Advanced Monetary Economics

Lecture 3

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Questions we want to answer

1. What are reserves?

2. How does the market for reserves look like?

3. What are the tools of (conventional) monetary policy?

1 Reserves

- Balance sheet of a bank

Balance Sheet of All Commercial Banks (items as a percentage of the total, June 2011

Assets (Uses of Funds)*		Liabilities (Sources of Funds)	
Reserves and cash items	15%	Checkable deposits	10%
Securities		Nontransaction deposits	
U.S. government and agency	13	Small-denomination time deposits (< $100,000) + savings deposits	41
State and local government and other securities	6	Large-denomination time deposits	14
Loans		Borrowings	23
Commercial and industrial	10	Bank capital	12
Real estate	28		
Consumer	9		
Interbank	1		
Other	8		
Other assets (for example, physical capital)	9		
Total	100	Total	100

*In order of decreasing liquidity.

Source: www.federalreserve.gov/releases/h8/current/.

Reserves

- Reserve holdings are deposits of a commercial bank at the central bank.

- *Minimum reserve* requirement:

  – In the Eurozone banks are supposed to hold 1 % of their short-term liabilities at the ECB.

  – Read about the minimum reserve requirement of the ECB here: `https://www.ecb.europa.eu/mopo/implement/mr/html/index.en.html`.

- Minimum reserve requirements are one part of the demand for reserves.

- There are also *excess reserves* that banks hold to buffer withdrawls of funds, for example, by a depositor.

Deposits and reserves

- Banks typically perform marturity transformation. They fund themselves short-term through deposits and lend long-term. The spread between long-term and short-term insterest rates is the main source of bank's profits (the interest margin).

- Changes in the deposit side change reserves first. Only subsequently loans will be originated.

First National Bank			
Assets		Liabilities	
Reserves	+$100	Checkable deposits	+$100

- As maturity transformation is risky, banks need a buffer if clients withdraw funds.

- Reserve holdings absorb a withdrawals of deposits.

First National Bank			
Assets		Liabilities	
Reserves	-\$100	Checkable deposits	-\$100

- The costs of holding reserves are the opportunity costs of not lending.

- Therefore, banks only hold the minimum reserve requirements plus a small buffer of excess reserves.

- The higher these costs, the lower the demand for central bank reserves.

2 Demand and supply for reserves

- Demand for reserves consist of

  1. minimum reserve requirements

  2. liquidity for potential deposit outflows

- Supply of reserves: central banks provide reserves.

- Open market operations: ECB auctions reserves on a weekly basis

- Discount window: market participants can borrow against collateral from the central bank

- A bank with excess reserves or cash can:

1. Deposit the reserves /cash at the deposit facility at central bank. It earns the deposit rate.

2. Lend the reserves/cash for one night to another bank. It earns the overnight rate.

Overnight borrowing and lending

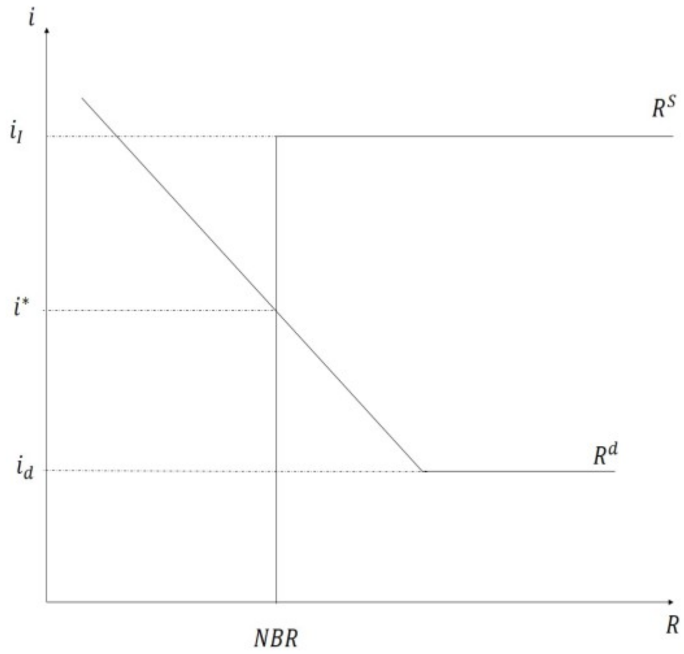
- Banks have the opportunity to lend and borrow to each other liquidity / reserves.

- Loans are: overnight and uncollaterized

- Overnight rate is determined on the market for reserves.

- Eurozone: Euro OverNight Index Average (EONIA).

- The market for reserves



3 Tools of monetary policy

- Central bank influences the overnight rate through:

  1. Open market operations – main refinancing rate

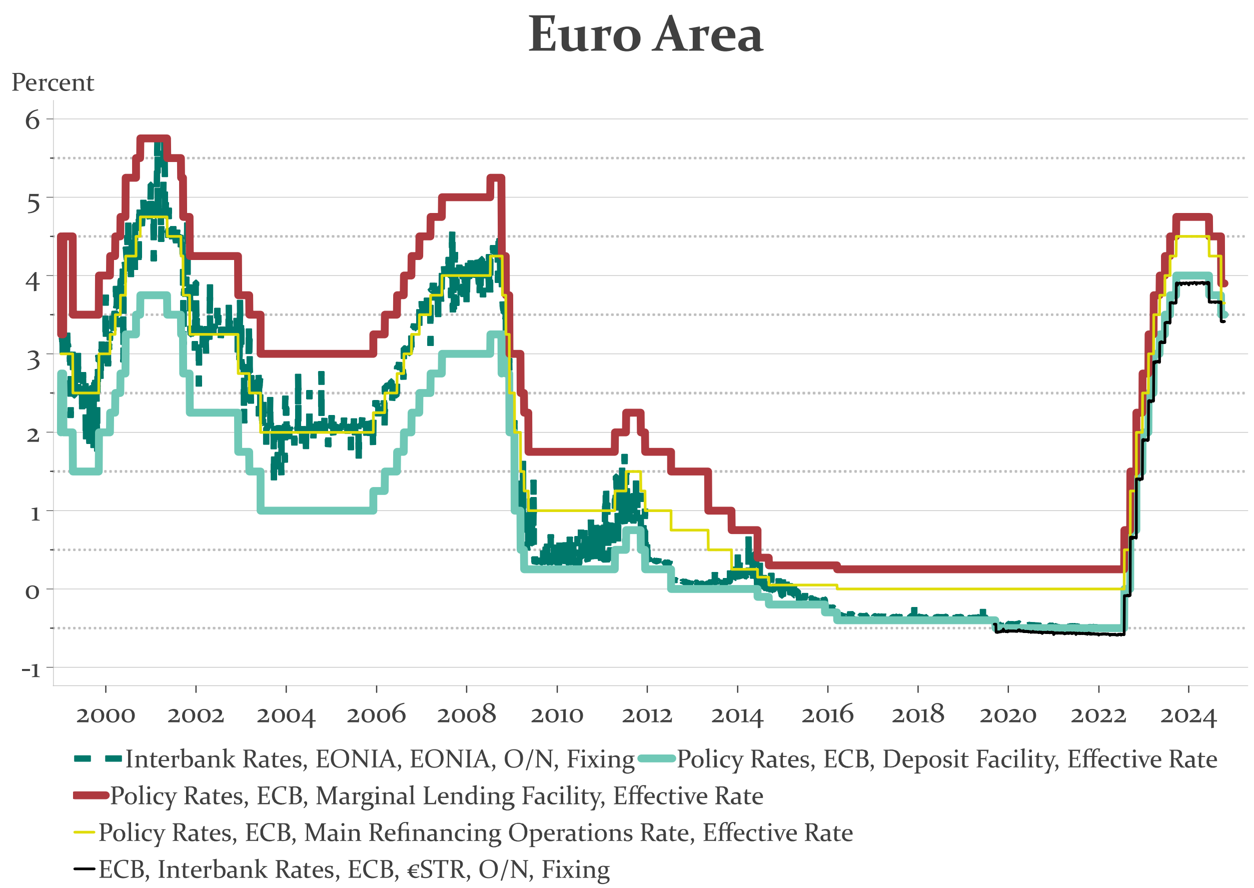
  2. Standing facilities:

     – Deposit facility – deposit rate

     – Marginal lending facility – marginal lending rate

  3. Minimum reserve requirements

- Interest rates in the Eurozone (Ester replaced Eonia in 2019)



Current key interest rates

- Main refinancing rate: 4.50%
- Marginal lending facility: 4.75%
- Deposit facility: 4.00%
- Ester: 3.90%
- Check the latest developments by clicking here: https://www.ecb.europa.eu/stats/policy_and_exchange_rates/key_ecb_interest_rates/html/index.en.html

Open market operations

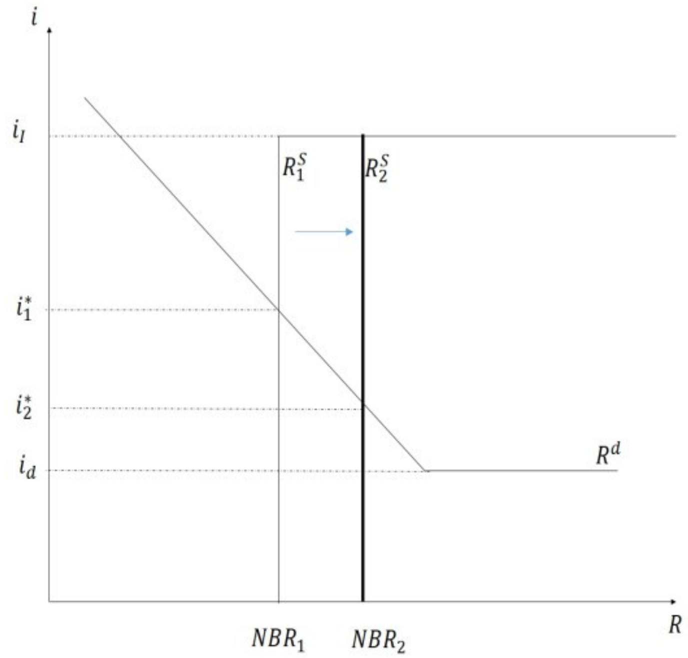
- Effects of open market operations depend on the intersection between demand and supply.

- Downward-sloped part of the demand curve:

  - Open market acquisition of securities decreases the overnight rate.

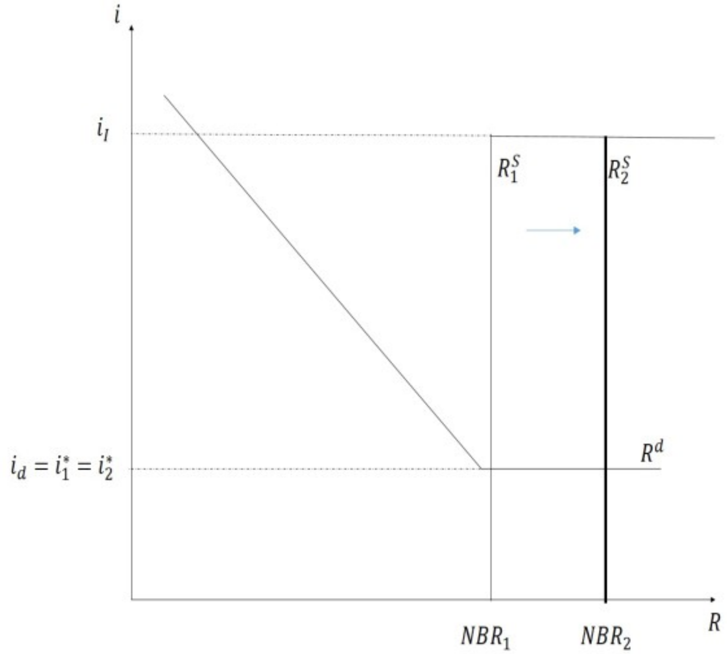
  - Open market sale of securities increases the overnight rate.

- Case 1: downward sloping part of demand curve, typical situation



- Open market acquisition has an effect on the overnight rate. Banks take out reserves and supply some of them to the interbank market. The interest rate falls.

- Case 2: flat part of demand curve, situation of ample liquidity in the banking system



- Open market acquisition has no effect on the overnight rate. Banks take the reserves and put them back to the central bank.

Standing facilities

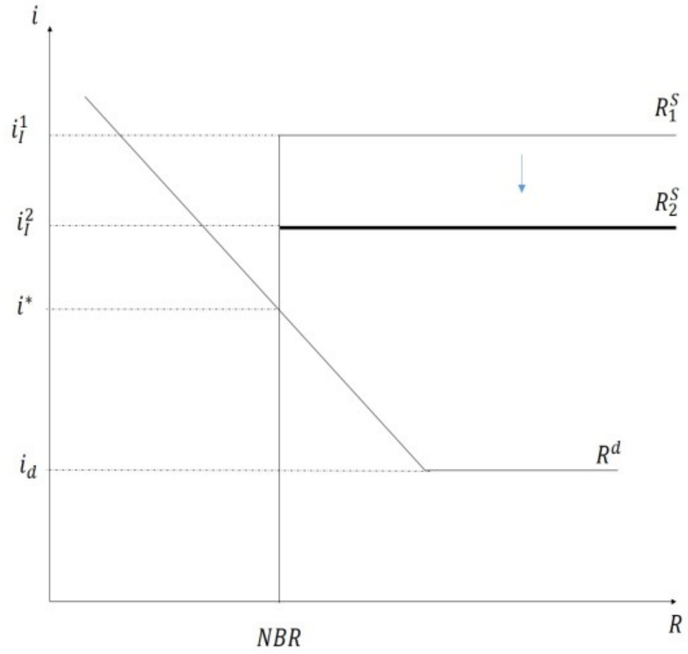
- The central bank sets the following interest rates on the standing facilities:

    1. Marginal lending facility: banks can borrow reserves directly; usually: $i_l = MRR + 100$ basis points

    2. Deposit facility: banks can deposit reserves at the central bank; usually: $i_d = MRR - 100$ basis points

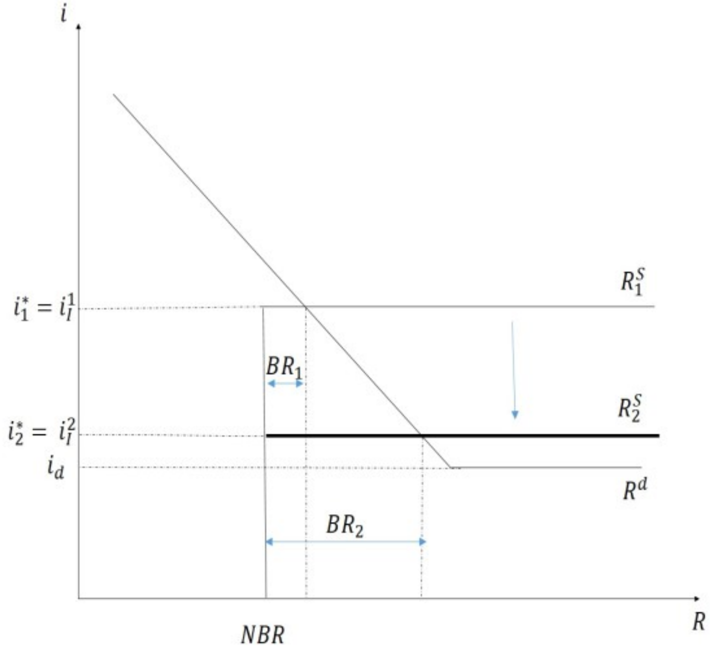
- Standing facilities limit the fluctuations of the overnight interest rate.

- Change marginal lending facility: case 1, typical situation



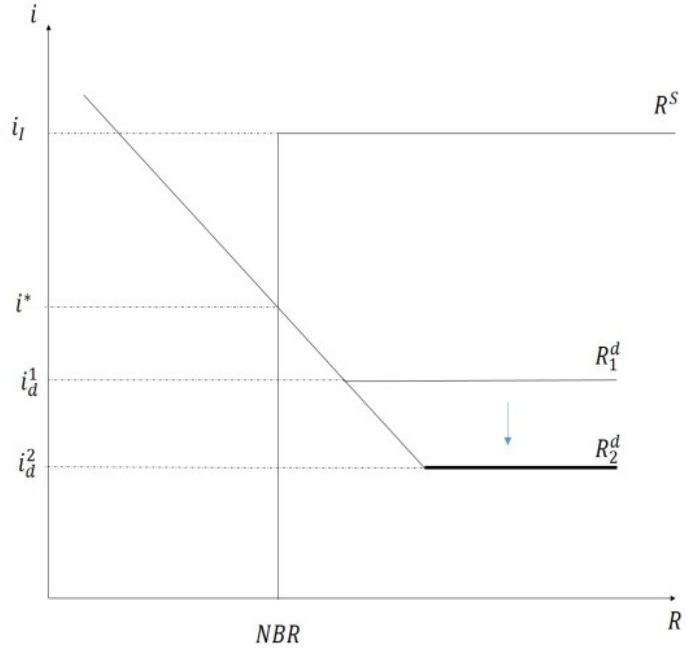
- Most changes in lendig rate have no effect on the interbank rate because banks borrow in the interbank market.

- Change marginal lending facility: case 2, situation of high liquidity needs in banking system



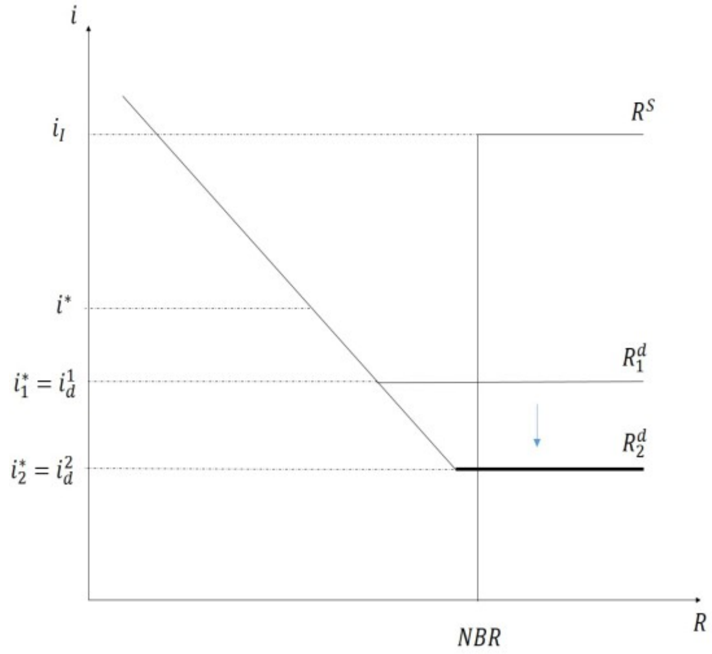
- Interbank rate falls to new lendig rate. The borrowing from the central bank increases.

- Change deposit facility: case 1, typical situation, no cash in deposit facility



- No effect on interbank rate or reserves

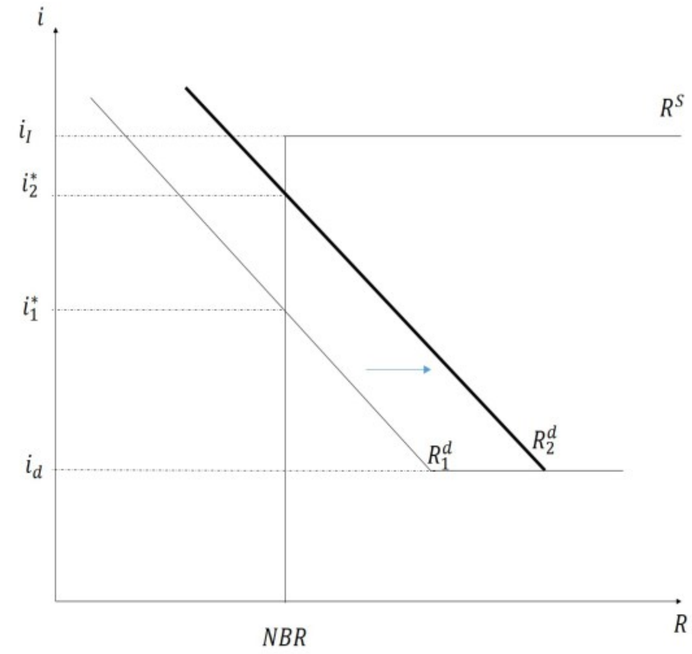
- Change deposit facility: case 2, situation with ample liquidity and some deposits at central bank



- Change of deposit rate affects interbank rate

- Reserve requirements: fraction of deposits has to be held as reserves (ECB: 1%)

- Increase in reserve requirements



Summary and outlook

- What is monetary policy? Monetary policy determines the overnight rate – a change in this interest rate changes other interest rates (credit, mortgages etc.)

- Monetary policy has the following tools available:

  1. Open market operations

  2. Standing facilities

  3. Minimum reserve requirements

- General outlook: Today, we have learned what monetary policy does. Next week, we study, how monetary policy influences the economy.