1.3 Supply and price elasticity of supply

Name: _____ Class: _____ Date: _____ **Total: 23 marks**

KEY WORDS price elasticity of supply

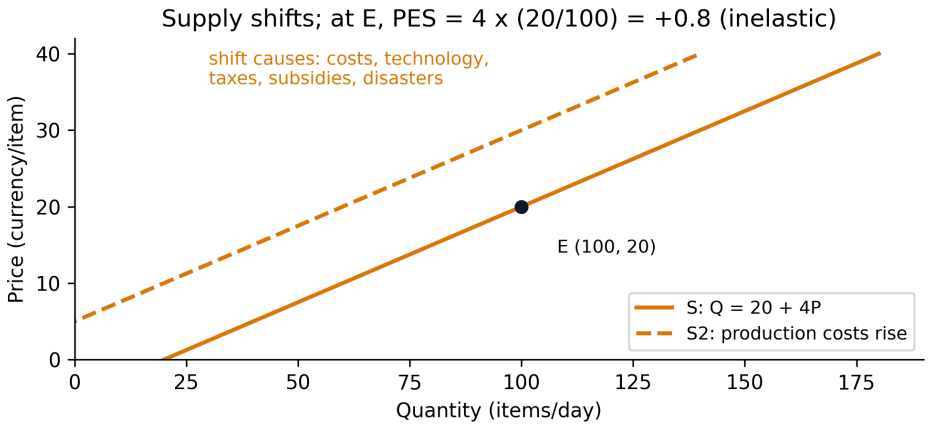
Supply and price elasticity of supply

Objective

Apply movements versus shifts of supply with their five causes, distinguish specific from ad valorem taxes, and calculate and interpret PES with the short-run/long-run distinction (spec 1.3.3, rows 1–2). Calculations use the shared model $Q_s = 20 + 4P$.

1 Key knowledge and worked examples

Supply and PES. Own-price changes move ALONG the supply curve; shifts come from production costs, technology, indirect taxes (specific per unit, ad valorem as a percentage), subsidies and natural disasters. PES = %ΔQs ÷ %ΔP; it depends on time period, stock and perishability, factor mobility, legal constraints and spare capacity. All factors are variable only in the long run, so supply is more elastic then.



Original model on the shared supply curve; the shift causes are listed in the text.

2 Practice

2.1 For each event, state movement along or shift (and direction) of the supply curve: (a) the market price of wheat rises; (b) fertiliser costs rise. [2]

2.2 Name any three of the five shift causes of the supply curve. [3]

2.3 Distinguish a specific tax from an ad valorem tax with one example of each. [2]

2.4 On $Q_s = 20 + 4P$, price rises from 20 to 24. Calculate PES and interpret it. [3]

2.5 State the short-run and long-run factor conditions, and link them to PES. [2]

2.6 A firm holds large stocks of a durable good. What does this imply for its price elasticity of supply, and why? [2]

3 Exam-style questions

3.1 *(Original.)* A technology improvement means sellers offer 24 more items per day at every price, so supply becomes $Q_s = 4P + 44$. With demand $Q_d = 140 - 2P$, find the new equilibrium price and quantity, and explain the adjustment from the old equilibrium (20, 100). [5]

3.2 *(Original.)* Explain why the price elasticity of supply of fresh strawberries differs between the picking day and two years later, naming two PES factors. [4]

Solutions

2.1 (a) Movement along the supply curve (a higher price raises quantity supplied). (b) Shift of the supply curve left – higher costs cut supply at every price.

2.2 Any three of: costs of production, new technology, indirect taxes, subsidies, natural disasters.

2.3 Specific: a fixed amount per unit (6 currency units per item of a carbon-neutral fuel). Ad valorem: a percentage of price (20% VAT on the item's price).

2.4 At $P = 20$, $Q_s = 100$; at $P = 24$, $Q_s = 116$. %ΔQ = 16%, %ΔP = 20%, so PES = +0.8: inelastic supply (quantity responds less than proportionately).

2.5 Short run: at least one factor fixed; long run: all factors variable. Supply response is limited in the short run, so PES rises over time.

2.6 More elastic supply: stocks can be released immediately when price rises, so quantity supplied responds strongly even in the short run (perishable goods cannot do this).

3.1 Set $Q_d = Q_s$: $140 - 2P = 4P + 44$, so $96 = 6P$ and $P = 16$, $Q = 108$. At the old price 20, supply now exceeds demand (100 → supply = 124 at 20 vs demand 100), so excess supply pushes price down from 20 towards 16; quantity traded rises from 100 to 108 as the market moves along both curves to the new equilibrium.

3.2 Picking day: supply is nearly fixed by the planted crop – highly inelastic (perfectly inelastic at the crop limit); stock is perishable, so it cannot be stored to answer price changes. Two years later: planting can fully adjust (all factors variable), new capacity and entry are possible, so supply is far more elastic. Factors named: time period (the dominant one) and availability of stock/perishability.

Local review guidance: percentage changes before dividing with the sign convention stated; the disequilibrium at the old price identified BEFORE the new equilibrium is solved; PES factors named from the specification list, not paraphrased. This is authored classroom guidance.