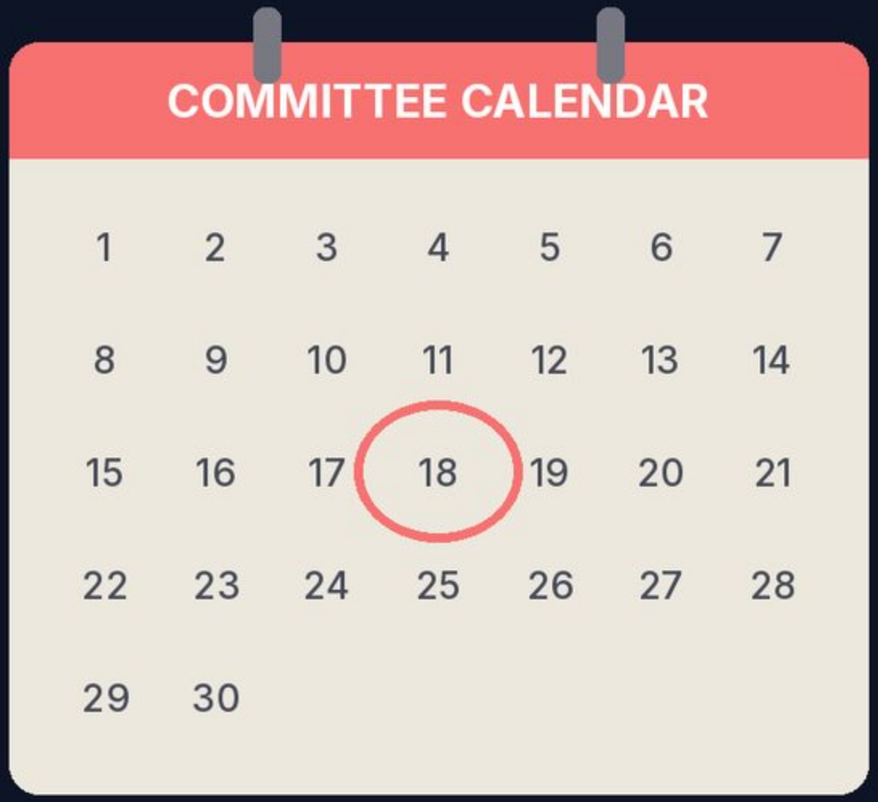
Understanding Economics · Chapter 5

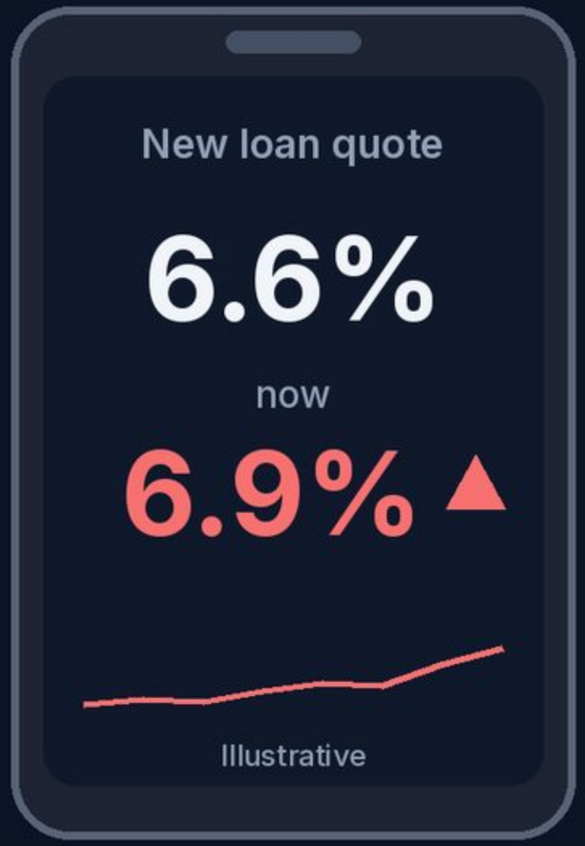
Money, Banking & Interest Rates

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



Committee meeting, Washington

?



Why does this move that?

And sometimes rates move before the meeting even happens

Section 2

What money is

Three jobs, and a shared agreement

A world without money: barter

A baker wants a haircut. The barber must want bread, right now.

Economists call it the need for a double coincidence of wants.

Money does three jobs



Medium of exchange

Everyone accepts it. The barber doesn't need to want bread.



Unit of account

The measuring stick for prices: everything in one unit, dollars.



Store of value

Earn today, spend next month… as long as inflation stays low.

Shells, salt, cattle, gold… and now?



Money is whatever people trust to do the three jobs.

Today: fiat money, not backed by gold. Most dollars are numbers in bank accounts.

How much money is there?

M2

M1

- Cash
- Checking accounts
- Savings accounts (in U.S. M1 since 2020)

M2 = M1 plus: small certificates of deposit, retail money-market funds

Take a little longer to turn into spending money

Most money is bank deposits, not cash.

What about crypto?

Something like Bitcoin, so far

Money's job	How it's done so far
Medium of exchange	Works in some places
Store of value	Poorly: the price swings a lot
Unit of account	Poorly: very few prices are set in it

Whether that changes is a debate for the future.

Section 3

How banks create money

Not a vault: a bank sits between savers and borrowers

Where a bank's money comes from

Illustrative numbers



On every $100 lent: $6 in – $1 out = a $5 gap. It covers staff, branches, loans that go bad, then profit.

When a bank lends, it creates money.

Next: how a modern bank does it, with illustrative numbers

A $20,000 car loan

Illustrative numbers

First Bank

What the bank owns	What the bank owes
NEW New loan to you **$20,000**	NEW New deposit in your account **$20,000**

A loan creates a matching deposit. Nobody printed anything.

Repay the loan → the loan and the deposit shrink together, and that money disappears

Can a bank lend without limit? No.

Once the loan is made, the bank has to manage three things

Funding & liquidity

Can it settle payments and pay depositors?

Reserves move to the car dealer's bank. What funding costs feeds into your rate.

Capital

Can it absorb losses?

The owners' own money. Rules require enough of it relative to lending.

A good bet

Will the borrower repay?

And do people want to borrow at the rate on offer?

Simplified textbook model

Illustrative numbers



each bank keeps 10%, lends the rest

Total deposits

≤ $1,000 ÷ 0.10

= $10,000

the "money multiplier"

A picture, not a rulebook. **Real banks don't lend out a fixed share of each deposit. U.S. required reserve ratios: zero since 2020.**

Two layers



Ordinary banks create **deposits** when they lend.



The central bank creates the **reserves** underneath the whole system.

Reserves: mostly money banks keep in their own account at the central bank, not cash in a vault.

Pause and predict · 1 of 2

People get nervous about banks, pull cash out of their accounts, and keep it at home. What happens to the total amount of money in the economy, and to lending?

Answer

At first, no change: deposit −$100, cash +$100, both money. Then reserves drain, banks lend less, and since loans create deposits, money can shrink over time.

Bank runs

- A bank keeps only a slice of deposits on hand
- The fear of a bank failing can make it fail
- Deposit insurance (U.S.): up to $250,000 per depositor, per bank, per ownership type
- Capital rules and regular check-ups work from the other side

Two ways a bank gets into trouble

Liquidity problem

- Loans are fine, but tied up for years
- Depositors want their money today
- Fix: a loan from the central bank

Insolvent

- Loans have gone bad
- It owns less than it owes
- No short-term loan fixes it: closed, sold or rescued

Capital is the cushion: it absorbs losses before depositors feel them.

Section 4

The Fed and its tools

A bank for the banks, set up by Congress in 1913

The Federal Reserve

the central bank of the United States



Its dual mandate

Maximum employment

Stable prices

(about 2% inflation a year)

Also: moderate long-term interest rates. Not zero inflation: a little gives some room (Chapter 4).

The FOMC: Federal Open Market Committee

12 voting members



7 governors

the Fed's board in Washington

1

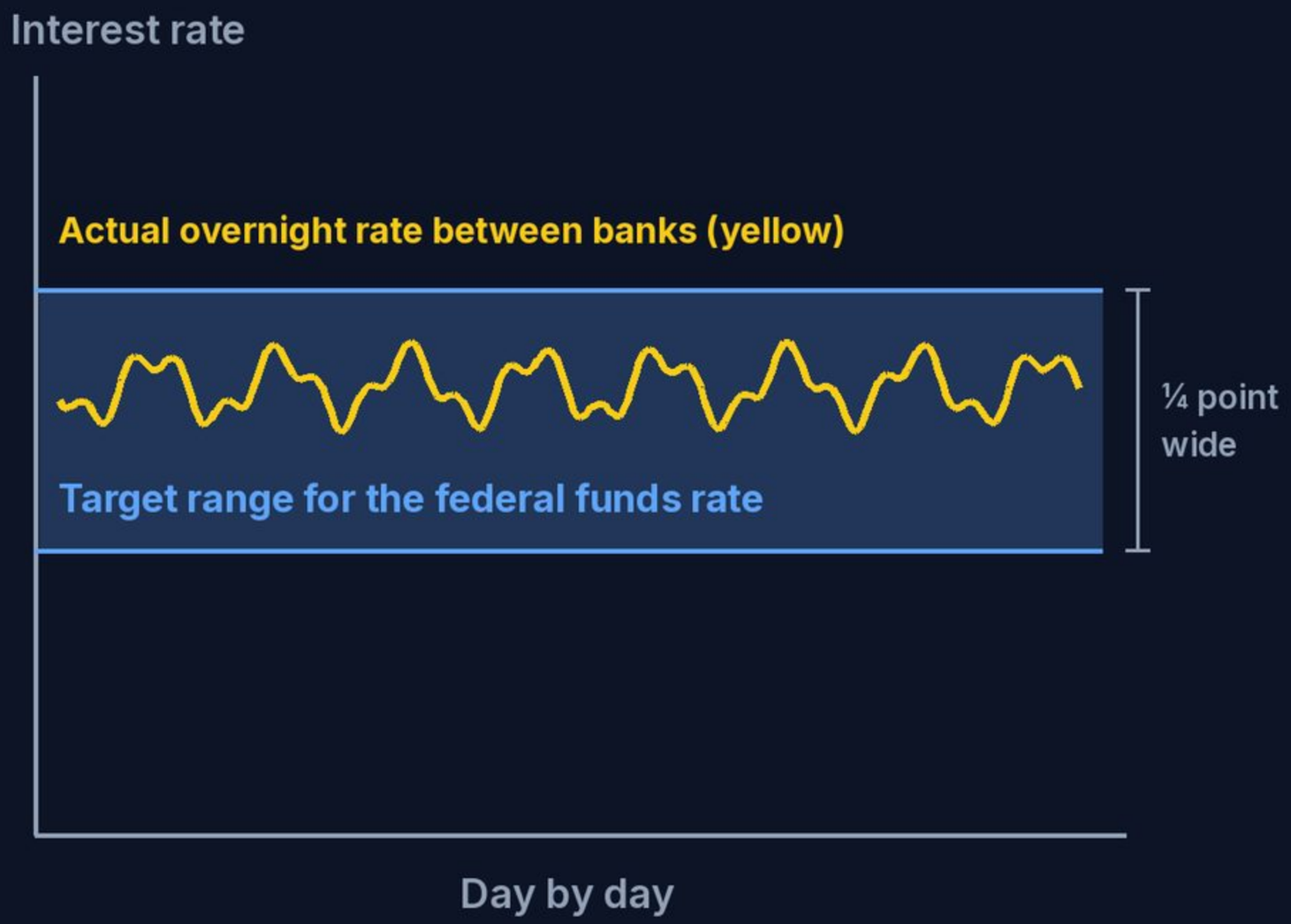
president of the New York Fed

4

of the other 11 regional Fed presidents, taking turns

Meets eight times a year

What the committee decides



Federal funds rate

The rate banks charge each other for overnight loans.

Banks with extra reserves lend to banks that are short.

The Fed sets a target range, like a band.

Real example, November 2026

Here's what these numbers looked like when this course was made.

Focus on what each number means.

Real example, November 2026

Federal funds target range

3.75%–4.00%

Held at the October 28, 2026 meeting (10–2 vote)

Source: Federal Reserve

How the committee decides

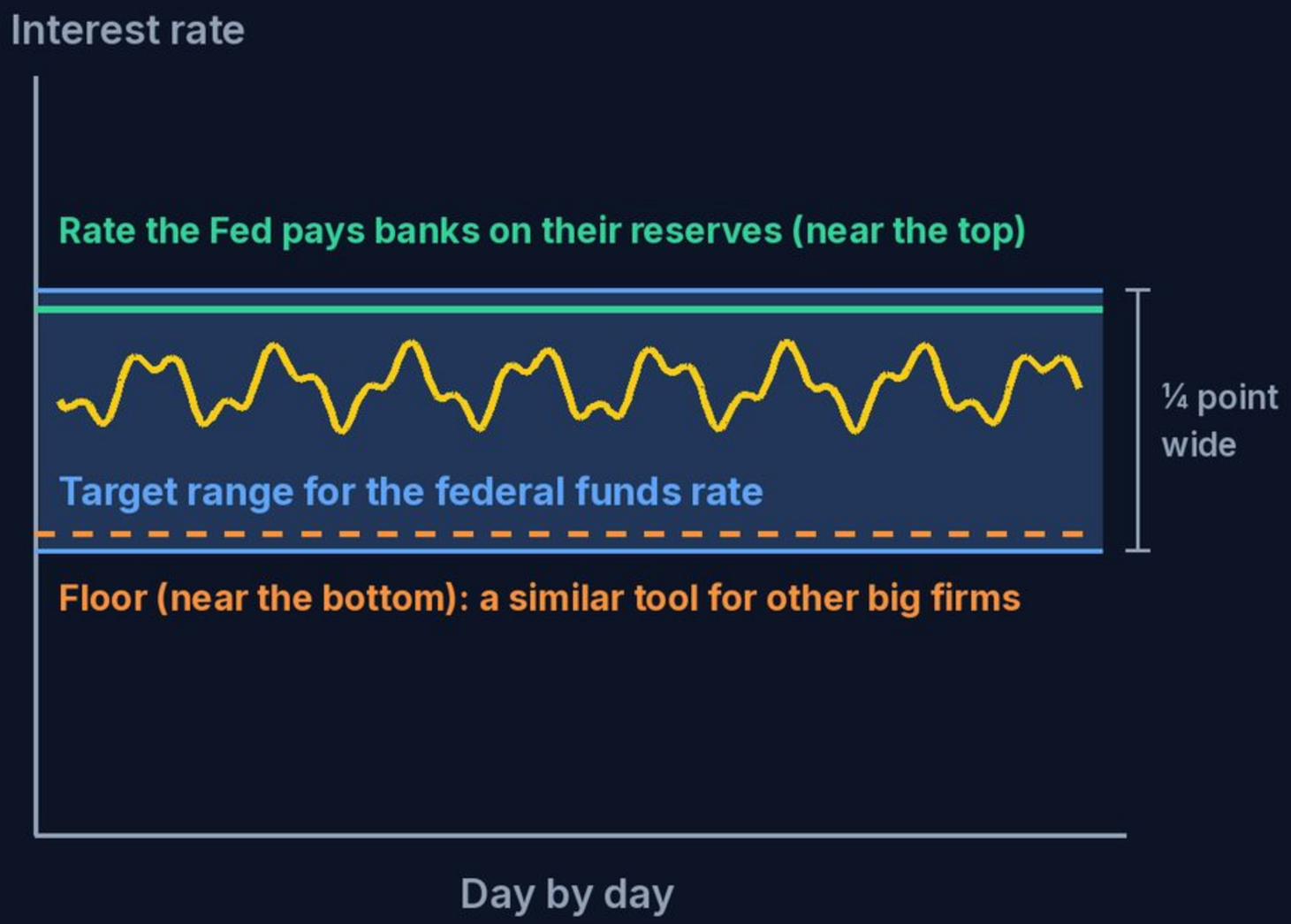
Reads the scoreboard from Chapter 4: jobs, wages, spending, GDP, and above all inflation

Inflation well above 2% → lean toward higher rates

Unemployment rising, inflation tame → lean toward lower rates

Goals point opposite ways → serious arguments, votes against

Tool one: the rate on reserves



Tool one (main)

The Fed pays banks interest on reserves, risk-free.

No bank lends overnight for much less than that.

Raise it → the overnight rate rises. Lower it → it falls.

More tools

Open market operations

Buy bonds → more reserves → rates tend to fall

Selling does the opposite. The main tool for most of the 20th century.

Discount window

Lends directly to banks, at or above the top of the range

A backstop: the lender of last resort. One way to fight bank runs.

Emergencies: QE

Buy long-term bonds to push long rates down

Used in and after 2008, and in 2020. In reverse: quantitative tightening.

Independence

Appointed by the president, confirmed by the Senate,

but no approval needed for each decision.

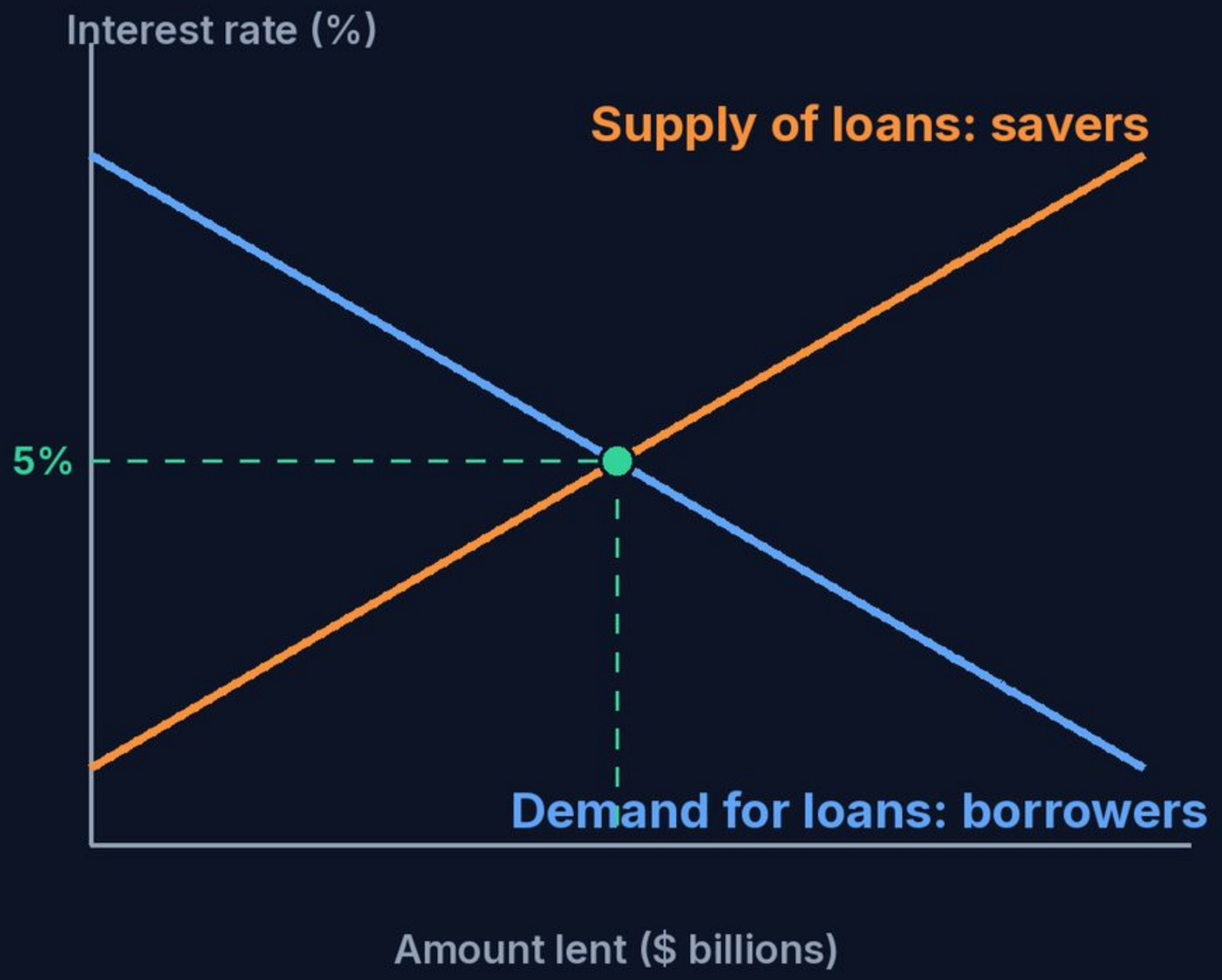
Look at the long run, not the next election.

Section 5

Interest rates and why they move

The price of borrowing money for a period of time

The market for loans



What moves rates?

Anything that shifts these curves.

Illustrative curves.

Why does borrowing have a price?

Interest is the reward for waiting

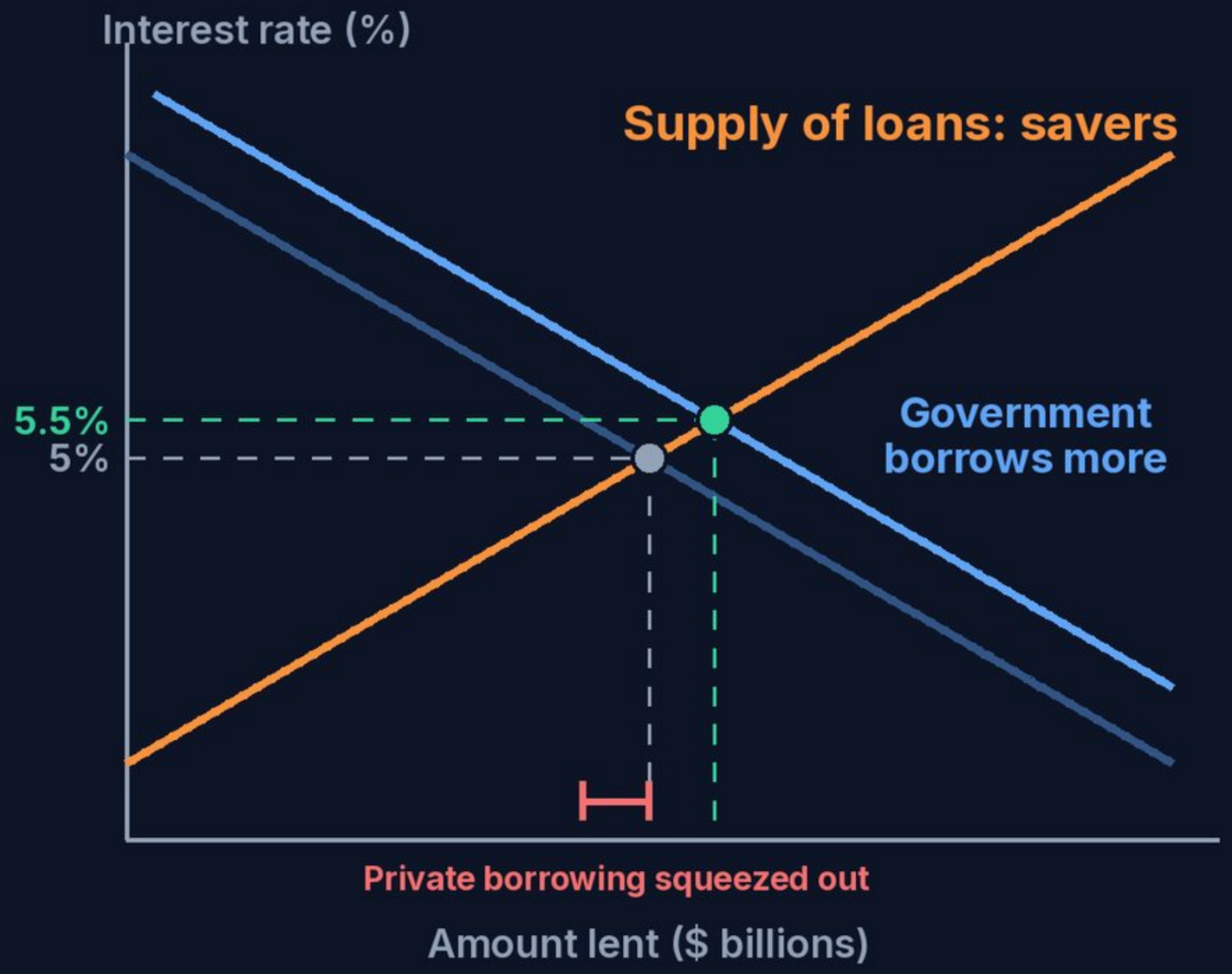
Opportunity cost (Chapter 1): you can't spend or invest it for a year

Risk: you might not get it back

Inflation: prices may rise in the meantime

Waiting: most people would rather have it now

What shifts the curves



Crowding out

Government borrowing shifts demand right.

The rate rises from 5% to 5.5%.

Some private borrowers give up.

Illustrative numbers. The real-life size is debated.

Why rates differ

Two main reasons, plus one ingredient inside all of them

Risk

Will I get paid back?

Government bond < car loan < credit card. The extra is a risk premium.

Time

How long is my money tied up?

Longer usually pays more: the term premium. Not always: see Chapter 6.

Inflation

Built into every nominal rate

What will the money be worth when it comes back?

Real vs. nominal

Real interest rate ≈ nominal interest rate − expected inflation · Illustrative numbers

Savings account pays	Inflation	Real return
5%	3%	≈ 2%
2%	3%	≈ −1%

Your money grew 5%, but each dollar buys 3% less.

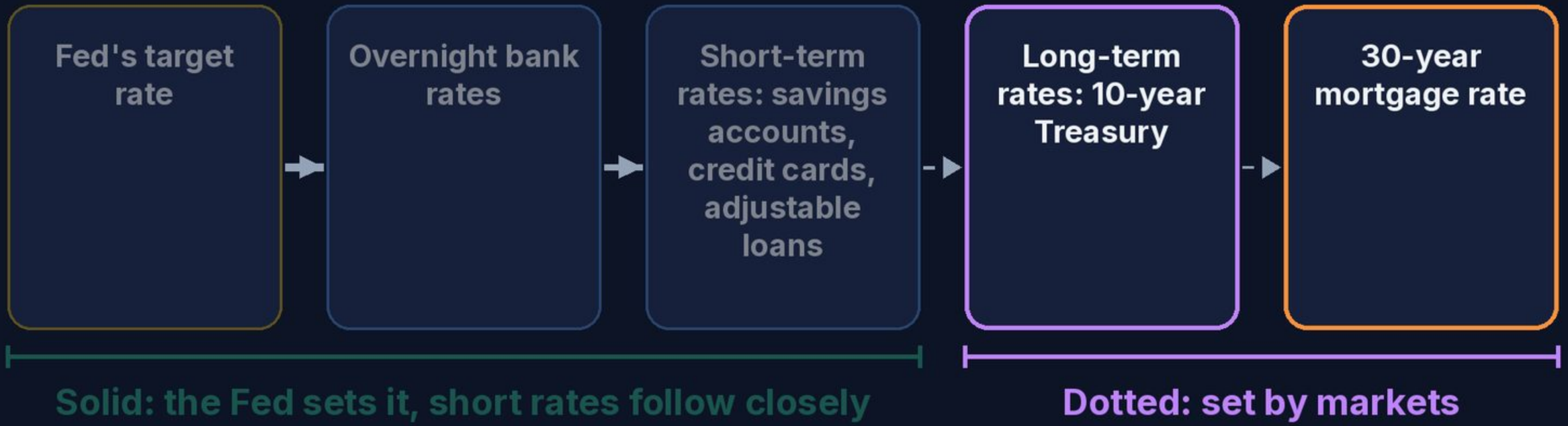
More dollars, but you can buy less. Expected inflation gets built into interest rates.

Section 6

From the Fed to your loan

Follow the chain

From the Fed to your loan



10 years ≈ a one-year loan rolled over ten times: expected short rates + a term premium.

How long rates are set



Expected inflation works through both pieces.

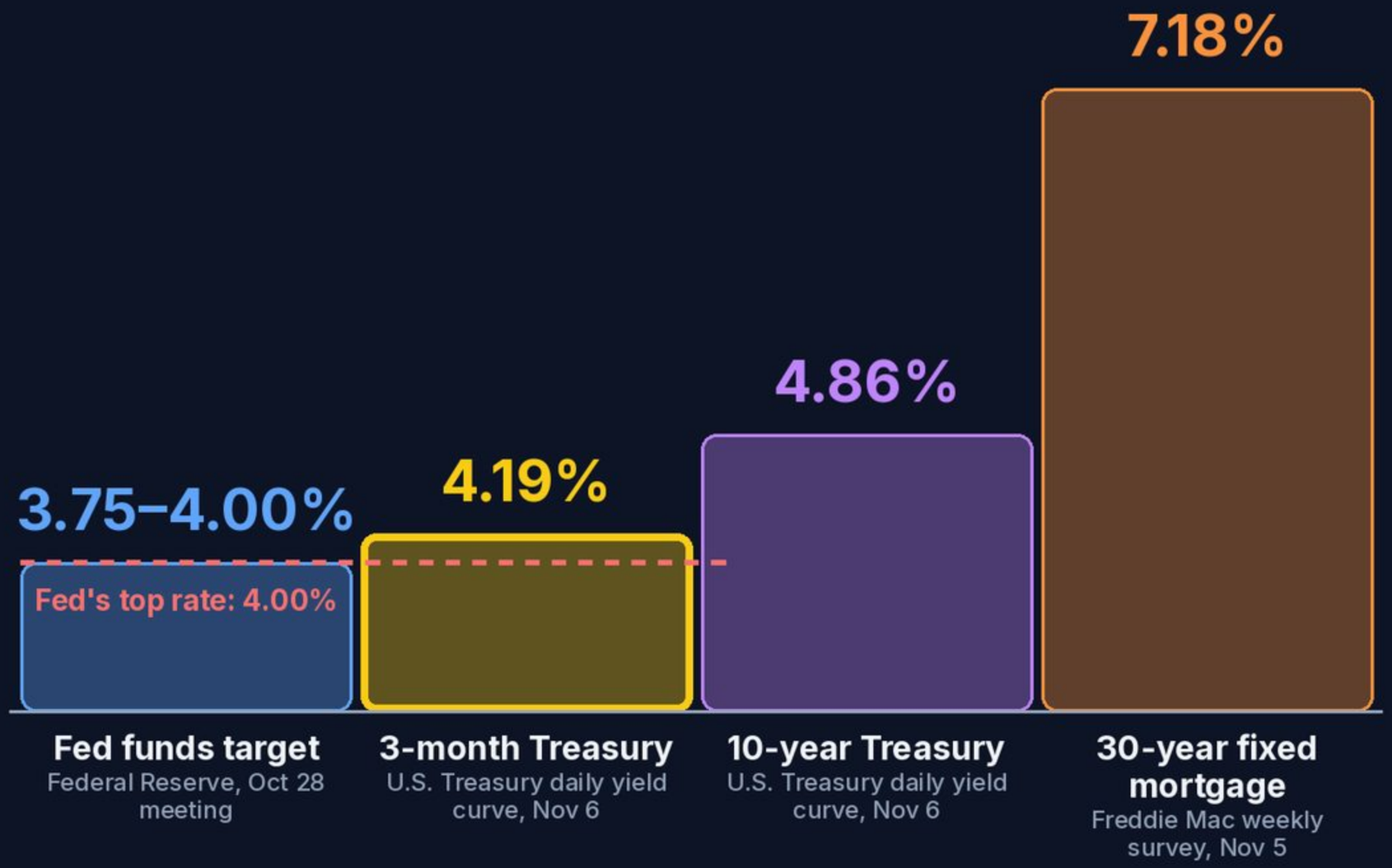
That word, "expect", does most of the work.

You can see what markets expect

- Traders buy and sell contracts tied to where the Fed's rate will be
- Their prices reveal the odds: "markets see a strong chance of a cut"
- The odds change every day with jobs and inflation news
- Long rates can move before the committee says a word

Real example, November 2026

The staircase of rates



Above the Fed's top rate

One likely reason: markets expected another hike (December).

A 3-month bill lives through that meeting.

A likely explanation, not proof.

10-year: expected short rates + term premium.

Mortgage: riskier borrower, and early repayment.

What a rate move feels like

Worked example: $30,000 car loan over 5 years · Illustrative numbers

Rate	Monthly payment	Total interest
5%	about $566	about $3,970
8%	about $608	about $6,500

3 points more → about $42 more every month, and over 60% more interest.

Pause and predict · 2 of 2

For weeks, everyone has expected the Fed to raise its rate by a quarter point at its next meeting. On the day, it does exactly that. What do you think happens to mortgage rates that day?

Answer

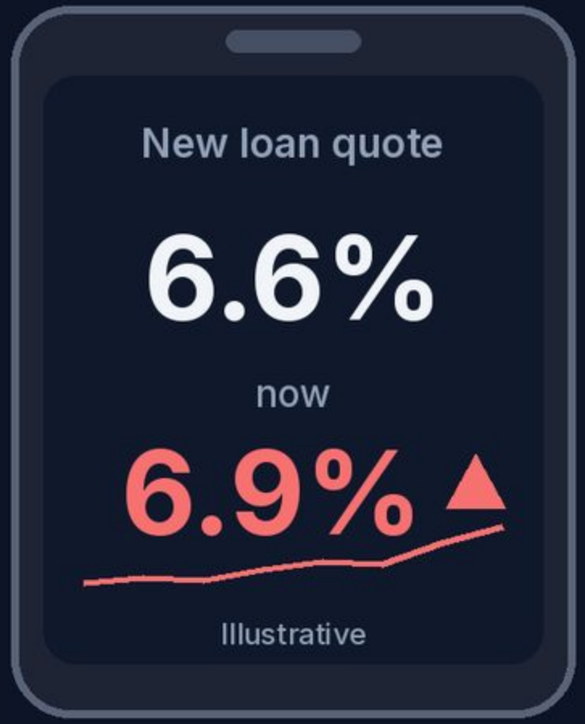
Probably not much. The hike was already expected, so it was built into long rates weeks before. The mortgage rate rose when the expectation formed.

Back to the puzzle



Committee meeting, Washington

?



1. Markets move on **expectations**
2. **Surprises** move rates on the day
3. The **words** matter as much as the decision

The twist: the Fed cuts, and long rates **rise**

Markets expect **more inflation later**

→ higher expected short rates **+** a bigger term premium

The Fed controls the **bottom step.** Expectations do most of the rest.

Section 7

Inflation vs interest rates

Why the Fed raises rates, and what it costs

When the Fed raises rates



Weak economy? The Fed **cuts:** borrowing gets cheaper, saving pays less, spending picks up.

The Fed isn't all-powerful

Zero lower bound: near 0%, people could just hold cash. In 2008 and 2020 → buy long-term bonds

The policy mix: government spending and taxes push on the same economy. Pulling opposite ways → the Fed may need higher rates

The hardest part: timing

Effects take a year or more: a big ship that turns slowly

Too little, too late → inflation takes hold

Too much → recession and lost jobs

The trade-off: the Phillips curve



Short run

Lower unemployment tends to come with higher inflation.

Longer run

The trade-off breaks down: rates kept too low → people expect higher inflation → more inflation, no lasting gain in jobs.

People **believe** inflation will stay near 2%

→ they set wages and prices that way

→ inflation **stays** near 2%

Credibility is one of the Fed's most valuable tools

Real example, November 2026

Putting real numbers on it

+3.74%
Consumer prices
over 12 months, September data · BLS

+2.56%
Core prices
without food and energy, September data · BLS

4.1%
Unemployment
October data · BLS

3.75–4.00%
Fed funds target
Federal Reserve, Oct 28 meeting

Rough arithmetic, not an official measure: fed funds minus headline inflation ≈ 0; minus core ≈ +1.3 points.

Sources: BLS · Federal Reserve

Why not just **print money?**

Money growing much faster than the economy can make things

→ **more dollars chasing the same goods** → prices rise

Why central banks are kept **at arm's length** from the spenders

Recap

Recap & self-check

The whole chapter in six lines

Recap

- **Money's three jobs:** exchange, account, store of value · mostly bank deposits
- **Banks create money:** a new loan creates a matching deposit · multiplier = textbook model
- **The Fed:** max employment + stable prices (~2%) · sets the overnight range via the rate on reserves
- **Interest rate** = price of borrowing · real ≈ nominal − inflation
- **Long rates ≈ expected short rates + term premium** · they move on surprises and signals
- **Higher rates** slow spending and, with a lag, inflation · lower rates do the opposite

Cheat sheet · Chapter 5

How banks create money

Bank	
owns	owes
+ new loan	+ new deposit

A loan creates a matching deposit

Repay → both shrink, the money disappears

Limits: funding & liquidity · capital · a good bet

Liquidity problem: central bank loan. Insolvent: no loan fixes it

Deposit insurance + lender of last resort → stop runs

Textbook model (a simplification)

ceiling = first deposit ÷ share kept

What sets interest rates



S = savers: save more → S right → rate ↓

D = borrowers: borrow more (or big deficits) → D right → rate ↑

Rates differ by risk and time

Every nominal rate builds in expected inflation

real ≈ nominal – expected inflation

From the Fed to your loan



Real example, November 2026

Fed · Treasury · Freddie Mac

Long rate ≈ expected short rates + term premium

Markets move on expectations; surprises move rates on the day

Higher rates → borrowing costs more → less spending → businesses sell & hire less → price rises slow

Self-check 1 of 3

Your bank approves you for a $10,000 loan and credits it to your checking account. Has the total amount of money changed? What does the bank manage next?

Answer

Yes: $10,000 of new money, a new deposit matched by your loan. Next: settling payments when you spend it, cash for depositors, and enough capital.

Self-check 2 of 3

Your savings account pays 4%. Prices rise 3% a year. Next year your rate goes to 5%, but inflation rises to 6%. Better or worse off in real terms?

Answer

Worse off. This year: 4 − 3 = +1%. Next year: 5 − 6 = −1%. Your rate went up, but your money buys less. Always subtract inflation.

Self-check 3 of 3

The Fed leaves its rate unchanged, but signals rates will stay higher for longer than markets thought. What happens to the 10-year Treasury and mortgage rates?

Answer

They probably rise. The expected path of short rates went up, so long rates rise even though today's rate didn't change. The words matter.

Where we're going

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

Next up · Chapter 6

Trade, Financial Markets & Real Estate

Why countries trade, how stocks and bonds work, and one of the biggest markets of all