

2 Price determination – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	Write it 3 times (English)		
Price elasticity of demand	_____	_____	_____
elastic	_____	_____	_____
inelastic	_____	_____	_____
total revenue	_____	_____	_____
income elasticity of demand	_____	_____	_____
normal good	_____	_____	_____
inferior good	_____	_____	_____
cross elasticity of demand	_____	_____	_____
substitutes	_____	_____	_____
complements	_____	_____	_____
consumer surplus	_____	_____	_____
producer surplus	_____	_____	_____

Recall

In **Part 1** you met demand, supply, and the **equilibrium price** where they meet. Part 2 looks at how strongly demand reacts to a change (**elasticity**), and the gains buyers and sellers get (**surplus**).

New ideas

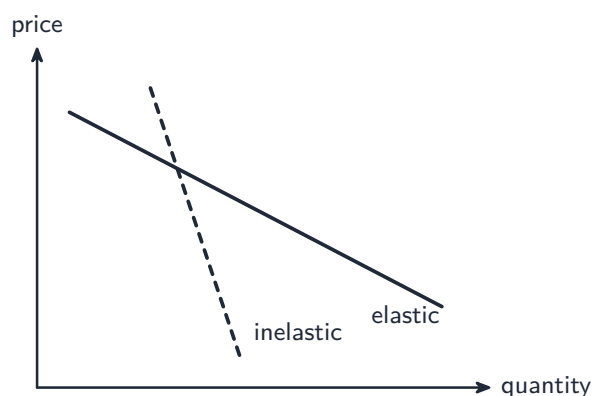
■ 1 Price elasticity of demand

Price elasticity of demand (PED) measures how much the quantity demanded reacts when the price changes:

$$\text{PED} = \frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}.$$

- demand is **elastic** when PED is more than 1 – quantity reacts a **lot**;
- demand is **inelastic** when PED is less than 1 – quantity reacts only a **little**.

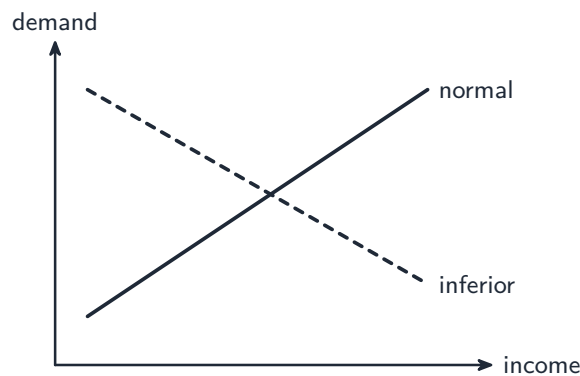
PED and **total revenue** (= price × quantity): if demand is **inelastic**, raising the price raises revenue; if **elastic**, cutting the price raises revenue.



Micro-check. Price rises 10% and quantity falls 30%. Is demand elastic or inelastic? [1]

■ 2 Income and cross elasticity

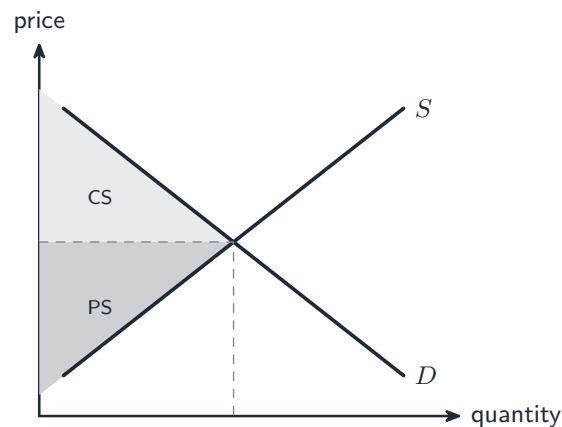
- **income elasticity of demand** (YED) measures how demand reacts to a change in income. A **normal good** has **positive** YED (demand rises as income rises); an **inferior good** has **negative** YED (demand falls as income rises – people switch to better goods).
- **cross elasticity of demand** (XED) is **positive** for **substitutes** and **negative** for **complements**.



Micro-check. Cheap instant noodles sell **less** as people get richer. Are they a normal or inferior good? [1]

■ 3 Consumer and producer surplus

- **consumer surplus** is the gain to buyers – the difference between the most they would have paid and the price they actually pay;
- **producer surplus** is the gain to sellers – the difference between the price they get and the least they would have accepted.



Micro-check. You would pay \$10 for a book but buy it for \$7. State your consumer surplus. [1]

Watch out: $PED = \% \Delta Q \div \% \Delta P$; if *elastic* (> 1) cut the price to raise revenue, if *inelastic* (< 1) raise it. Normal goods have *positive* YED, inferior goods *negative*; substitutes have *positive* XED, complements *negative*.

Practice

2.1 The price of a good rises by 20% and the quantity demanded falls by 10%. Find the **PED**, and state whether demand is elastic or inelastic. [2]

2.2 A firm sells a good with **inelastic** demand. State what happens to its total revenue if it **raises** the price. [1]

2.3 State whether each is a **normal** or an **inferior** good: (a) restaurant meals (demand rises with income); (b) bus travel (demand falls with income). [2]

2.4 State the sign of the **XED** (positive or negative) for (a) substitutes, (b) complements. [2]

2.5 Explain what **consumer surplus** is. [2]

2.6 Challenge. A 10% rise in the price of tea causes a 15% rise in the demand for coffee. Find the **XED**, and state what it shows about the two goods. [2]