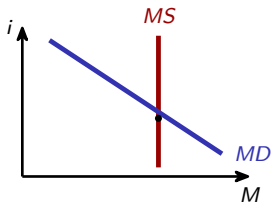
Financial Sector

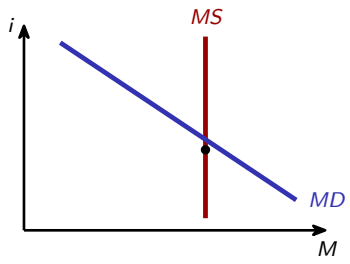
AP Macroeconomics ▪ Unit 4

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



1 Financial assets

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.

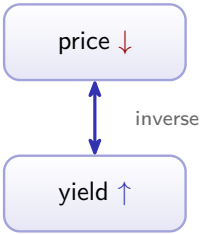
Bond price and yield move opposite

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)

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

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



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

2 Interest rates

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
$\Rightarrow$ **borrowers win**

inflation lower than expected
$\Rightarrow$ **lenders win**

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

3 Money

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

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

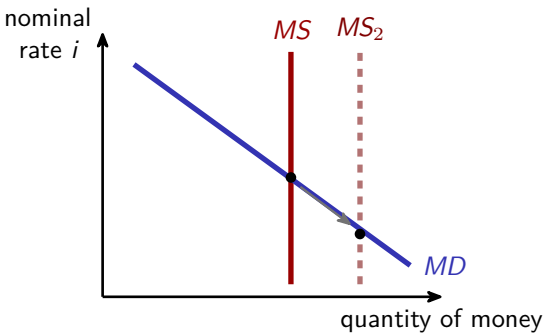
Reserve ratio $= 10\%$ so multiplier $= \frac{1}{0.10} = 10$.

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

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

4 Money market

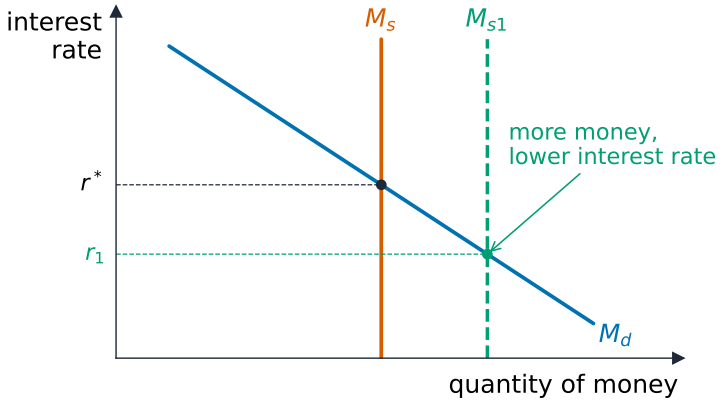
The money market



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 interest rate is set by the money market



The interest rate is set by the demand for and supply of money

5 Monetary policy

Monetary policy

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

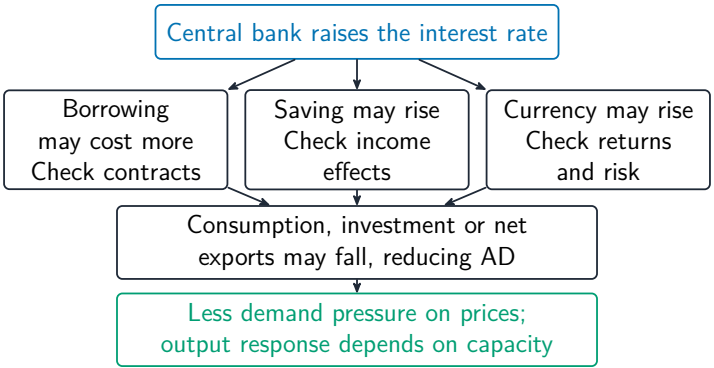
- **Expansionary**: buy bonds ⇒ rate down (recession)
- **Contractionary**: sell bonds ⇒ rate up (inflation)

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

> $MS \uparrow \Rightarrow i \downarrow \Rightarrow$ investment $\uparrow \Rightarrow AD$ right.

Central banks steer rates and credit

How a higher interest rate works through



Lower AD can reduce demand pressure on prices; contracts, confidence and capacity affect the response.

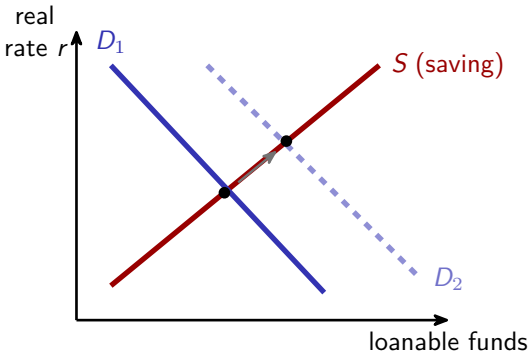
The Fed's tools, by name

Policy rate	The **policy rate** 政策利率 is the rate the central bank targets – the federal funds rate, at which banks lend reserves overnight.
Interest on reserves	**Interest on reserves (IOR)** 准备金利息 is the main modern tool: paying banks on reserves sets a floor under the market rate.
Required reserve ratio	The **required reserve ratio** 法定准备金率 fixes the fraction of deposits a bank must hold, and so the size of the money multiplier.
Monetary base	Open-market operations change the **monetary base** 基础货币 – currency plus reserves – by buying or selling government bonds.

Households hold **stocks** 股票 and bonds as alternatives to money; when the policy rate rises, holding money costs more, so they hold less of it.

6 Loanable funds

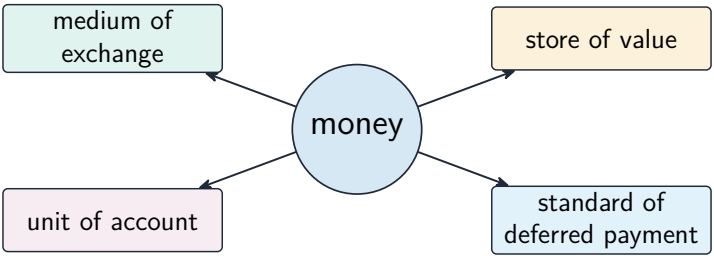
The loanable funds market



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.

The Definition, Measurement, and Functions of Money



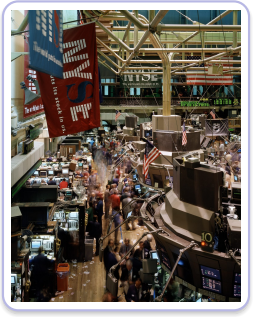
The functions of money – the AP exam tests the first three (medium of exchange, unit of account, store of value); standard of deferred payment is beyond the CED

Real rates, money measures, and the modern policy tool

the real interest rate 实际利率	what you actually earn in purchasing power: nominal rate minus inflation
M1	currency plus checkable deposits – the most liquid tier
M2	M1 plus savings deposits and other near-money – broader and less liquid
excess reserves 超额准备金	what a bank holds beyond its requirement – the basis of money creation
the modern system	central banks run an ample-reserves system: rather than nudging the money supply, the Fed sets **interest on reserves** 准备金利息
the two directions	**expansionary** 扩张性 (easy) money lowers rates; **contractionary** 紧缩性 (tight) money raises them

National savings 国民储蓄 = private savings + public savings, and it is the supply side of the loanable funds market.

Financial Assets



A stock exchange is where financial assets are bought and sold, setting prices from supply and demand

Exam tips

- Know money's three functions and the M1/M2 measures.
- The **money market** sets the nominal interest rate (vertical money supply); more money supply lowers the rate.
- Compute the **money multiplier** $\frac{1}{rr}$ and the maximum change in the money supply from a new deposit.
- Trace monetary policy: money supply $\rightarrow$ interest rate $\rightarrow$ investment $\rightarrow$ AD $\rightarrow$ output.
- Distinguish the money market (nominal rate) from the loanable-funds market (real rate); use the real rate = nominal $-$ inflation.

7 Recap

Unit 4 – key takeaways

1 Assets

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

2 Money

three functions; multiplier = $1/$reserve ratio

3 Money market

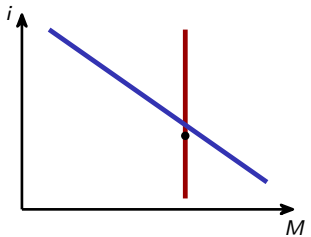
MD down, *MS* vertical; more money $\Rightarrow$ lower rate

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)