

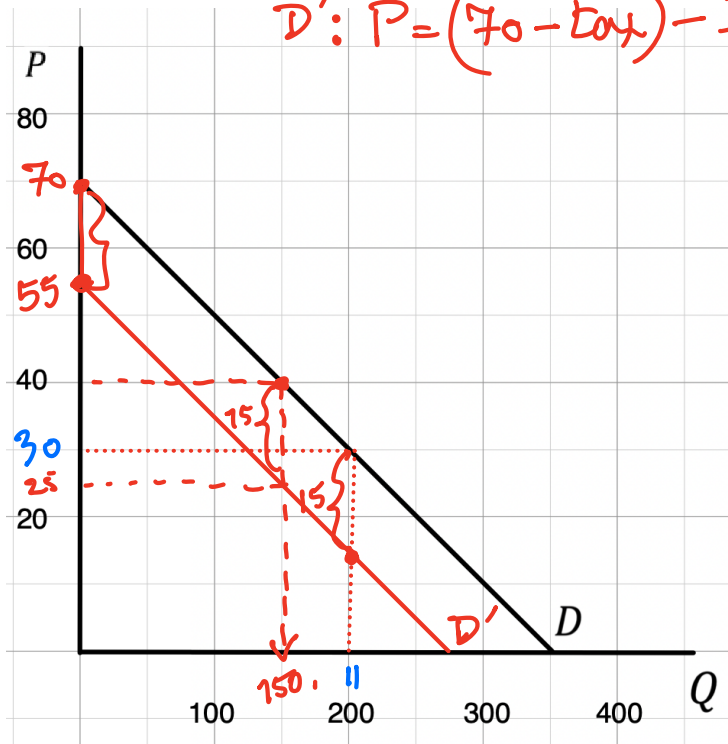
Chapter 10 Applications of Demand and Supply (a)

Case 2. The *buyers pay tax* to the government t bahts/unit.

Tax $t = 15$ bahts / unit on the buyers will affect the Demand curve. How?

$$D: P = 70 - \frac{1}{5}Q_D$$

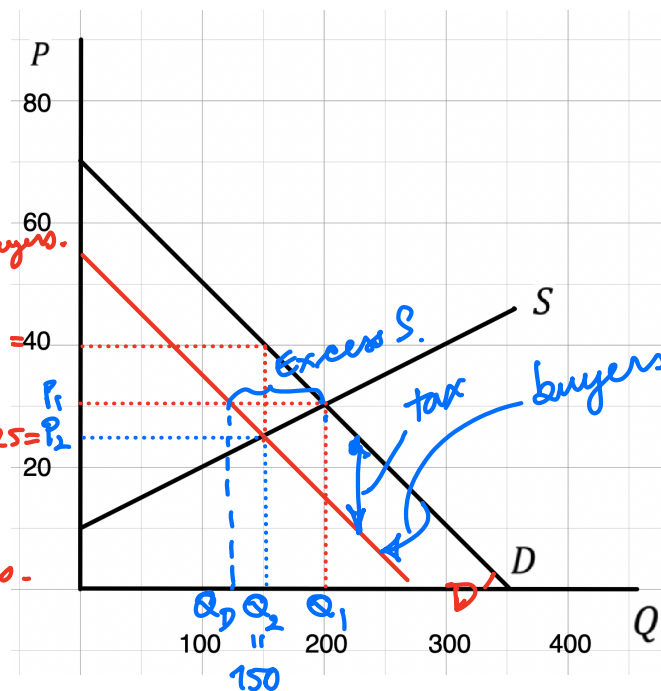
$$D': P = (70 - \text{Tax}) - \frac{1}{5}Q_D.$$



Given the Demand and Supply:

$$D: P = 70 - \frac{1}{5}Q_D \quad \therefore P = (70 - t) - \frac{1}{5}Q_D = (70 - 15) - \frac{1}{5}Q_D$$

$$= 55 - \frac{1}{5}Q_D \quad S: P = 10 + \frac{1}{10}Q_S$$



Solve $Q_D = Q_S$.

$$(70 - 15) - \frac{1}{5}Q_D = 10 + \frac{1}{10}Q_S$$

Before tax, the equilibrium is at $E = (Q_1, P_1) = (200, 30)$.

Once tax is imposed, at the original equilibrium price P_1 there is an Excess $S = Q_1 - Q_D$.

$\Rightarrow$ The price thus will ~~increase/decrease~~

The new equilibrium will be at $F = (Q_2, P_2) =$

Solving equations to find the new equilibrium:

With tax,

the eq. quantity decreases from $Q_1 = 200$ to $Q_2 =$

the eq. price increases/decreases from $p_1 = 30$ to $p_3 =$

Question: Is p_2 the price the buyers pay or the sellers

receive in their pockets?

exactly the same as the case sellers pay tax.
Tax Burden (Tax Incidence) (Compare the total payment out of the pockets of buyers and total amount received by the sellers)

Before:

Price the buyers pay $p_1 = 30$, sellers receive $p_1 = 30$

After:

Price the buyers pay = , sellers receive =

Tax burden: Buyers' = bahts/unit

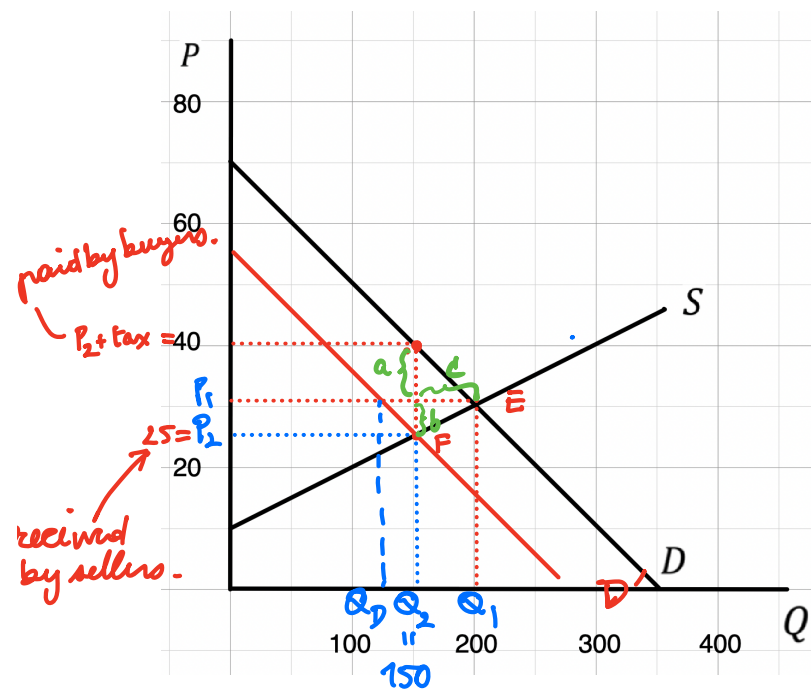
Sellers' = bahts/unit

Total Tax burden: Buyers' = bahts = Area

Sellers' = bahts = Area

Total Tax Collected:

Share of Tax Burden:



Note; Since the tax burdens shared by the buyers and sellers when buyers pay the tax are identical to the case the sellers pay the tax, we have exactly the same results of the share of tax burden. We also have the same deadweight loss.

What is the value the buyers place on the last unit bought?

What is the cost of producing the last unit sold?

Same analysis result of change in consumer's and producer's surplus.