Understanding Economics · Chapter 1

# Foundations, Supply & Demand

What economics is, and how prices get made

**Tickets go on sale at 10:00.**

**By 10:01, every seat is sold out.**

**An hour later, resale prices are 3× face value. Why?**

**To crack it: a few building blocks.**

An illustrative scenario

**Economics** =

the study of how people make **choices** when they **can't have everything**.

# Micro vs. macro

Two zoom levels on the same subject

| | Microeconomics | Macroeconomics |
|---|---|---|
| **Zoom** | One person, firm, or market | The whole economy |
| **Asks** | Why is coffee $5? | Why are all prices rising? |
| | How many workers to hire? | Why is unemployment up? |
| | Who buys concert tickets? | What does the central bank do? |

# Section 2

## Scarcity, opportunity cost & the margin

The ideas everything else rests on

**Scarcity:**

we want more than we can have.

So every choice has a **cost.**

**Opportunity cost** =
the value of the next-best thing you gave up.

# What does that concert really cost?

Illustrative numbers

| | Amount |
|---|---|
| **Ticket price** | $80 |
| **Shift you could have worked instead** | $120 |
| **True cost of going** | $200 |

Money spent plus the best thing you gave up. Going is only worth it if the night is worth $200 to you.

# Opportunity cost hides everywhere

Time: four years of college costs tuition and four years of wages

Money: cash under the mattress costs the interest it could earn

Space: a store shelf for one product is a shelf not used for another

# Think at the margin

Marginal = one more

Marginal means one more: the next unit, the next hour, the next dollar

Rule: do it if the extra benefit > extra cost

Sunk costs don't count: what's already spent can't be un-spent

# Should the coffee shop stay open later?

Illustrative numbers · extra cost = $40 staff & lights + beans, milk & cups

| Extra hour | Extra sales | Extra cost | Do it? |
|---|---|---|---|
| **8 to 9 pm** | $90 | $58 | Yes |
| **9 to 10 pm** | $55 | $51 | Yes, barely |
| **10 to 11 pm** | $30 | $46 | No |

Stop where the extra cost of one more hour beats the extra benefit.

# People respond to incentives

An incentive is anything that rewards or punishes a choice

Prices are the biggest incentive of all

Change the reward, and behavior changes, sometimes in ways nobody planned

# How economists think

Models simplify on purpose, like a map

Ceteris paribus: change one thing, hold everything else equal

Positive = what is (testable). Normative = what should be (a value judgment)

# Section 3

## Economic systems & the circular flow

How a society organizes its choices

# Who decides?

Every economy must decide: what to make, how, and for whom

| System | Who answers the 3 questions |
|---|---|
| **Traditional** | Custom: do what was done before |
| **Command** | The government plans it |
| **Market** | Millions of buyers and sellers, through prices |
| **Mixed** | Mostly markets, plus government rules and services |

# The four factors of production

The ingredients every economy uses, and what each one earns

**Land:** natural resources → earns **rent**

**Labor:** people's work → earns **wages**

**Capital:** tools, machines, buildings → earns **interest**

**Entrepreneurship:** combining them and taking the risk → earns **profit**

# The circular flow



# Section 4

## The production possibilities frontier

A picture of trade-offs

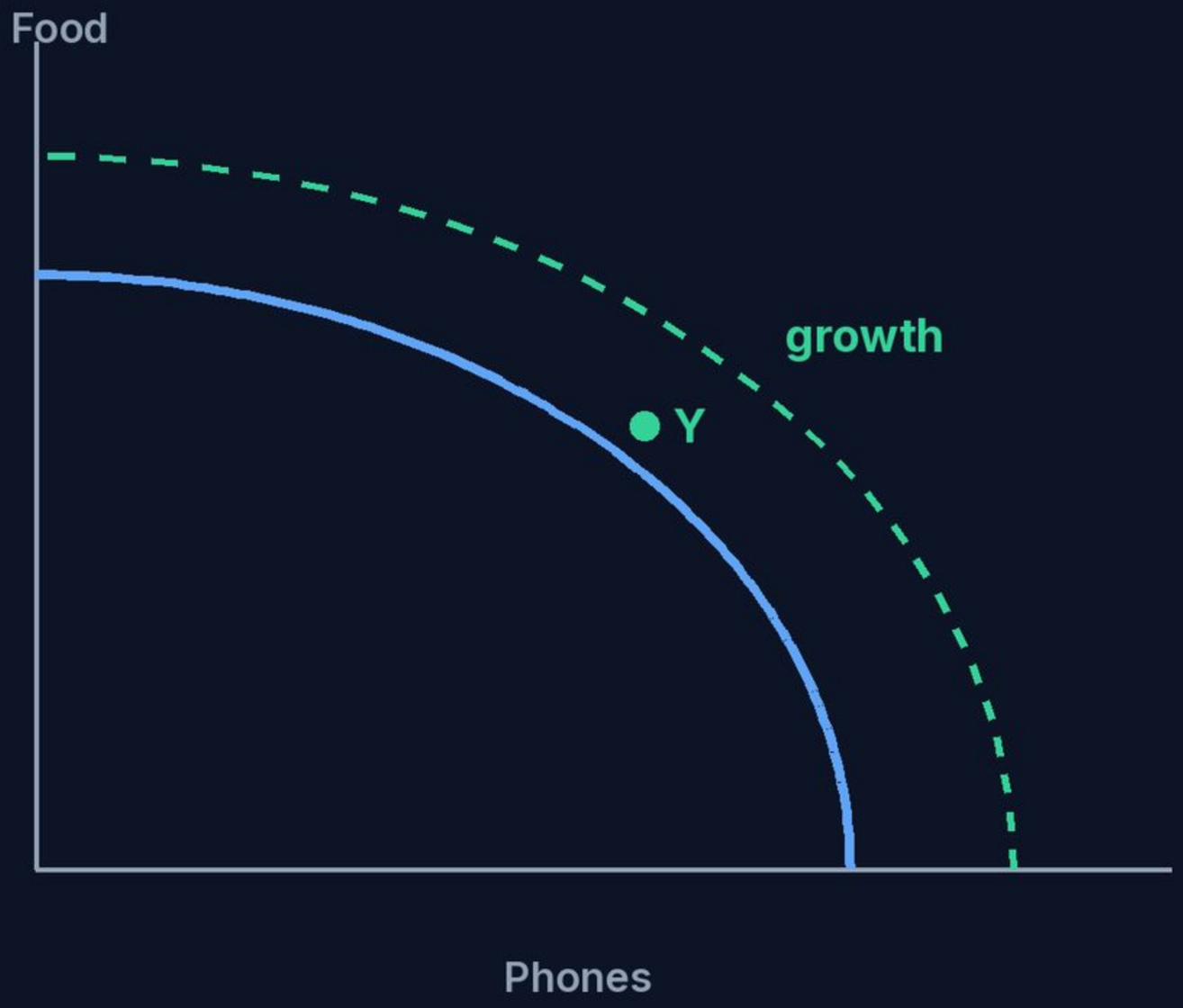
# One country, two goods

Made-up economy, illustrative numbers

| Option | Food (tons) | Phones (thousands) |
|---|---|---|
| A | 100 | 0 |
| B | 90 | 10 |
| C | 70 | 20 |
| D | 40 | 30 |
| E | 0 | 40 |

Each extra 10 thousand phones costs more and more food: 10, then 20, then 30, then 40 tons.

# The production possibilities frontier




**Growth**

More workers, more machines, or better technology

→ the whole frontier shifts out.

Y is now within reach.

Invest today → more of both tomorrow.

# Section 5

## Comparative advantage

Why trade makes both sides better off

# Two workers at a café

Made-up numbers: what each can make in one hour

| | Sandwiches | OR coffees |
|---|---|---|
| **Maya** | 30 | 60 |
| **Leo** | 10 | 40 |

Maya is faster at both. That's absolute advantage.

So should Maya do everything? No. Look at what each task costs.

# What each task really costs

Opportunity cost = what you give up

| | 1 sandwich costs… | 1 coffee costs… |
|---|---|---|
| **Maya** | 2 coffees | ½ sandwich |
| **Leo** | 4 coffees | ¼ sandwich |

Lowest cost wins: Maya makes sandwiches, Leo makes coffee. That's comparative advantage.

# Specialize, and the café gets more of both

Two hours each. Specialize = Leo all coffee; Maya 1½ h sandwiches, ½ h coffee

| | Sandwiches | Coffees |
|---|---|---|
| **Split time evenly** | 40 | 100 |
| **Specialize** | 45 | 110 |

More sandwiches and more coffee, from the same two people, same hours. That's the gain from trade.

# Why this matters far beyond a café

People: a great lawyer still hires an assistant

Countries: each makes what it gives up least for, then trades. Both can win, even if one is better at everything

But inside a country, some workers and industries lose. More in Chapter 6

# Section 6

## Demand

What buyers want, and what moves it

**Demand** = how much people want to buy **at each possible price.**

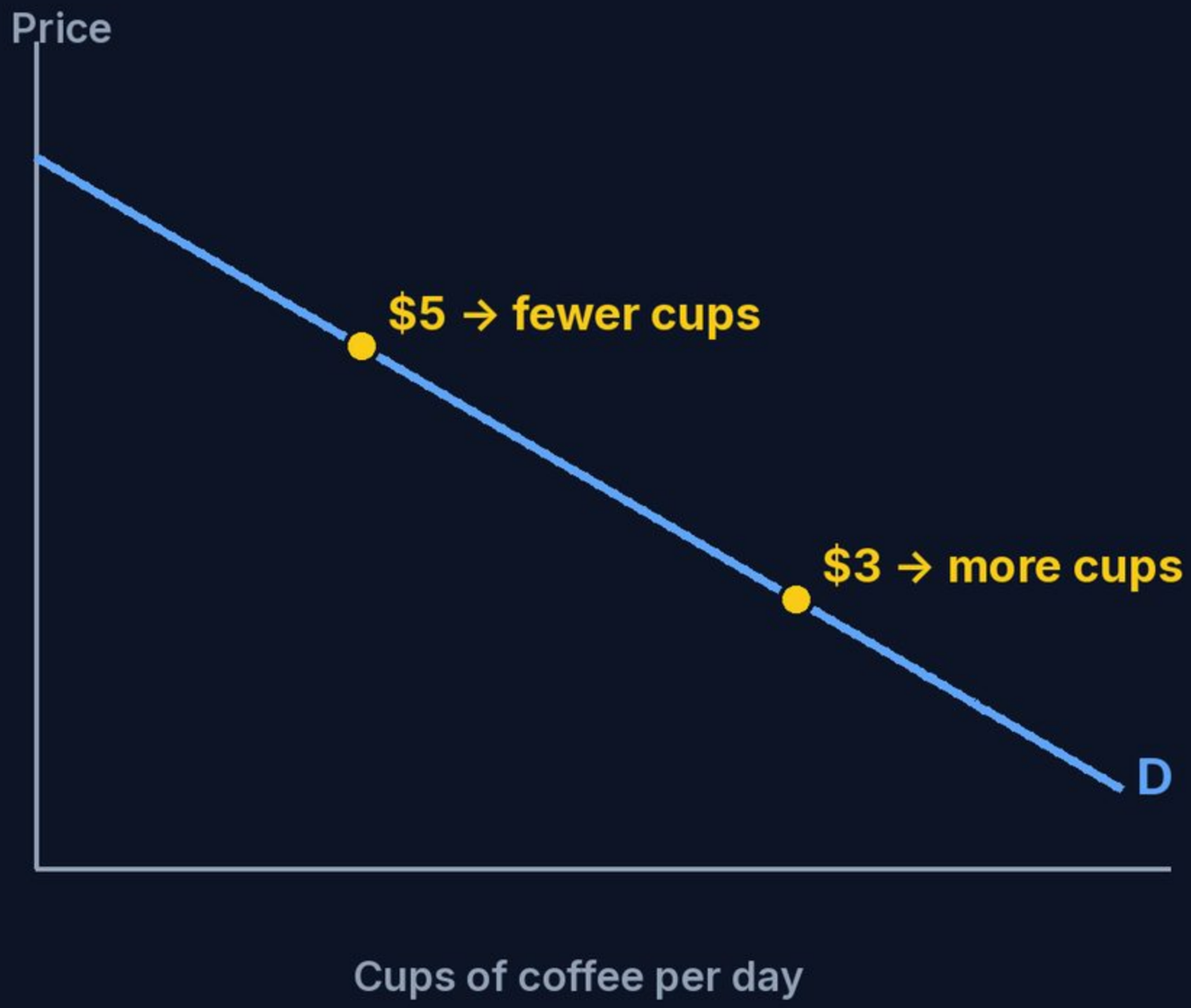
# A demand schedule

Coffee in a small town, illustrative numbers

| Price per cup | Cups wanted per day |
|---|---|
| $3.00 | 1,400 |
| $3.50 | 1,200 |
| $4.00 | 1,000 |
| $4.50 | 800 |
| $5.00 | 600 |

Higher price, fewer cups wanted. Plot these points and you get the demand curve.

# The demand curve




**Law of demand**

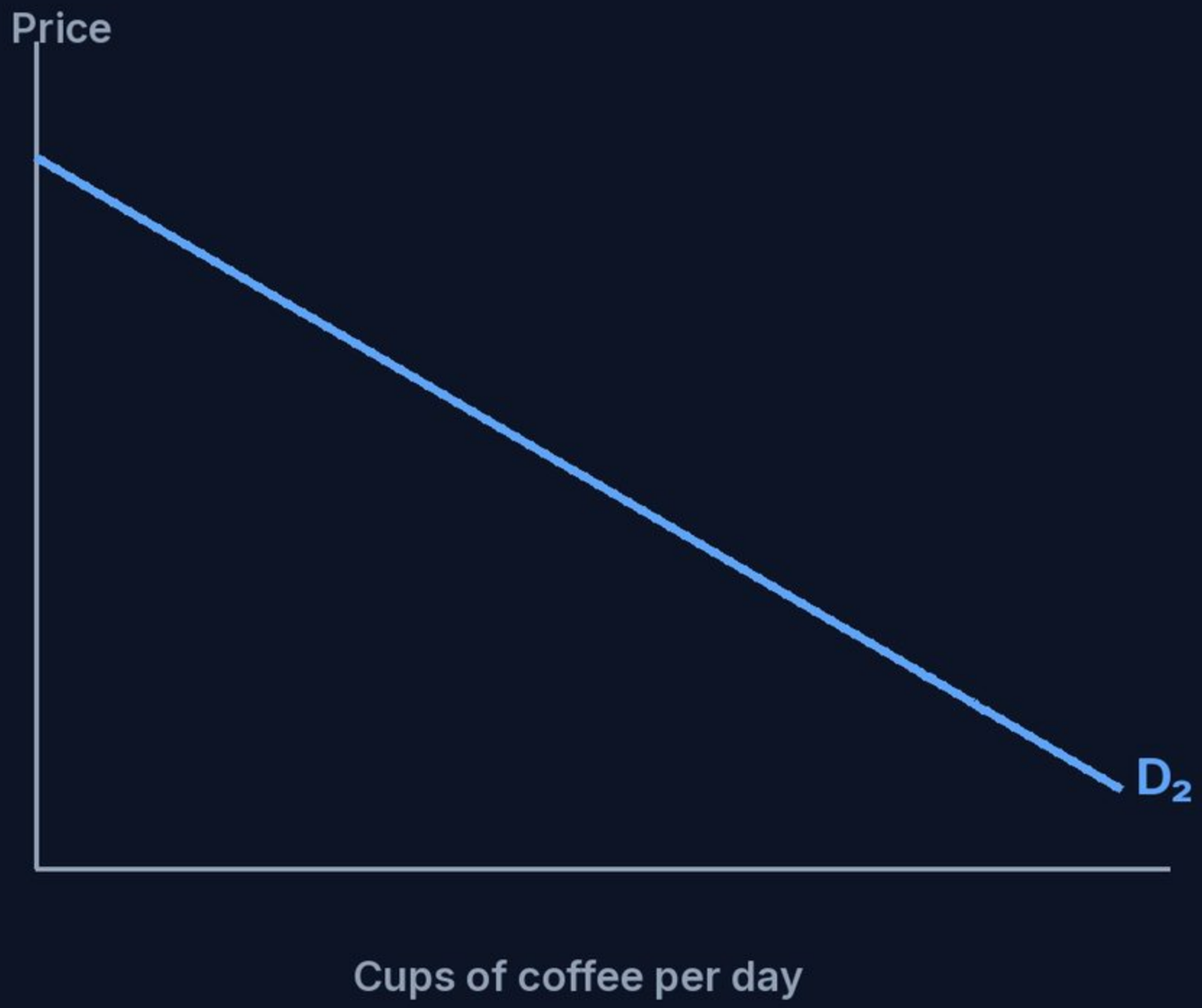
Price up → quantity wanted down.

Price down → quantity wanted up.

Why? Substitution: pricier → people switch to other options.

Income effect: a higher price leaves less to spend.

# Moving along vs. shifting the curve




**The trap**

A good's own price never shifts its demand curve.

Price moves you along it.

Everything else shifts it.

# What shifts demand

- **Income:** more money → more demand for most goods
- **Number of buyers:** more people in the market
- **Related goods:** substitutes & complements
- **Tastes:** a trend, a new study, a viral video
- **Expectations:** expect prices to rise → buy now

# Related goods: substitutes & complements

**Substitutes:** used instead of each other, like coffee and tea

Price of tea ↑ → more people drink coffee → coffee demand shifts **right**

**Complements:** used together, like cars and gas

Price of gas ↑ → demand for gas-guzzling cars shifts **left**

Quick check: the price of **tea** jumps. What happens to **coffee** demand?

→ It **shifts right.** Tea, the substitute, got pricier.

# Section 7

## Supply

What sellers offer, and what moves it

# Add supply to the schedule

Same town, illustrative numbers

| Price per cup | Cups wanted | Cups offered |
|---|---|---|
| $3.00 | 1,400 | 600 |
| $3.50 | 1,200 | 800 |
| $4.00 | 1,000 | 1,000 |
| $4.50 | 800 | 1,200 |
| $5.00 | 600 | 1,400 |

Higher price, more cups offered: the supply schedule.

At $4.00, wanted = offered. Hold that thought for Section 8.

# The supply curve

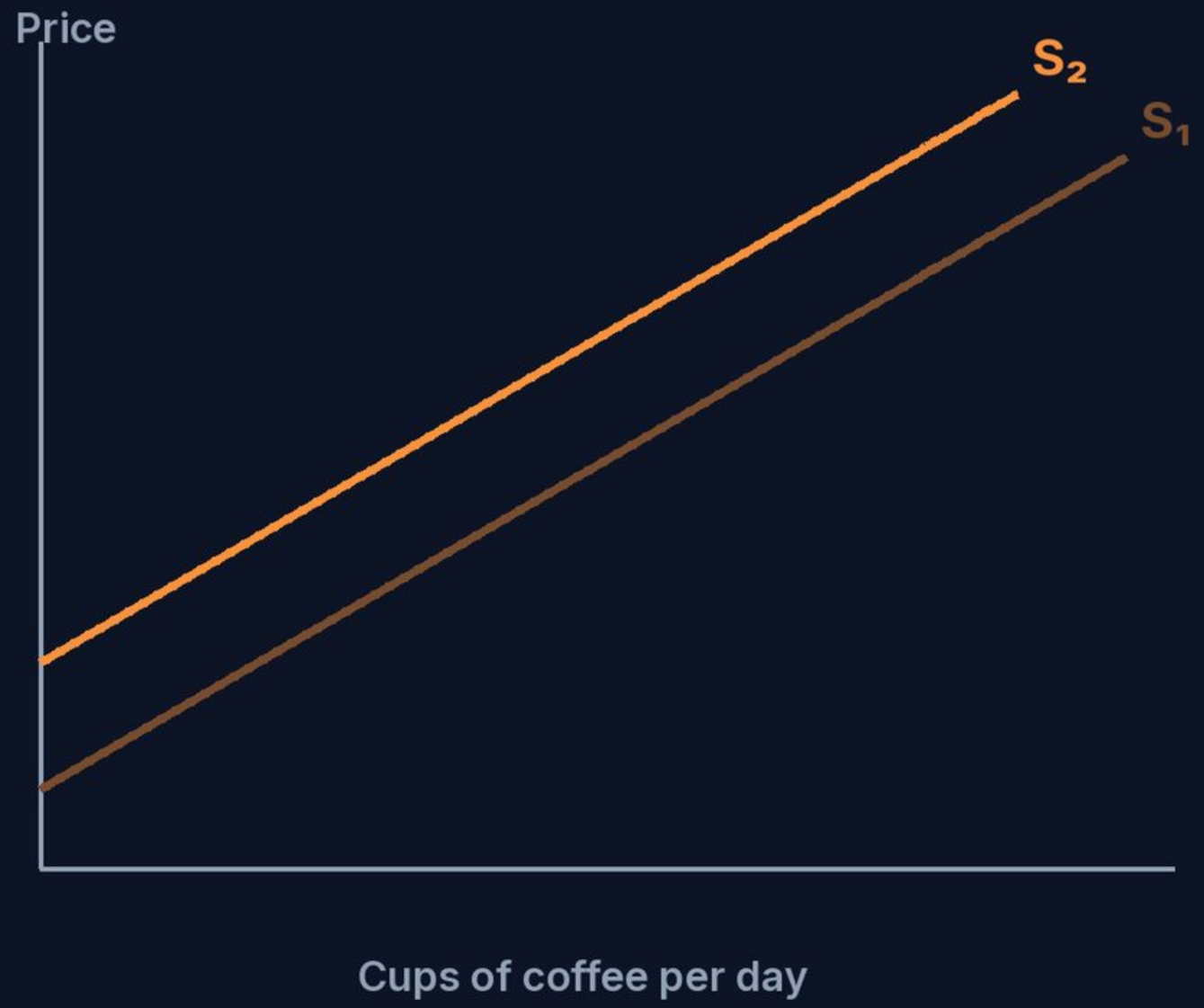



## Law of supply

Price up → quantity offered up.

A higher price makes selling more profitable, so sellers offer more and new ones join.

# Shifting supply




**Shift LEFT**

Less offered at every price.

Coffee bean prices spike.

# What shifts supply

- **Input prices:** beans, milk, wages, rent
- **Technology:** faster, cheaper ways to make it
- **Number of sellers:** cafés opening or closing
- **Expectations:** expect higher prices later → hold back now
- **Government:** taxes, subsidies, regulations
- **Other uses of the same resources:** a farmer can grow corn or soybeans

Quick check: a new machine lets cafés make coffee **twice as fast.**

What happens to the **supply of coffee?**

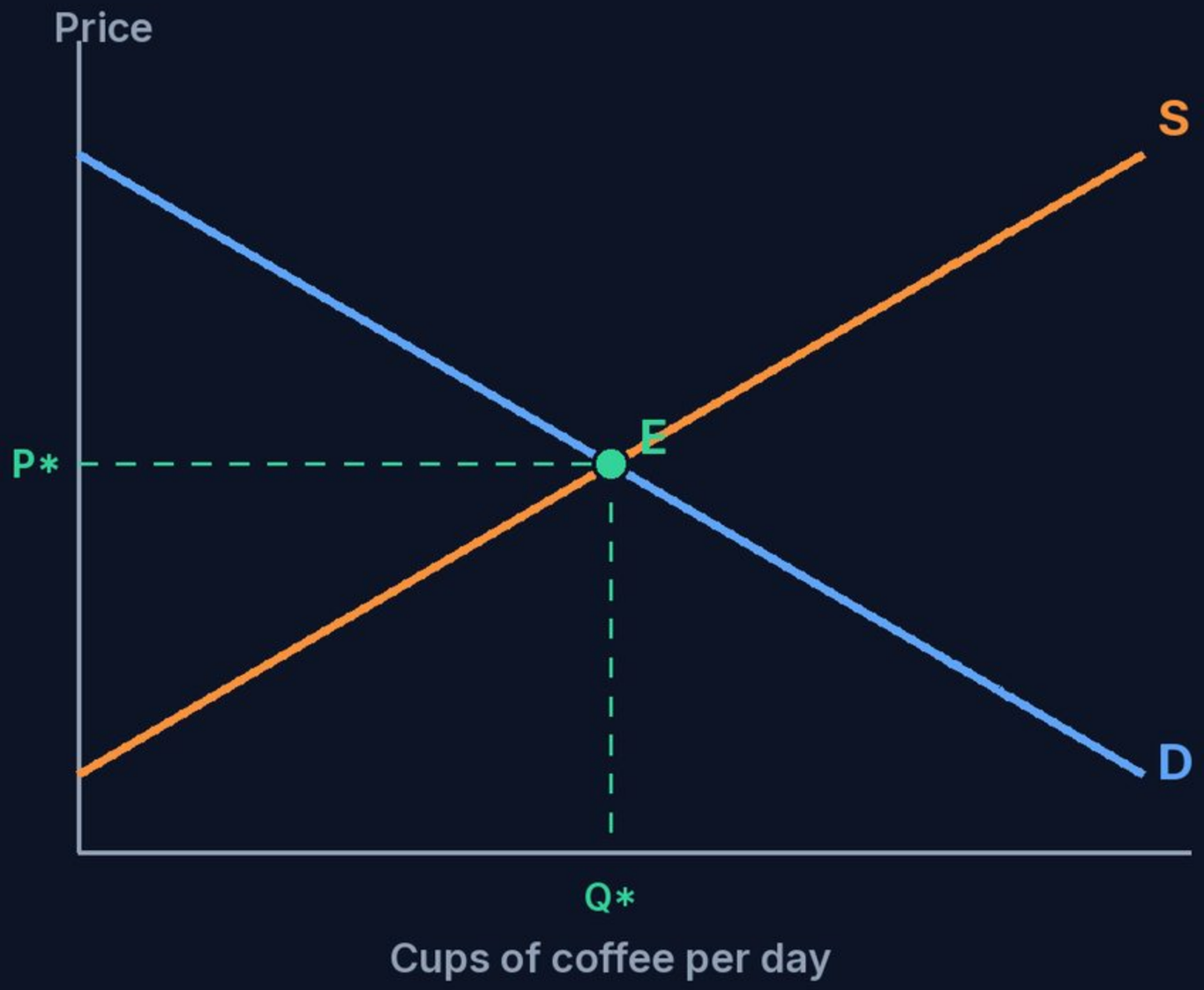
→ It **shifts right.** Cheaper to make, so more is offered at every price.

# Section 8

## Equilibrium

Where the price lands, and what happens when things change

# Put them together



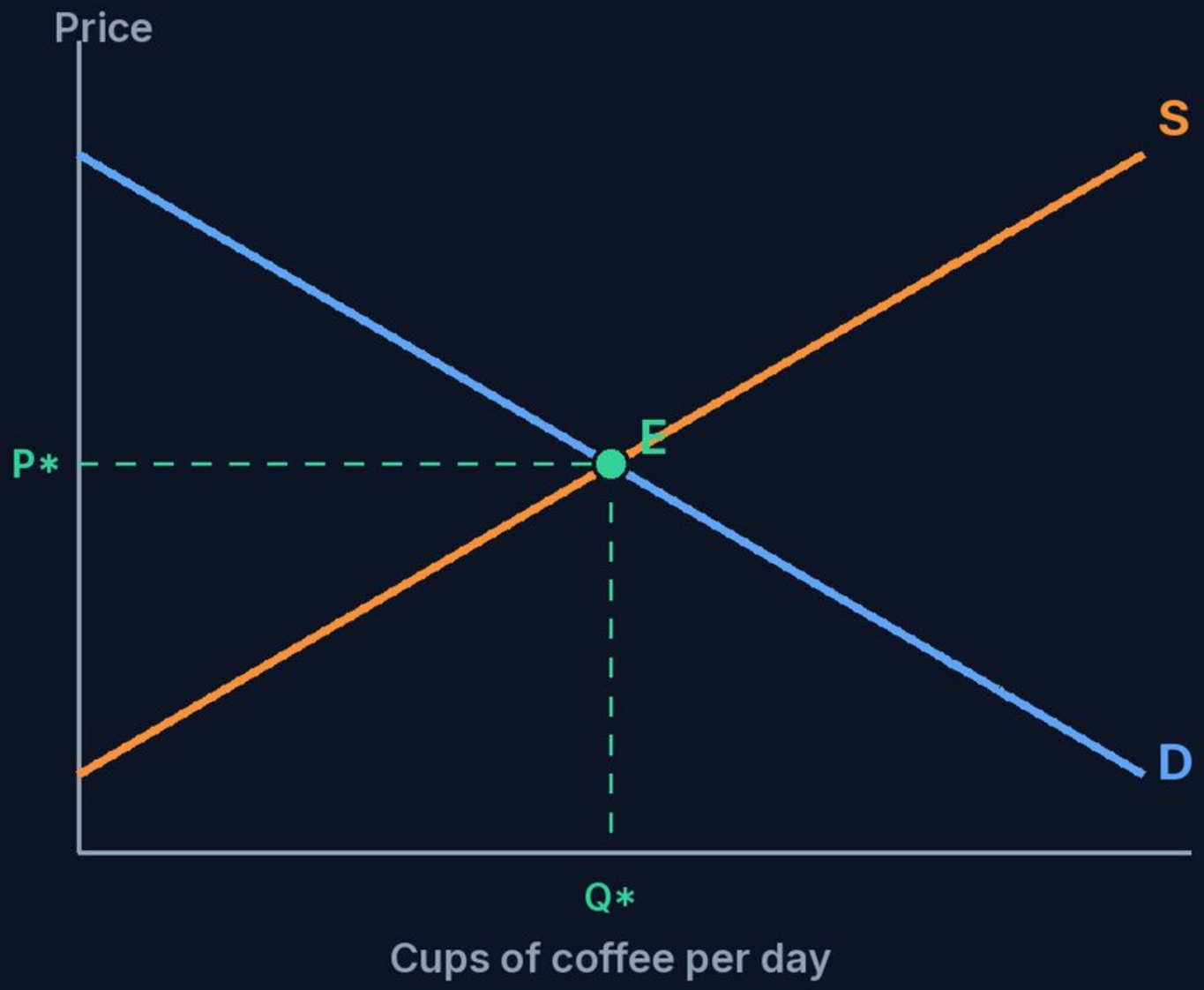

**Equilibrium**

Where the curves cross.

Quantity wanted = quantity offered.

P * = market price. Q * = cups sold.

# Below equilibrium: shortage

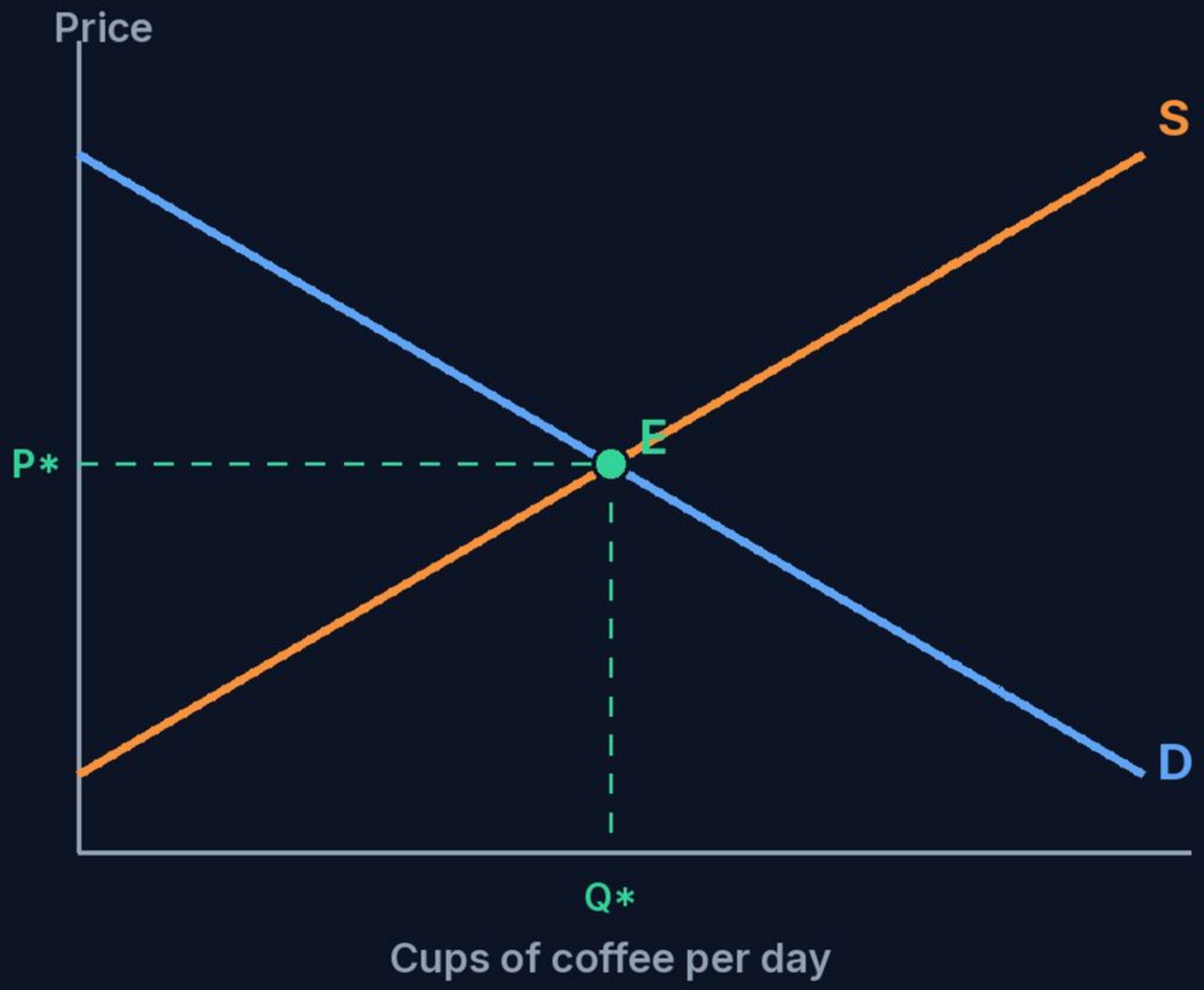



**…until it closes**

Back at equilibrium.

Nobody had to plan it.

# Above equilibrium: surplus




**So the price falls**

…until the surplus is gone.

Back at equilibrium.

# Shortage and surplus, in numbers

Same town, illustrative numbers

| Price | Wanted | Offered | Result |
|---|---|---|---|
| **$3.50** | 1,200 | 800 | Shortage of 400 |
| **$4.00** | 1,000 | 1,000 | Equilibrium |
| **$4.50** | 800 | 1,200 | Surplus of 400 |

Only one price clears the market: $4.00. Any other price leaves a gap that pushes it back.

**Shortage** → price rises

**Surplus** → price falls

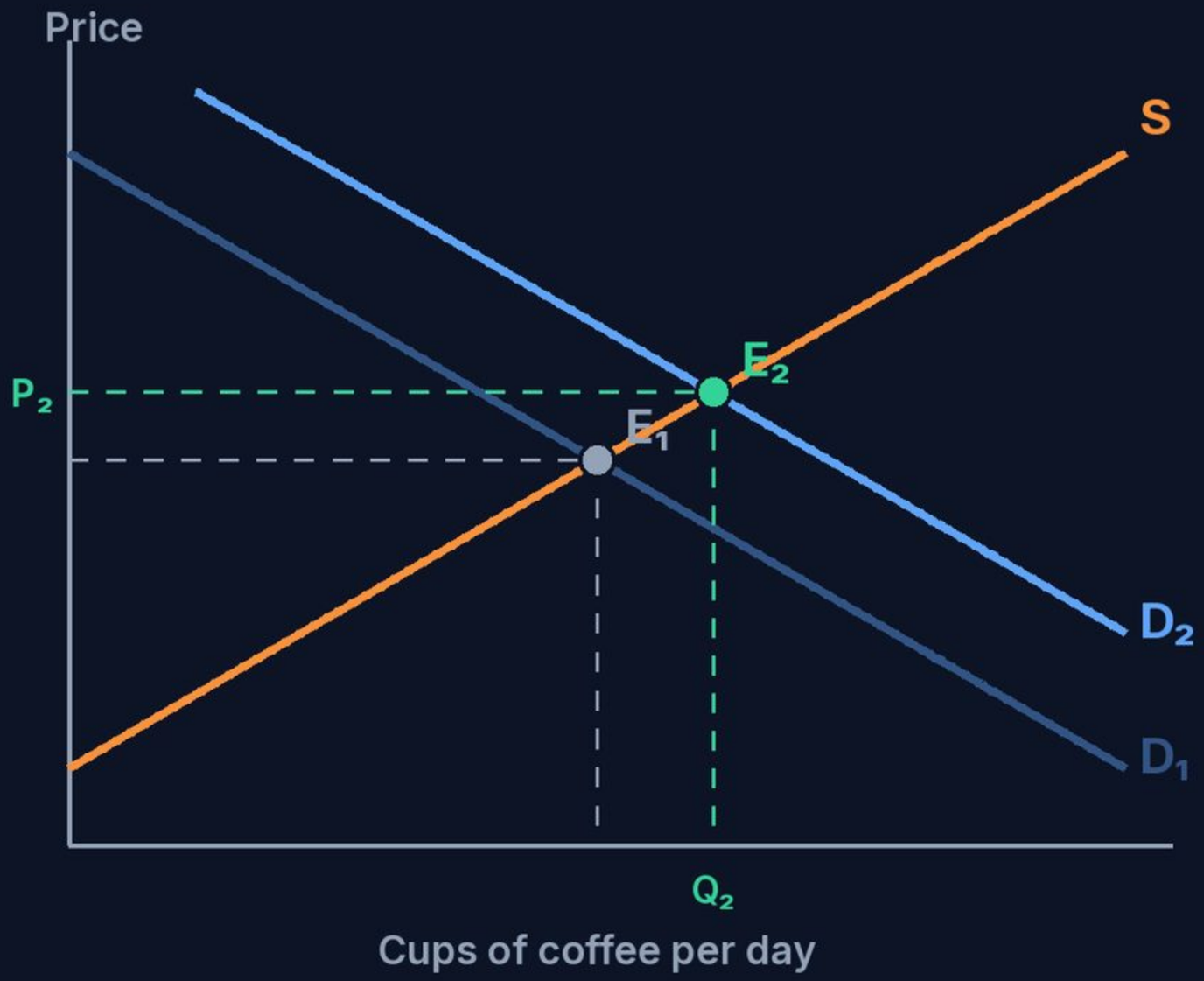
Price is a **signal:** it tells buyers and sellers what to do.

# The 4-step method

Use this every time something changes

1. Draw the market as it is now
2. Which curve moves: demand, supply, or both?
3. Which direction: right (more) or left (less)?
4. Find the new crossing: what happened to price and quantity?

# Demand shifts right



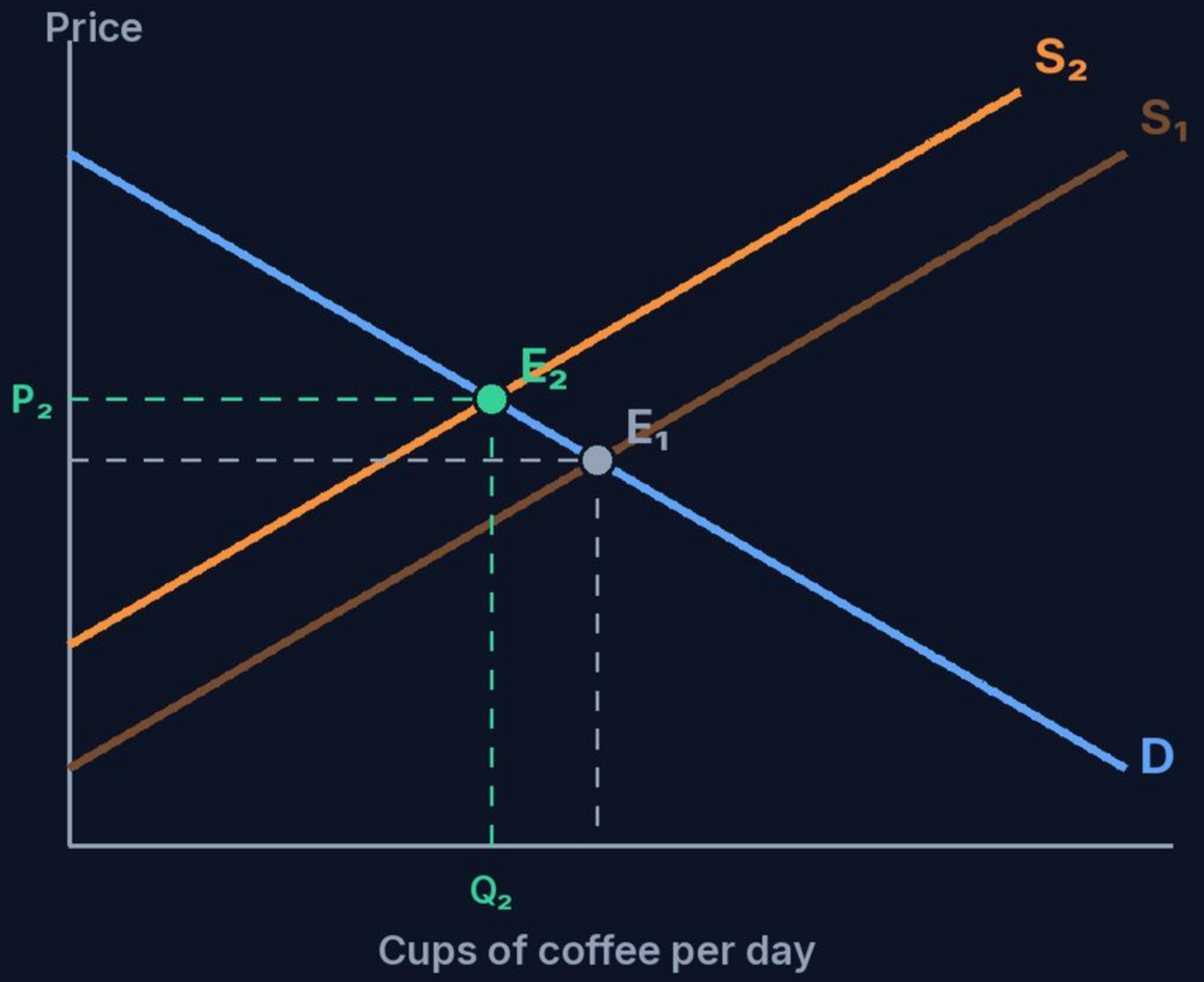

**Event**

A big office building opens downtown.

Buyers → demand shifts right.

Price ↑ Cups sold ↑

# Supply shifts left




**Event**

Coffee bean prices spike after a bad harvest.

Sellers → supply shifts left.

Price ↑ Cups sold ↓

# Read the market backwards

See what price AND quantity did, and you can tell which curve moved

| Price | Quantity | What moved? |
|---|---|---|
| ↑ | ↑ | Demand rose |
| ↓ | ↓ | Demand fell |
| ↓ | ↑ | Supply rose |
| ↑ | ↓ | Supply fell |

Prices up while less gets sold? Most likely a supply story. (If both curves moved, you can't tell from these two alone.)

# When BOTH curves move

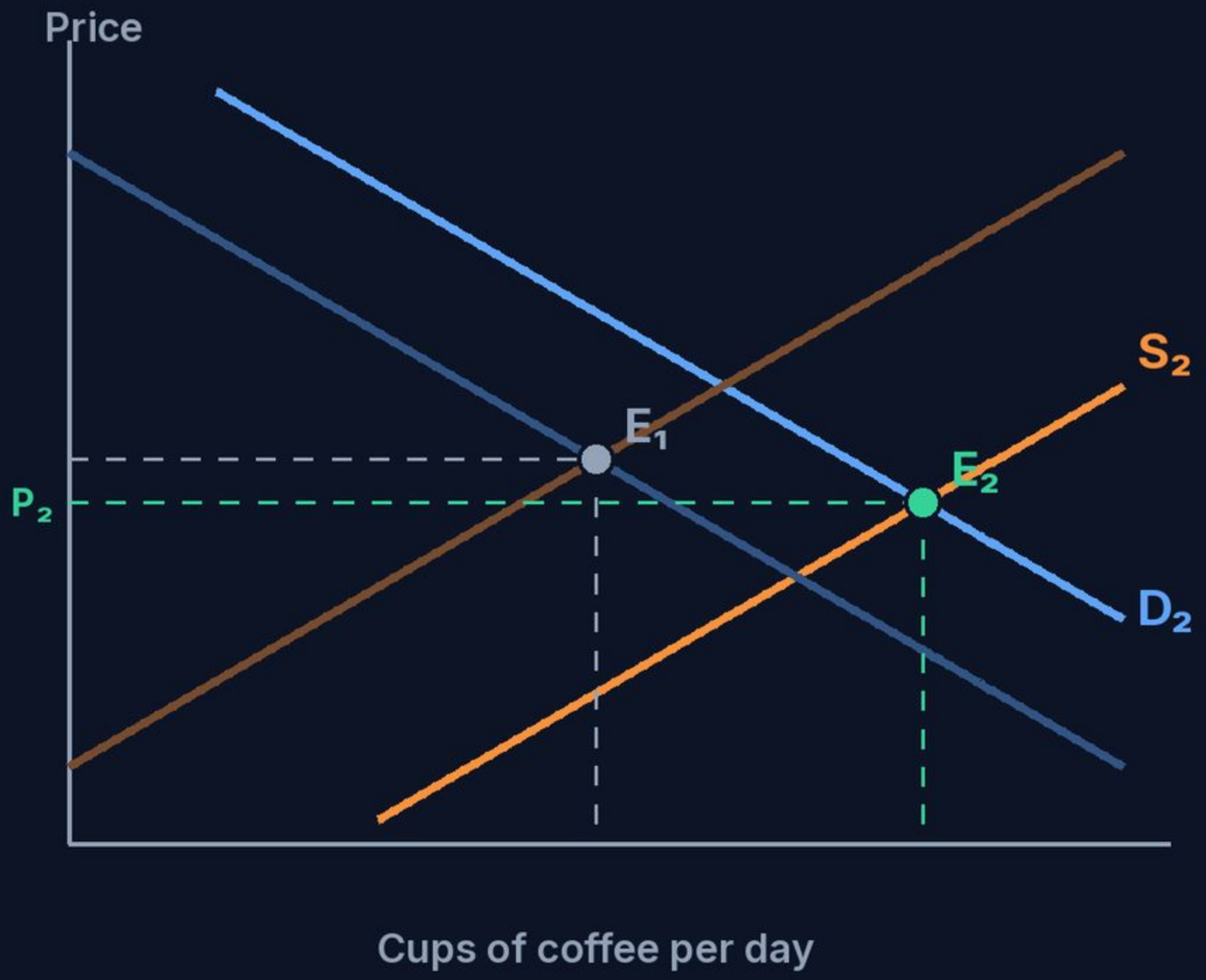
One answer is certain. The other depends on which shift is bigger

| Demand | Supply | Price | Quantity |
|---|---|---|---|
| → **right** | → right | ? | ↑ |
| ← **left** | ← left | ? | ↓ |
| → **right** | ← left | ↑ | ? |
| ← **left** | → right | ↓ | ? |

Both push quantity up. On price they fight: demand pushes up, supply pushes down.

Rule: when both move, you know one answer for sure. The other is a tug-of-war.

# Both shift right: who wins on price?

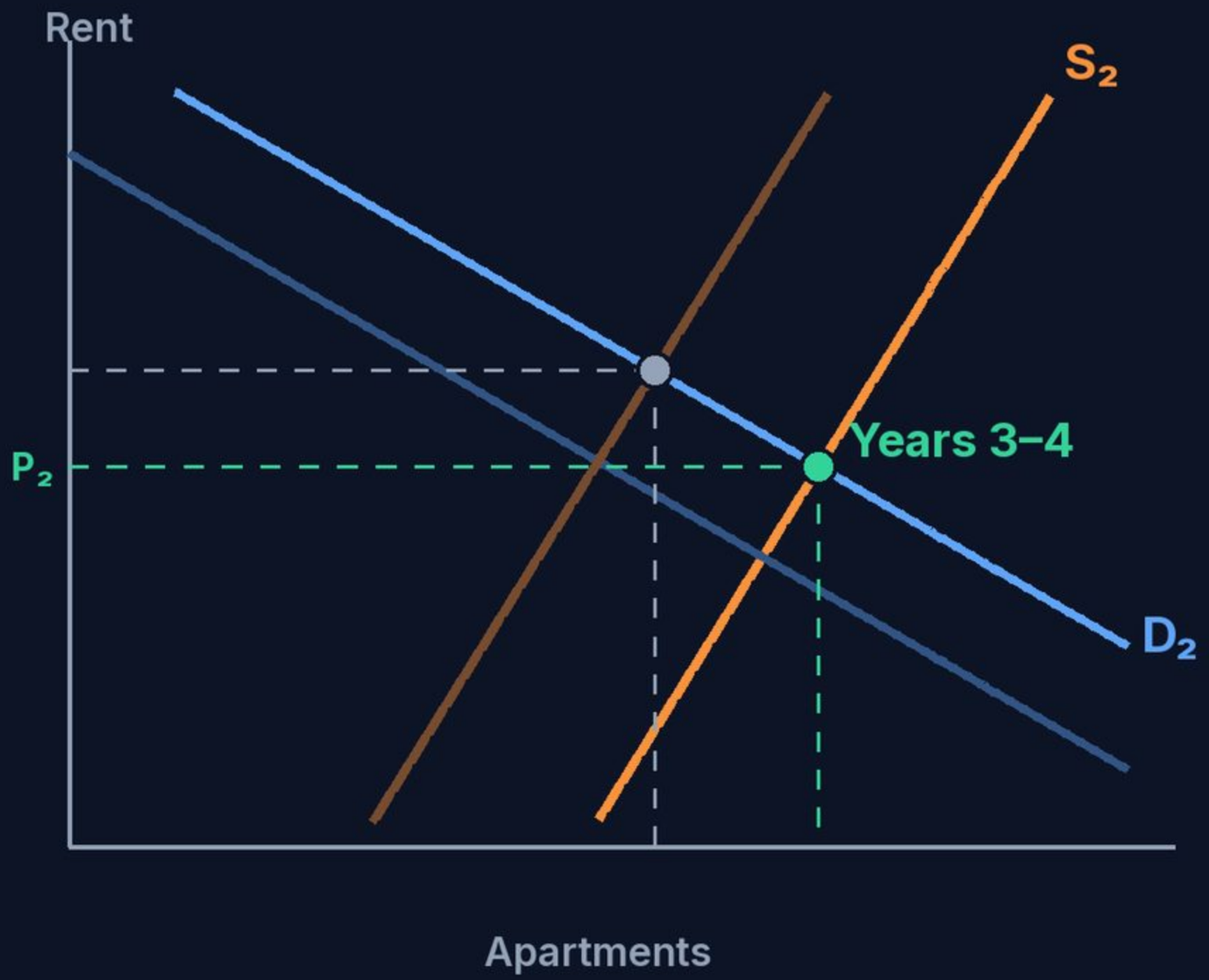



**Supply shift bigger**

Price ↓

Quantity ↑↑

# A real-world pattern: "Boomtown"



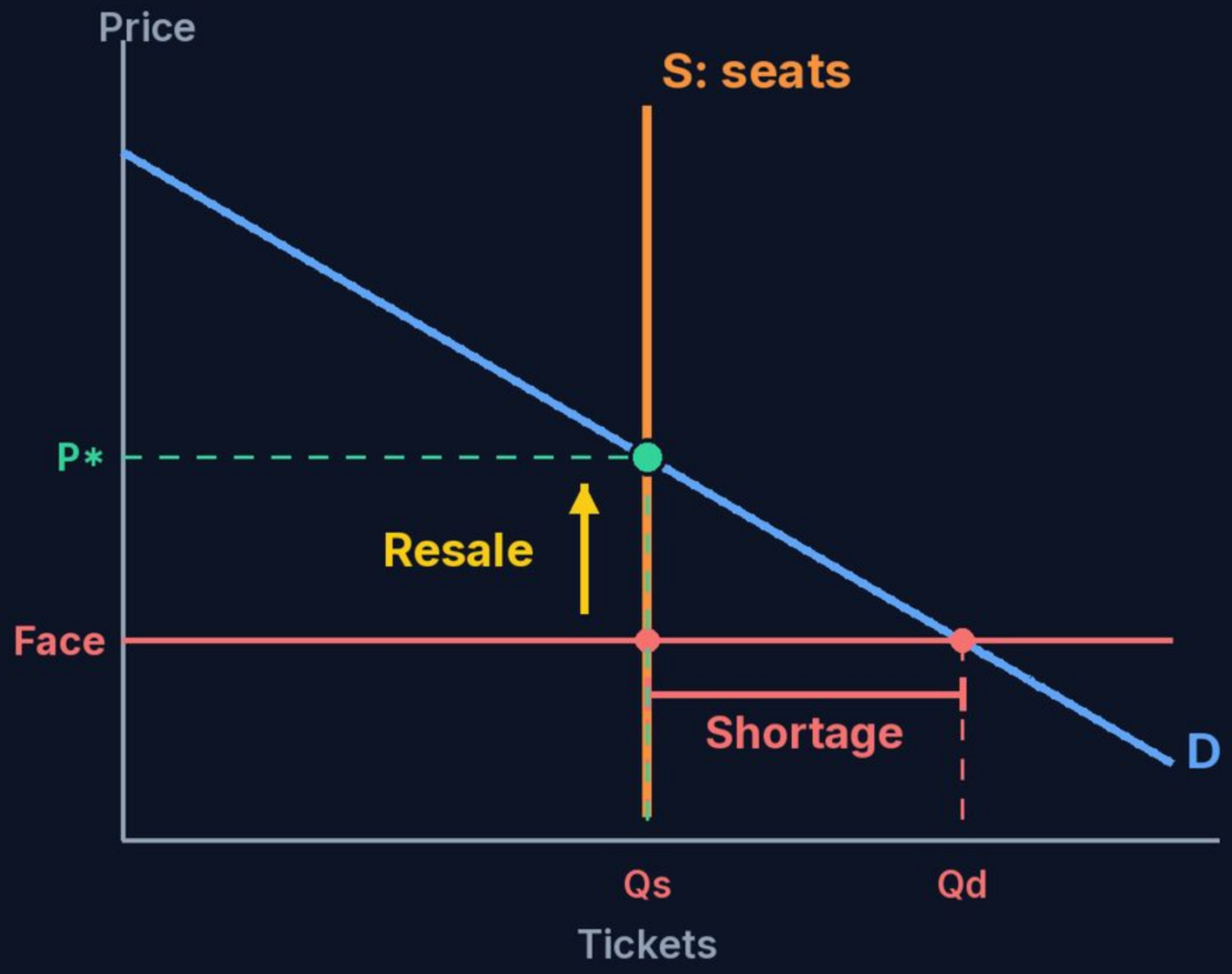

**The lesson**

Demand can move fast. Supply often moves slow.

A price trend today is not a forecast.

The response is coming.

# Back to the puzzle: the sold-out concert




**Face value BELOW P***

Fans want far more tickets than there are seats.

Shortage → sold out in a minute.

Resale prices climb toward P*.

# The same model, many markets

Jobs: a wage is the price of labor; workers supply it, employers demand it

Stocks: a share price is where buyers and sellers meet

Expectations move all of them: prices react to what people expect

# Section 9

## Recap & where we're going

Lock it in

# Recap

Economics = choices under scarcity. Micro zooms in; macro zooms out

Opportunity cost = the best thing you gave up. Decide at the margin

PPF: the menu of what's possible. Comparative advantage → gains from trade

Demand slopes down, supply slopes up. Price → move along; anything else → shift

Equilibrium: shortage → price ↑, surplus → price ↓. Price set below it → sellouts & resale

Both move: one result is sure, the other is a tug-of-war

# Cheat sheet · Chapter 1




Below P*: shortage → price ↑
Above P*: surplus → price ↓
Opp. cost = best option given up
Decide at the margin

## Shift rules

| | |
|---|---|
| Demand → | P ↑ Q ↑ |
| Demand ← | P ↓ Q ↓ |
| Supply → | P ↓ Q ↑ |
| Supply ← | P ↑ Q ↓ |

Both move: one result sure, the other a tug-of-war

Own price changes → move along. Anything else → shift

## Demand shifters

- Income
- Number of buyers
- Related goods (substitutes, complements)
- Tastes
- Expectations

## Supply shifters

- Input prices
- Technology
- Number of sellers
- Expectations
- Government (taxes, rules)
- Other uses of resources

Self-check 1 of 3

# Gas prices rise sharply. What happens to the demand for bus rides, and why?

**Answer**

It shifts right. Driving is a substitute for the bus. It got pricier, so at every fare, more people want to ride.

Self-check 2 of 3

# This summer, strawberry prices fell while more strawberries were sold. What most likely happened?

**Answer**

Most likely, supply rose, by more than any change in demand. Price ↓ with quantity ↑ is the supply signature. Maybe a great harvest.

Self-check 3 of 3

# You skip a 4-hour, $15-an-hour shift to go to a free festival. What did the festival cost you?

**Answer**

$60, if the shift was your next-best option. "Free" to enter is not the same as free. Go if it was worth more than $60 to you.

# Where we're going

Understanding Economics: 6 chapters, each building on the last

| # | Chapter |
|---|---|
| 1 | Foundations, Supply & Demand (this chapter) |
| 2 | How Markets Work: elasticity, price controls, taxes, competition |
| 3 | Market Failures & the Labor Market: pollution, public goods, hidden information, wag |
| 4 | Growth, Employment & Inflation: GDP, jobs, inflation, recessions, debt |
| 5 | Money, Banking & Interest Rates |
| 6 | Trade, Financial Markets & Real Estate |

Next up · Chapter 2

# How Markets Work

Elasticity, price controls, taxes, and competition vs. monopoly