¶ 4.1

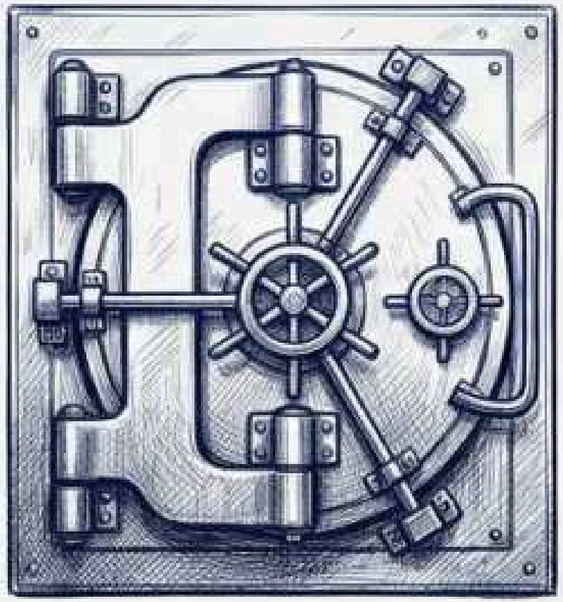


ECON 130 B: Lecture 4

Money, Banks, and Inflation

At a glance — What money is, how banks create it, what a central bank does, and what causes inflation.

¶ 4.2



What is Money?

How Banks Create It



Money



Inflation: Causes, Costs, & Interest Rates

The Role of a Central Bank



The Three Jobs of Money

¶ 4.3



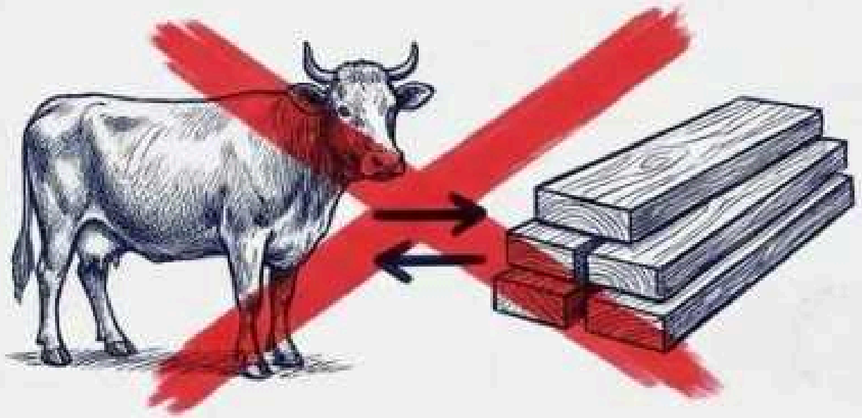
Medium of Exchange

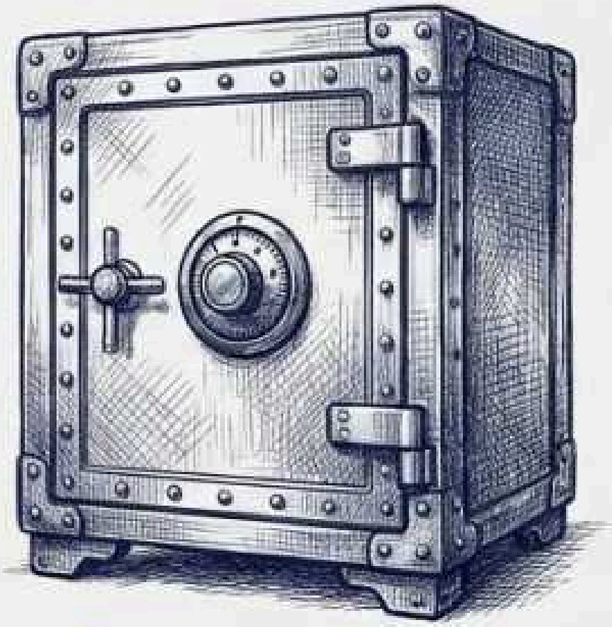
Buys goods and services (solves the double coincidence of wants in barter).



Unit of Account

The yardstick for quoting prices.





Store of Value

Carries purchasing power into the future.

Forms of Money

¶ 4.4

Commodity Money

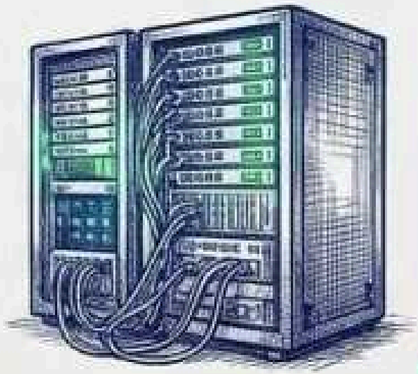
Has intrinsic value of its own (e.g., Gold, POW camp cigarettes).



Fiat Money

No intrinsic value; money only because the government decrees it (e.g., Dollars, Euros, Yen).



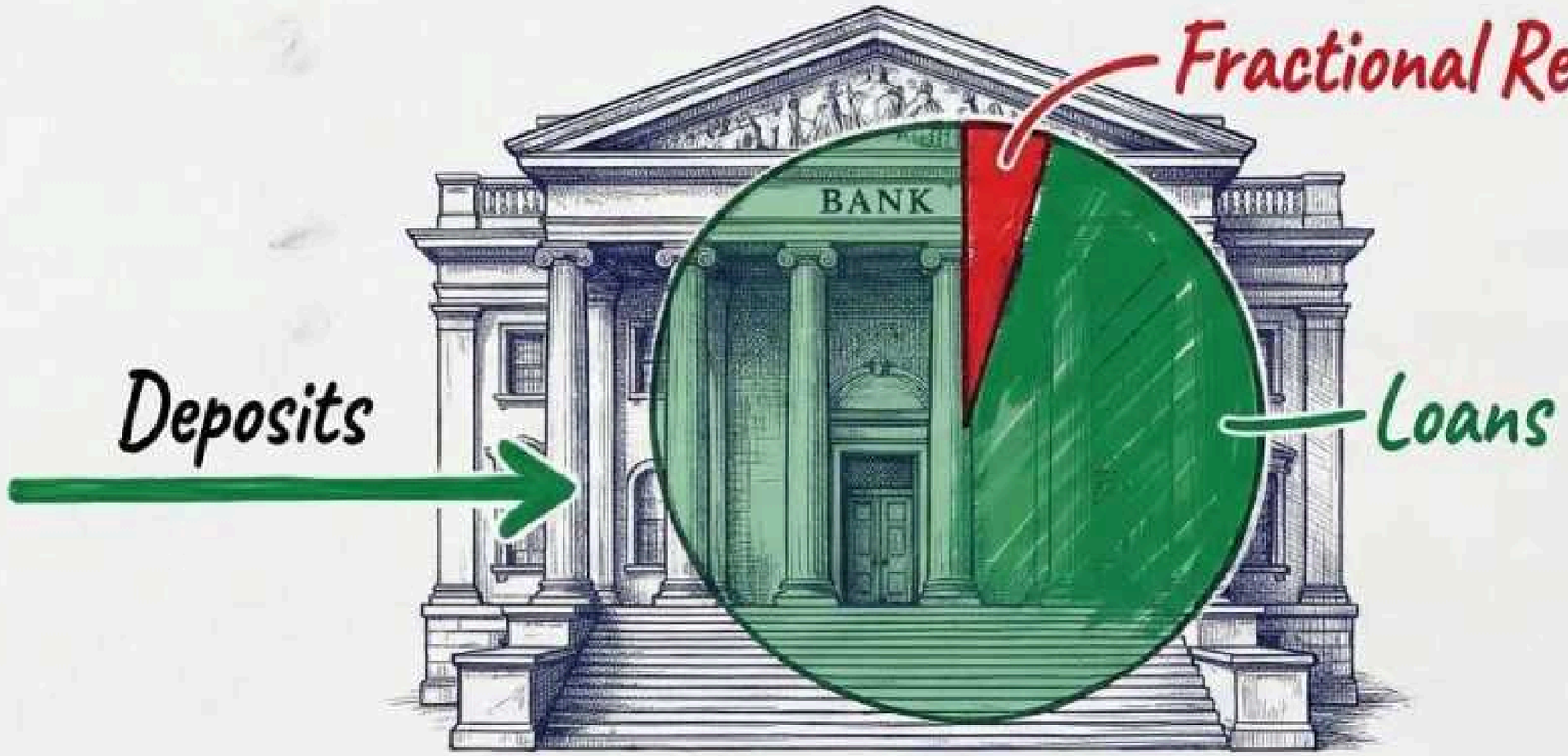


Note: Most of the modern money supply is not physical cash, but digital bank deposits recorded on computers.

Fractional Reserve Banking

¶ 4.5

Banks keep only a fraction of deposits ready for withdrawals, lending out the rest.

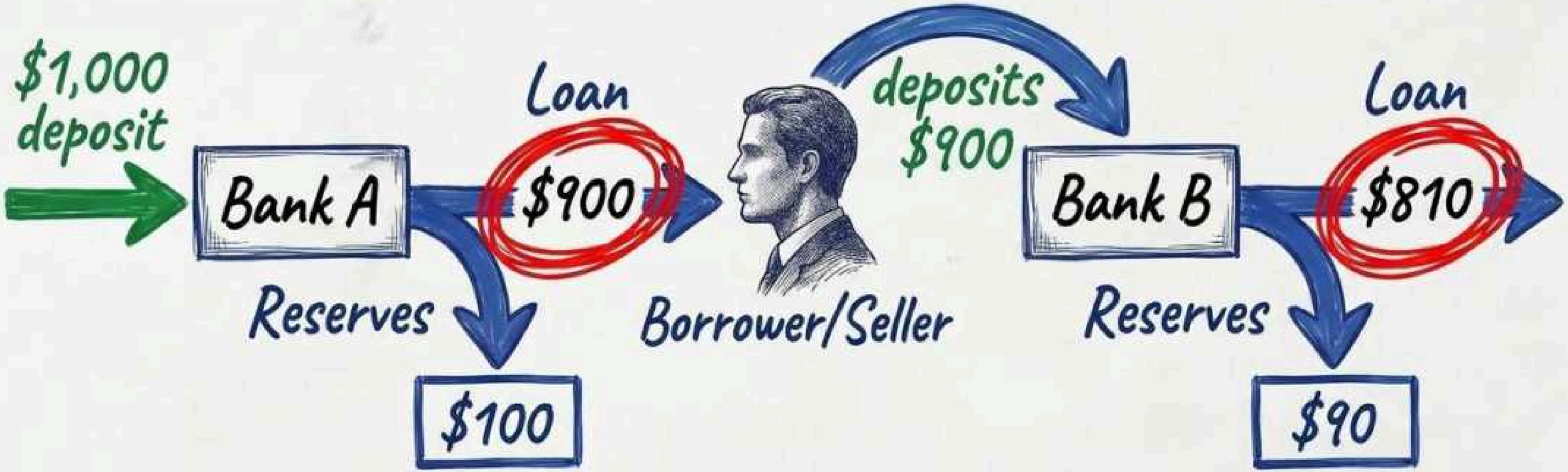


[Interest Charged on Loans] – [Interest Paid on Deposits] = [Bank Profit]

The Money Creation Loop

¶ 4.6

Assumption: 10% Reserve Ratio.



Key Insight: Every new round of deposits equals new money injected into the system.

The Math of Money Creation

¶ 4.7

$$\text{Total Deposits} = \text{Original Deposit} \times \left(\frac{1}{\text{Reserve Ratio}} \right)$$

$$\frac{1}{\text{Reserve Ratio}}$$

→ 10% ratio = 10x multiplier ($1,000 becomes $10,000).

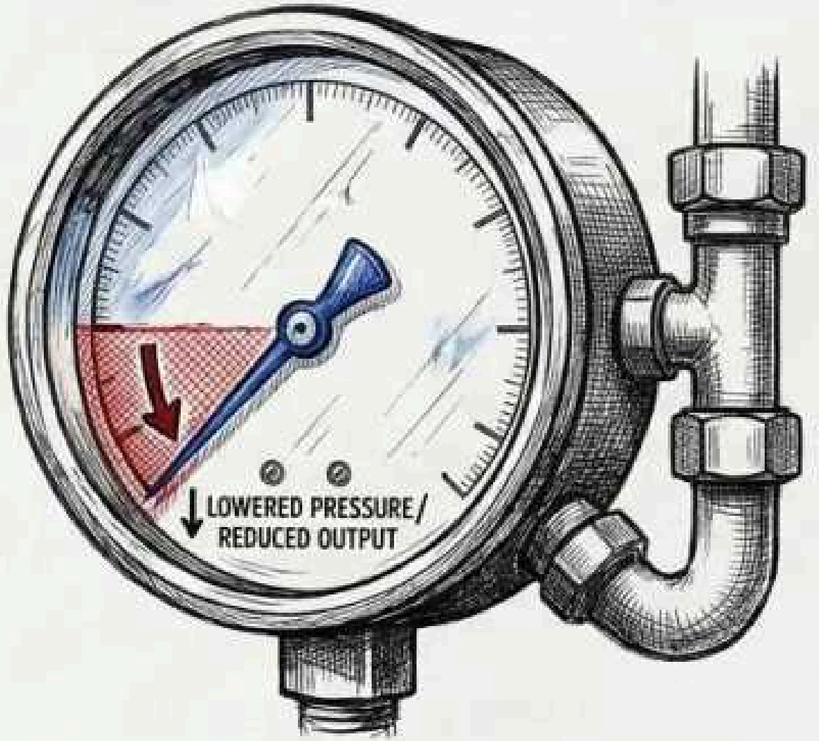
→ 20% ratio = 5x multiplier ($1,000 becomes $5,000).

Reality vs. The Textbook

¶ 4.8

Frictions that lower the multiplier:

1. Banks choose to hold excess reserves.
2. Borrowers choose to hold physical cash instead of depositing it.



2020

Post-2020 Shift: The U.S. Federal Reserve set required reserves to zero. The modern money supply is now steered by interest rates, not rigid reserve ratios.

The Weak Point: Bank Runs

¶ 4.9



- *The Trigger:* Depositor fear leads to simultaneous mass withdrawals.
- *The Reality:* No bank holds enough cash to pay everyone at once. Even perfectly healthy banks can fail in a run.
- *Historical Impact:* In the early 1930s, thousands of U.S. banks collapsed, shrinking the money supply by ~33%.

The Solution: Deposit Insurance

¶ 4.10





The Shield: The FDIC (est. 1934) guarantees deposits (currently up to $250,000). This fundamentally eliminates the depositor's reason to run.

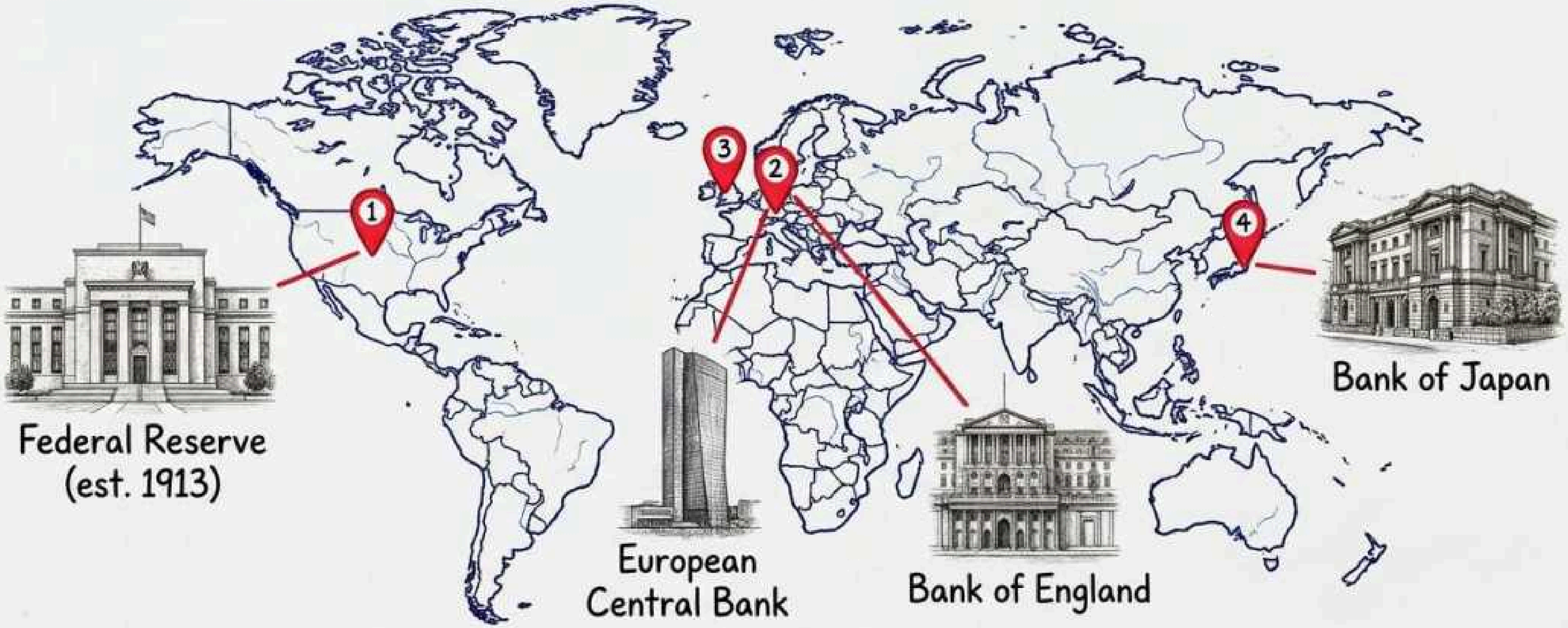
The Trade-off: Moral Hazard. Because deposits are perfectly safe, insured banks may take riskier bets. Consequently, strict government supervision is required.

The Central Bank

¶ 4.11

Two Primary Jobs:

1. **Monetary Policy**: Control the money supply and interest rates.
2. **Lender of Last Resort**: Provide emergency liquidity to banks during crises.



The Dual Mandate & Independence

¶ 4.12



Congressional Directive: Maximum Employment & Stable Prices (2% inflation target).

The Decision Makers: The Federal Open Market Committee (FOMC) meets ~8 times a year.

The Independence Factor: Central banks are insulated from elected politicians to prevent the temptation of printing money for short-term electoral gains.

The Central Bank Toolkit

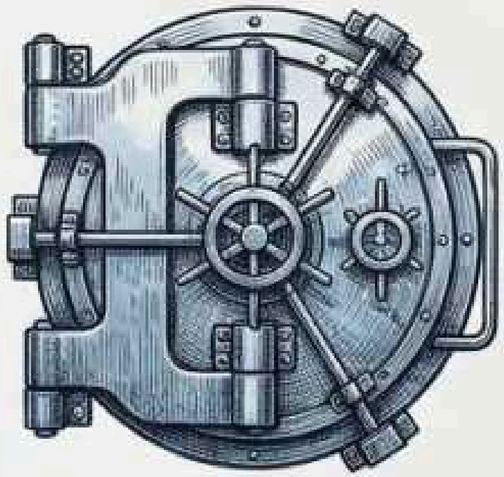
¶ 4.13



Open Market Operations

Buying or selling government bonds.

Buy bonds = create reserves, → increase money supply, % push rates down.



Interest on Reserves

Setting the specific rate paid to commercial banks for parking their cash at the Fed.



Discount Rate

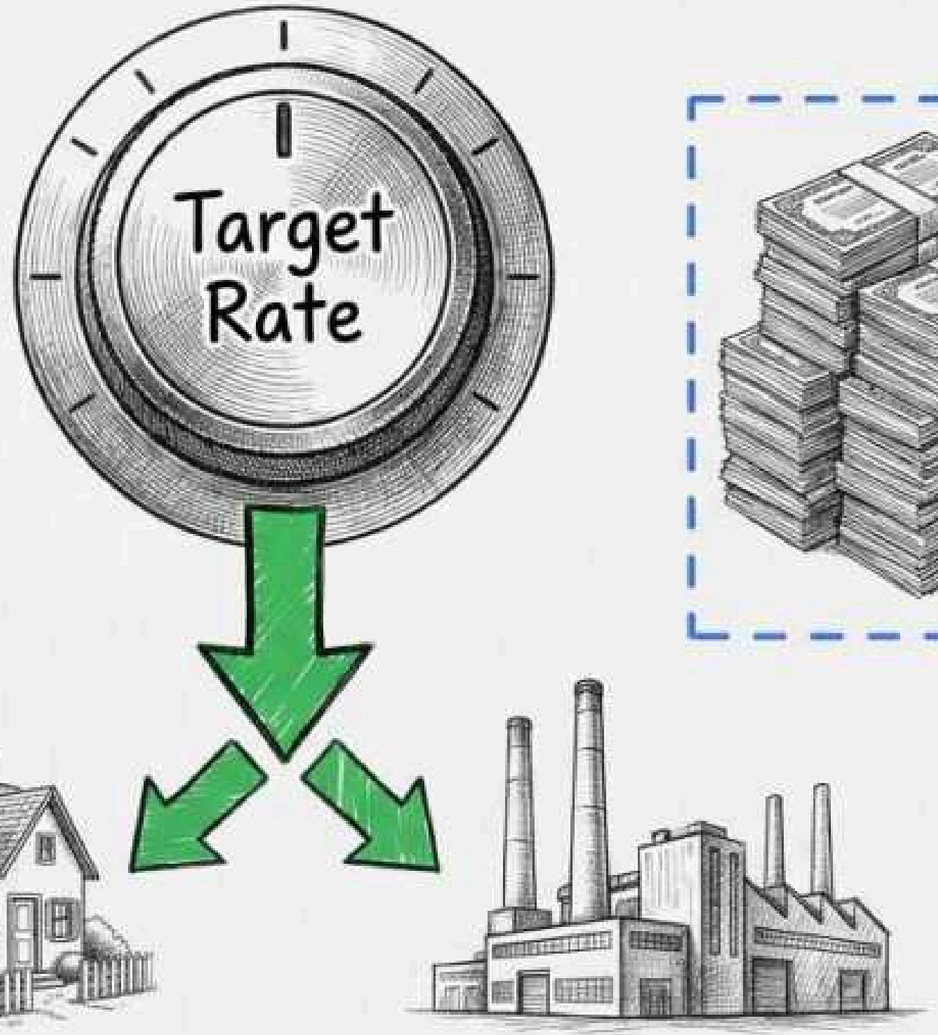
The punitive interest rate charged for emergency, last-resort loans to banks.

The Key US Interest Rate

¶ 4.14

Federal Funds Rate:
The overnight lending rate between commercial banks.

The Mechanism:
The Fed sets a target.
Lower target = cheaper borrowing economy-wide.
Higher target = dearer borrowing.



Post-2008 Tool:
Quantitative Easing (QE) — Large-scale bond purchasing to inject massive liquidity.

Why Do Prices Rise? The Quantity Theory

¶ 4.15



Takeaway: Both sides of the equation measure the exact same thing: total economy-wide spending.

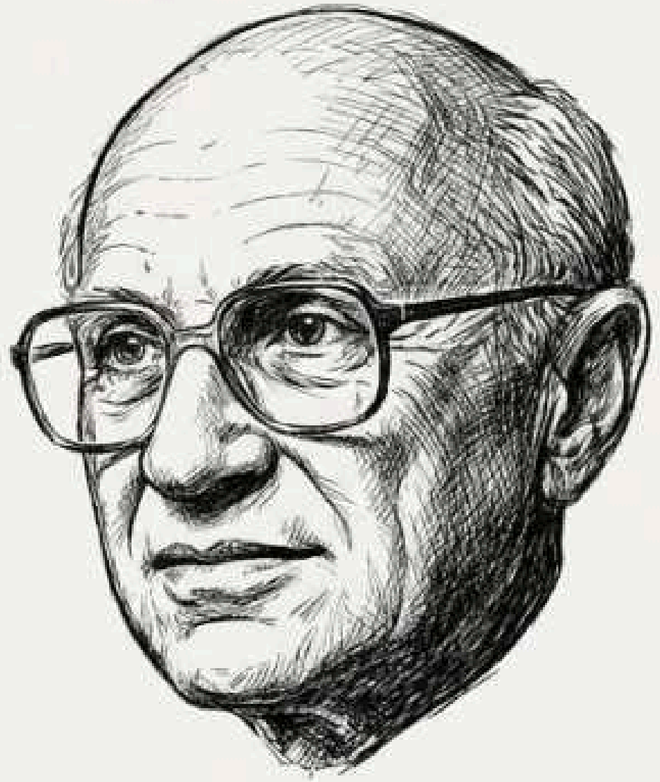
Money Growth vs. Output Growth

¶ 4.16

The Rule: If Velocity (V) is stable, Prices (P) move proportionally to the Money Supply (M).

10% Money Growth
− 3% Real Output Growth

= **7% Inflation**



[Inflation is always and everywhere a monetary phenomenon.] — Milton Friedman

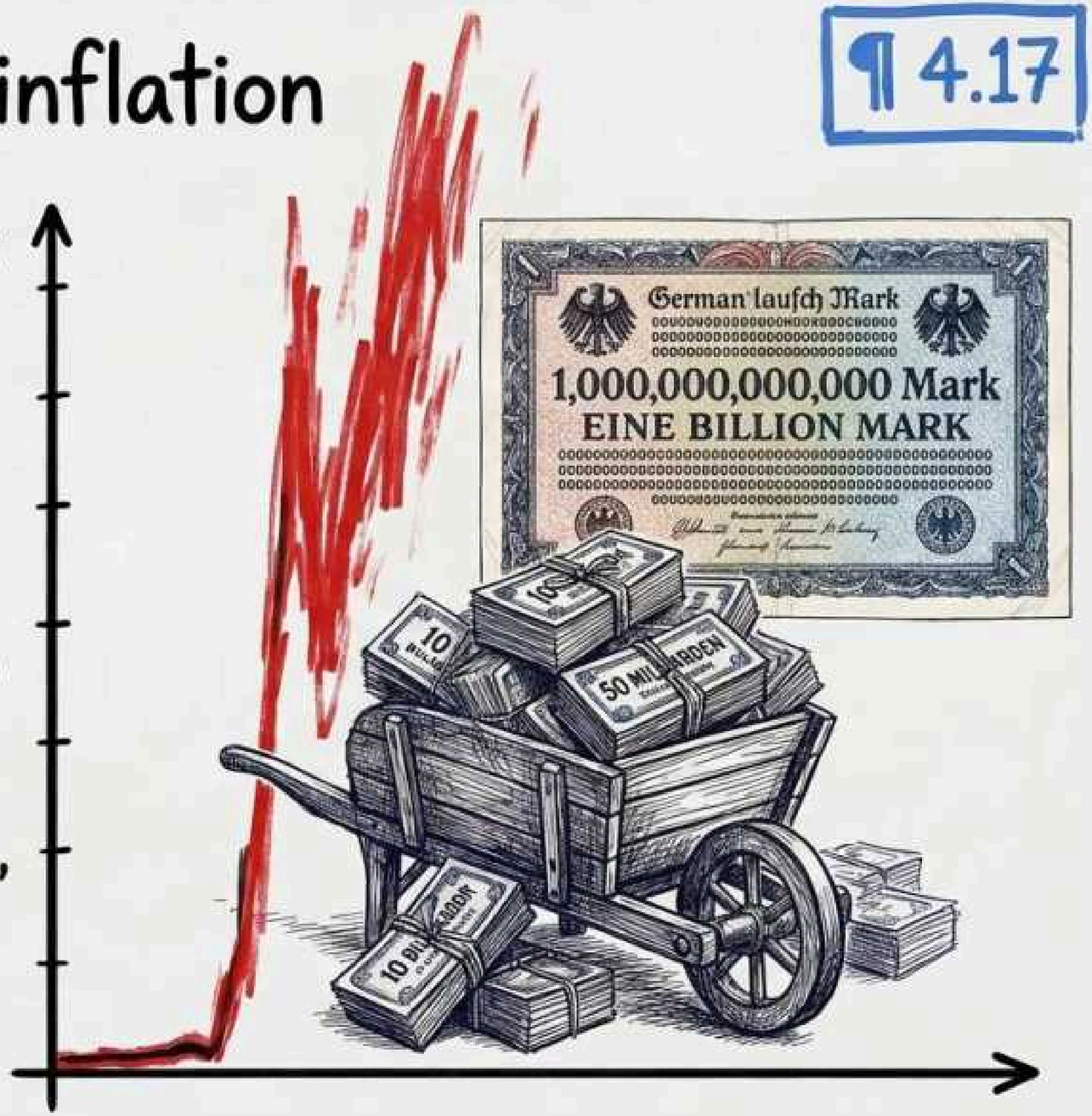
Hyperinflation

¶ 4.17

The Cause: Governments lacking tax revenue simply print money to pay their bills.

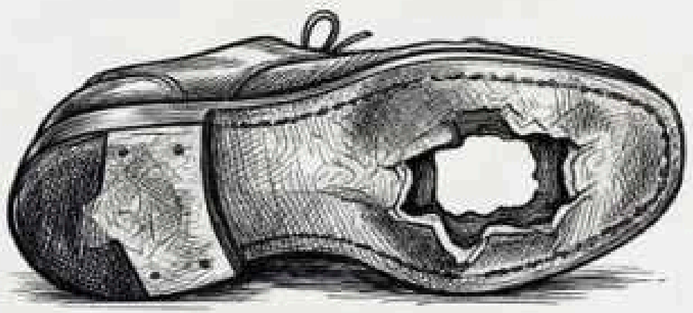
The Result: Money supply explodes, prices follow instantly, and trust in the currency collapses as people rush to spend it before it loses value.

Historical Examples: Germany (1923), Zimbabwe (late 2000s). It ends only when the printing stops.



Why is Inflation Harmful?

¶ 4.18



Shoeleather Costs: Holding less cash requires more physical trips to the bank.



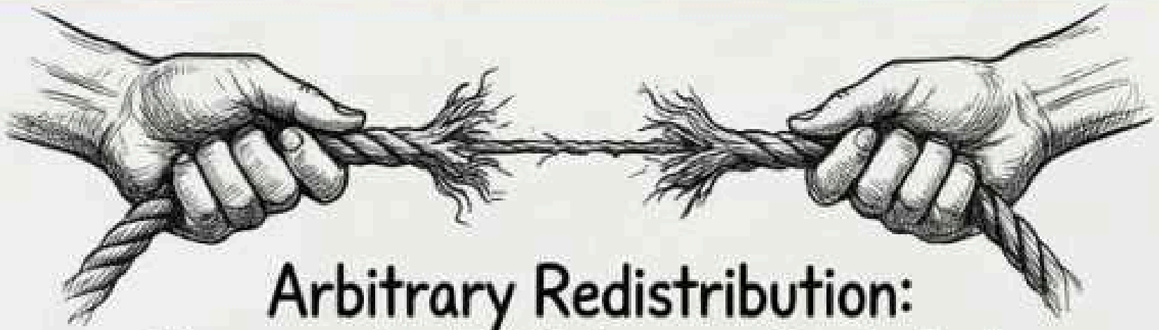
Menu Costs: Firms must expend resources constantly updating prices.



Tax Distortions: Taxes on interest/capital gains are applied to artificially inflated amounts.



Confusion: Prices lose their value as clear market signals.



Arbitrary Redistribution: Unexpected inflation unfairly helps borrowers and hurts lenders.

Expected vs. Surprise Inflation

¶ 4.19

Core Concept: Inflation that is expected is less costly because lenders price it in.

The Fisher Effect: Nominal Interest Rate = Real Interest Rate + Expected Inflation

If / Then

- Scenario A: 3% Real + 2% Expected = 5% Nominal Rate
- Scenario B: 3% Real + 6% Expected = 9% Nominal Rate

The Question for Today

¶ 4.20

Reflection:
Consider your own bank account or savings.

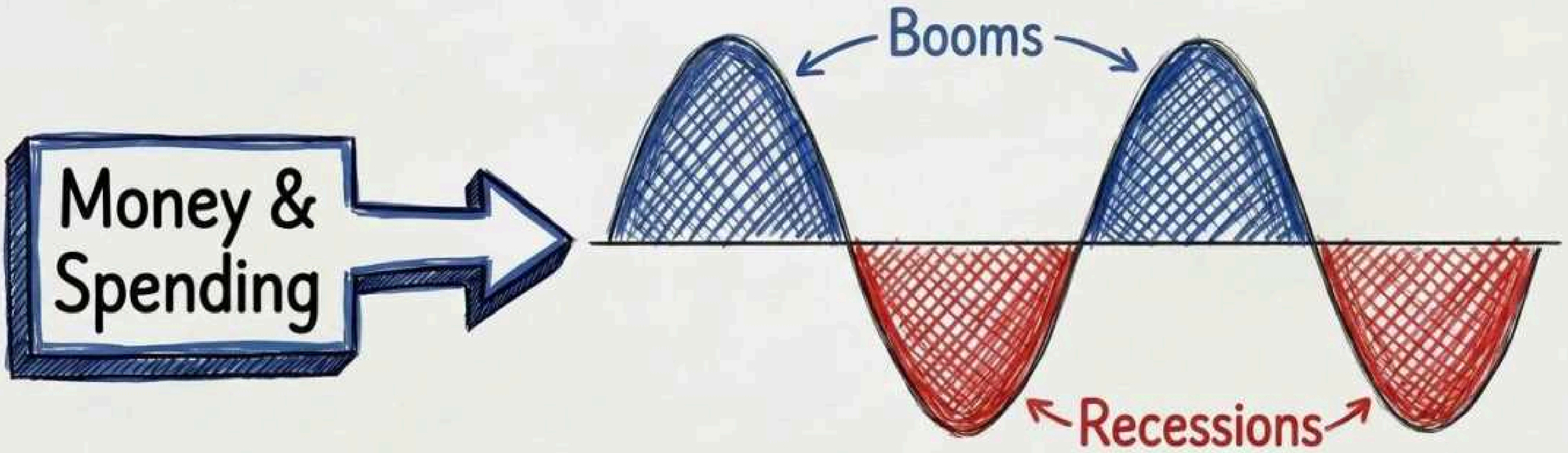


The Math:
If prices rise at 2% a year, what exactly happens to the purchasing power of those savings over the next 10 years?

The Challenge: Is the interest you are earning right now actually enough to keep up?

Coming Up in Lecture 5

¶ 4.21



Next Step: Building a comprehensive model of economic booms and recessions.

The Synthesis: We will map exactly how the mechanics of money, the velocity of spending, and real production fit together to drive the broader economy.