
Econ 2
Principles of Macroeconomics
Lecture 15: Monetary Policy

Fractional Reserve Banking

- Bank: a firm that specializes in brokering between savers and borrowers, allowing borrowers to go to one firm instead of 1000s

- Banks are only required to keep a fraction of their deposits on hand as reserves
- Lends out the rest
- Creates new money in the form of a deposit in the borrower's account
- Deposit effectively increases the overall money supply
- Governments regulate banks and provide deposit insurance to protect depositors' funds.

The Federal Reserve

- The Mint Act of 1792 established the dollar as the principal unit of currency
- 1793 to 1861: 1,600+ banks issued their own currency
- 1863: National Banking/Currency Act: National Banking System, Uniform Currency
- Bank Panics in late 1800s/early 1900s: fears that banks would not have funds
- Federal Reserve Act of 1913Central authority to stabilize system Authorized the issuance of Federal Reserve notes, which are still in use today

The Federal Reserve

- Today there are five key functions of the Federal Reserve:

1. Overseer of all banks/bank for banks
2. Bank for the government
3. Provides loans to banks (discount rate)
4. Facilitates Issuing of Bonds (auctions)
5. Carry out monetary policy

- The decisions about monetary policy are carried out at Federal Open Market Committee meetings about 8 times a year (June 17-18)
- Chair: Jerome Powell
  6 Board of Governors
  12 Independent Branch presidents
- Chair, Board, NY Fed president and rotation of remaining branch presidents vote on policies

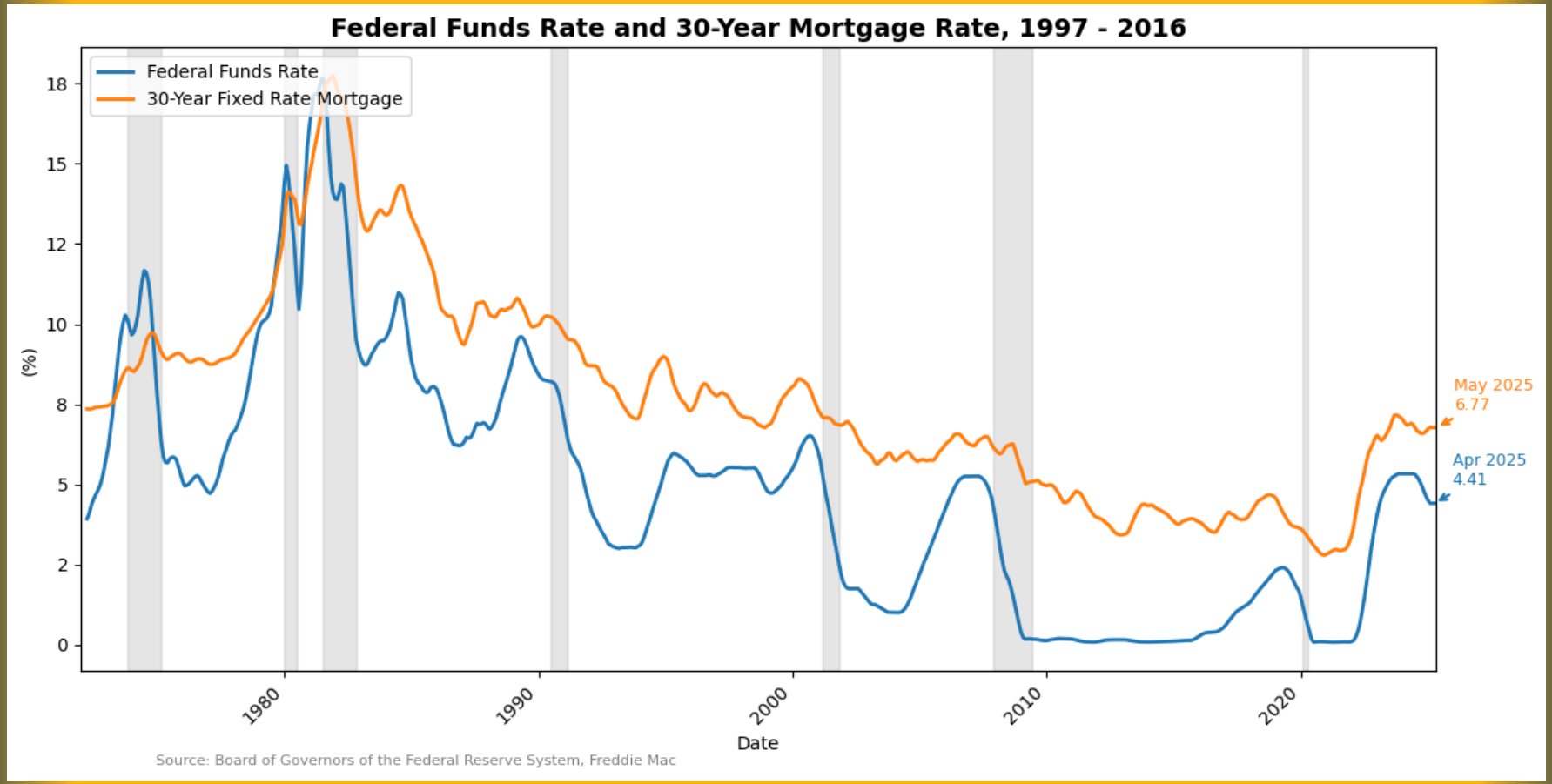
Monetary Policy

- Monetary Policy: managing the money supply in order to maximize employment and keep prices stable
- How does the Fed change the Money Supply?
- Typically done through Open Market Operations: buying and selling of Treasury bills (mature in 1 year), notes (2 to 10 years) or bonds (30 years)
- **Open market purchase**→Federal Reserve purchases Treasury securities from banks and the public→more money deposited in banks→**Money Supply Increases!**
- **Open market sale**→Federal Reserve sells Treasury securities that the government has created→less money deposited in banks→**Money Supply Decreases!**

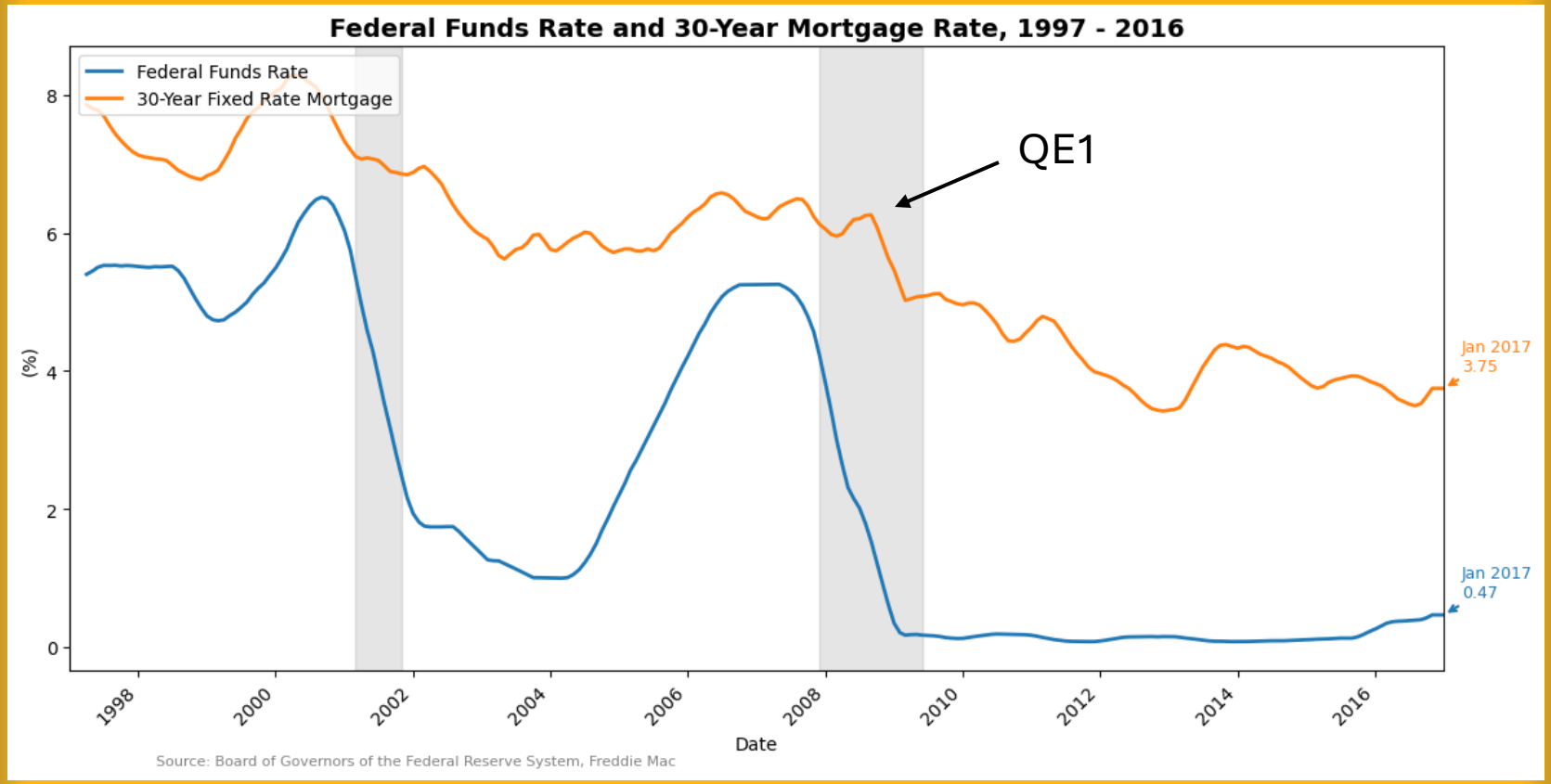
Monetary Policy

- Buying and selling Treasuries changes the interest rate
- Target the Federal Funds Rate: the interest rates banks charge other banks for loans
  - determines flexibility in the banking system since banks can loan out more than they borrow
  - other important interest rates tend to follow the Federal Funds rate

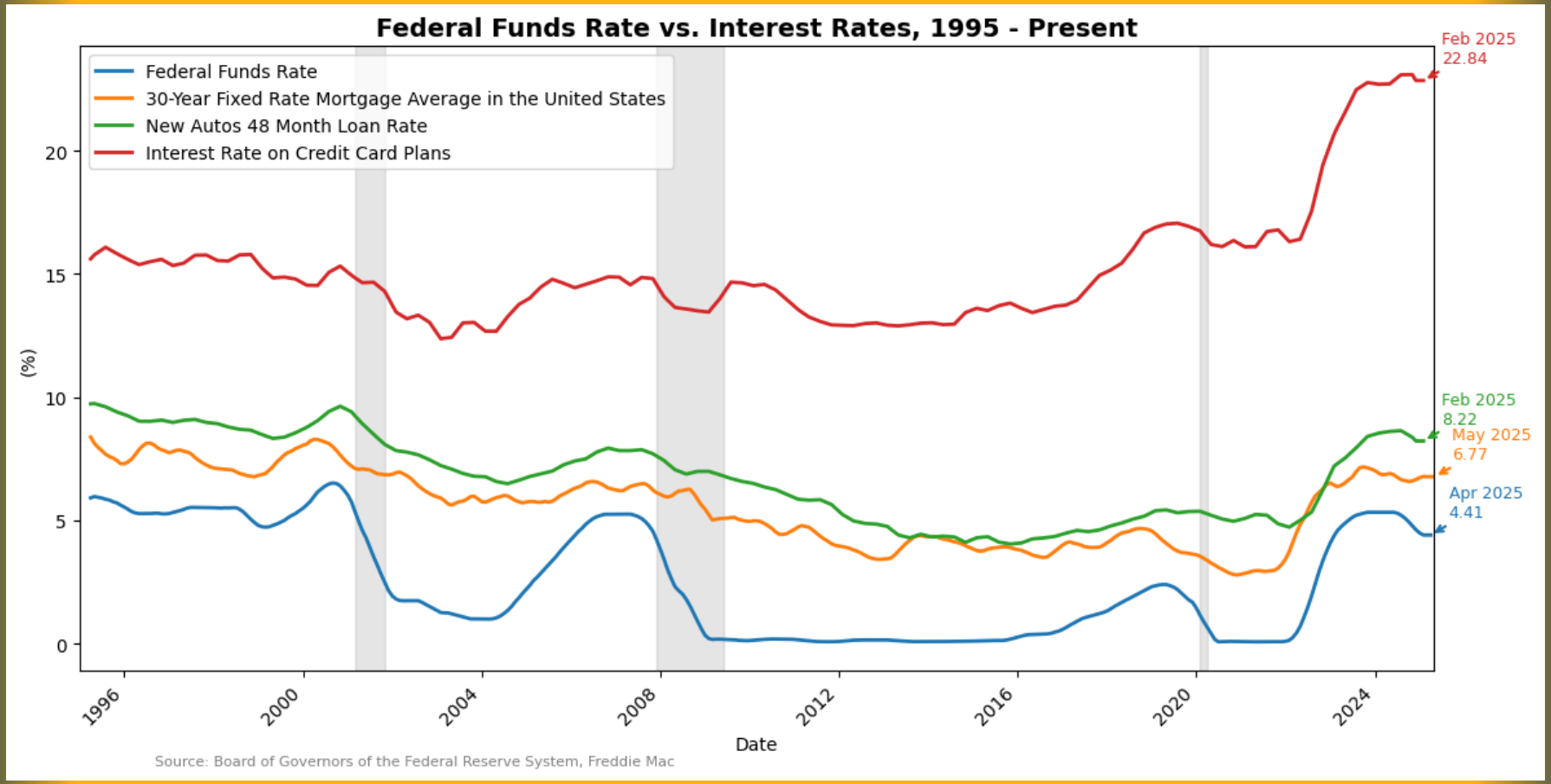
Federal Funds Rate vs 30 Year Mort. Rate



Federal Funds Rate vs 30 Year Mortgage Rate, 97-16



Federal Funds Rate vs Interest Rates



Demand for Money

- Connect Monetary Policy to Interest Rates through the market for money
- Demand for Money: Why hold on to money (M1 Money)?

Demand for Money

- Wealth Box:

Money	Other Assets

Demand for Money

- Benefit of holding wealth in the form of money :
- Cost of holding wealth in the form of money:
- Price of money vs. Return on illiquid assets?

Demand for Money

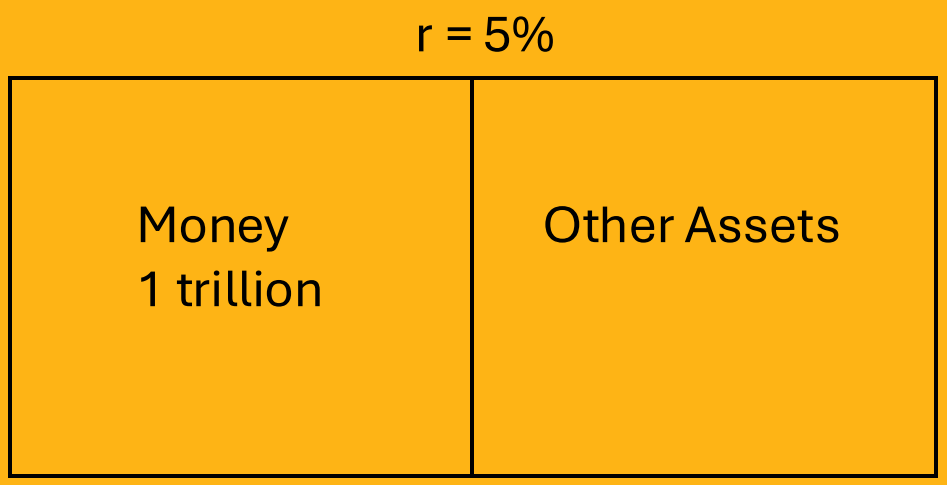
- Interest Rate = r

- Demand for Money:

Demand for Money

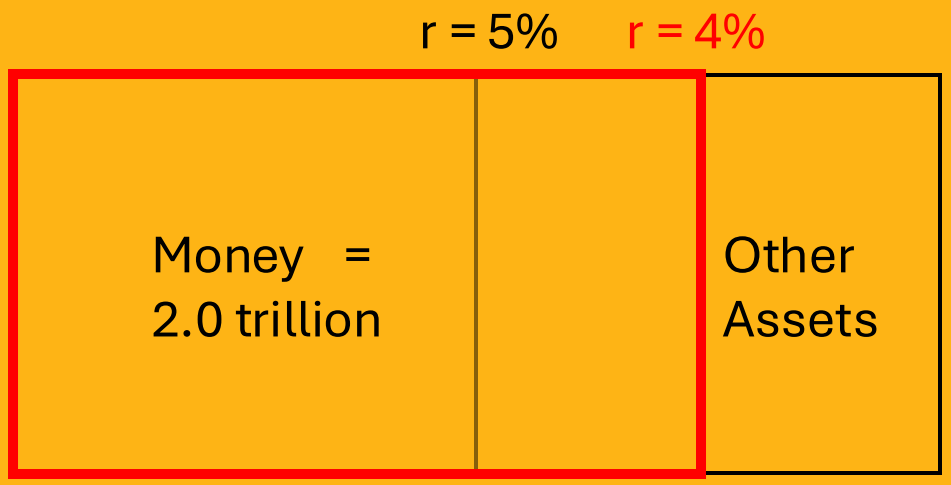
Demand for Money

- Point A:



Demand for Money

- Point A to Point B:



Demand for Money

- What shifts the demand for money?

Demand for Money

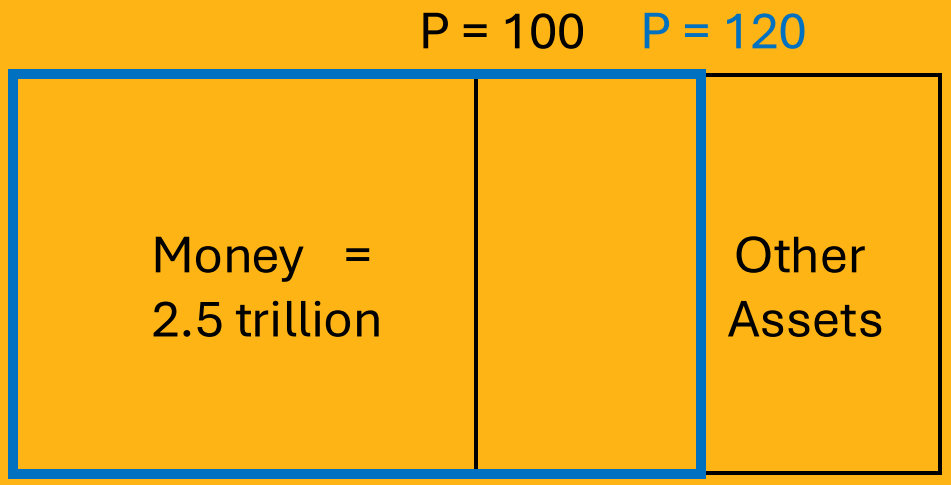
- Point A: r = 5%

P = 100

Money = 1 trillion	Other Assets

Demand for Money

- Point A to Point D:

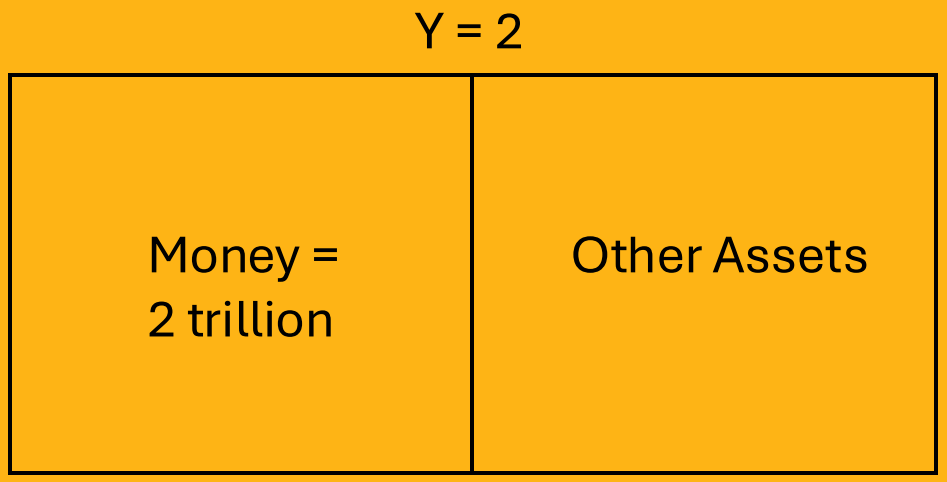


Demand for Money

- What shifts the demand for money?

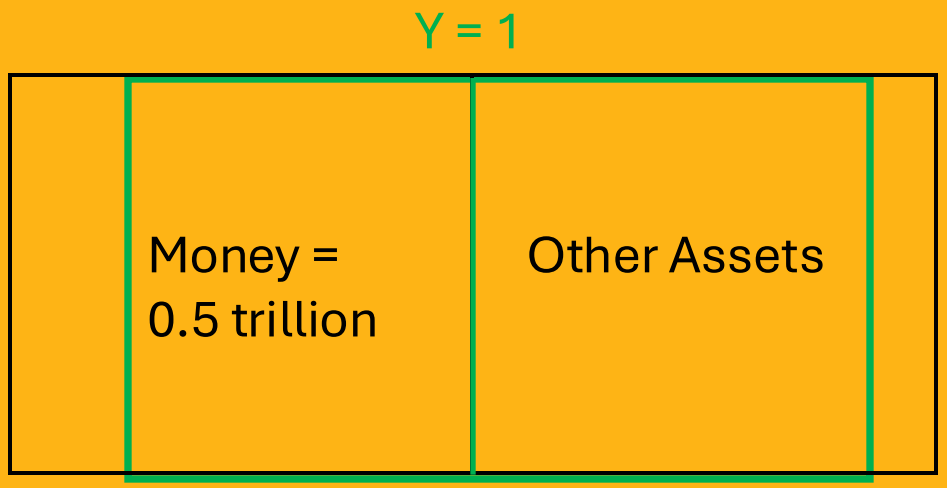
Demand for Money

- Point A: r = 5%, P=100



Demand for Money

- Point A to Point F: r = 5%, P=100



Supply of Money

- Set by the Central Bank/Federal Reserve
- Same supply of money at all interest rates

Money Market Equilibrium

Changing the Interest Rate

- Federal Reserve buys/sells bonds
  - Changes the interest rate

- 1-Year Bond with a value of $100
  - Buyer purchases bond today, gets $100 in 1 year
  - Price of bond today is less than $100

- Interest Rate = (Return on the bond/Price of bond) x 100
- Bond Price Change→ Return on bond Change→ r* Change

Carrying out Monetary Policy

- How does the Fed enact monetary policy?
- Example: r_1 = 5%, Fed wants to decrease r_2 = 4%

Carrying out Monetary Policy

- How does the Fed enact monetary policy?
- Example: r_1 = 5%, Fed wants to increase r_3 = 6%

Why is the interest rate so important?

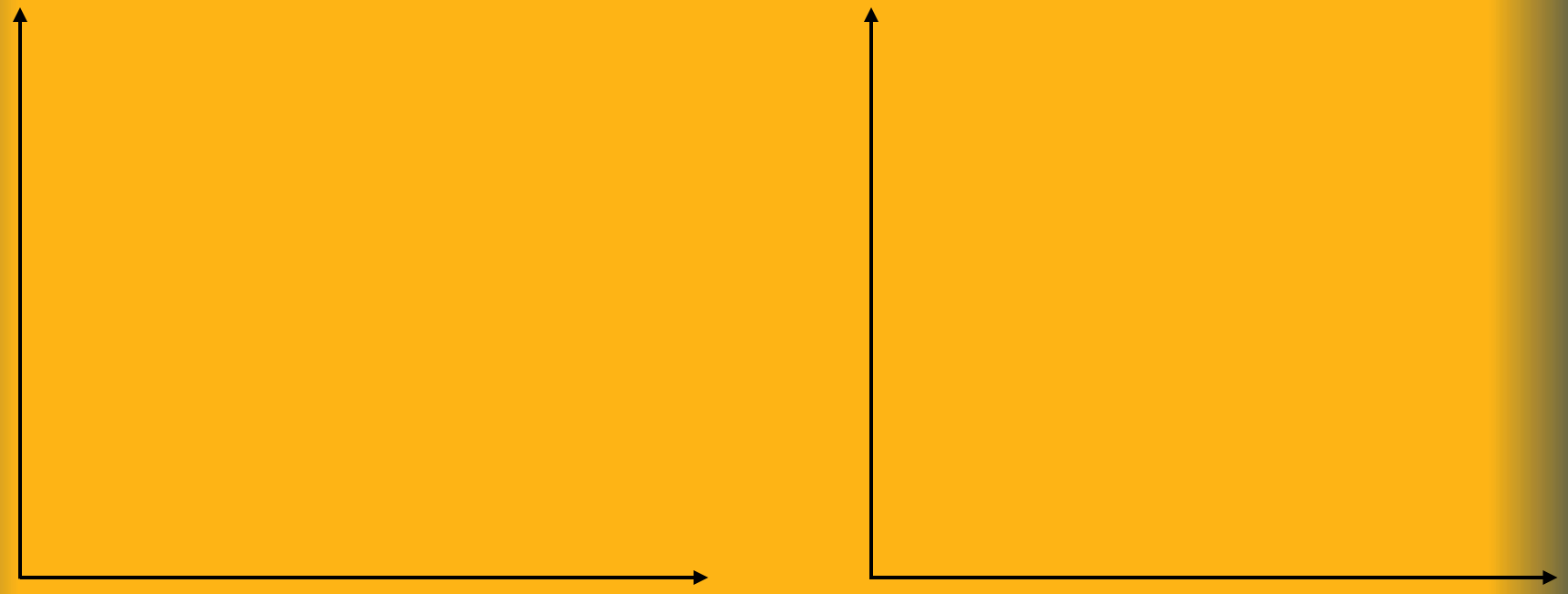
- What changes when r decreases?
- 1.
- 2.
- 3.

Monetary Policy in Action

- Example 1: Y_1 = 8,000, r_1 = 6% and M_1 = 1 trillion
- $\bar{Y}$ = 10,000 (full employment GDP)

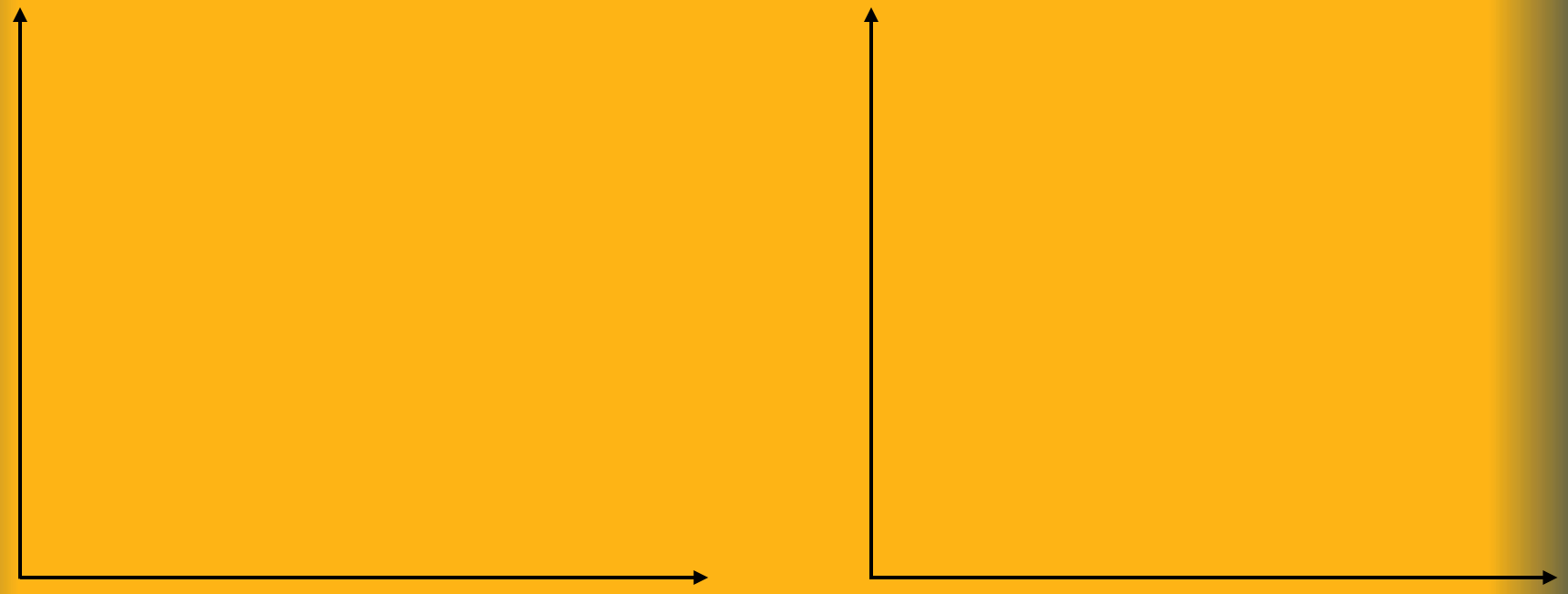
Monetary Policy in Action

- Example 1: $Y_3 = 12{,}000$, $r_3 = 2\%$ and $M_3 = 4$ trillion
- $\bar{Y} = 10{,}000$ (full employment GDP)



Effects of Inflation

- Example: $\bar{Y}$ = 10,000 (full employment GDP), r_1 = 5%, M_1 = 1 trillion, CPI_1 = 100



Aggregate Demand Curve

- How are prices and levels of Y=AE related?

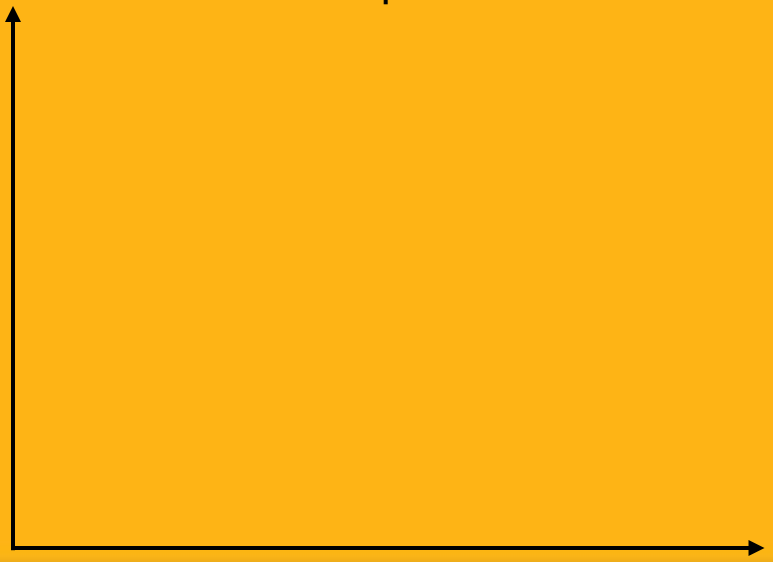
- Aggregate Demand Curve: "Equilibrium Level of Spending at Every Price Level" Curve
  As general level of prices rise, equilibrium level of spending (Y*=AE*) decreases
- Moving along the aggregate demand curve?

Aggregate Demand Curve

- Shifts in the AD Curve

Aggregate Supply Curve

- Aggregate Supply: The amount that firms are willing and able to produce at various price levels
- In the short-run:
  - -firms respond to the costs of production
  - -production costs are determined by level of Y in short-run
  - -as Y increases, new (less productive) workers are hired
  - -additional Y costs more than previous Y



Aggregate Supply Curve

- Movement Along vs. Shifts in Supply
- What shifts AS?
- Anything that changes the amount firms are willing to produce that is not the price
- Examples:

Complete Macroeconomic Equilibrium

Entire Macroeconomy

- Money Supply = 1 trillion
  Interest Rate = 5%
  Price Level = 100
  Y=Y-bar = 10,000