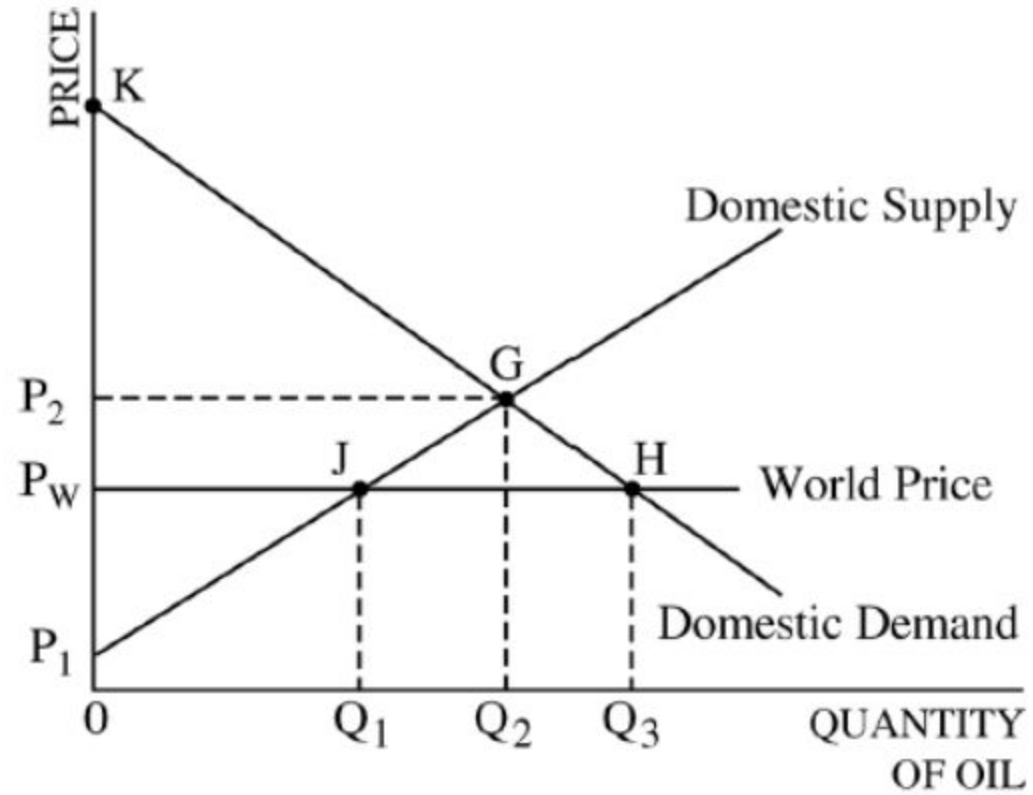
$$Q_3 - Q_1$$



c. Identify the consumer surplus in the United States market for each of the following cases.

i. Before international trade  $K, G, P_2$

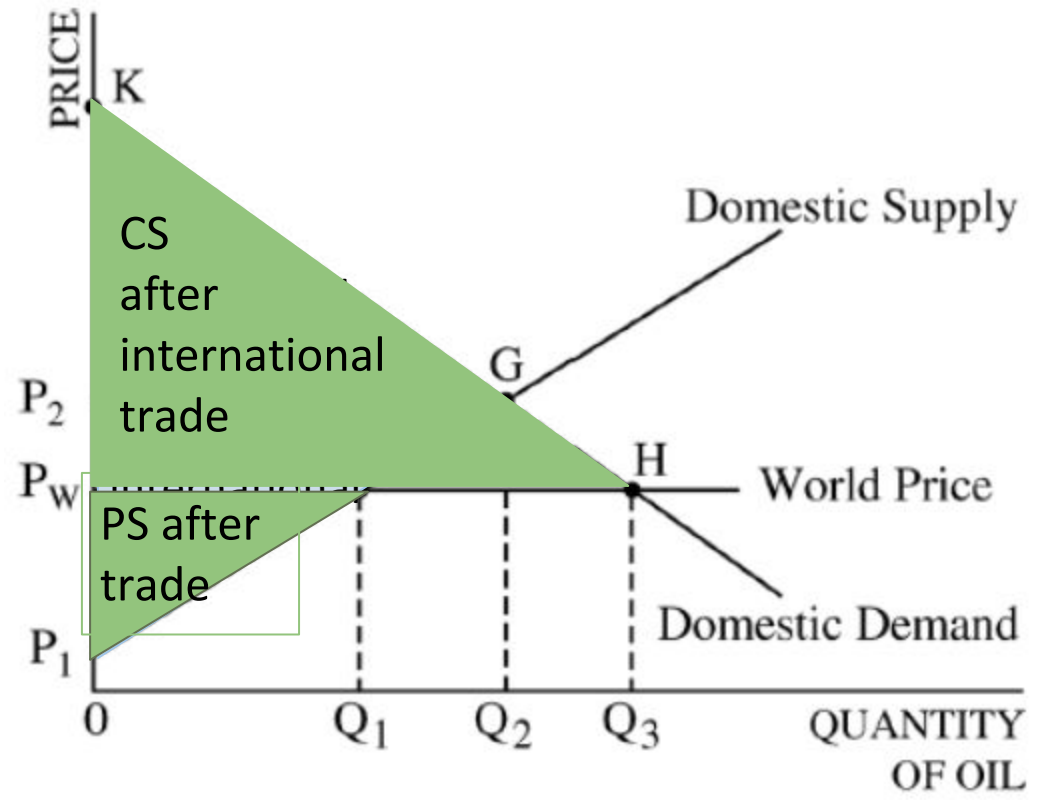
ii. After international trade  $K, H, P_w$



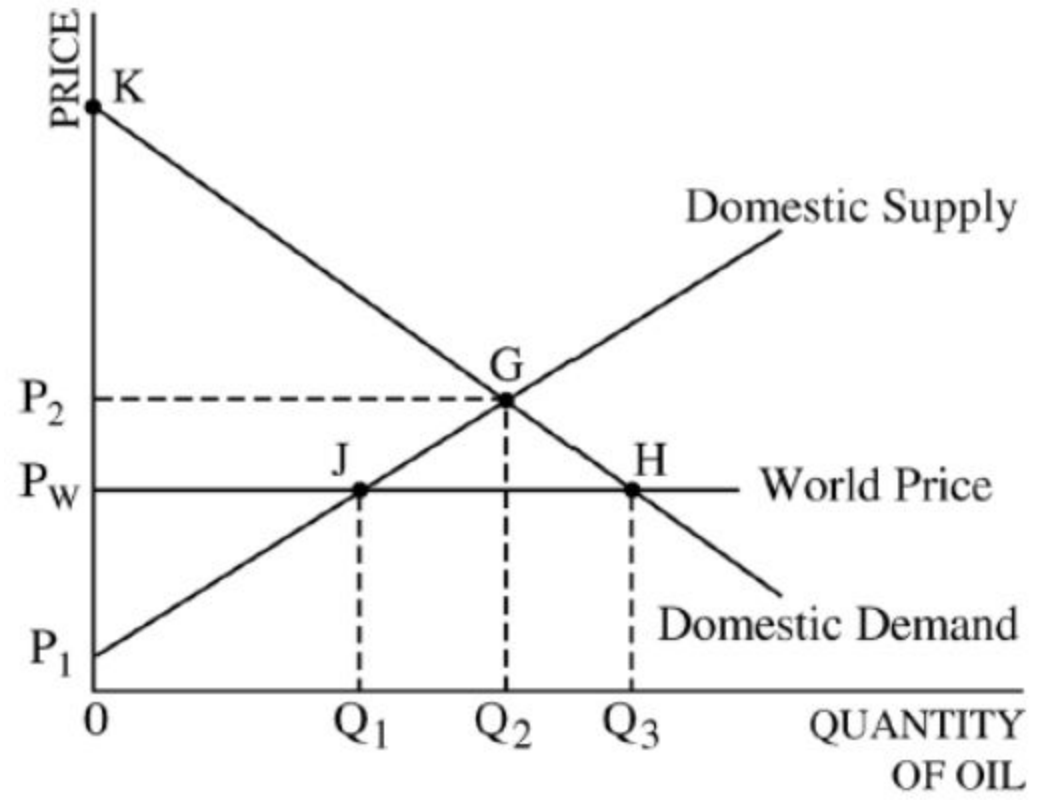
d. Identify the producer surplus in the United States market for each of the following cases.

i. Before international trade  $P_2, G, P_1$

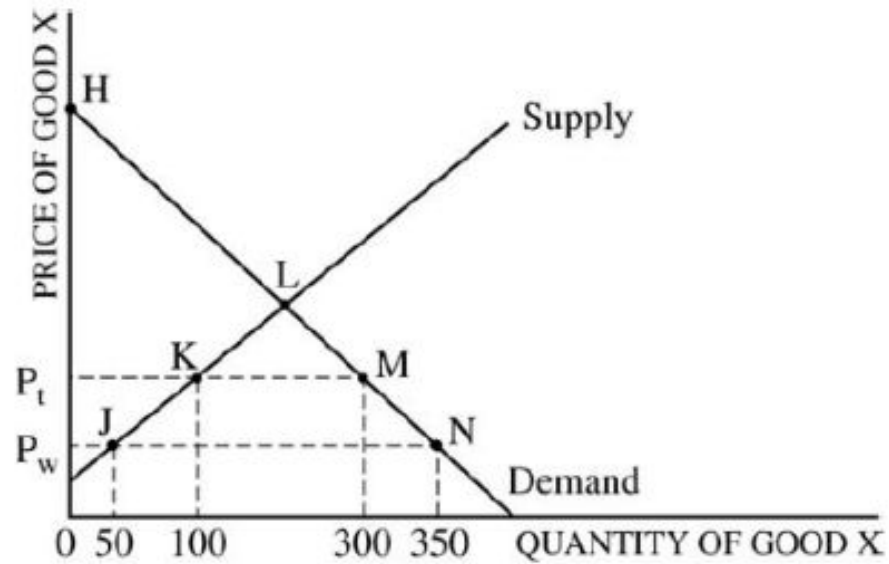
ii. After international trade  $P_w, J, P_1$



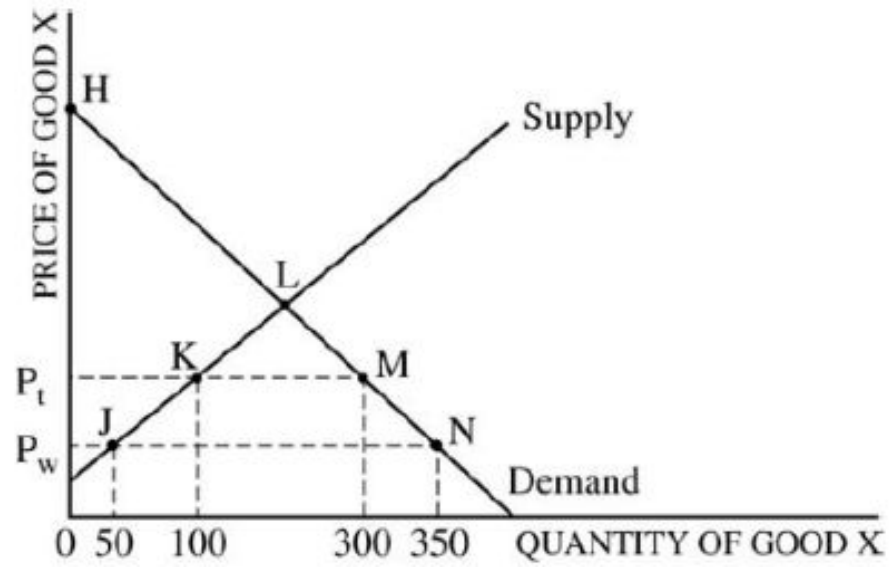
e. Identify the net gain in total surplus from trade.



e. Identify the net gain in total surplus from trade. **G,H,J**



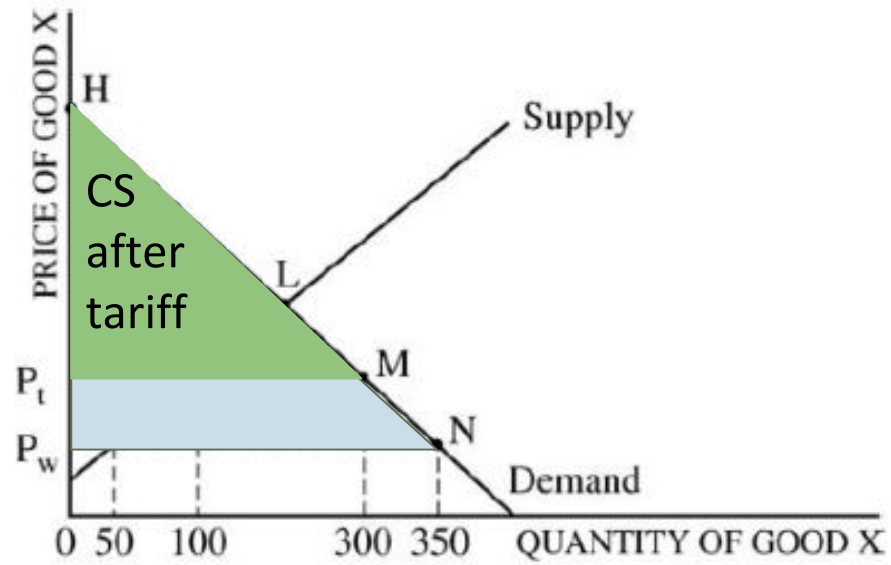
- a. If the current world price of good X is  $P_w$ , does Placonia export or import good X? Explain. **Import, domestic  $Q_d$  is 350 and domestic  $Q_s$  is only 50. Since  $Q_d > Q_s$ , this country must import.**



b. Given your answer in part (a), indicate the quantity of good X that Placonia exports or imports.

$Q_d$  is 350,  $Q_s$  is 50.  $350 - 50 = 300$  units.

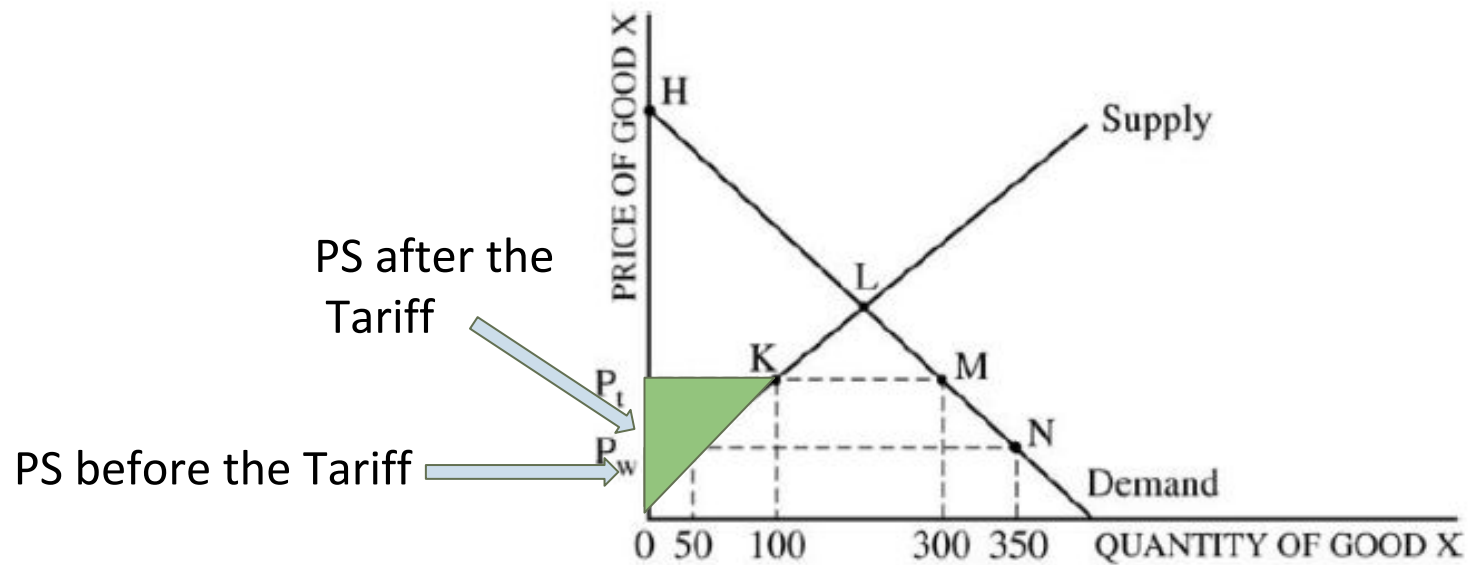




c. Assume that the government of Placonia imposes a tariff on good X, increasing the price from  $P_w$  to  $P_t$ .

Using the labels in the graph, indicate the change in each of the following in Placonia.

- i. Consumer surplus      Consumer Surplus was H,N,P<sub>w</sub>.  
It is now H, M, P<sub>t</sub>.
- ii. Producer surplus      The change is P<sub>t</sub>, M, N, P<sub>w</sub>



c. Assume that the government of Placonia imposes a tariff on good X, increasing the price from  $P_w$  to  $P_t$ .

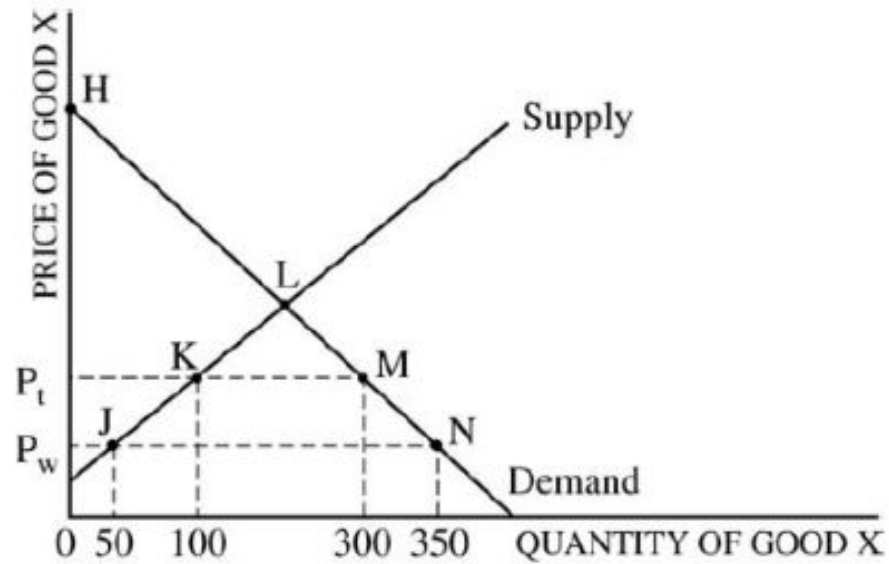
Using the labels in the graph, indicate the change in each of the following in Placonia.

i. Consumer surplus

Producer Surplus was  $P_w$ , J, ?.

ii. Producer surplus

It is now ?,  $P_t$ , K.



c. Assume that the government of Placonia imposes a tariff on good X, increasing the price from  $P_w$  to  $P_t$ .

Using the labels in the graph, indicate the change in each of the following in Placonia.

i. Consumer surplus

Producer Surplus was  $P_w$ , J, ?.

ii. Producer surplus

It is now ?,  $P_t$ , K.

It increased by  $P_w$ ,  $P_t$ , K, J.

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What are your questions?



