

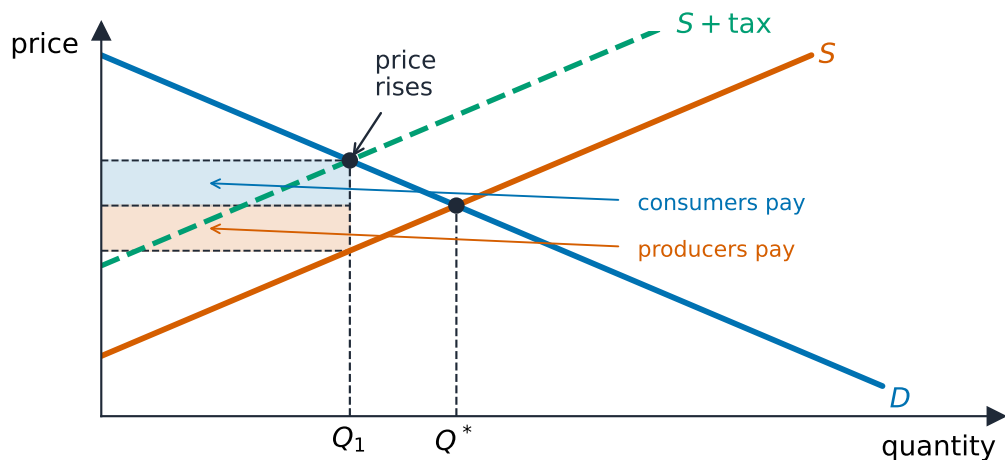
Exercise walk-through

3.2

Methods and effects of government intervention in markets

A-Level Economics

A specific indirect tax creates a price wedge



tax: S shifts left · incidence split consumers/producers

Indirect tax : charged on goods or services. Here:

demand $P = 12 - Q$, supply $P = 2 + Q$, tax 3 pounds per unit.

Find what buyers pay and what producers keep.
Legal payment and economic burden are different.

Calculate the tax outcome before judging incidence

Q per period; prices in pounds per unit

Demand $P = 12 - Q$, supply $P = 2 + Q$. Before tax, $Q=5/P=7$. A specific tax 3 creates $P_b = P_s + 3$.

Calculate the tax outcome before judging incidence

Q per period; prices in pounds per unit

Demand $P = 12 - Q$, supply $P = 2 + Q$. Before tax, $Q=5/P=7$. A specific tax 3 creates $P_b = P_s + 3$.

$$P_D = P_S + t$$

$$12 - Q = 2 + Q + 3$$

$$Q_t = (12 - 5)/2 = 3.5 \text{ units per period}$$

$$P_b = 12 - Q_t = 12 - 3.5 = \text{£}8.5 \text{ per unit}$$

$$P_s = P_b - t = 8.5 - 3 = \text{£}5.5 \text{ per unit}$$

Separate the burden from government revenue

Burden per unit

$$B_c = P_b - P_0 = 8.5 - 7 = \text{£}1.5$$

$$B_p = P_0 - P_s = 7 - 5.5 = \text{£}1.5$$

Revenue per period

$$R = tQ_t$$

$$R = 3(3.5) = \text{£}10.5$$

The **incidence of a tax** is shared equally here. Neither side bears the full 3-pound tax.

Does inelastic demand prove that buyers pay most?

A different constructed market

$Q_d = 120 - 2P_b$ and $Q_s = 95 + 0.5P_s$. Initially P_{10}/Q_{100} . Absolute $PED_{0.2}$; $PES_{0.05}$. Which side responds less?

Holding supply fixed, more **elastic** demand limits passing tax to buyers.
To compare who pays most, consider both sides.

Exercises 2.1-2.3

2.1 Define the term *indirect tax*.

[2]

2.2 State the effect of a **maximum price** set below the equilibrium price.

[1]

2.3 State who bears most of an indirect tax when demand is **inelastic**.

[1]

Exercises 2.1-2.3

2.1 Define the term *indirect tax*. [2]

2.1

- a tax on spending that raises a firm's costs and so shifts the supply curve to the left (2 for a clear definition; 1 for a partial idea)

2.2 State the effect of a **maximum price** set below the equilibrium price. [1]

2.2

- a shortage (excess demand), because quantity demanded exceeds quantity supplied (1)

2.3 State who bears most of an indirect tax when demand is **inelastic**. [1]

2.3

- consumers bear most of the tax (1)

Exercises 3.1·3.2

3.1 A government subsidy to producers will:

[1]

☐

- A** shift supply left, raising the price
- B** shift supply right, lowering the price
- C** shift demand right, raising the price
- D** have no effect on price

3.2 Using a diagram, explain how an indirect tax on a demerit good affects its price and quantity.

[8]

Exercises 3.1-3.2

3.1 A government subsidy to producers will:

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- A shift supply left, raising the price
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3.1 B

- A subsidy shifts supply right and lowers the price

3.2 Using a diagram, explain how an indirect tax on a demerit good affects its price and quantity.

[8]

3.2

- $[8]$ AO1 1 + **AO3 diagram up to 4** (supply shifts up to $S + \text{tax}$, new higher price, lower quantity) + AO2/AO3 up to 3 – the tax raises producers' costs
- supply shifts left
- price rises and quantity falls
- consumption of the demerit good falls; the burden splits by elasticity

Exercise 3.3

3.3 Discuss whether an indirect tax is the best way for a government to reduce consumption of a demerit good. [12]

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3.3

- [12] AO1/AO2/AO3 up to 8 + AO4 up to 4. **For tax:** cuts consumption, raises revenue, internalises the external cost. **Against:** if demand is inelastic (addiction), consumption falls little; it is regressive, and a black market may form. **Alternatives:** regulation, education, advertising bans. Judgement: a tax helps but works best combined with information and regulation – its success depends on the PED of the good