

HW#8 Due March 1, 2022

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:

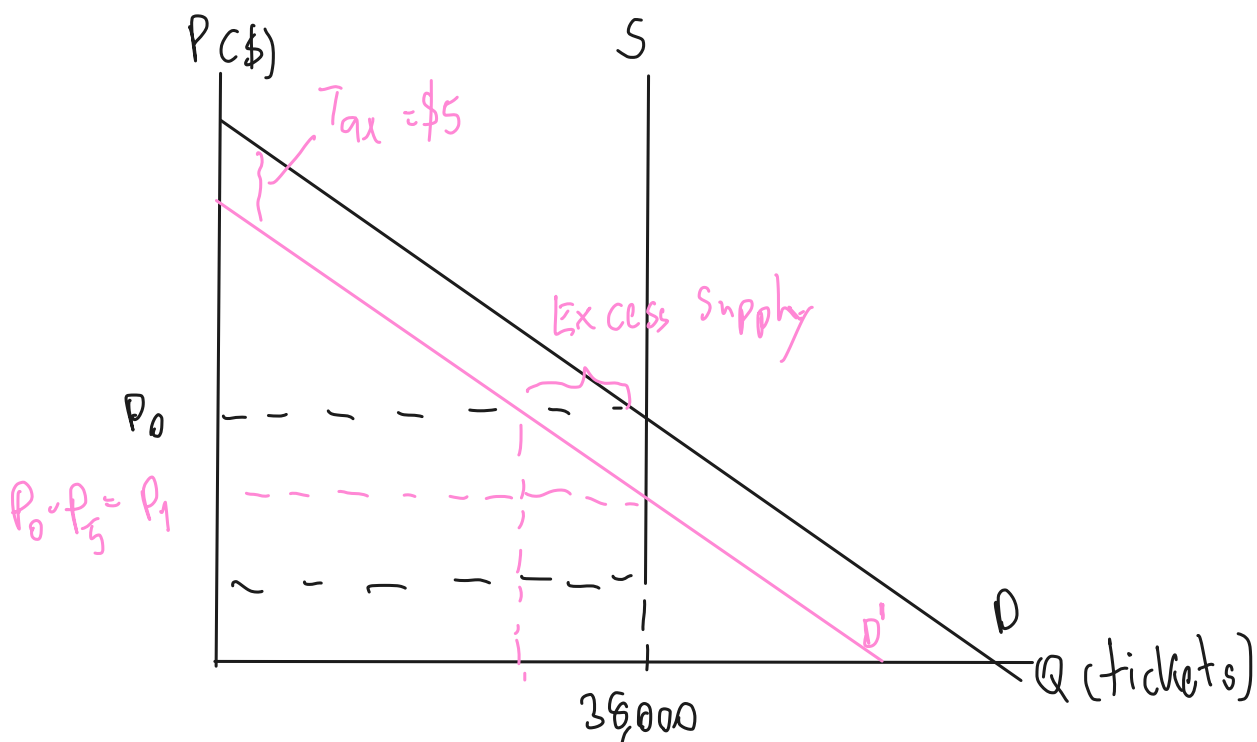
$$Q^S = 2P$$

$$Q^D = 300 - P$$

- 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?



From the graph above at the original price and quantity  $P_0$  and  $Q_0 = 35,000$  tickets respectively

Then, the buyer is levied  $\$5$  per ticket causing  $D$  shift to  $D'$ . At the same price level  $P_0$ , there is an excess supply  $= 35,000 - Q'_d > 0$ . So the price fall, the excess supply exists.

The new equilibrium price is at  $P_1$  because it satisfies the equilibrium condition (excess supply = 0) where the equilibrium quantity remains at  $35,000$  tickets.

According to the graph above, the seller could get the price  $P_0$  before the tax. Nevertheless, the sellers can get only  $P_1 = P_0 - 5$  after the tax

for the buyer, the price it has to pay is  $P_0$

before the tax, however the buyers pay seller

at the price  $P_1 = P_0 - 5$  and tax  $\$5$  total amount

paid by buyers is  $P_1 + P_5 = P_0 - 5 + 5 = P_0$

To conclude, the tax falls to the seller only because the seller got the price \$5 lower while the buyer pays the same price as the

free tax price  
From the elastic,  $\frac{\eta_s}{|\eta_d|} = \frac{\text{tax burden on the buyers}}{\text{tax burden on the sellers}}$

Since  $\eta_s$  is 0 (perfectly in elastic), the buyers bears no tax burden at all.