

Tax incidence 2: Tax on sellers vs tax on buyers

Abbreviations: S = Supply D = Demand P = Price Q = Quantity

1 Situation without a tax

Example:

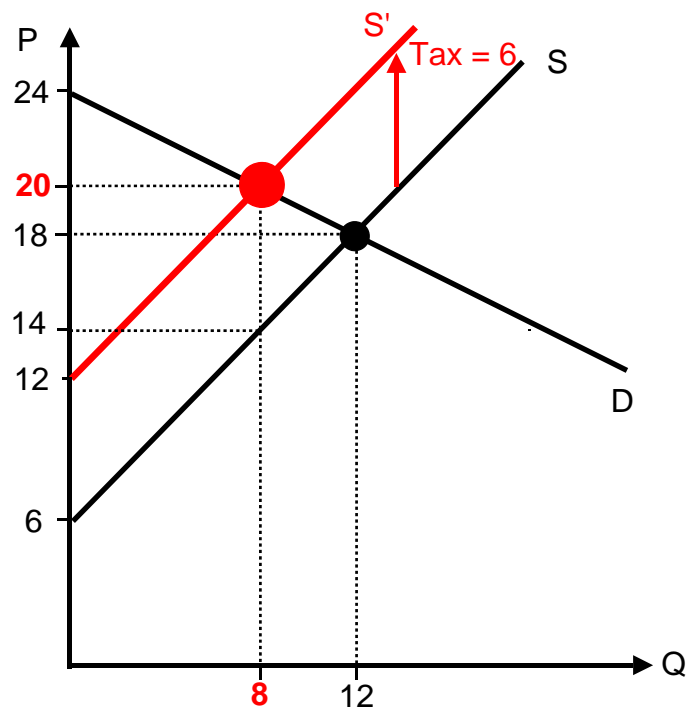
- $S = 6 + Q$
- $D = 24 - 0.5Q$
- Equilibrium if $S = D$
- $6 + Q = 24 - 0.5Q$
- $1.5Q = 18$
- $Q = 12$ and $P = 18$

2 Introduction of a tax of 6 per unit, to be paid by the **seller**

New situation:

- $S' = 6 + Q + 6$
- $D = 24 - 0.5Q$
- Equilibrium if $S' = D$
- $6 + Q + 6 = 24 - 0.5Q$
- $1.5Q = 12$
- $Q = 8$ and $P = 20$ (out of which the seller has to pay a tax of 6)

Graphically:



Results:

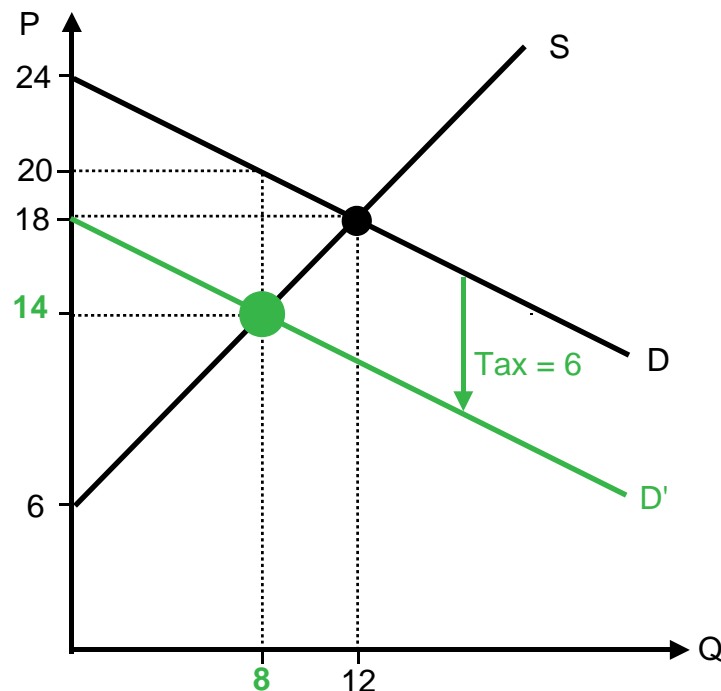
- P rises from 18 to 20, Q falls from 12 to 8.
- Out of P of 20, the seller has to pay a tax of 6.
- **Tax incidence: Buyer 2 (18 → 20), seller 4 (18 → 14).**

3 Introduction of a tax of 6 per unit, now to be paid by the **buyer**

New situation:

- $D' = 24 - 0.5Q - 6$
- $S = 6 + Q$
- Equilibrium if $D' = S$
- $24 - 0.5Q - 6 = 6 + Q$
- $1.5Q = 12$
- **$Q = 8$** and **$P = 14$** (in addition, the buyer has to pay a tax of 6)

Graphically:



Results:

- P falls from 18 to 14, Q falls from 12 to 8.
- In addition, the buyer has to pay a tax of 6.
- **Tax incidence: Buyer 2 (18 → 20), seller 4 (18 → 14).**

4 General result

In both cases, the buyer bears 2 (18 → 20), the seller bears 4 (18 → 14) of the tax. It does not matter who pays the tax to the government.