Demand, supply, equilibrium and elasticity

Pearson Edexcel · International GCSE · Economics

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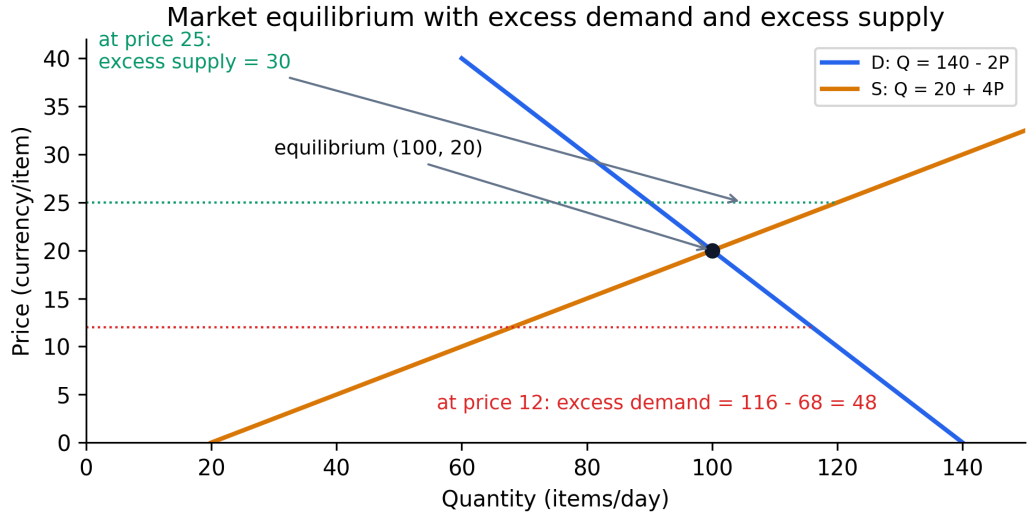
Must-know for this topic:

Family	Relationship
equilibrium	$Q_d = Q_s$ (here P = 20, Q = 100)
excess	at P = 12: excess demand = 116 − 68 = 48; at P = 25: excess supply = 120 − 90 = 30
PED	$= \frac{\%\Delta Q_d}{\%\Delta P}$; TR test: price up and TR up → inelastic
PES / YED	$= \frac{\%\Delta Q_s}{\%\Delta P}$ / $= \frac{\%\Delta Q_d}{\%\Delta \text{income}}$ (luxury > 1, normal > 0, inferior < 0)

Demand, supply and market equilibrium

Demand is the quantity consumers are willing AND able to buy at each price over a period (1.1.3a). A change in the good's own price causes a MOVEMENT ALONG the demand curve; a change in any other determinant SHIFTS it – advertising, income, fashion and tastes, the price of SUBSTITUTES (a rise shifts demand for this good right) and of COMPLEMENTS (a rise shifts it left), and demographic changes (1.1.3b–c). **Supply** is the quantity producers are willing AND able to sell at each price (1.1.3d); own-price changes move ALONG the supply curve, while costs of production, technology, indirect taxes, subsidies and natural factors (disasters, weather) SHIFT it (1.1.3e–f).

Equilibrium is where demand meets supply: $140 - 2P = 20 + 4P$ gives $P^* = 20$ currency units and $Q^* = 100$ items/day (1.1.3g). Shift analysis (1.1.3h): demand rising raises both equilibrium price and quantity; supply rising raises quantity but lowers price; both shifting leaves one variable indeterminate. EXCESS DEMAND at P = 12: $Q_d = 116$ against $Q_s = 68$, a shortage of 48; EXCESS SUPPLY at P = 25: $Q_s = 120$ against $Q_d = 90$, a surplus of 30 (1.1.3i). Market forces remove both: shortage bids the price UP, surplus pushes it DOWN, until the market returns to equilibrium (1.1.3j).



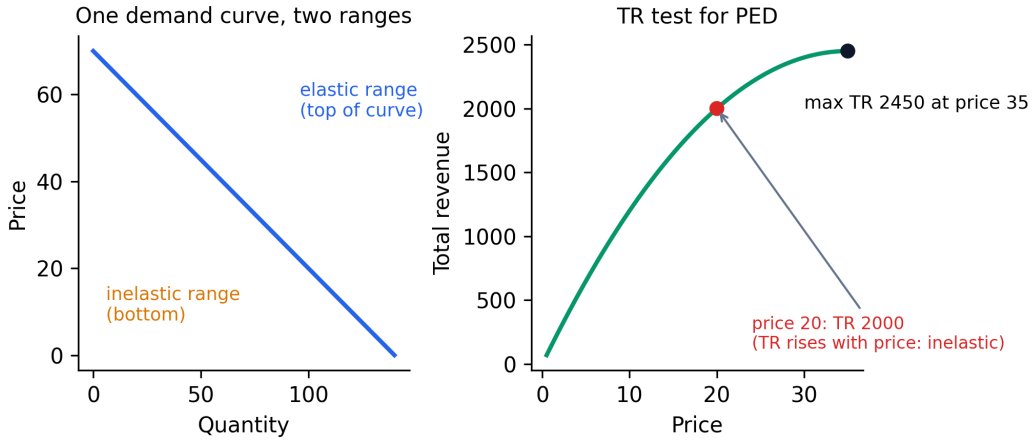
Original model: the shortage at 12 and the surplus at 25 are computed in the text.

Elasticity

Price elasticity of demand (PED, 1.1.4a–b): $PED = \frac{\%\Delta Q_d}{\%\Delta P}$. Calculation: price rising from 20 to 22 moves Q_d from 100 to 96, so $PED = \frac{-4\%}{+10\%} = -0.4$ (1.1.4c). The five interpretations (1.1.4e): 0 perfectly inelastic (vertical), between 0 and −1 inelastic, −1 unitary, beyond −1 elastic, infinite perfectly elastic (horizontal). PED depends on substitutes, the degree of necessity, the percentage of income spent on the good, and time (1.1.4f). The TOTAL REVENUE test (1.1.4g): TR = $P \times Q$; at P = 20, TR = 2000; at P = 22, TR = 2112 – a price rise RAISING revenue proves inelastic demand; on the shared curve TR peaks at 2450 where P = 35 (unitary PED).

Price elasticity of supply (PES, 1.1.4h–l): $PES = \frac{\%\Delta Q_s}{\%\Delta P}$; on the shared model price 20 → 24 moves Q_s 100 → 116, so PES = $\frac{16\%}{20\%} = +0.8$ (inelastic supply). PES depends on the factors of production (their mobility), availability of stocks, spare capacity and time (1.1.4m). Examples (1.1.4n): manufactured products tend to be MORE elastic (stocks, spare capacity, quick retooling); primary products LESS elastic (growing periods, perishability, fixed land).

Income elasticity of demand (YED, 1.1.4o–q): $YED = \frac{\%\Delta Q_d}{\%\Delta \text{income}}$; income +10% raising quantity +8% gives YED = +0.8. Interpretation (1.1.4r): YED > 1 LUXURY, a normal necessity has $0 < YED < 1$, YED = 1 means unit income elasticity, and YED < 0 means INFERIOR. Significance (1.1.4s): PED guides indirect taxes (inelastic goods raise reliable revenue) and subsidies; YED guides firms' forecasts over the cycle – luxury sellers boom with incomes, demand for inferior goods may rise as incomes fall, holding other influences constant.



Original model: elastic at the top of the demand curve, inelastic at the bottom; TR peaks where PED is unitary.

Checklist

- Demand and supply definitions; movements versus shifts with the five demand and five supply determinants (1.1.3a–f).
- Equilibrium from $Q_d = Q_s$; shift analysis; excess demand 48 at P = 12 and excess supply 30 at P = 25; market-force adjustment (1.1.3g–j).
- PED definition, formula, calculation (−0.4), the five value ranges, four influence factors, the TR test (2000 → 2112 → 2450) (1.1.4a–g).
- PES definition, formula, calculation (+0.8), five ranges, four factors, manufactured vs primary (1.1.4h–n).
- YED definition, formula, calculation (+0.8), luxury/normal/inferior thresholds; significance for business and government (1.1.4o–s).

Boundary notes: Paper 1 (microeconomics, 80 marks) mixes MCQ, short answer, data response and open questions; calculators allowed. Use precise definitions; diagram marks need labelled axes, curves, equilibria and the shift arrow. All worked numbers are original on the shared model.