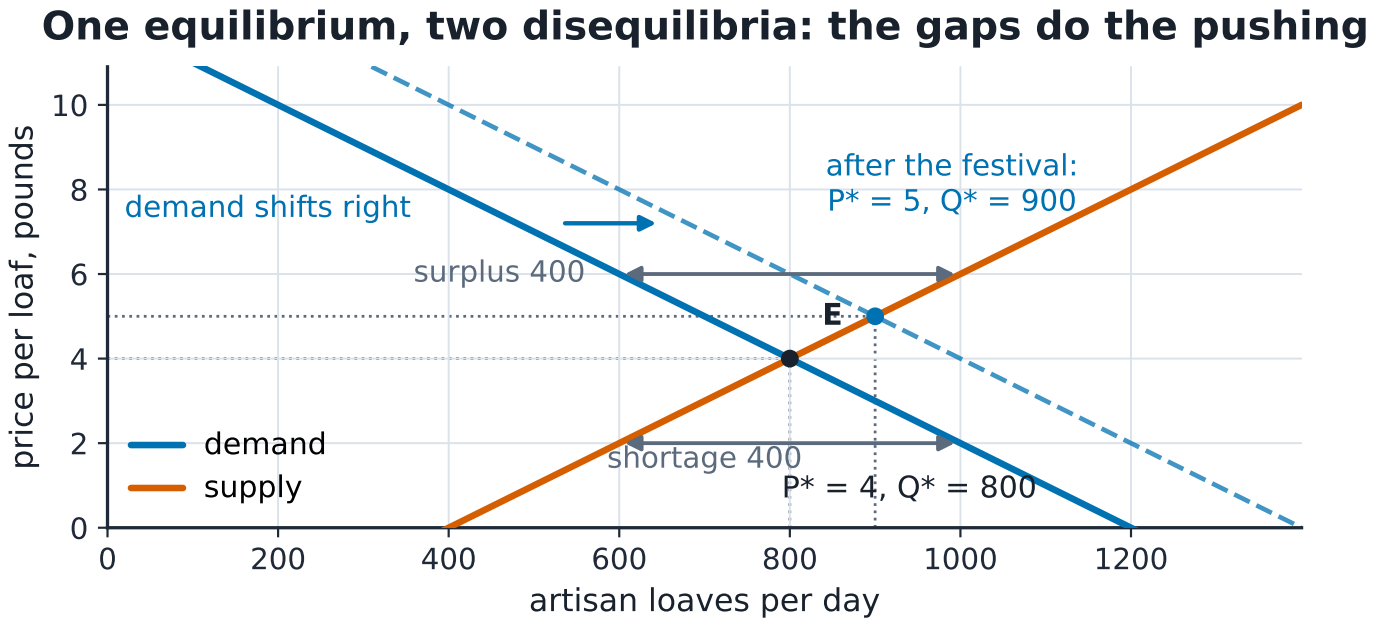
Exercise walk-through

# 3.2
# Demand and supply

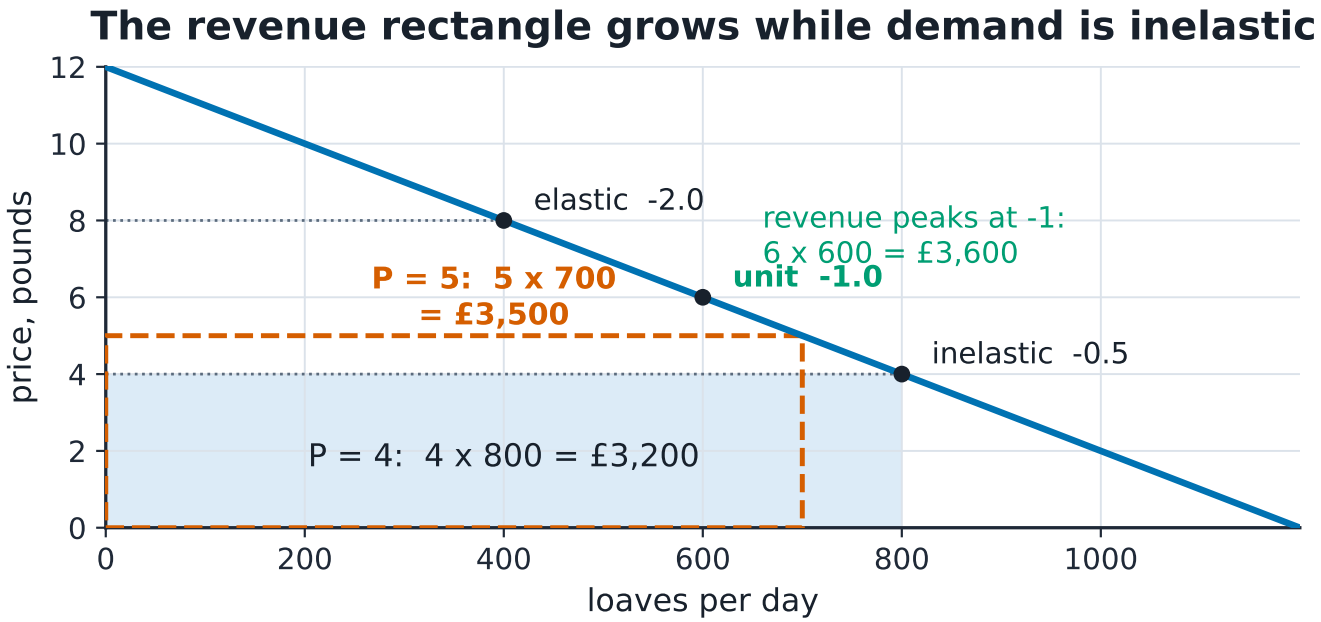
University Business

# Demand and supply: one equilibrium, two signatures



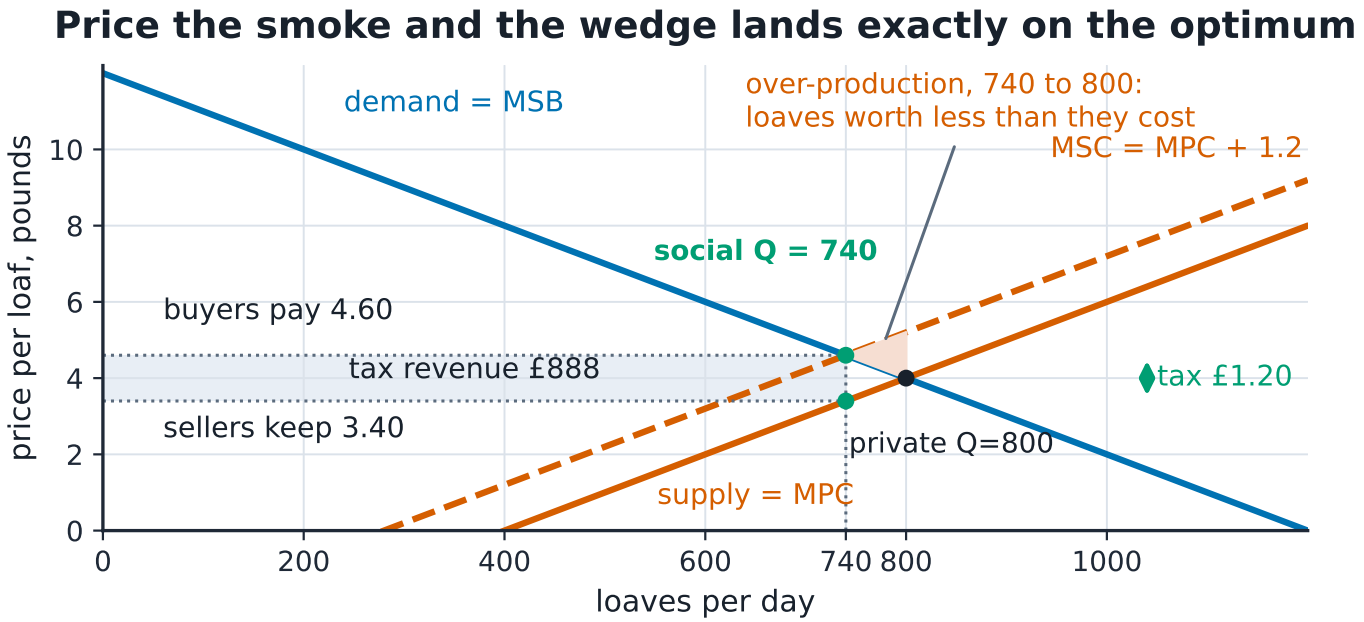

**Equilibrium** at 4 pounds, 800 loaves; the festival moves it to 5 and 900.

# Elasticity: the percentage ruler




Revenue rises from 3,200 to 3,500 while demand is inelastic.

# Market failure: price the smoke




A 1.20 tax moves output from 800 to the social optimum of 740.

# Exercises 2.1·2.2

**2.1** Solve for the equilibrium price and quantity. Then measure the shortage at a price of £5. [4]

**2.2** A pay rise across the city shifts demand to $Q_d = 1000 - 50P$. Find the new equilibrium and state the direction signature that identifies a demand shift. [4]

# Exercises 2.1·2.2

**2.1** Solve for the equilibrium price and quantity. Then measure the shortage at a price of £5. [4]

**2.1**

- $900 - 50P = 100 + 50P$ gives $800 = 100P$.
- $P^* = £8$, $Q^* = 500$ cups.
- At £5: $Q_d = 650$, $Q_s = 350$.
- **Shortage of 300 cups.**

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**2.2** A pay rise across the city shifts demand to $Q_d = 1000 - 50P$. Find the new equilibrium and state the direction signature that identifies a demand shift. [4]

**2.2**

- $1000 - 50P = 100 + 50P$.
- $P^* = £9$, $Q^* = 550$.
- Price AND quantity rose together.
- The signature of a demand shift along an upward supply.

# Exercises 2.3·2.4

**2.3** Bean prices fall and supply becomes $Q_s = 200 + 50P$. Find the new equilibrium and state its signature. [4]

**2.4** Both changes arrive in the same week. Find the equilibrium and explain, in one line, why the price returned to its old level. [3]

# Exercises 2.3·2.4

**2.3** Bean prices fall and supply becomes $Q_s = 200 + 50P$. Find the new equilibrium and state its signature. [4]

**2.3**

- $900 - 50P = 200 + 50P$.
- $P^* = £7$, $Q^* = 550$.
- Quantity rose but the price FELL.
- The supply-shift signature.

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**2.4** Both changes arrive in the same week. Find the equilibrium and explain, in one line, why the price returned to its old level. [3]

**2.4**

- $1000 - 50P = 200 + 50P$ gives $P^* = £8$, $Q^* = 600$.
- The two shifts push the price in opposite directions by equal amounts ($\pm £1$ here), so they cancel.
- The quantity gains add.

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# Exercise 2.5

**2.5** Classify each event as (i) movement along a curve, (ii) demand shift, (iii) supply shift: (a) the cup price falls to £6 and carts sell more; (b) a latte trend sweeps the city; (c) three new carts open; (d) the rent each cart pays rises; (e) the price of tea (a substitute) falls. [5]

# Exercise 2.5

**2.5** Classify each event as (i) movement along a curve, (ii) demand shift, (iii) supply shift: (a) the cup price falls to £6 and carts sell more; (b) a latte trend sweeps the city; (c) three new carts open; (d) the rent each cart pays rises; (e) the price of tea (a substitute) falls. [5]

**2.5**

- (a) i – a price change moves along the curves.
- (b) ii – tastes shift demand.
- (c) iii – more sellers shift supply.
- (d) iii – an input price shifts supply.
- (e) ii – a cheaper substitute shifts demand for coffee left.

# Exercise 2.6

**2.6** At the base equilibrium a commentator says ”carts are greedy: the price should be £5, not £8”. Using the shortage you computed in question 2.1, explain in two lines what a price ceiling at £5 would do. [3]

# Exercise 2.6

**2.6** At the base equilibrium a commentator says ”carts are greedy: the price should be £5, not £8”. Using the shortage you computed in question 2.1, explain in two lines what a price ceiling at £5 would do. [3]

**2.6**

- A ceiling at £5 holds the price below the £8 equilibrium.
- Buyers plan 650 while carts offer 350: the 300-cup shortage turns into queues and rationing instead of a higher price.
- The equilibrium price did not fall from greed; it sits where the plans agree.