Understanding Economics · Chapter 4

Growth, Employment & Inflation

GDP, jobs, inflation, recessions, and debt

NEWS Economy

Economy grows 3.4%

Strong numbers, lots of jobs

Real example, November 2026 · BEA



GROCERY STORE

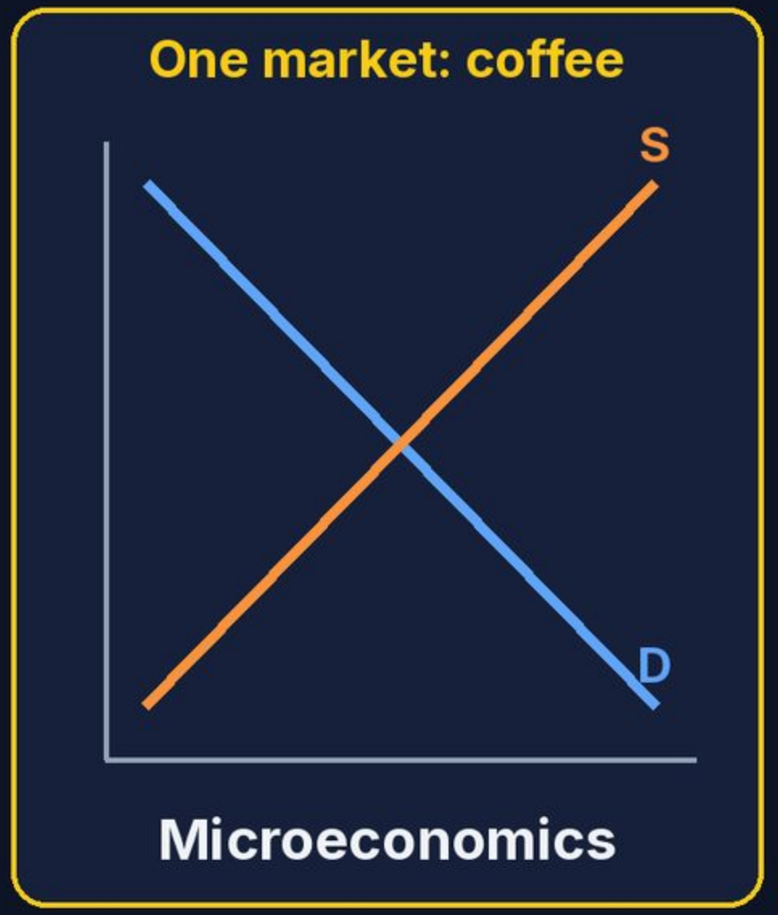
Illustrative receipt

Milk	$4.29
Bread	$3.89
Eggs	$4.79
Coffee	$12.99
TOTAL	**$25.96**

Booming… so why does it feel like this?

What the headlines do and don't say about your wallet

From one market to the whole economy



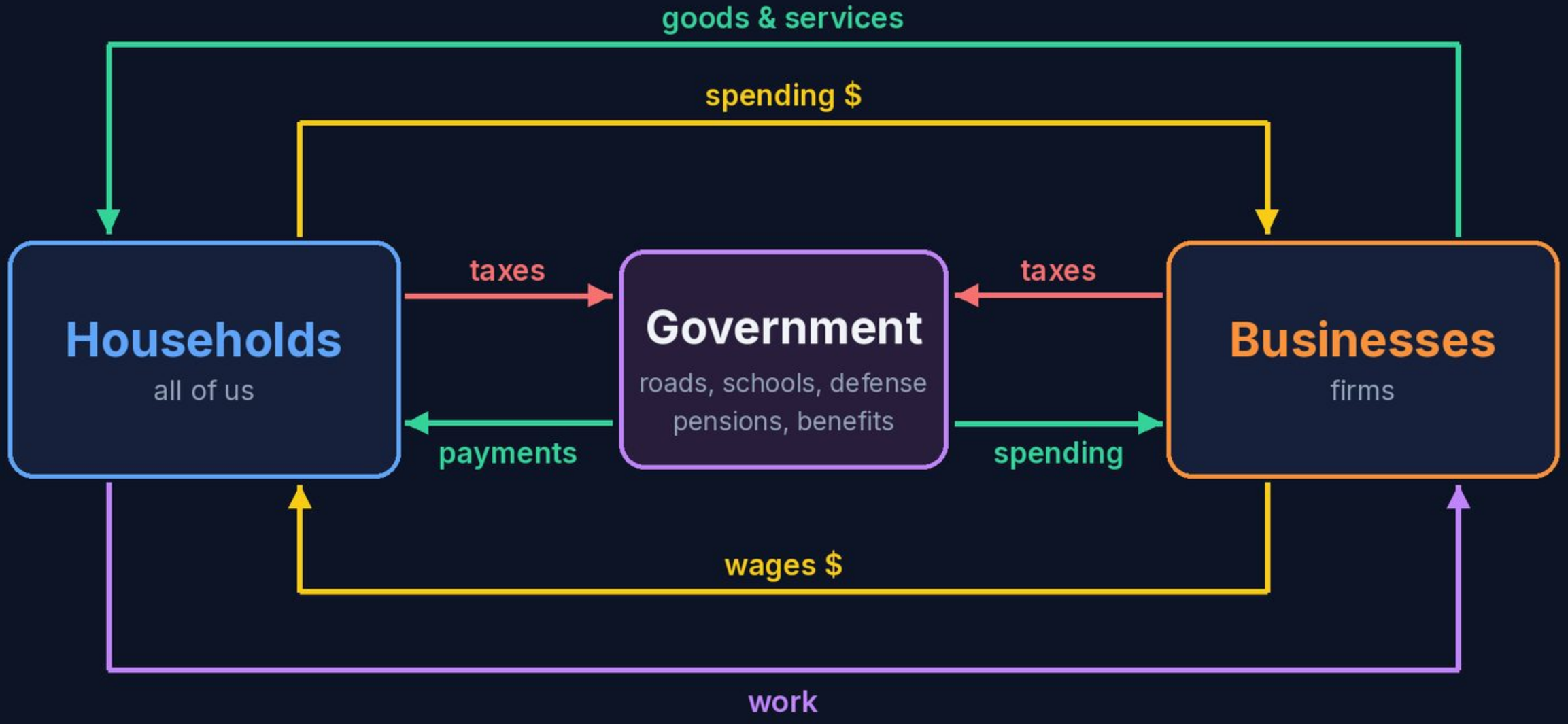


The whole economy: macroeconomics

Macro's four big questions

- How much is the economy producing?
- Is it growing?
- Can people who want jobs find them?
- Are prices stable?

The circular flow



Section 3

GDP: measuring the whole economy

How do you add up apples, haircuts and phones?

GDP = Gross Domestic Product

The market value of all final goods and services produced in a country in a period of time.

Usually measured over a quarter or a year

Market value

We use prices: a car counts for more than a coffee

Produced in a country

Where it's made, not who owns the company

In a period of time

Only what's newly made: no old houses, no used cars

Final

The trickiest word. Let's slow down.

Follow one loaf of bread

Illustrative numbers

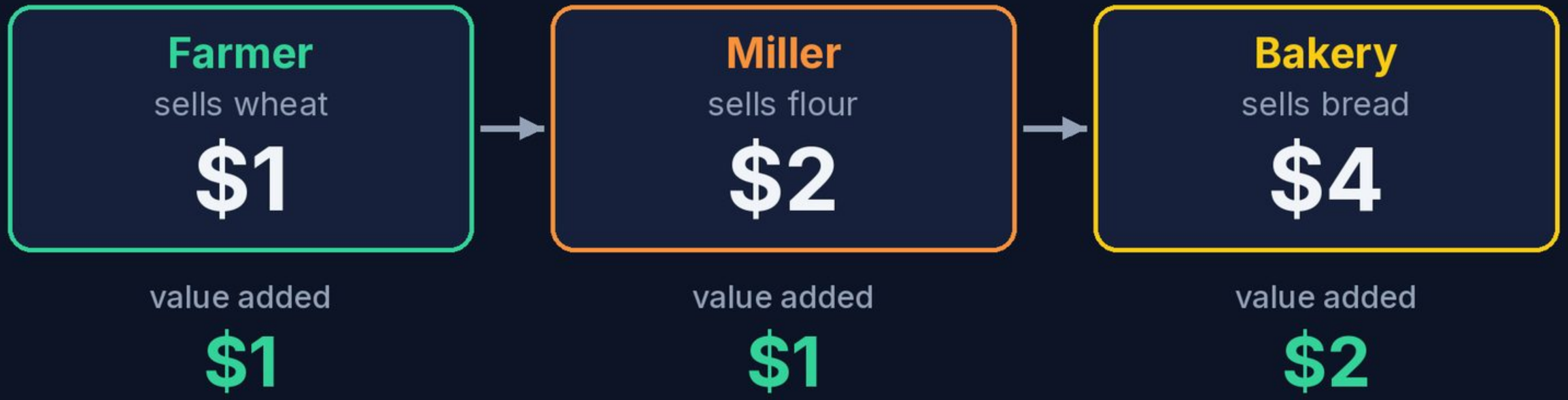


~~$1 + $2 + $4 = $7~~ counts the wheat 3 times

Wheat and flour are intermediate. GDP counts $4

Second way: add up the value added

Illustrative numbers



$1 + $1 + $2 = $4: the same answer

Count the phone, not the chip inside it.

Measuring GDP by spending

GDP = C + I + G + NX

C

Consumption

Households: groceries, rent, haircuts, phones, subscriptions

By far the biggest part of U.S. GDP

I

Investment

Businesses' new equipment and buildings, plus new homes

Not buying shares: nothing new got made

G

Government purchases

Teachers' salaries, road repair, military equipment

Not transfer payments like pensions or unemployment benefits

NX

Net exports

Exports minus imports

Imports are subtracted: already in C, but not made here

Worked example: a tiny economy

Made-up numbers · Illustrative

	Amount
C Consumption	$700
I Investment	$150
G Government purchases	$200
NX Exports $100 – imports $150	−$50
GDP = C + I + G + NX	$1,000

Every dollar of spending is a dollar of income for someone

Add up all spending, or all income: the same total

Real example, November 2026

What these numbers looked like when this course was made

Focus on what each number means

Real example, November 2026

Real GDP, third quarter of 2026

+3.4%

at an annual rate · advance estimate

How fast the U.S. economy grew

At an annual rate: three months of growth, scaled up to a full year. Advance estimate: an early number, revised as more data comes in.

Source: U.S. Bureau of Economic Analysis

What GDP leaves out

- Unpaid work: cooking at home, caring for family
- Pollution isn't subtracted; leisure doesn't count
- It's a total: silent on how income is shared
- Across countries: GDP per person, adjusted for what a dollar buys
- A measure of output, not of how well everyone is doing

The pizza trap

An economy that makes only pizzas · Illustrative

	Pizzas	Price	GDP
Year 1	100	$10	$1,000
Year 2	100	$12	$1,200

Did the economy grow 20%?

Same pizzas. Only the price tag grew.

Nominal vs. real GDP

Nominal GDP

- Measured in each year's own prices
- Rises when we make more or when prices rise

Real GDP

- Measured in fixed prices from one chosen year
- Rises only if we actually make more

The pizza economy, at year-1 prices

Illustrative

	Pizzas	Price	Nominal	Real (at $10)
Year 1	100	$10	$1,000	$1,000
Year 2	100	$12	$1,200	$1,000
Year 3	105	$12	$1,260	$1,050

Year 2 real growth: 0% · Year 3 real growth: 5% (five more pizzas)

Any dollar number over time: real or nominal?

Real growth ≈ nominal growth − inflation

Pause and predict · 1 of 2

BEA, third quarter of 2026, advance estimate. Real example, November 2026.

This quarter, nominal GDP grew at a 5.6% annual rate, and real GDP grew 3.4%. About how much of the growth was just higher prices?

Answer

About 2 percentage points (5.6 − 3.4). A bit more than half the growth was more stuff; the rest was higher prices.

Section 5

Jobs and unemployment

Can people who want jobs find them?

Adults, sorted into three groups

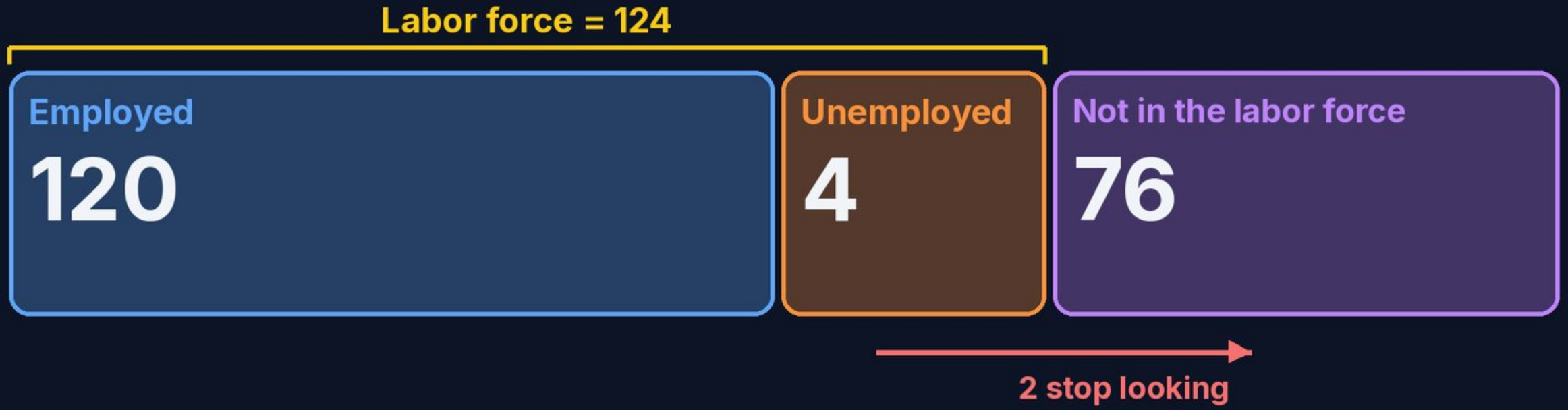


Labor force = employed + unemployed:

everyone working or trying to

Worked example: a small town

Made-up numbers · Illustrative



Unemployment rate = 4 ÷ 124 ≈ 3.2%

The headline improved, and it was bad news

Discouraged workers

- They stopped looking, so they're not counted as unemployed
- U-3: the headline unemployment rate
- U-6: also counts discouraged and loosely attached workers, and part-timers who want full-time work
- When the two move apart, it's telling you something

Real example, November 2026

The October 2026 jobs report

4.1%

U-3 ↓ from 4.2%

The headline rate fell

7.9%

U-6 ↑ from 7.6%

The broader rate rose

Same month, two measures, two different stories

Source: U.S. Bureau of Labor Statistics

Real example, November 2026

Unemployment rate and payrolls, October 2026

4.1%

unemployment rate

From a monthly survey of households

+165,000

payroll jobs

From a survey of employers

Source: U.S. Bureau of Labor Statistics

Is an unemployment rate around 4% good?

Some unemployment is normal, even in a great economy

Three types of unemployment

Frictional

Between jobs, searching

Someone quits for a better fit; a graduate looks for a first job. Healthy.

Structural

Skills or location don't match the jobs

The factory closes; the new jobs are in software, three states away. Can last a long time.

Cyclical

Caused by a slump in the economy

Spending falls, sales fall, layoffs. Rises in recessions; the kind policy fights.

The natural rate of unemployment

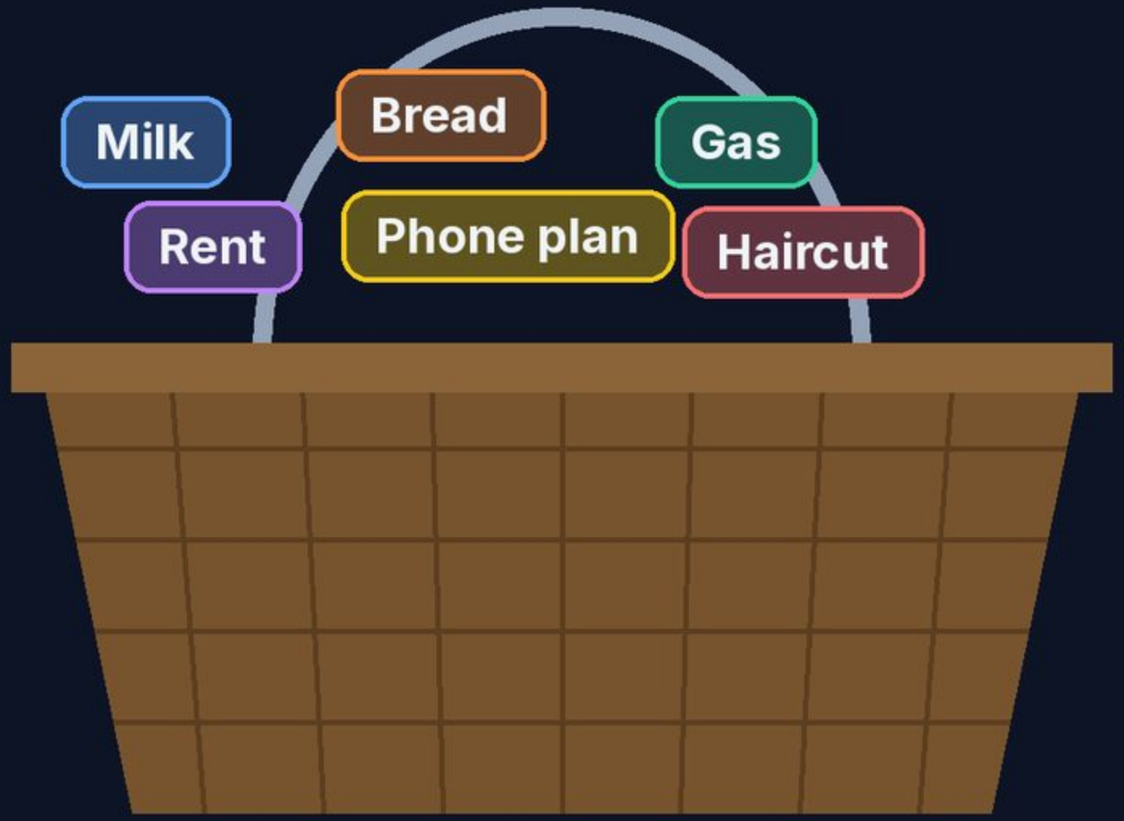
- Only frictional + structural: no cyclical
- Not zero, and nobody knows its exact value
- It shifts over time, and economists argue about it
- Behind the question: is the job market too hot or too cold?

Section 6

Inflation

Are prices stable?

The Consumer Price Index: the price of a basket



Inflation: the general price level rising, not one price

Inflation rate: how fast, usually over a year

CPI: what the same basket costs over time (BLS)

Worked example: a price index

Illustrative numbers

	Basket cost	Price index
Base year	$500	100
This year	$520	520 ÷ 500 × 100 = 104
Next year		108

This year: prices 4% higher · Next year: 4 ÷ 104 ≈ 3.8% inflation

Why it's hard to measure

- People switch to cheaper things; a fixed basket doesn't
- Products get better at the same price
- New products take time to get into the basket
- Other measures too: the U.S. central bank watches the PCE price index
- Core inflation leaves out food and energy: a steadier read

Real example, November 2026

Consumer prices, September 2026

+3.74%

CPI, over a year earlier

All items

+2.56%

core CPI

Excluding food and energy

The gap: a good share of the price pressure came from food and energy

Source: U.S. Bureau of Labor Statistics, CPI index

Who gets hurt by inflation?

It depends whose money is fixed

Tends to lose

- Workers whose pay doesn't keep up
- Savers in cash
- People on fixed incomes
- Lenders at fixed rates

Tends to gain

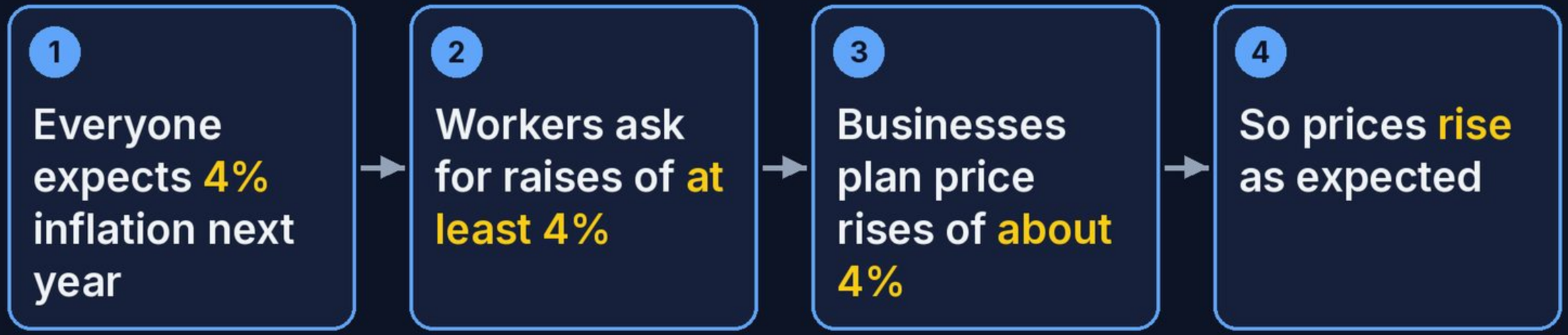
- Borrowers at fixed rates

Indexing: some payments, like U.S. Social Security, adjust each year for inflation

Deflation: falling prices

- Sounds great, but it's usually a bad sign
- People wait to buy, so businesses sell less
- Debts get harder to pay: the dollars you owe are worth more
- So central banks aim for low, steady inflation: about 2% a year in the U.S.

Expectations can make themselves come true



Central banks watch expectations closely, and care about being believed (Chapter 5)

Back to the puzzle

NEWS Economy

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Real example, November 2026 · BEA



GROCERY STORE

Illustrative receipt

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1 Growth is real (prices removed)

It says the country made more stuff

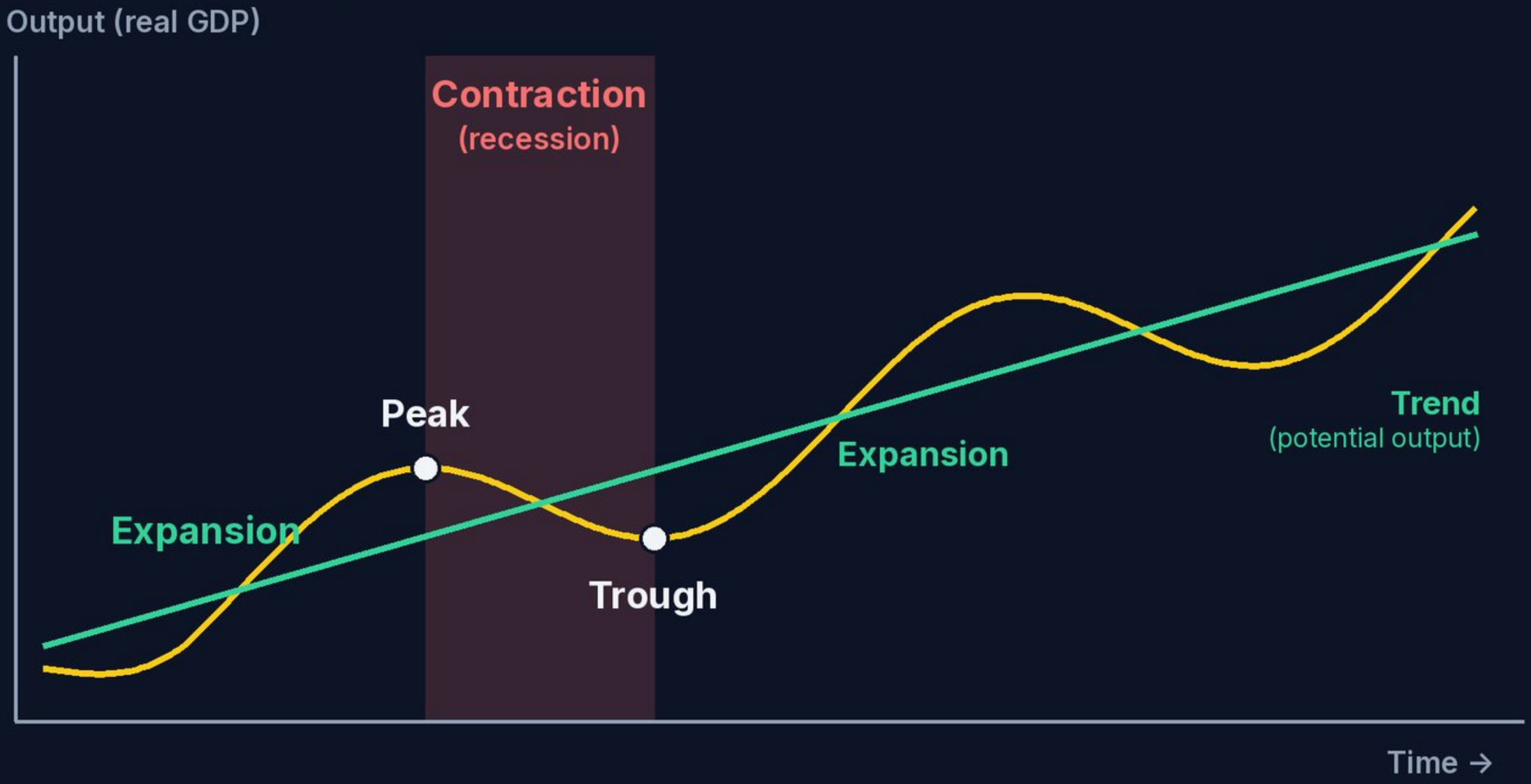
2 Prices are up from a year ago

3.7% in the November 2026 example (BLS)

3 Prices stay high even when inflation slows

The headline is a rate; your wallet feels the level

The business cycle



Why output per person rises

- Better tools and machines: physical capital
- More skills and training: human capital (Chapter 3)
- Better ideas and technology
- Helped by stable laws, secure property rights, working institutions

The rule of 70

Years to double ≈ 70 ÷ growth rate

Growth a year	Years to double
1%	about 70 years
2%	about 35 years
3.5%	about 20 years

Doubling roughly once in a lifetime, or every 20 years or so

What counts as a recession?

- Rule of thumb: two quarters in a row of falling GDP, not the official definition
- U.S. official dates: a committee at the National Bureau of Economic Research
- It looks for a significant, broad fall in activity lasting more than a few months
- The call usually comes well after the fact

What causes recessions?

Demand falls

People and businesses cut spending

A crash, lost confidence, a credit crunch. Spending falls → income falls → spending falls again.

Supply shock

Costs jump suddenly

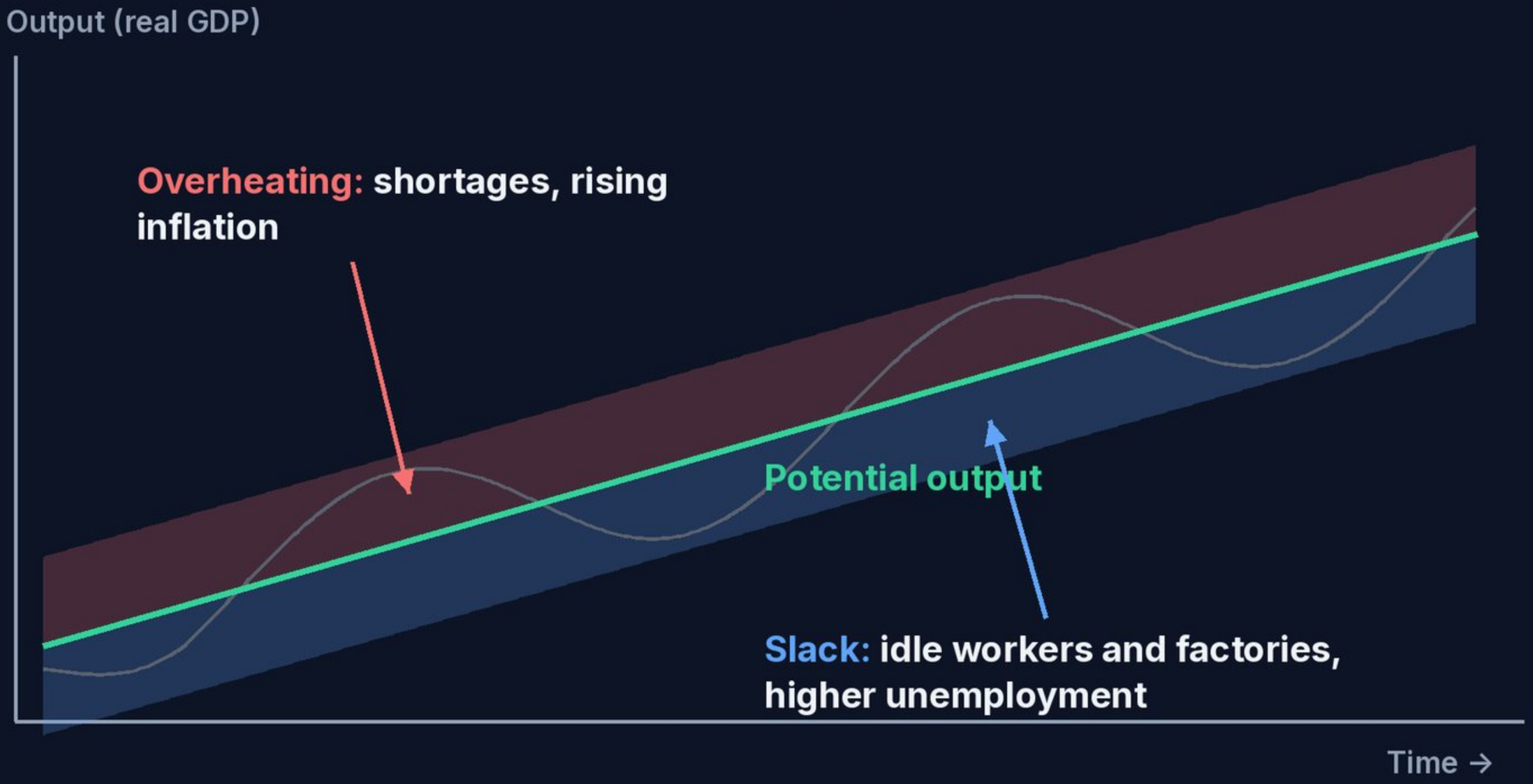
An oil price spike, a pandemic, a disaster. Rising prices and rising unemployment: stagflation.

Leading indicators

Numbers that tend to turn before the economy does. None is a crystal ball.

- New claims for unemployment benefits
- Orders for new equipment
- Confidence surveys of consumers and businesses
- The stock market
- When several turn down at once, people pay attention

Potential output: the economy's speed limit



Section 8

Government spending, taxes & fiscal policy

Using spending and taxes to steer the economy

The government's ledger

Money in

- Income taxes
- Payroll taxes
- Business taxes
- Other

Money out

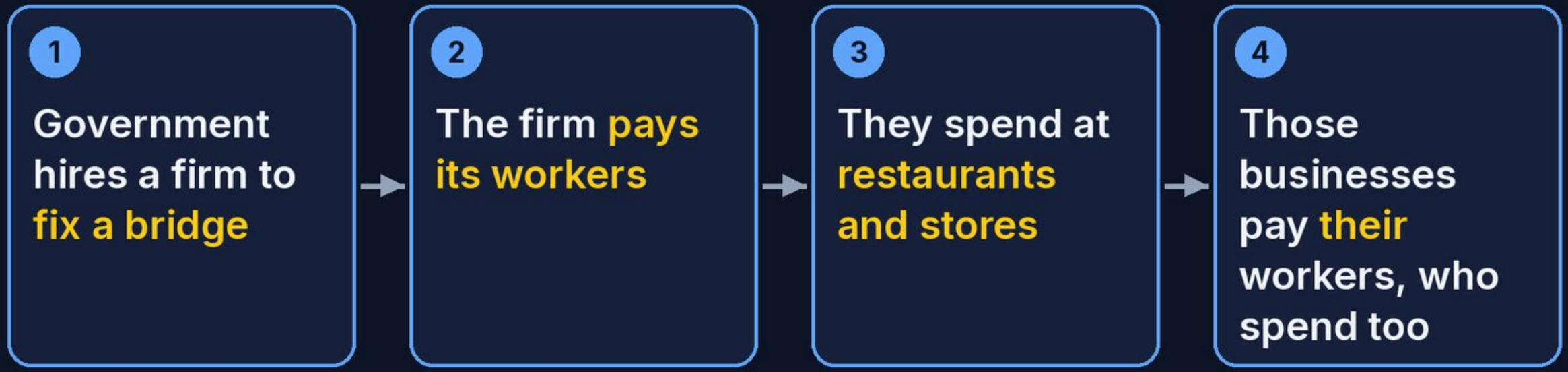
- Retirement and health programs
- Defense
- Interest on the debt
- Everything else, from roads to research

Expansionary fiscal policy

When the economy is in a slump

- **Spend more:** money goes straight into the circular flow
- **Cut taxes:** more money left in people's pockets
- Either way: **replace some of the spending** that disappeared

The multiplier effect



$1 of new spending can add **more than $1** in total

Size is hotly argued: likely **bigger** in a deep slump, **small** at the speed limit

Contractionary fiscal policy

When the economy is overheating

- Spend less or raise taxes, to cool things down
- Much less popular, so governments use it less

Pause and predict · 2 of 2

A recession hits. Before any new law is passed, what happens on its own to (a) the taxes people pay and (b) government payments like unemployment benefits? Does that soften the recession or make it worse?

Answer

(a) Taxes paid fall and (b) benefits rise, automatically. The government takes less out and puts more back in: it softens the recession.

Automatic stabilizers

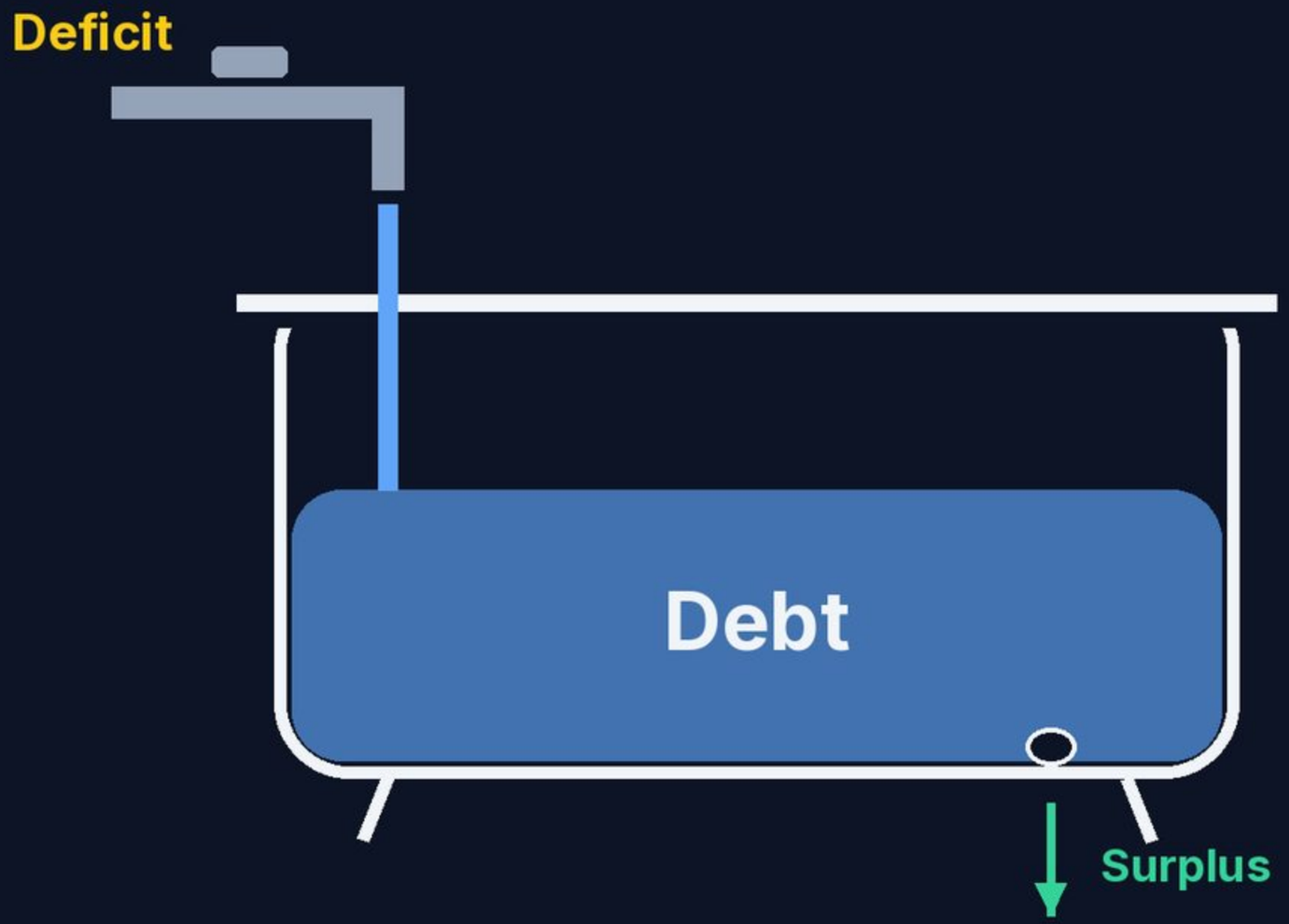
- They kick in on their own: no vote needed
- A new law has a timing problem:
- Notice the recession first: the official call can come months late
- Agree on a plan, then spend the money: a bridge can take years
- By then the economy may be heating up already

Section 9

Deficits and the national debt

Two words that get mixed up constantly

Deficit vs. debt



Deficit: one year

This year's spending minus this year's taxes

Take in more than you spend: a surplus

Debt: the running total

A smaller deficit still adds water, just more slowly

The tub only empties with a surplus

How a government borrows

- It sells bonds: IOUs that pay interest and repay on a set date
- In the U.S.: Treasury bonds
- Bought by people, pension funds, banks, foreign governments, and the central bank
- A good chunk is held by the government itself, in trust funds like Social Security's

Real example, November 2026

Federal debt, as of November 5, 2026

$40.56T

total federal debt

All federal debt, counted daily by the Treasury

$32.77T

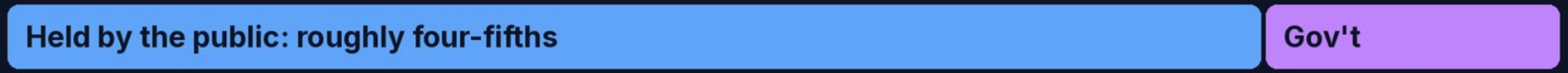
held by the public

Investors at home and abroad

$7.79T

government accounts

The government's own accounts, like the Social Security trust funds



Source: U.S. Treasury, Debt to the Penny

Is the debt a problem?

Compare it with the size of the economy: debt ÷ GDP

- Like a household: $100,000 of debt on $30,000 a year, or on $300,000
- What matters: debt compared with the income that supports it
- The ratio varies by source and method: look it up from an official source
- The trend matters more than any single reading

Is government debt bad?

It depends what it's for, and how big it gets

Borrowing can make sense

- In recessions and emergencies
- For things that pay off for decades: infrastructure, research

The risks

- Interest costs grow, more so if rates rise
- Less room in the next crisis
- Higher interest rates for everyone: crowding out (Chapter 5)

A large national government doesn't usually have to **pay its debt off completely**

What matters: is it growing **faster than the economy?** Do lenders stay **confident?**

Recap

Recap & self-check

The whole chapter in six lines

Recap

- **GDP:** final goods and services · C + I + G + NX
- **Real** takes inflation out · real ≈ nominal − inflation
- **Unemployment rate** = unemployed ÷ labor force · frictional, structural, cyclical
- **Inflation:** the general price level (CPI basket) · lower inflation ≠ lower prices
- **Business cycle:** expansion, peak, contraction, trough
- **Fiscal policy:** spending & taxes · deficit = one year, debt = the total

Cheat sheet · Chapter 4

Measuring output

GDP = C + I + G + NX

C consumption (households)

I investment (new equipment, buildings, homes)

G government purchases

NX net exports = exports − imports

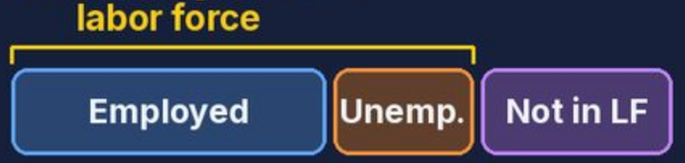
Count final goods only

(= the sum of value added)

Real = prices taken out

Real ≈ nominal − inflation

Jobs & prices



Unemployment rate = unemployed ÷ labor force

(not ÷ all adults)

Frictional · structural · cyclical

Price index = basket cost ÷ base-year cost × 100

Inflation = % change in the index

Lower inflation ≠ lower prices

Cycles & government



Expansion → peak → contraction → trough

Causes: spending falls, or a supply shock

Fiscal policy = spending & taxes

Automatic stabilizers: on their own



Deficit: one year's gap

Debt: the total, judged vs. the economy

Real example, November 2026

Sources: BEA · BLS · U.S. Treasury

+3.4%	+3.7%	4.1%	$40.56T
real GDP, Q3, annual rate	CPI, Sept., year over year	unemployment, October	federal debt

Self-check 1 of 3

A family buys a brand-new car made in Japan, and a used car from a neighbor. What happens to U.S. GDP?

Answer

Neither adds to U.S. GDP. The new car is in C but subtracted in NX: it's Japan's GDP. The used car was counted when new. (A dealer's fee would count.)

Self-check 2 of 3

Last year you earned $50,000. This year you got a raise to $51,000, and prices rose 4%. Better or worse off?

Answer

Worse off. Pay +2%, prices +4% → real wage ≈ −2%. More dollars, each buying less: the opening puzzle in one paycheck.

Self-check 3 of 3

Unemployment falls from 6% to 5%, but the number of people with jobs doesn't change at all. How could that happen? Is it good news?

Answer

Probably not good news. Unemployed people most likely stopped looking and left the labor force. Check the participation rate or U-6 first.

Where we're going

6 chapters, from the basics to real estate

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

Next up · Chapter 5

Money, Banking & Interest Rates

What money is, how banks create it, what the central bank does, and why rates move