

Indirect taxes

What an indirect tax is

An indirect tax is a tax on spending. Firms collect it when goods and services are sold, then pass the tax revenue to the government. It is only paid when a purchase happens, so it is commonly used to raise revenue and discourage consumption of demerit goods. For example, in the UK around **80% of the retail price of a packet of cigarettes consists of tax**.

The basic diagram

A per-unit (specific) indirect tax increases firms' costs, so the supply curve shifts left/up from **S** to **S + tax** by the size of the tax. This leads to a higher market price and a lower equilibrium quantity. The vertical gap between the original supply curve and the new supply curve represents the tax per unit.

The three prices

There are three prices that must be clearly identified on the diagram.

- The original equilibrium price (**P_e**) before the tax
- The higher price consumers pay after the tax (**P₁**)
- The lower price producers receive after the tax (**P₂**)

The producer price is lower because firms now have to pay the tax out of the revenue they receive per unit sold.

Government revenue from the tax

Tax revenue is calculated as the tax per unit multiplied by the quantity sold after the tax.

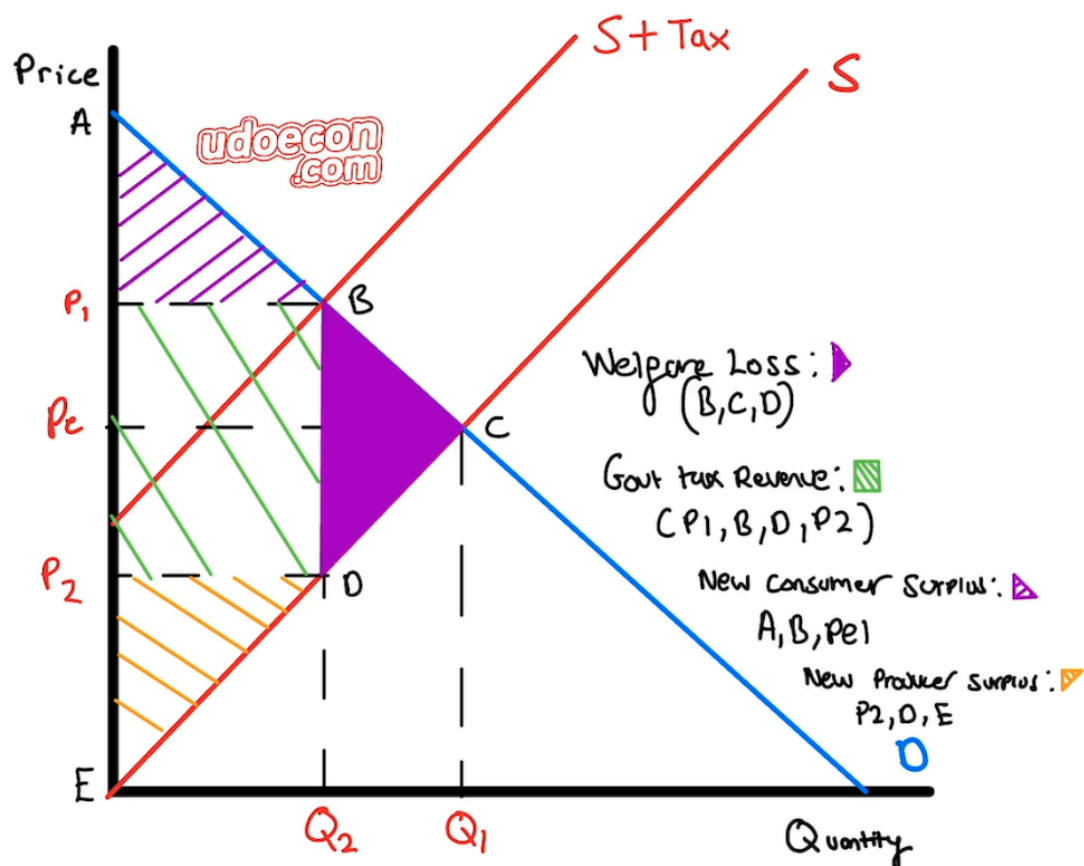
Tax revenue = (tax per unit) × (quantity after tax)

On the diagram, this is shown by the green rectangle → P₁, B, D, P₂.

Welfare effects of an indirect tax

Consumers lose because they face a higher price and buy less, causing consumer surplus to fall. Producers also lose because the price they keep after paying the tax is lower and they sell fewer units, reducing producer surplus. The government gains through the tax revenue collected.

Overall, the market becomes less efficient. Output falls from **Q1** to **Q2**, creating a deadweight welfare loss shown by the triangle between points **B**, **C**, and **D**.

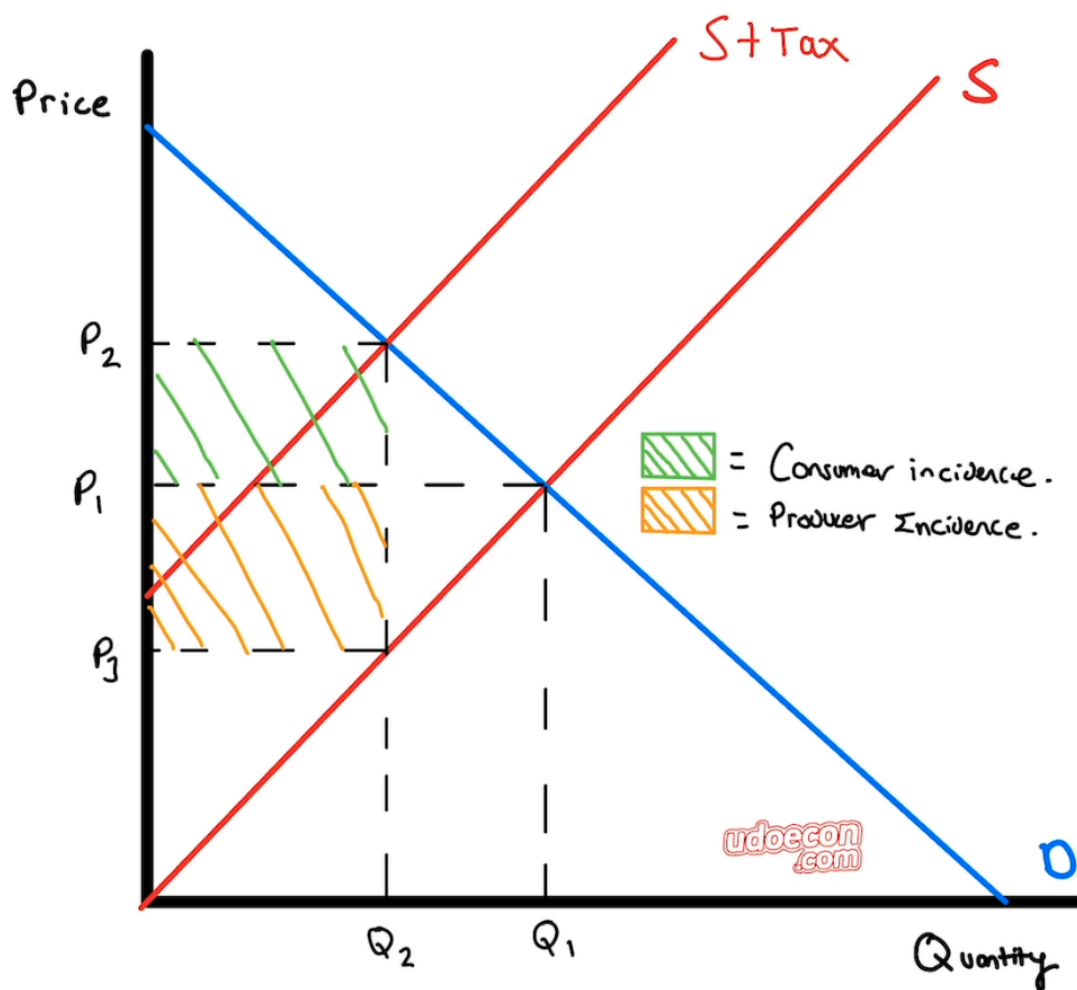


Tax incidence

Meaning of incidence

Tax incidence is the split of the tax burden between consumers and producers. Even though firms are responsible for paying the tax to the government, some of the burden may be passed on to consumers through higher prices.

How to show incidence on the diagram

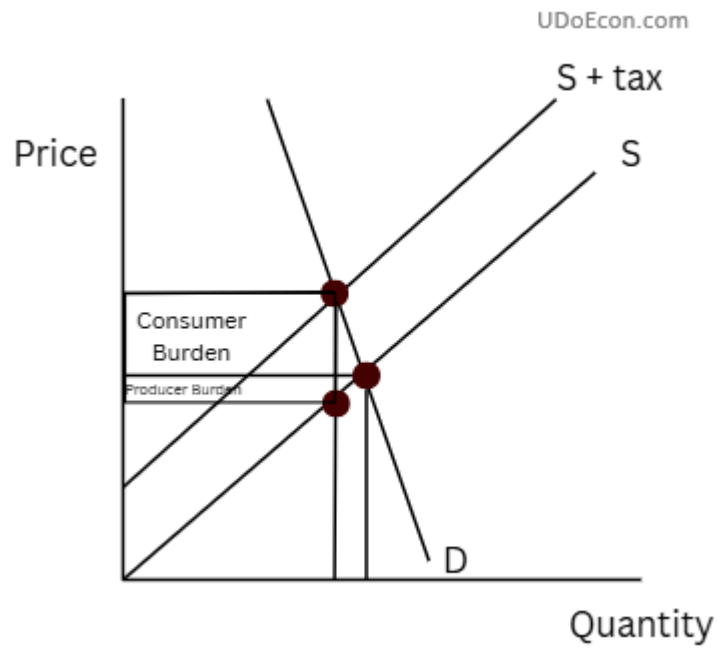


What determines who pays more

The split depends on price responsiveness, so you should always link incidence to elasticities.

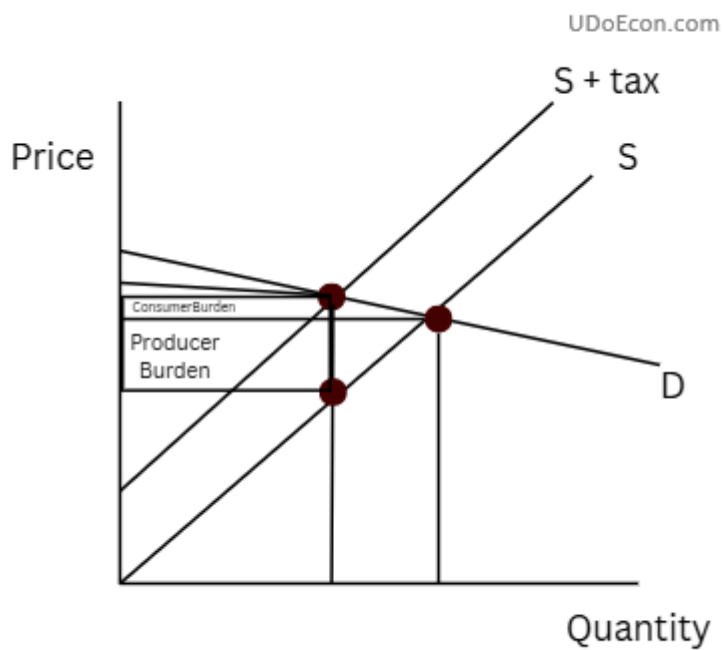
If demand is price inelastic

- Consumers are less responsive to the price change, so they bear the majority of the tax burden.



If demand is price elastic

Consumers are very responsive to the price change, so they buy much less, and producers bear the majority of the tax burden.



Don't ignore PES

Written by udoecon.com

If supply is price inelastic, producers cannot easily reduce output, so they end up taking a larger share of the tax burden.

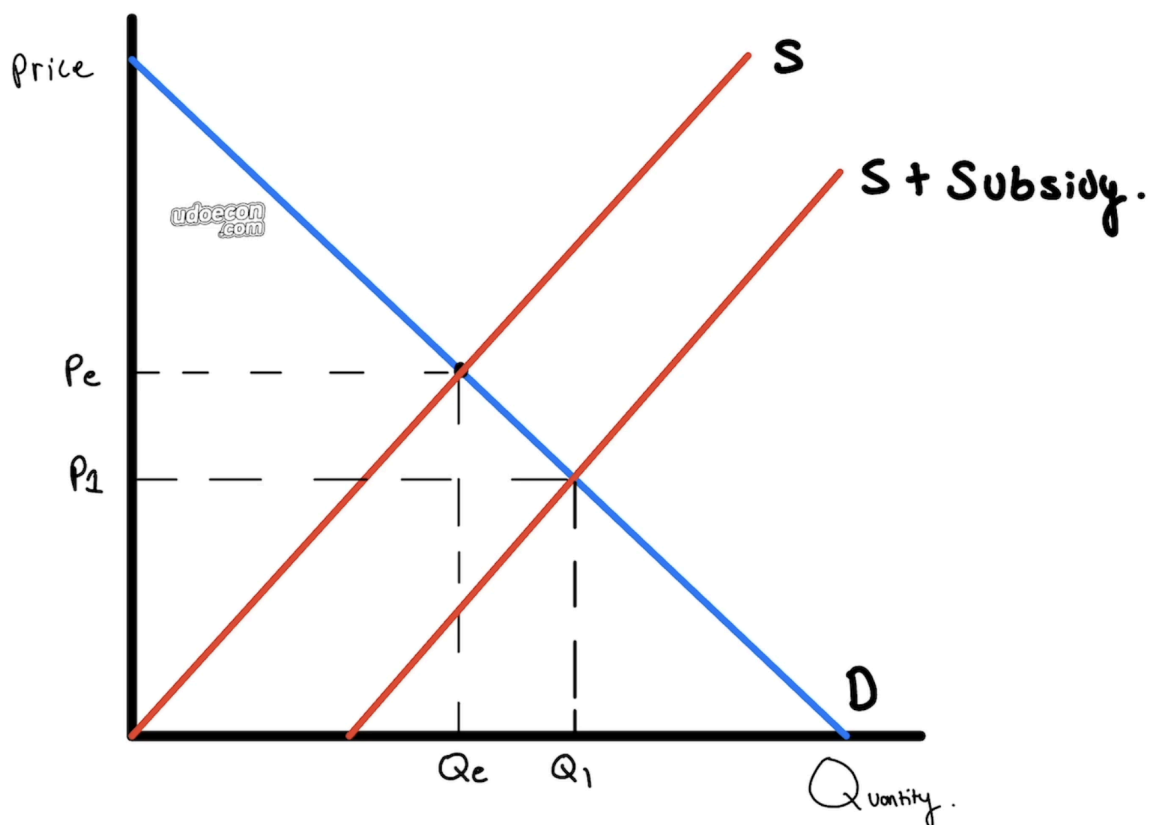
Subsidies

What a subsidy is

A subsidy is a payment from the government to firms, usually per unit produced. It is used to increase output, often for merit goods e.g electric vehicles , by lowering firms' effective costs.

The basic diagram

A subsidy lowers firms' costs of production, which causes the supply curve to shift right from S to $S + \text{Subsidy}$ (by the size of the subsidy). As a result, the equilibrium price in the market falls from P_e to P_1 and the equilibrium quantity rises from Q_e to Q_1 .



Subsidy incidence

Splitting the benefit

In the diagram, the subsidy shifts supply from **S** to **S + subsidy**, increasing output from **Q_e** to **Q₁** and lowering the market price from **P_e** to **P₁**.

Consumers benefit because the price they pay falls from **P_e** to **P₁**. This gain is shown by the **green shaded area (C)**, which represents the reduction in price on all units consumed after the subsidy.

Producers also benefit because although consumers pay **P₁**, firms receive an effective price of **P₂** (the market price plus the subsidy per unit). The **yellow shaded area (P)** shows this gain to producers, reflecting the extra revenue they receive per unit sold due to the subsidy.

Overall, the subsidy's benefit is split between consumers (via lower prices) and producers (via a higher effective price).

