Understanding Economics · Chapter 3

Market Failures & the Labor Market

Pollution, public goods, hidden information, and wages

New, on the lot



Full price

?

Same model

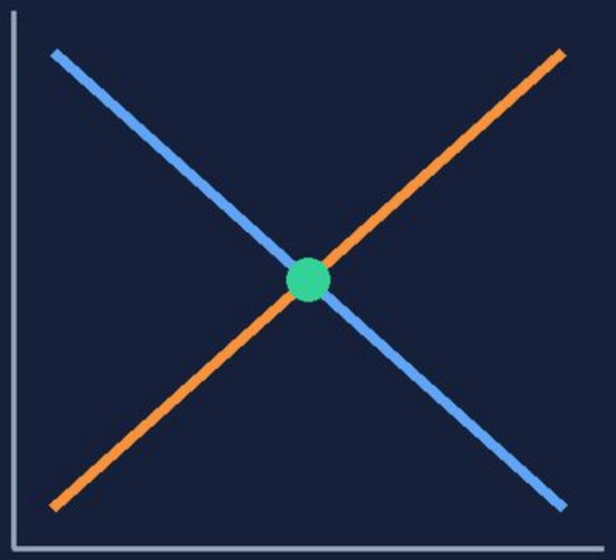
3 weeks old · 500 miles



Noticeably less

The car didn't get three weeks worse. So why?

When Markets Fail



Markets usually get it right



Pollution



Public goods



Hidden information



Wages

But it rests on three assumptions.

Three assumptions behind the market



1 The price includes all the costs and benefits

Whoever makes the deal feels everything it causes.



2 If you don't pay, you can't use it

No latte unless you pay for it.



3 Both sides know what they're getting

You can see the apples, taste the coffee.

One breaks → market failure: the result isn't the best one available.

This chapter: three ways markets fail, then the job market.

Market failure is a diagnosis, not a prescription.

Section 3

Who pays for the smoke?



Factory

Neighborhood downwind

Pays for: workers, materials, power

Pays for: the smoke

Externality: a cost or benefit that lands on people **outside** the deal

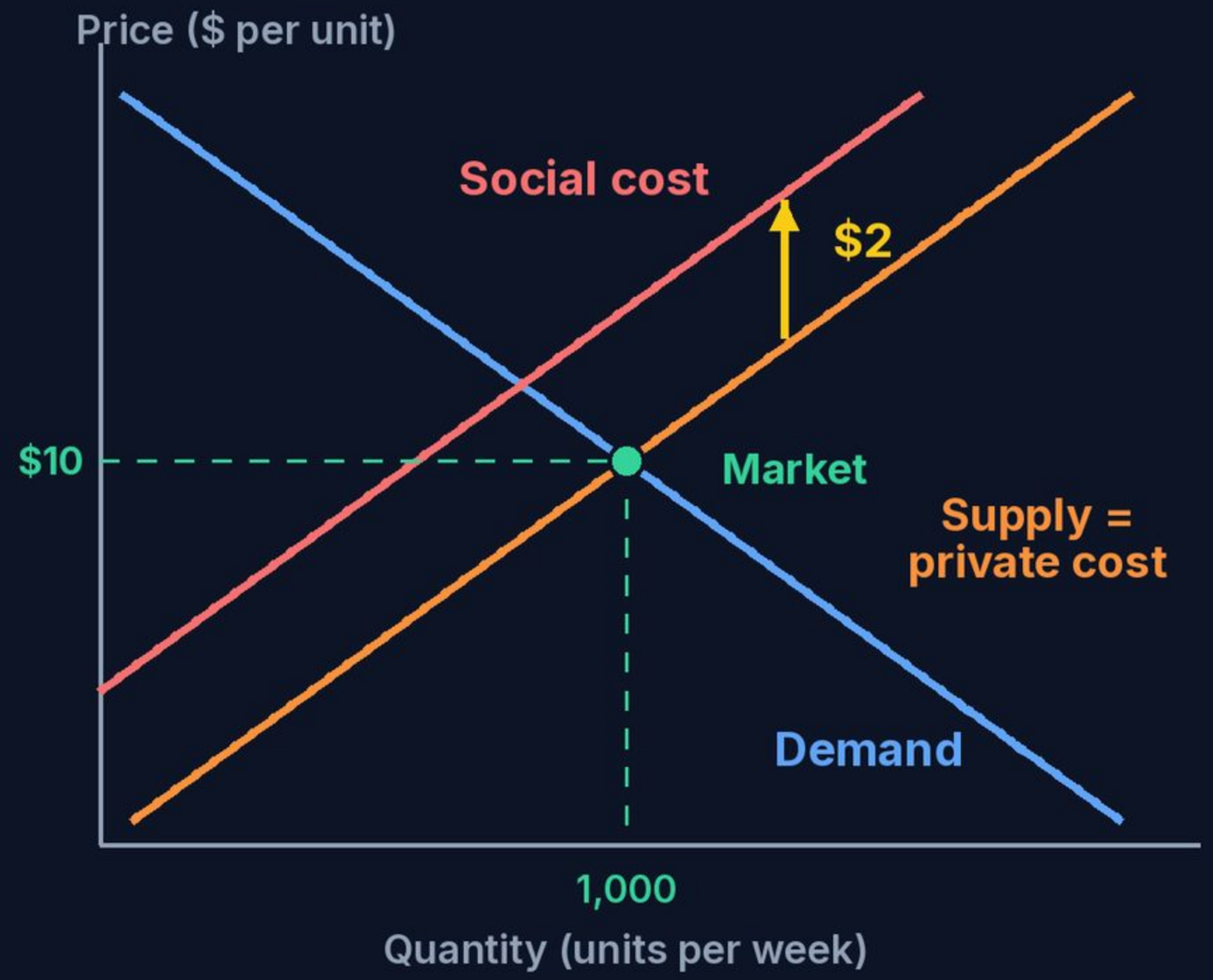
Harmful → **negative** externality.
Helpful → **positive**.

Negative externalities, all day

- A neighbor's leaf blower at 7 a.m.
- The car ahead idling and pumping out exhaust
- Music on the train, no headphones

Nothing in the price tells them your cost. So they do more of it.

The packaging market



Social cost

= private cost + $2 harm

Everybody's cost, not just the seller's.

Illustrative numbers.

Your turn: too much or too little?

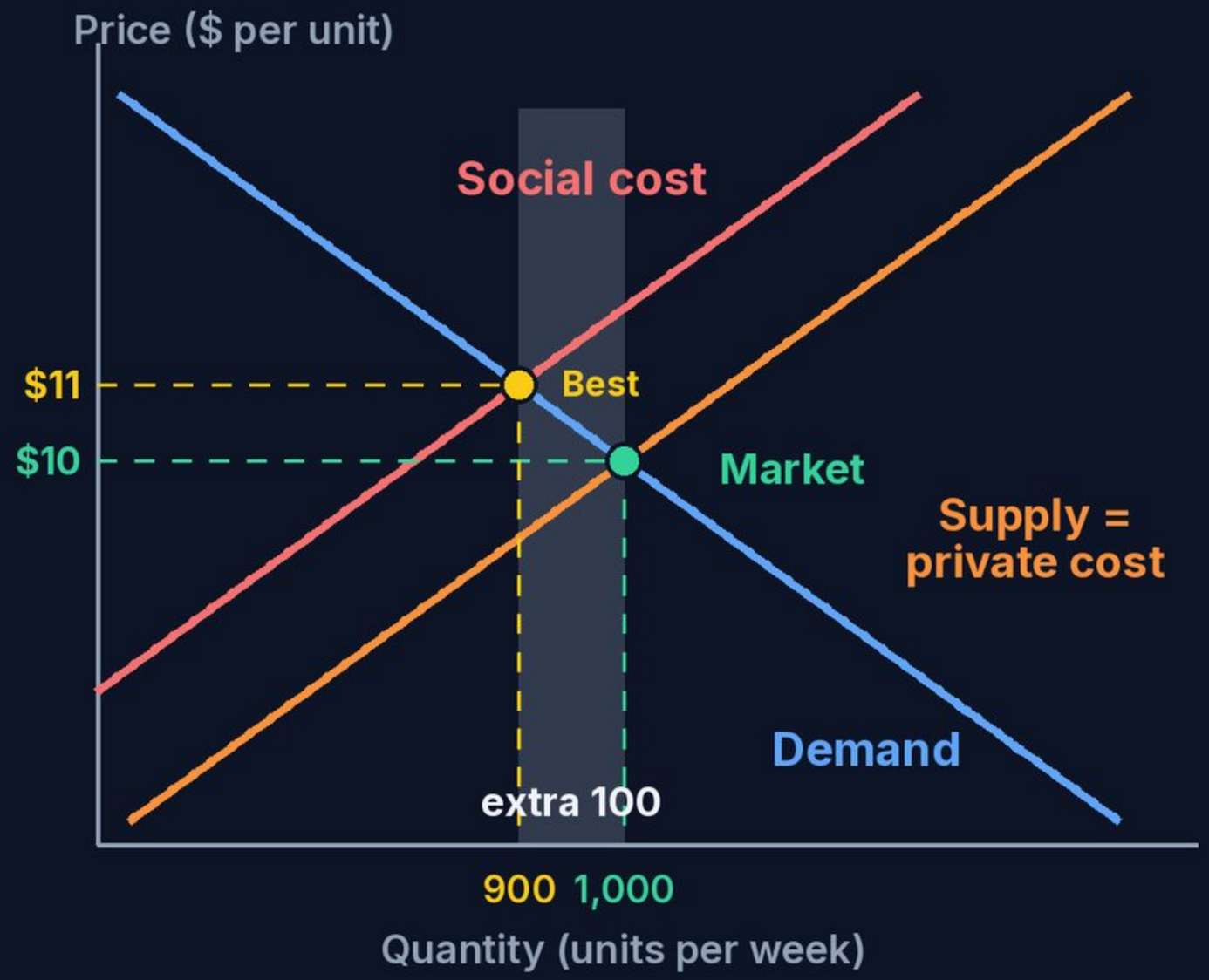
Pause and predict · 1 of 2

The market ignores the smoke. Compared with what's best for everyone, does the market make too much packaging or too little? Is the price too high or too low?

Answer

Too much, too cheap. The market makes 1,000 units instead of 900, at $10 instead of $11.

Market result vs. best for everyone

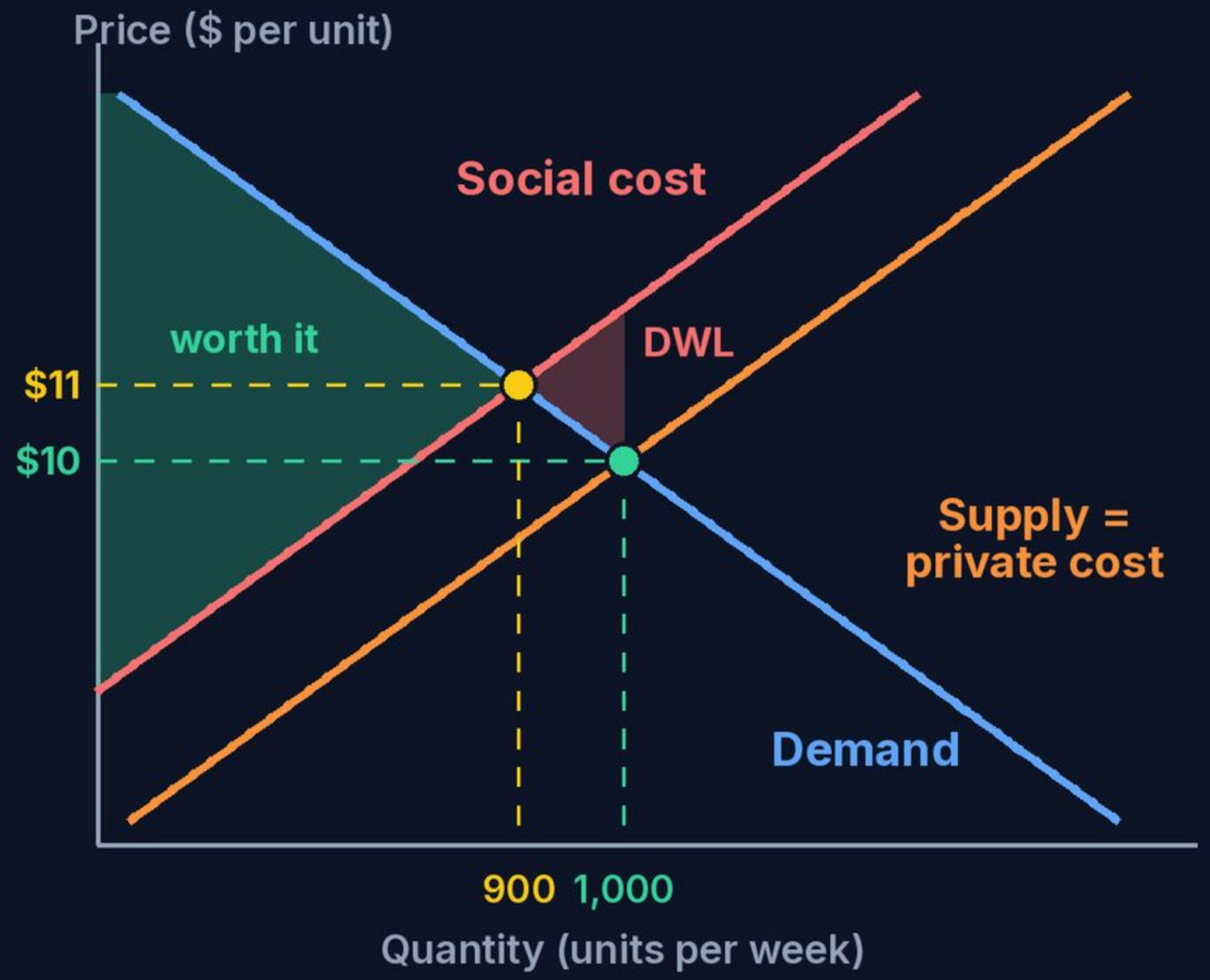


The extra 100 units

From 900 to 1,000.

Why are they a problem?

The deadweight loss



The right amount isn't zero

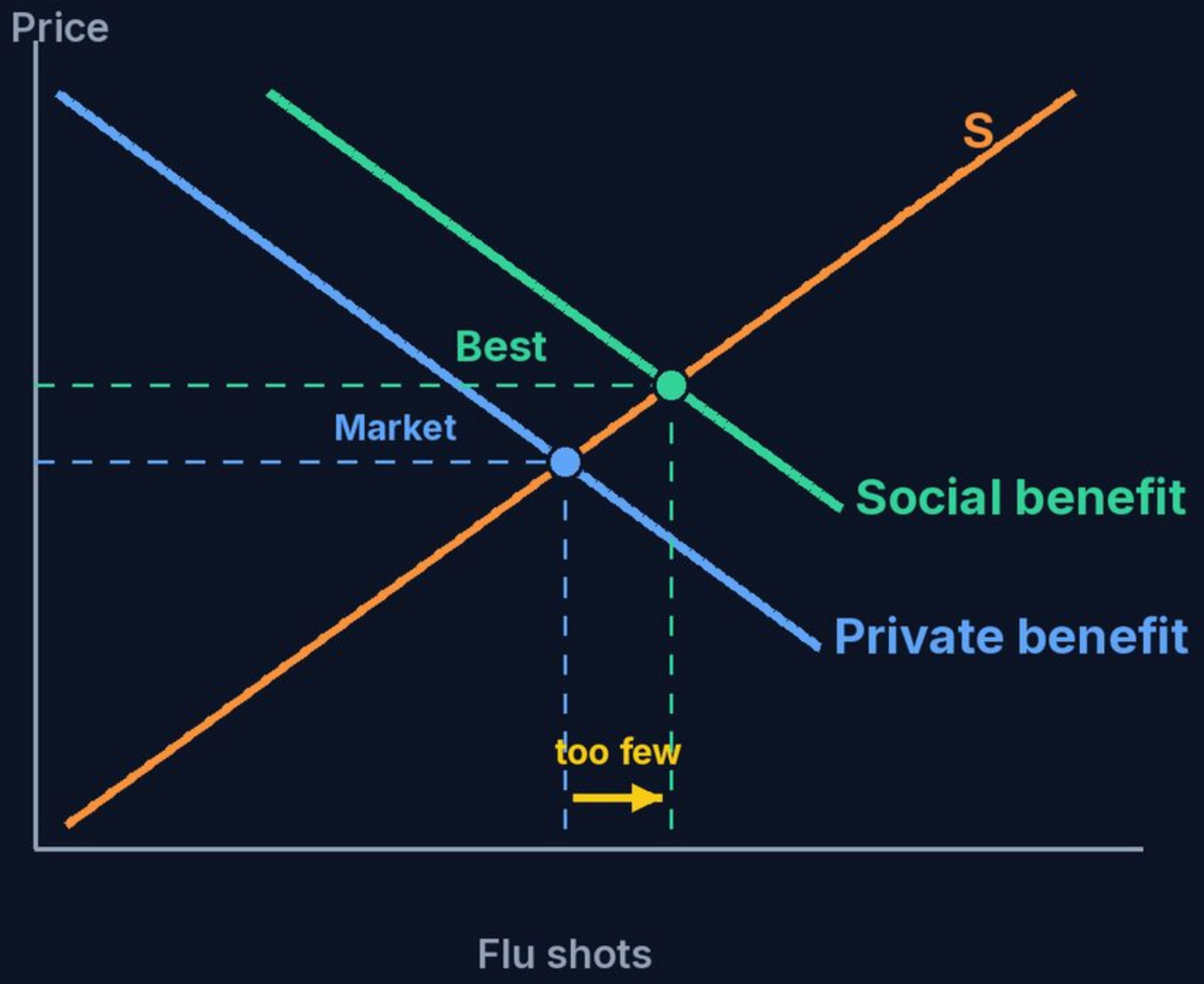
First 900: worth more than their full cost.

The problem is only the last 100.

Right amount: benefit of one more = its full cost.

Next: helpful side effects, in reverse.

Flu shots: a helpful side effect



Rule of thumb

Harmful side effects → market makes too much.

Helpful side effects → market makes too little.

The price leaves something out.

Section 4

Four ways to fix it



Rules

Exhaust systems, chemical limits, no noise after 10 p.m.



A tax on the harm



Permits you can trade

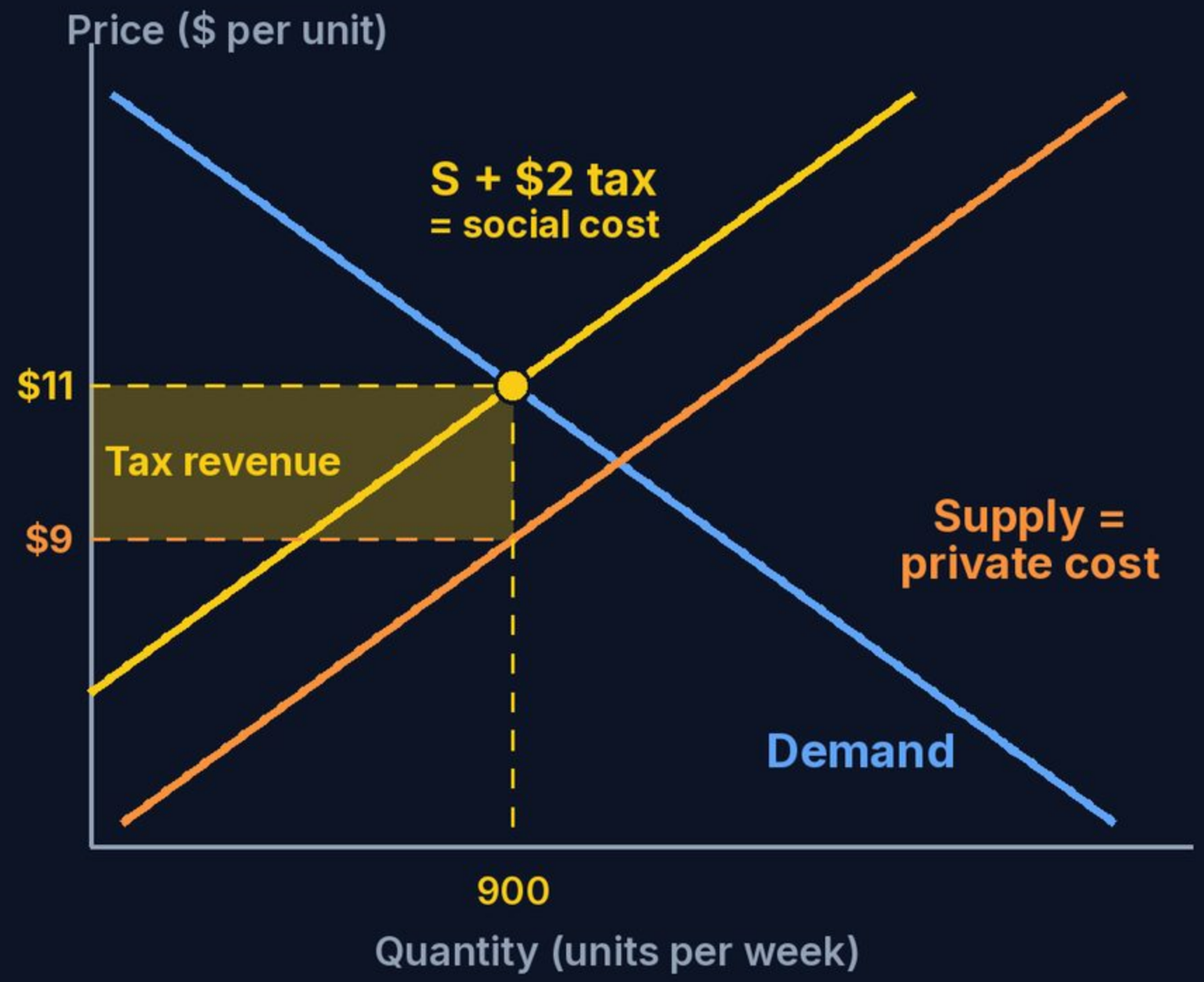


Bargaining

All four: internalize the externality, bring the outside cost inside the decision.

Rules: clear and simple, but one size fits all.

Tool 2: a tax on the harm



A Pigouvian tax

In Chapter 2, a tax pushed a market away from its best point.

This one pushes it to its best point.

Sometimes used to defend taxes on cigarettes or gasoline.

Why economists like the tax

No micromanaging: each factory decides whether to pay the tax or clean up. Cheap cleaners clean up.

The catch: someone has to put a dollar number on the harm.

Tool 3: cap-and-trade

A fixed cap on pollution · 1 permit = 1 ton · firms can trade · illustrative numbers

	Cost to cut a ton	What it does
Firm 1	$20	Cleans up, sells its spare permit
Firm 2	$200	Buys the permit

Permits add up to exactly the cap.

Same pollution, much lower total cost. A tax fixes the price, a cap fixes the amount.

Bargaining, subsidies, and a warning

Bargaining: clear property rights + cheap bargaining → people can often work it out. Fine for small, local problems.

Helpful side effects: subsidize instead. Flu shots, schools, patents.

Government failure: the fixers are people too. The real question: **which imperfect option does better?**

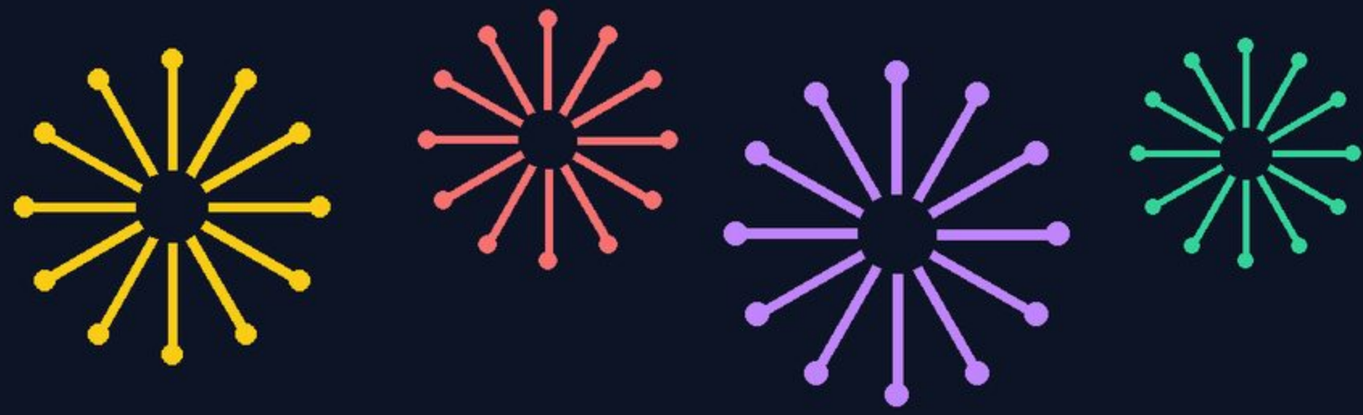
Section 5

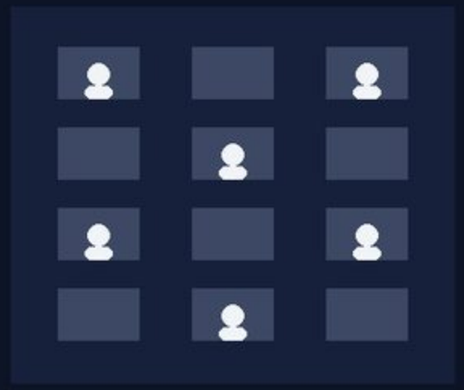
Public goods & the commons

If you don't pay, can you still use it?

Illustrative numbers

A $50,000 fireworks show





…and from windows





Watching free from the hill

Free rider problem: if you can enjoy it without paying, many won't pay.

Two questions about any good

Does one person's use leave less for others?	Can you keep people out? — Yes (excludable)	Can you keep people out? — No
Yes (rival)		
No		

Two questions → four kinds of goods.

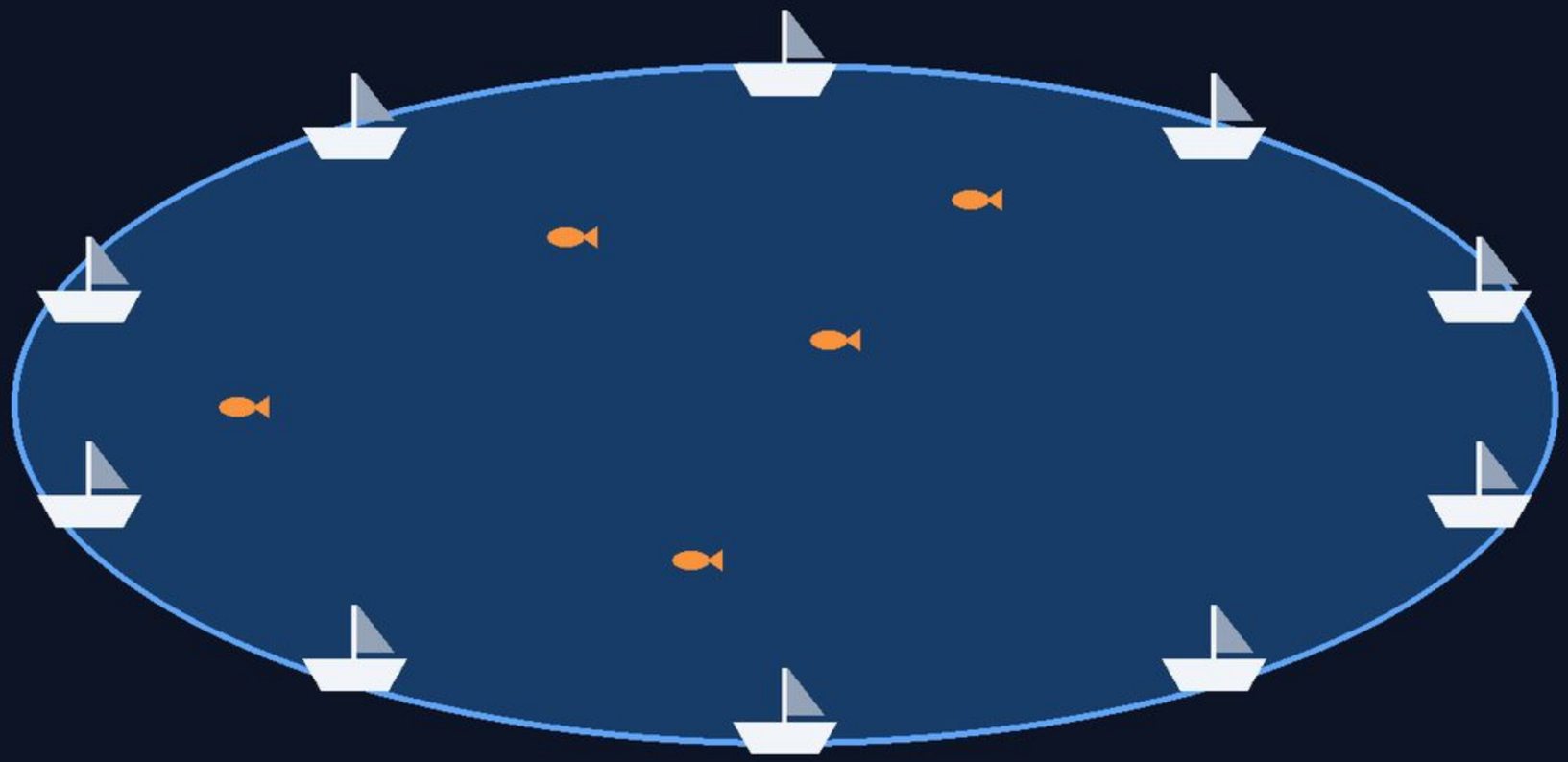
Four kinds of goods

Does one person's use leave less for others?	Can you keep people out? — Yes (excludable)	Can you keep people out? — No
Yes (rival)	**Private goods** coffee, phones, groceries	**Common resources** ocean fish, a free beach, a busy road
No	**Club goods** streaming services, gyms, a toll bridge	**Public goods** fireworks, streetlights, national defense

→ the tragedy of the commons (popularized in the late 1960s)

The tragedy of the commons

Ten boats, one shared lake



An externality in disguise: each extra catch costs the others.

Fixing the commons

- **Rules:** fishing seasons, catch limits
- **Prices:** a toll on a crowded road at rush hour
- **Ownership:** a share of the catch you can keep, sell, or save
- **Communities:** local customs and rules everyone agrees to

Section 6

Hidden information

When one side knows more than the other

Asymmetric information

The car's full history

- Serviced on time
- Rattle at 40 mph
- Why I'm selling it

?



Seller

Buyer

The classic example: used cars.

Peaches and lemons

Illustrative numbers

Peaches: good cars

worth $12,000 to buyers



Lemons: hidden problems

worth $6,000 to buyers



They look the same from outside

Coin flip → a careful buyer offers the average: $9,000

Lemon owners: great deal. Peach owners: too low, they keep driving.

Who's left at $9,000?

Illustrative numbers

Peaches: good cars

worth $12,000 to buyers



owners keep them

Lemons: hidden problems

worth $6,000 to buyers



Adverse selection: who shows up isn't a random sample.

Back to the puzzle

New, on the lot



Ordinary reasons

- Dealer incentives and margins
- Warranty and first-owner perks
- Buyers who want to be first

Same model

3 weeks old · 500 miles



Plus: why is the owner selling?

Plans changed? Or a problem? The buyer can't tell, so the price drops.

Partly, it got a question mark attached.

Making hidden information visible

Markets fight back by making the hidden information visible

Signal (seller): cheap if honest, costly if not. A warranty.

Screen (buyer): a mechanic, a history report, reviews and ratings

Insurance: now the **buyer** knows more than the seller.

Pause and predict · 2 of 2

A health insurer charges everyone the same price, set for an average customer. Who is most eager to sign up? What happens to the price next year?

Answer

People expecting big bills sign up; healthy people skip it. Costs rise → price rises → more healthy people leave. It can spiral.

Why insurance looks the way it does

- Insurers ask questions and charge different prices for different risks
- Employers insure whole groups of workers
- Some governments require coverage or provide it

Problem 2, after the deal: moral hazard

Behavior changes because someone else carries part of the risk, and the other side can't fully watch.

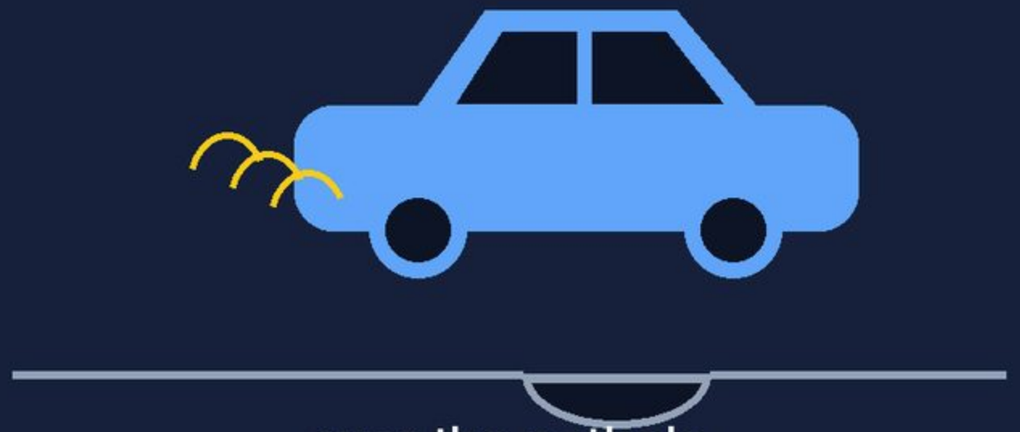
Moral hazard

My car



driven gently

Rental car, full coverage



over the pothole

Hourly work, contractors, banks expecting a rescue.

Telling them apart

	Adverse selection	Moral hazard
Hidden…	Information	Actions
When	Before the deal	After the deal
It's about	Who shows up	How people behave
The fix	Signals, screening	Share the risk: a deductible

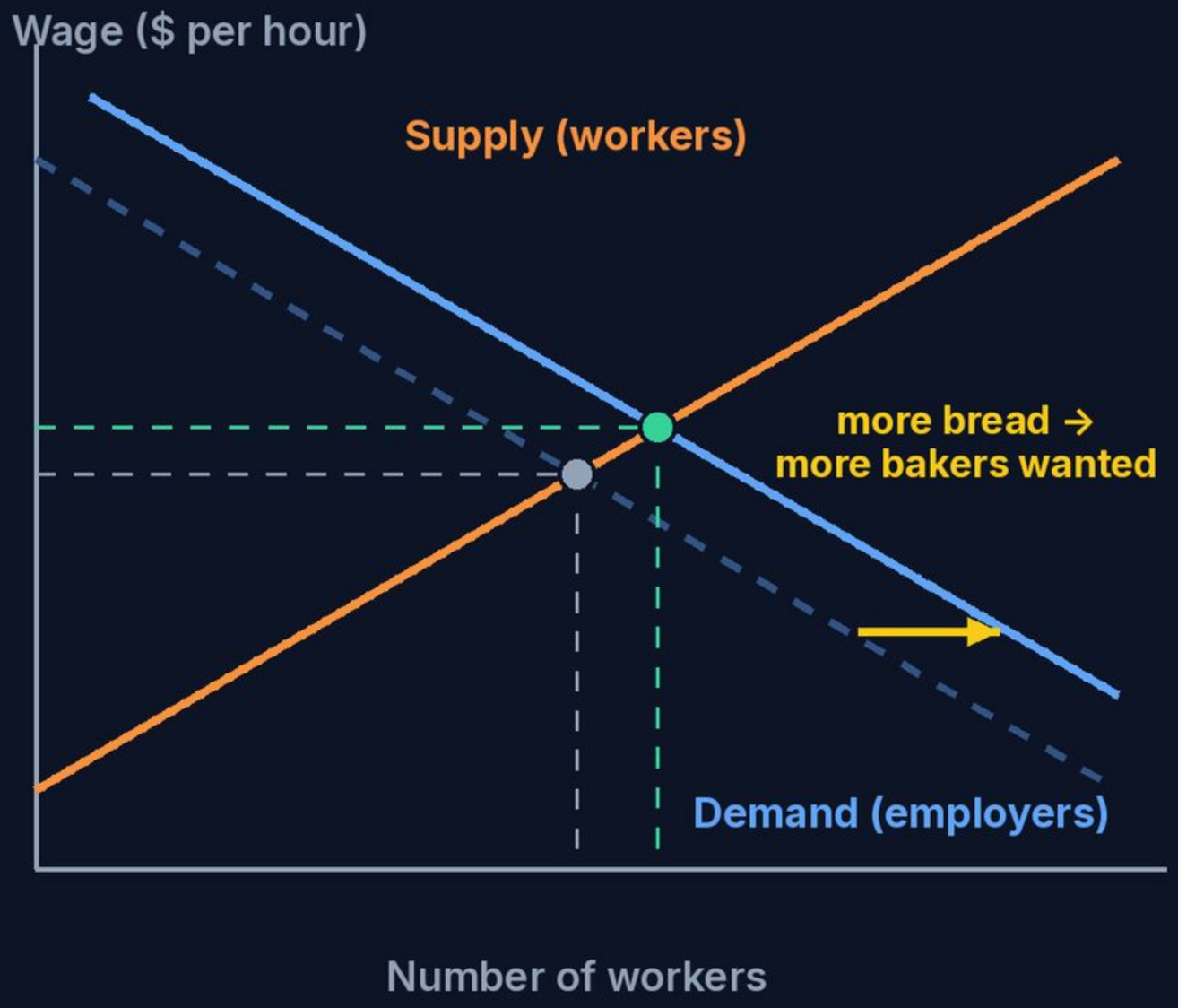
Also: co-pays, security deposits, commission pay

Section 7

Wages and the job market

The market almost every adult takes part in

The job market



Derived demand

Demand for workers comes from demand for what they make.

More bread wanted → more bakers wanted → wage ↑

How many baristas?

A coffee shop, illustrative numbers: $5 a drink, $1 of supplies, $20 an hour wage

Barista	Extra drinks/hr	Revenue	Supplies	Left over	vs. $20 wage
1st	12	$60	−$12	$48	Hire
2nd	8	$40	−$8	$32	Hire
3rd	6	$30	−$6	$24	Hire
~~**4th**~~	~~3~~	~~$15~~	~~$3~~	~~$12~~	~~Stop~~

Hire while what's left over beats the wage.

Stop at 3. Higher drink prices could make the 4th worth it: derived demand.

Why wages differ

Skills and training: human capital. Rare, hard-to-learn skills pay more.

Unpleasant or risky work: extra pay, a compensating differential

Scarcity: many employers, few people with the skill → wage bid up

Bargaining power: one main buyer of labor = monopsony → lower pay, fewer jobs

Beyond the simple model

Unions balance an employer's power, but can push wages above the market. Which effect is bigger? It depends on the market.

Discrimination: unfair, and a waste of talent

Same tools, new market

Idea	In the job market
Adverse selection	Can't see how hard you'll work before hiring
Moral hazard	Can't watch everything once you're hired
Signals	Degrees, references, work samples
Screens	Interviews, trial periods
Like a deductible	Bonuses and commissions

Recap

Recap & self-check

The whole chapter in five lines

Recap

Market failure: an assumption breaks, and the result isn't the best available

Externalities: harmful → too much, too cheap; helpful → too little. Fixes make people feel the full cost or benefit.

Public goods → free riders, too few. Common resources → overused.

Hidden information: adverse selection (before), moral hazard (after). Signals, screening, deductibles.

Wages = the price of labor: skills, unpleasant work, scarcity, bargaining power

Cheat sheet · Chapter 3

Externalities



Harmful side effect → too much, too cheap

Helpful side effect → too little

Red: deadweight loss. Arrow: tax on the harm

Fixes: rules · taxes · permits · bargaining · subsidies

Four kinds of goods

Leaves less?	Keep people out? Yes	Keep people out? No
Yes	**Private goods** coffee	**Common resources** ocean fish
No	**Club goods** streaming services	**Public goods** fireworks

Public goods → free riders → too few; paid by taxes

Commons → overused (tragedy of the commons)

Hidden information

Adverse selection

Hidden info

Before the deal: who shows up

Fix: signals and screening

Moral hazard

Hidden action

After the deal: how people behave

Fix: share the risk (deductibles)

Ask: which assumption broke?

Price leaves out a cost? Free to use? Hidden info?

Three questions. Pause after each, answer out loud.

Self-check 1 of 3

A crowded downtown: cars stuck every rush hour, exhaust in the air. Name the market failure, and one fix an economist would like.

Answer

A negative externality, with the road acting like a common resource. Fix: a charge for driving downtown at peak times.

Self-check 2 of 3

Phone insurance with no deductible: more phones get broken than the company expected. Which information problem? What would you change?

Answer

Moral hazard: fully covered, some took less care. Add a deductible or a fee per claim.

Self-check 3 of 3

Everyone agrees new streetlights are worth it, but door-to-door donations barely come in. Why, and what usually happens instead?

Answer

A public good: non-payers can't be kept out, so people free ride. Usually paid for through taxes.

Where we're going

Chapters 1–3 done: that's microeconomics

#	Chapter
1 ✓	Foundations, Supply & Demand
2 ✓	How Markets Work
3 ✓	Market Failures & the Labor Market
4	Growth, Employment & Inflation · Next up
5	Money, Banking & Interest Rates
6	Trade, Financial Markets & Real Estate

Next up · Chapter 4

Growth, Employment & Inflation

GDP, unemployment, inflation, and recessions