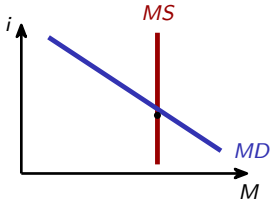


Financial Sector

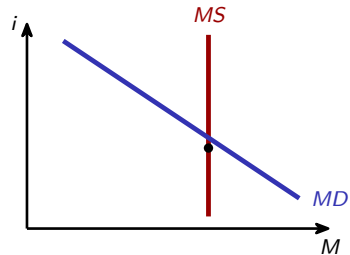
AP Macroeconomics ■ Unit 4

AP Macroeconomics



What we will cover

- 1 Financial assets
- 2 Nominal vs real interest rates
- 3 The functions of money
- 4 Banking and the money multiplier
- 5 The money market
- 6 Monetary policy
- 7 The loanable funds market



Three financial assets

Stock 股票: a share of ownership in a company

Bond 债券: a loan that pays fixed interest

Bank deposit 银行存款: safe, easy to spend

Every asset trades off three features:

- **risk 风险** – chance of a worse return
- **return 回报** – how much it earns
- **liquidity 流动性** – how fast it becomes cash

Higher risk must pay a higher return; the most liquid assets pay least.

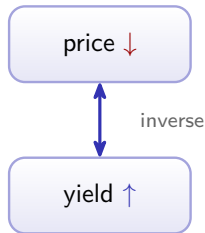
Bond price and yield move opposite

A bond pays a **fixed** number of dollars each year. So its **yield** 收益率 depends on its price:

Worked example (fixed \$50/year)

$$\text{price } 1000 \Rightarrow \text{yield} = \frac{50}{1000} = 5\%$$

$$\text{price } 500 \Rightarrow \text{yield} = \frac{50}{500} = 10\%$$



This is why bond prices
fall when market interest rates rise.

Nominal vs real interest rates

The quoted rate is **nominal** 名义利率;
inflation eats its value, so what matters is
the **real rate** 实际利率.

The Fisher equation

$$\text{real} \approx \text{nominal} - \text{expected inflation}$$

inflation **higher** than expected
⇒ **borrowers win**

inflation **lower** than expected
⇒ **lenders win**

Lend at

6%, expect 2% (plan 4% real); if inflation is
5%, real is only 1%.

What money does, and how we measure it

Money is anything widely accepted in trade.

Three jobs:

- **Medium of exchange** 交换媒介 – accepted in payment
- **Store of value** 价值储藏 – holds worth over time
- **Unit of account** 记账单位 – a common price stick

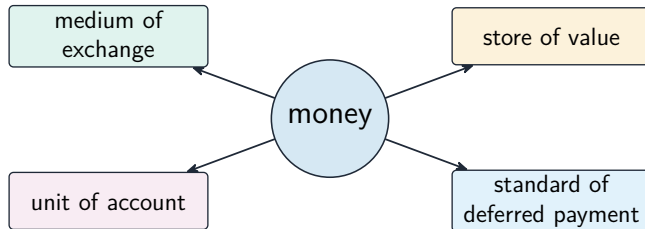
M1 = cash + checking; **M2** = M1 + savings.

Fiat money 法定货币 has value by government declaration.



Fiat money works because people accept it

What money does, and how we measure it



Banking creates money

Under **fractional reserve**

banking 部分准备金银行制度 a bank keeps a fraction as **required reserves** 法定准备金 and lends the rest. Loans become new deposits – re-lent again and again.

Money multiplier

$$\text{money multiplier} = \frac{1}{\text{reserve ratio}}$$

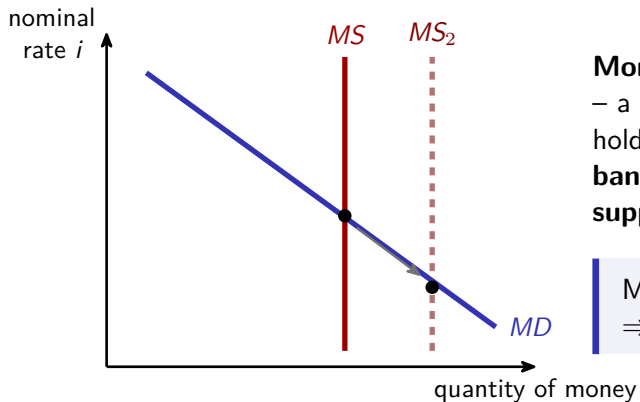
Worked example

Reserve ratio = 10% so multiplier
 $= \frac{1}{0.10} = 10$.

1000 new reserves $\Rightarrow$ up to 10,000

In reality less – people hold cash, banks keep extra. This is the **maximum**.

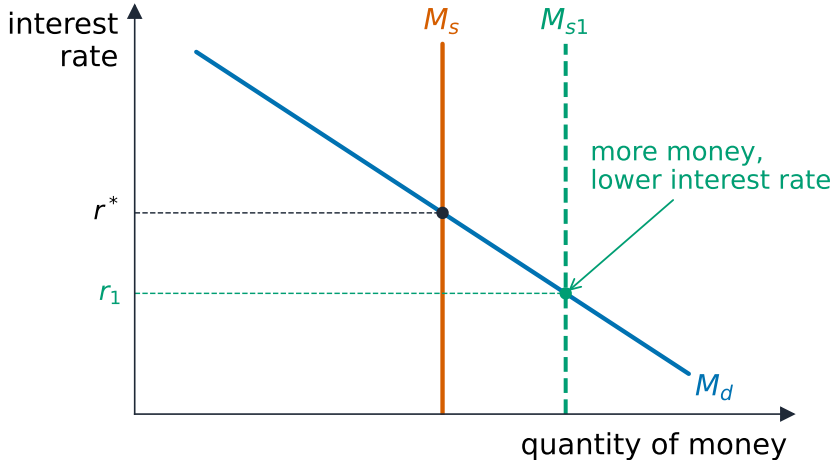
The money market



Money demand 货币需求 slopes **down** – a high rate is the opportunity cost of holding cash. The **central bank** 中央银行 sets **money supply** 货币供给: a **vertical** line.

More money supply ($MS \rightarrow MS_2$)
 $\Rightarrow$ the interest rate **falls**.

The money market



Monetary policy

Monetary policy 货币政策: the central bank moves the money supply and interest rates.

- **Expansionary:** buy bonds $\Rightarrow$ rate down (recession)
- **Contractionary:** sell bonds $\Rightarrow$ rate up (inflation)

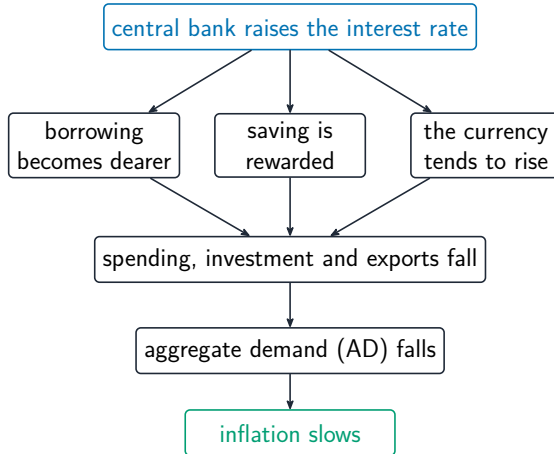
Three tools: open-market operations (main), reserve requirement, discount rate.

$MS \uparrow \Rightarrow i \downarrow \Rightarrow \text{investment} \uparrow \Rightarrow AD \text{ right.}$

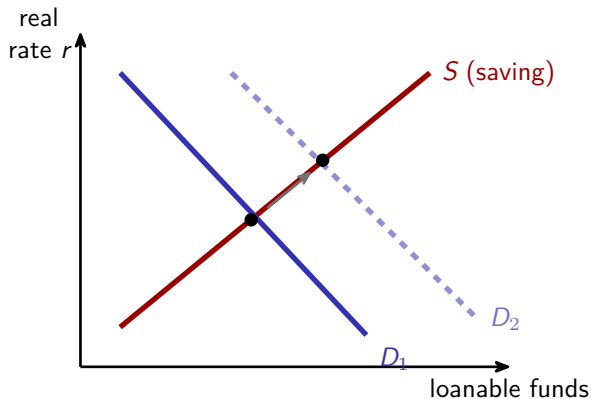


Central banks steer rates and credit

Monetary policy



The loanable funds market



Sets the **real interest rate** 实际利率:
saving supplies funds (up), investment
borrows them (down).

Government borrowing shifts demand right ($D_1 \rightarrow D_2$): the real rate rises and private investment is squeezed – **crowding out** 挤出效应.

Unit 4 – key takeaways

1 Assets

bond price and yield move opposite; risk, return, liquidity trade off

2 Money

three functions; multiplier = $1/\text{reserve ratio}$

3 Money market

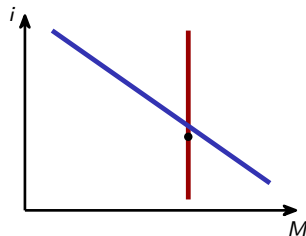
MD down, MS vertical; more money $\Rightarrow$ lower rate

4 Loanable funds

sets the real rate; deficits crowd out investment

Check yourself

- 1 A bond's price falls. What happens to its yield?
- 2 Reserve ratio = 20%. What is the money multiplier?
- 3 The central bank buys bonds. Which way does the rate move?
- 4 Government borrows heavily. What happens to private investment?



Answers 1. it rises 2. 5 3. it falls 4. it falls (crowding out)