

HW#6 Due March 4, 2021

9. At Fenway Park, home of the Boston Red Sox, seating is limited to about 38,000. Hence, the number of tickets issued is fixed at that figure. Seeing a golden opportunity to raise revenue, the City of Boston levies a per ticket tax of \$5 to be paid by the ticket buyer. Boston sports fans, a famously civic-minded lot, dutifully send in the \$5 per ticket. Draw a well-labeled graph showing the impact of the tax. On whom does the tax burden fall—the team's owners, the fans, or both? Why?
10. A market is described by the following supply and demand curves:

$$Q^S = 2P$$

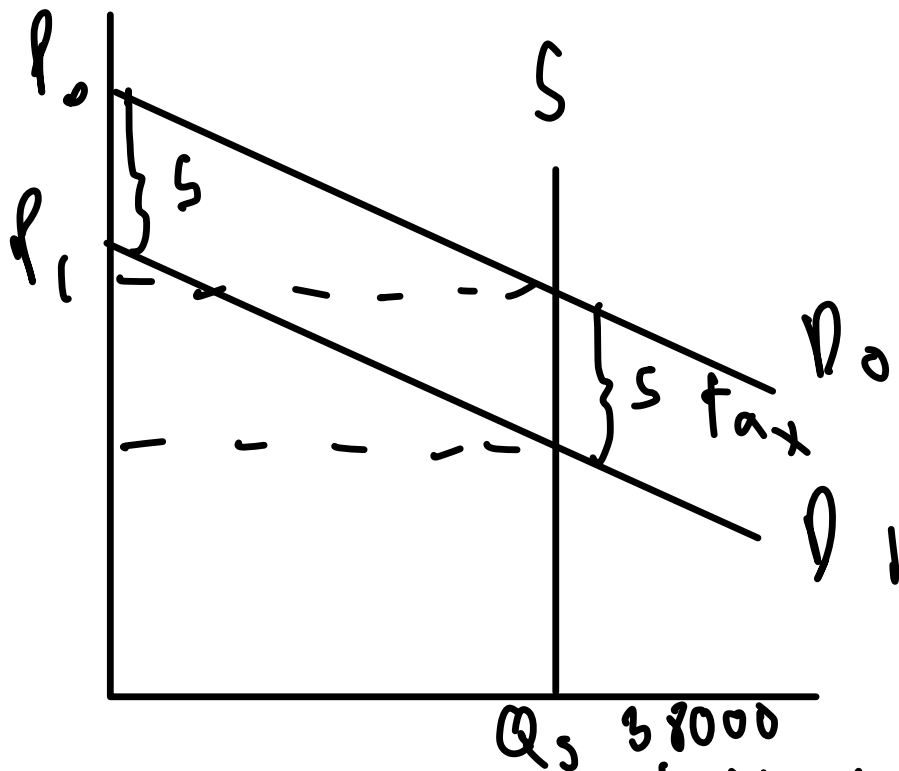
$$Q^D = 300 - P$$

- Solve for the equilibrium price and quantity.
- If the government imposes a price ceiling of \$90, does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?
- If the government imposes a price floor of \$90, does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?
- Instead of a price control, the government levies a tax on producers of \$30. As a result, the new supply curve is:

$$Q^S = 2(P - 30).$$

Does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?

a) $Q_s = 38000$



Demand curve shift down because of the tax lead to pay more supply curve is perfectly inelastic so supplier have to pay all of tax burden because they need to decrease the price then they can sell at the same amount so Q_s doesn't change.

$$10) Q_s = 2P$$

$$Q_D = 300 - P$$

a)

$$P = \frac{Q_s}{2} \quad P = 300 - Q_D$$

$$Q_s = Q_D$$

$$2P = 300 - P$$

$$P = \frac{300}{3} = \underline{\underline{100}}$$

$$Q_s = 2P$$

$$Q_s = 2(100)$$

$$Q_s = \underline{\underline{200}}$$

b) price ceiling \$90 is below

Equilibrium price

$$Q_D = 300 - P$$

$$Q_D = 300 - 90 = 210$$

$$Q_s = 2P$$

$$Q_s = 2(90)$$

$$Q_s = 180$$

$Q_D > Q_S$ excess demand
lead to shortage in Q_S

$$Q_D - Q_S = 210 - 180 = 30$$

Shortage 30 units

c) Price floor 90 \$ but
equilibrium price is 100 \$
so price floor is not necessary
because price floor is used
for increase the market price
in this case if price floor
is 90 \$ then the market
price will be the same
as before 100 \$
 $Q_D = Q_S$ so surplus or shortage won't
happen

0)

government levies a tax on
producer 30 \$

$$Q_s = 2(P - 30)$$

$$Q_D = 300 - P$$

$$Q_D = Q_S$$

$$300 - P = 2(P - 30)$$

$$360 = 3P$$

$$P = \frac{360}{3} = 120$$

$$Q_D = 300 - P$$

$$= 300 - 120$$

$$Q_D = 180$$

$$Q_S = 180$$

new equilibrium at $(180, 120)$

Surplus and shortage
won't happen