



# Financial markets

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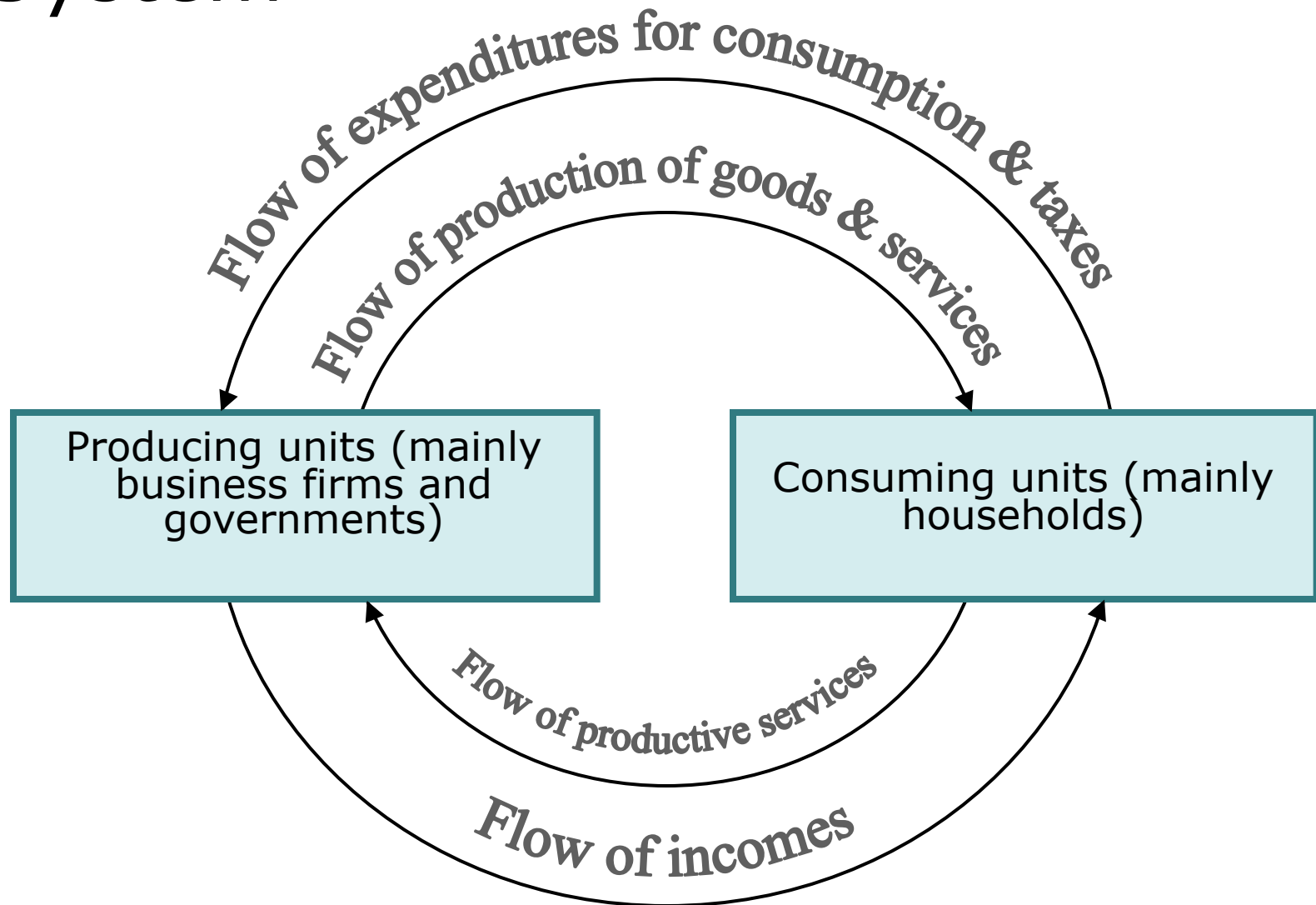
**Ing. Tomáš Rábek, PhD..**  
Department of Finance

# Content

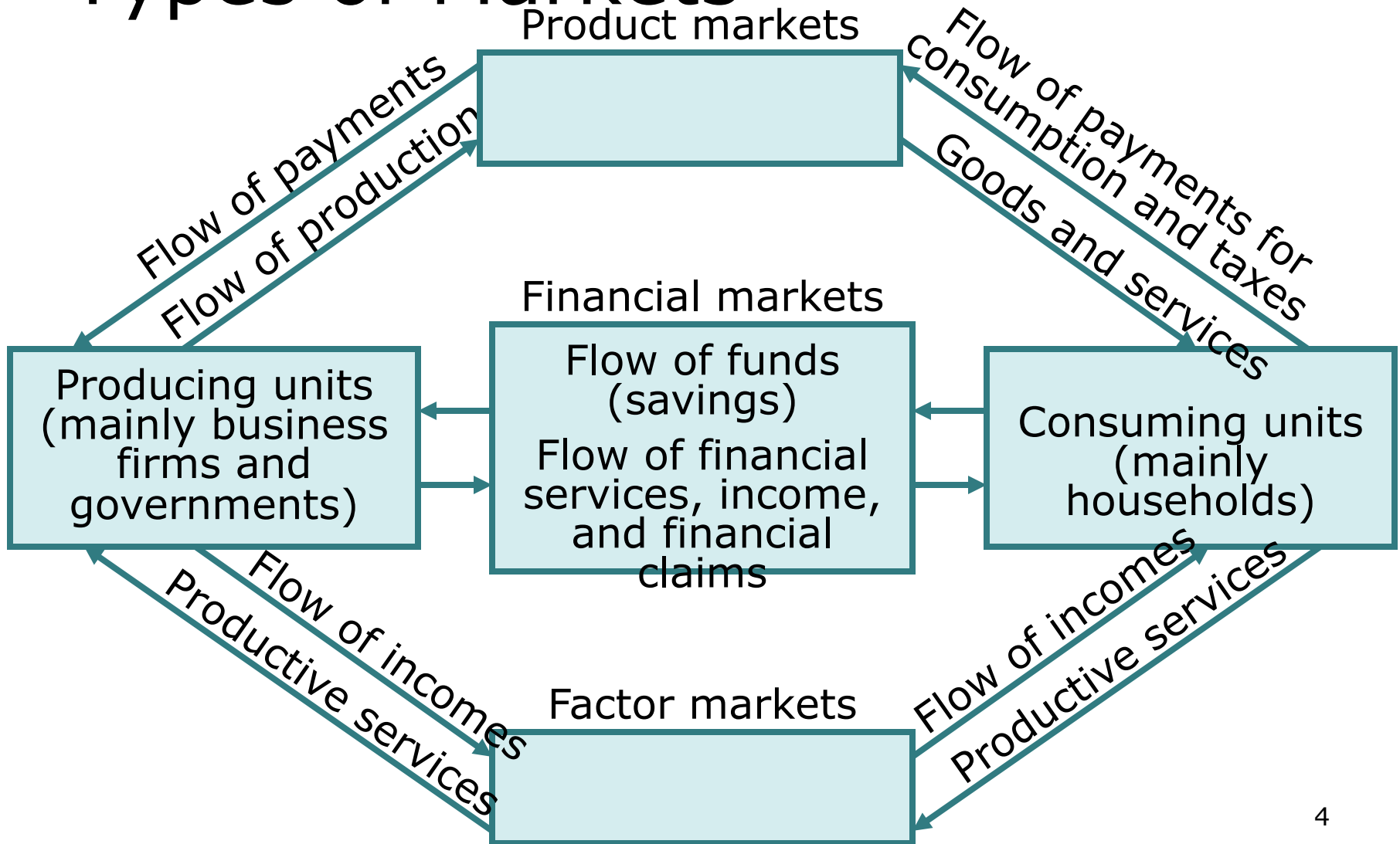
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- 1. Basic terminology of financial markets:
  - - the definition of financial markets,
  - - the structure of financial markets,
  - - the segmentation of financial markets,
  - - the participants of financial markets,
- 2. The instruments of financial markets

# Flows within the Global Economic System



# Types of Markets



# Financial markets

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- Place where meets supply of financial resources and demand for financial resources
- Financial resources transfer from units with surplus to units with a lack
- Directly or through intermediary

# Financial Markets

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- is a mechanism that allows people to easily buy and sell (trade) financial securities (such as stocks and bonds), commodities (such as precious metals or agricultural goods), and other fungible items of value at low transaction costs.
  
- In Finance, Financial markets facilitate:
  - The raising of capital (in the capital markets);
  - The transfer of risk (in the derivatives markets);
  - International trade (in the currency markets).

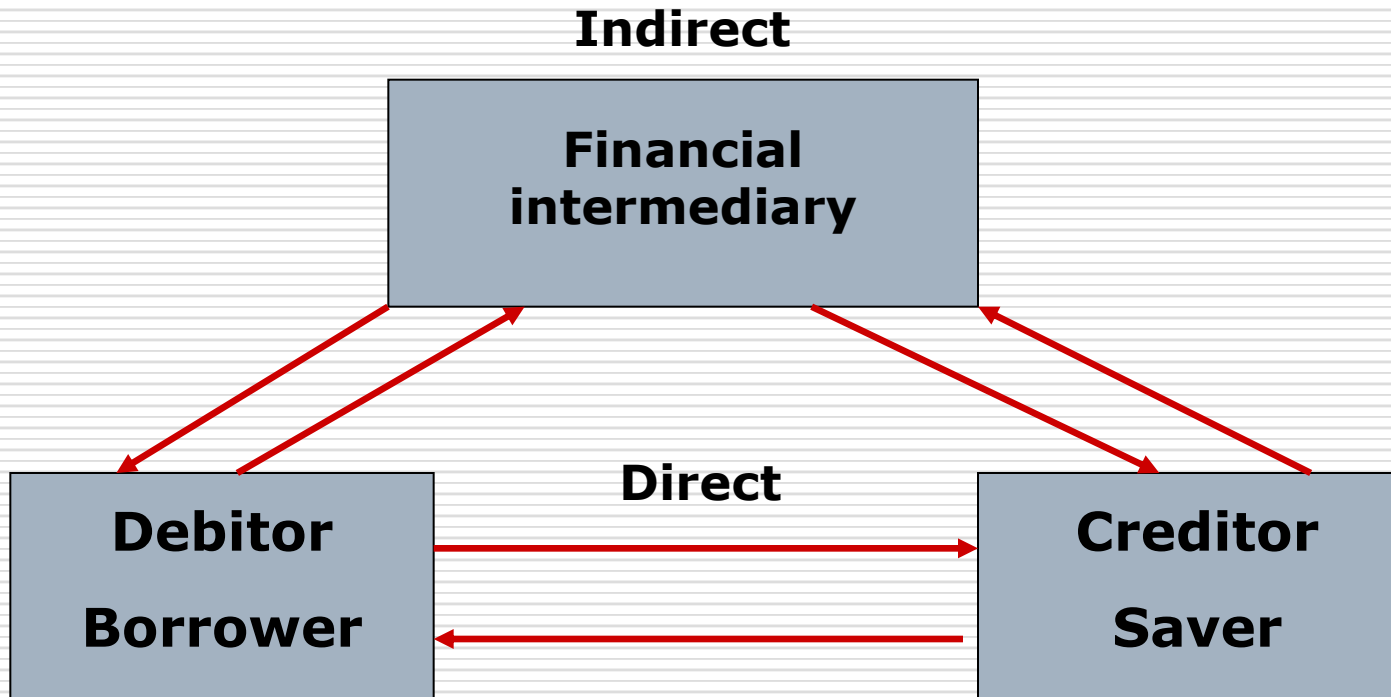
# Financial markets

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- is the transmission mechanism between saver (as lenders) and borrower (as spenders).
- **Saver - lenders** stand to benefit because they earn interest or dividends on their funds.
- **Borrower – investors (real asset)** stand to gain because they get access to money to carry out investment plans they otherwise could not finance and that probably yield more than the interest they pay.
- Without financial markets savers would have no choice to hoard their excess money, and borrowers would be unable to realize any investment plans except those they could finance by themselves.

# Direct and Indirect financing

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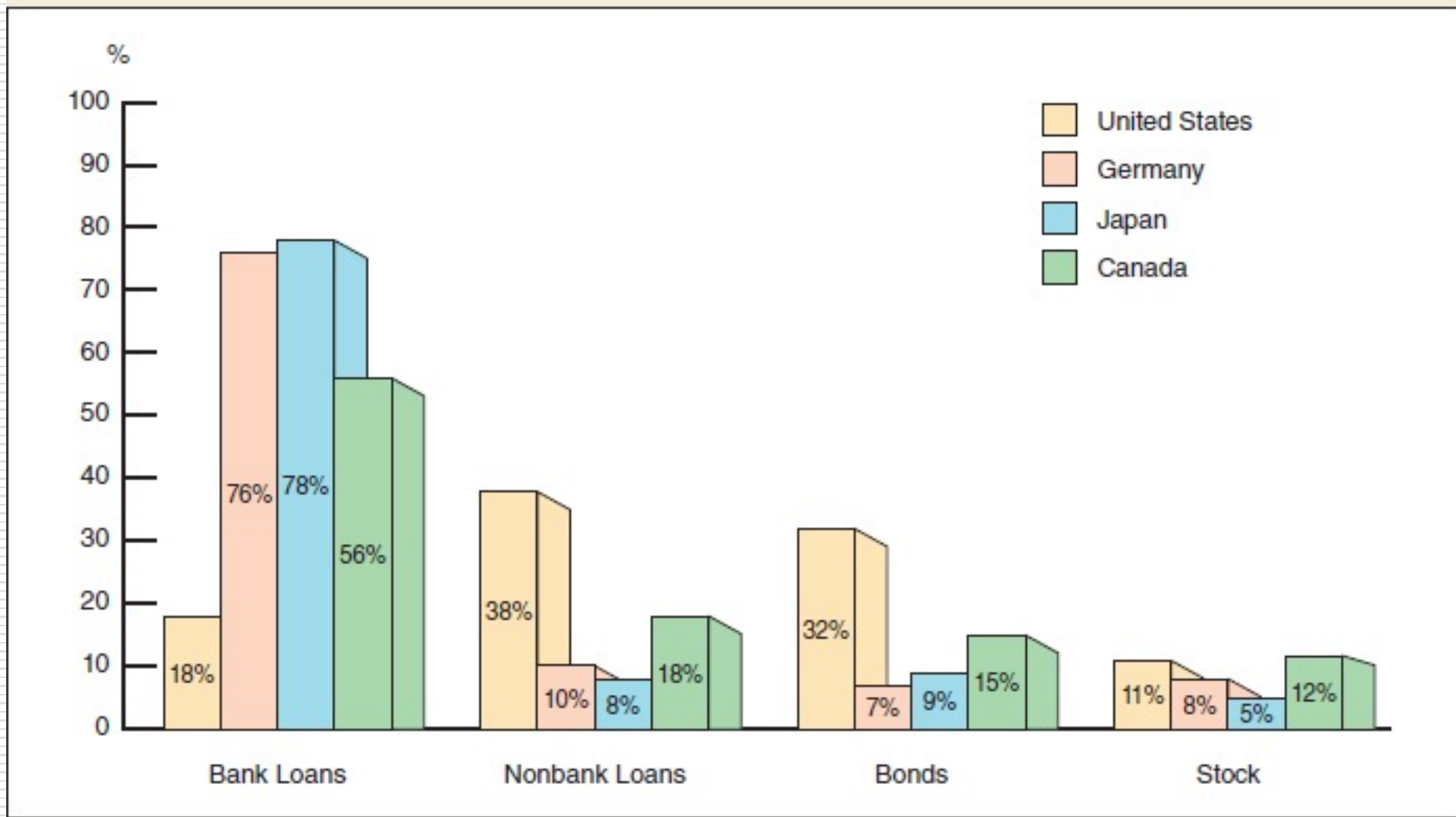
## □ Advantages and disadvantages



# Two types of capitalism

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- There are two basic types of financial system, which also determine the local type of capitalism:
  - A) Market type (Anglo-Saxon type) – is characterized by dominant function of security market to gain external financial resources.(direct)
  - B) Credit type (Bank type)- is founded on bank funding, which has dominate function at providing capital and loans have the most important role.(indirect)



**FIGURE 1** Sources of External Funds for Nonfinancial Businesses: A Comparison of the United States with Germany, Japan, and Canada

# Indirect investments allow investors

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- choice of desired maturity
  - maturity intermediation
- diversification - small amount of capital
- lower transactions costs
- alternative payment mechanisms

# Participants of financial markets

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- There are four main groups of financial markets participants:
  - A) households,
  - B) firms,
  - C) governments,
  - D) foreign investors and lenders.
- Ultimate lenders are typically households, although from time to time business firms and governments.
- Ultimate borrowers are mostly business firms and governments, but households are also important as consumer credit and mortgage borrowers.

# Financial intermediaries

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- Depository institutions
  - Commercial banks
  - Savings and loan banks
- Contractual savings institutions
  - Life insurance companies
  - Property insurance companies
  - Pension funds
- Investment intermediaries
  - Finance companies
  - Mutual funds
  - Money market mutual funds

# Functions of financial market

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- ❑ 1. deposit function,
- ❑ 2. liquidity function,
- ❑ 3. credit function,
- ❑ 4. payment function,
- ❑ 5. selective function,
- ❑ 6. political function,
- ❑ 7. protection against risk

# Segmentation of financial markets

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- 1. time point of view:
  - A) money market,
  - B) capital market,
- 2. the order of selling securities:
  - A) primary market – the securities are traded for the first time
  - B) secondary market – there are trade securities which have been sold once before at the minimum,
- 3. maturity date of trade:
  - A) prompt/spot market,
  - B) term market/future market,
  - C) option market,

# Segmentation of financial markets

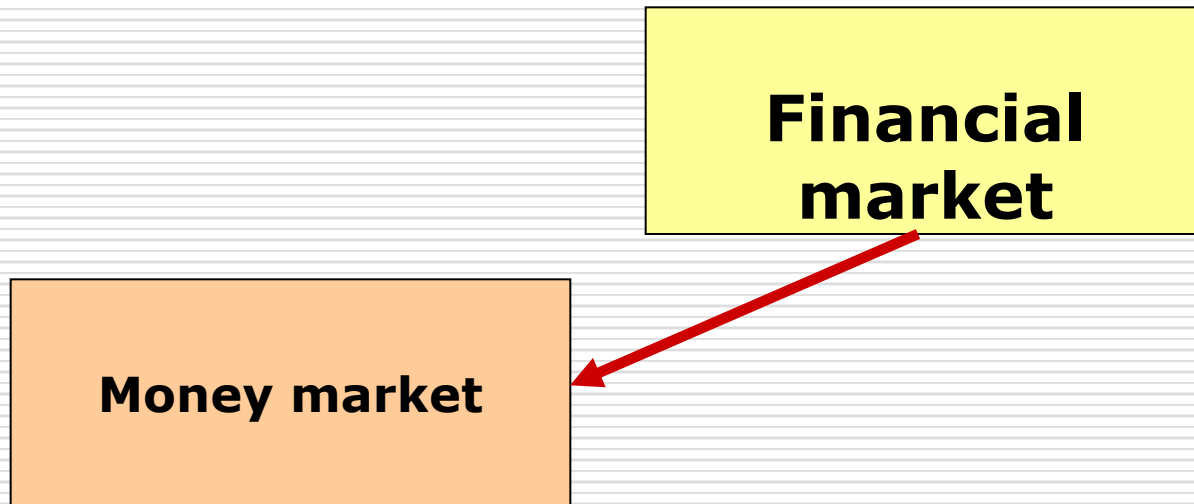
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- 4. Object of the market:
  - A) money market,
  - B) capital market,
  - C) foreign currency market,
  - D) insurance market,
  - E) market of gold and other precious metals
- 5. Territory point of view:
  - A) national market,
  - B) international market



# Financial markets segmentation

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# Money market

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- Market for short- term instruments/securities (one year or less in original maturity), such as Treasury bill.
- instruments are more liquid than capital market instruments.

# Money market

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## □ Instruments:

- Treasury bills
  - Bills
  - Cheques
  - Short term deposits
  - Commercial papers
  - Repurchase agreements
- 
- maturity shorter than one year

# Characteristics of the Money Market

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- ❑ The money market is the mechanism through which holders of temporary **cash surpluses** meet holders of temporary **cash deficits**.
- ❑ The money market arises because for most individuals and institutions, cash inflows and outflows **are rarely in perfect harmony** with each other, and the holding of idle surplus cash is expensive.

# Characteristics of the Money Market

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- ❑ Money market investors seek mainly *safety* and *liquidity*, plus the opportunity to earn some *interest income*.
- ❑ Because funds invested in the money market represent only temporary cash surpluses and are usually needed in the near future, money market investors **are especially sensitive to risk**.

# Types of Investment Risk

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- *Market risk* – The risk that the market value of an asset will decline, resulting in a capital loss when sold.
  
- *Default risk* – The probability that a borrower fails to meet one or more promised principal or interest payments on a security.

# Types of Investment Risk

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- ❑ *Inflation risk* – The risk that increases in the general price level will reduce the purchasing power of earnings from the investment.
- ❑ *Currency risk* – The risk that adverse movements in the price of a currency will reduce the net rate of return from a foreign investment. Also called *exchange rate risk*.
- ❑ *Political risk* – The probability that changes in government laws or regulations will reduce the expected return from an investment.

# Characteristics of the Money Market

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- ❑ The money market is extremely *broad* and *deep*. It can absorb a large volume of transactions with only small effects on security prices and interest rates.
- ❑ The money market is also very *efficient*. Securities dealers, major banks, and funds brokers maintain constant contact with one another through a vast telephone and computer network.



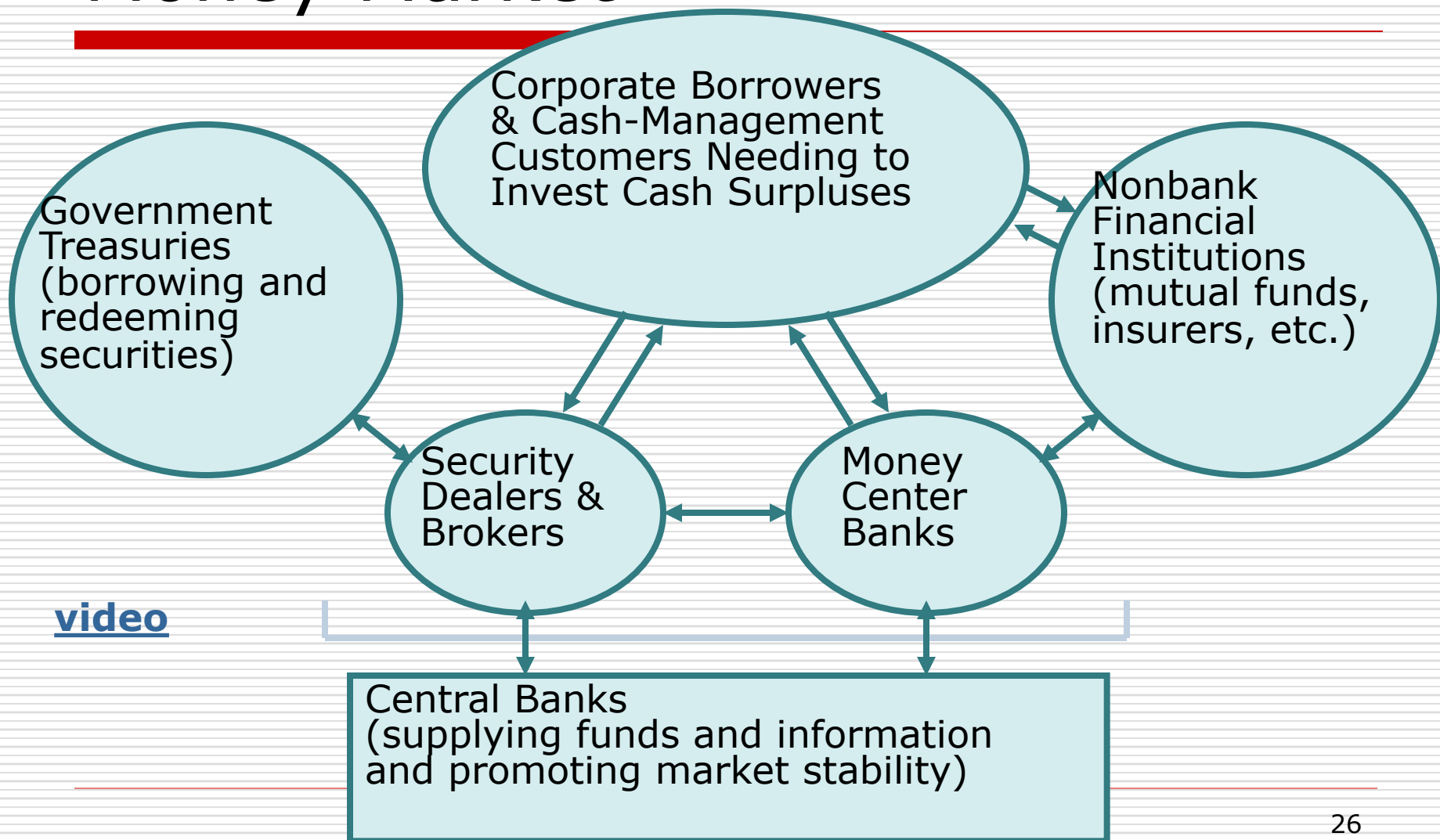
# Characteristics of the Money Market

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- The money market is a wholesale market for funds – most trading occurs in multiples of a million €
- The market is dominated by a relatively small number of large financial institutions.

# Borrowers and Lenders in the Money Market

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# Exercise 1

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- Treasury Bill – is discounted short-term instrument of money market
- Calculate the Price on primary market of „Treasury Bill 20 C“ if you have the conditions (next side) and interest rate was:  $-0,4205\%$

Notice: "At a discount" is a phrase used to describe the practice of selling securities, below their current market value, or below nominal value

## Terms and Conditions of the State Treasury Bills 20

<b>Issuer</b>	The Slovak Republic acting through the Ministry of Finance of the Slovak Republic, Štefanovičova 5, 817 82 Bratislava, Identification No. 00151742, represented by the Agentúra pre riadenie dlhu a likvidity („Debt and Liquidity Management Agency“) ARDAL.
<b>ISIN</b>	SK4000017133
<b>Name of treasury bill</b>	State Treasury Bill 20
<b>Form of treasury bill</b>	bearer
<b>Registration</b>	Book-entry form, registered by Centrálny depozitár cenných papierov SR, a.s.
<b>Pricing date</b>	4 May 2020
<b>First settle date (Issue date)</b>	6 May 2020
<b>Expected term of issue</b>	1 day
<b>Maturity date</b>	5 May 2021
<b>Issue size</b>	EUR 1,000,000,000
<b>Nominal value</b>	EUR 1.00
<b>Issuing method</b>	Sale into the own portfolio
<b>Issue price</b>	100%
<b>Coupon rate</b>	Difference between nominal value and issue price
<b>Type of interest calculation</b>	actual/360 (ICMA)
<b>Payment date for ordered treasury bills</b>	till 6 May 2020 (including)
<b>Type of redemption payment</b>	Clearing
<b>Redemption paying agent</b>	Agentúra pre riadenie dlhu a likvidity, Bratislava (ARDAL)
<b>Listing</b>	Application for listing on the main listed market will be submitted to Burza cenných papierov v Bratislave, a.s. (Bratislava Stock Exchange)
<b>ECB eligible</b>	yes
<b>Governing Law</b>	Slovak law

Full face value of the treasury bill is redeemed at maturity.

The issuer owes the full face value of the treasury bill to the owner.

The issuer is obliged to pay full face value of the treasury bill stipulated by issue conditions to the bearer.

In case of maturity date of the treasury bill is a public holiday, the nominal value of the treasury bill will be paid on a following working day, regardless of longer period of treasury bill holding.



# Price of Treasury Bill on primary market

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- $P$  – price on primary market
- $NV$  – nominal value
- $n$  – length of period
- $i$  – interest rate

$$P = \frac{NV}{1 + i * \frac{n}{360}}$$

# Price of Treasury Bill on primary market

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$$P = \frac{1}{1 + (-0,004205) * \frac{315}{360}} = 1,003693 \text{ EUR}$$

Price can be in %, then  $1,003693 * 100$   
 $= 100,3693 \%$

# Exercise 2

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- Calculate the Nominal interest rate of the same „Treasury Bill 20 C and Price was 1,03693 EUR

# Nominal interest rate (i)

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- P – price on primary market
- NV – nominal value
- n – length of period
- i – nominal interest rate

$$i = \frac{NV - P}{P * \frac{n}{360}} * 100 (\%)$$



# Nominal interest rate (i)

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$$-0,4205\% = \frac{1 - 1,003693}{1,003693 * \frac{315}{360}} * 100$$

# Nominal interest rate (i) by using function in Excel INTRATE

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The Excel Intrate function calculates the interest rate for a fully invested security.

INTRATE( **settlement**, **maturity**, **investment**, **redemption**, **[basis]** ) :

<b>settlement</b>	- The security's settlement date (i.e. the date that the coupon is purchased).
<b>maturity</b>	- The security's maturity date (i.e. the date that the coupon expires).
<b>investment</b>	- The initial amount invested into the security.
<b>redemption</b>	- The amount to be received at maturity.
<b>[basis]</b>	- An optional argument, that specifies the day count basis to be used in the calculation.

# Possible values of **[basis]** and their meanings are:

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<b>[basis]</b>	<b>Day Count Basis</b>
0 (or omitted)	US (NASD) 30/360
1	actual/actual
2	actual/360
3	actual/365
4	European 30/360



### **Auction Results of the Treasury Bills ŠPP 20 C**

<b>Issuer</b>	Ministry of Finance of the Slovak Republic, Štefanovičova 5, 817 82 Bratislava Identification No. 00151742
ISIN	SK4000017133
Maturity	05 May 2021
Date of competitive part of the auction	22 June 2020
Date of non-competitive part of the auction	-
Issue date	24 June 2020

#### **COMPETITIVE PART OF THE AUCTION**

TOTAL BIDS (EUR)	1,223,000,000
Minimum requested yield to maturity (% p. a.)	-0.4508
Average requested yield to maturity (% p. a.)	-0.3051
Maximum requested yield to maturity (% p. a.)	0.0250
ACCEPTED BIDS (EUR)	<b>220,000,000</b>
Minimum accepted yield to maturity (% p. a.)	-0.4205
Average accepted yield to maturity (% p. a.)	-0.4205
Maximum accepted yield to maturity (% p. a.)	-0.4205
Minimum accepted price (%)	100.3693
Average accepted price (%)	100.3693
Maximum accepted price (%)	100.3693
Cut Off Allotment (%)	58.27

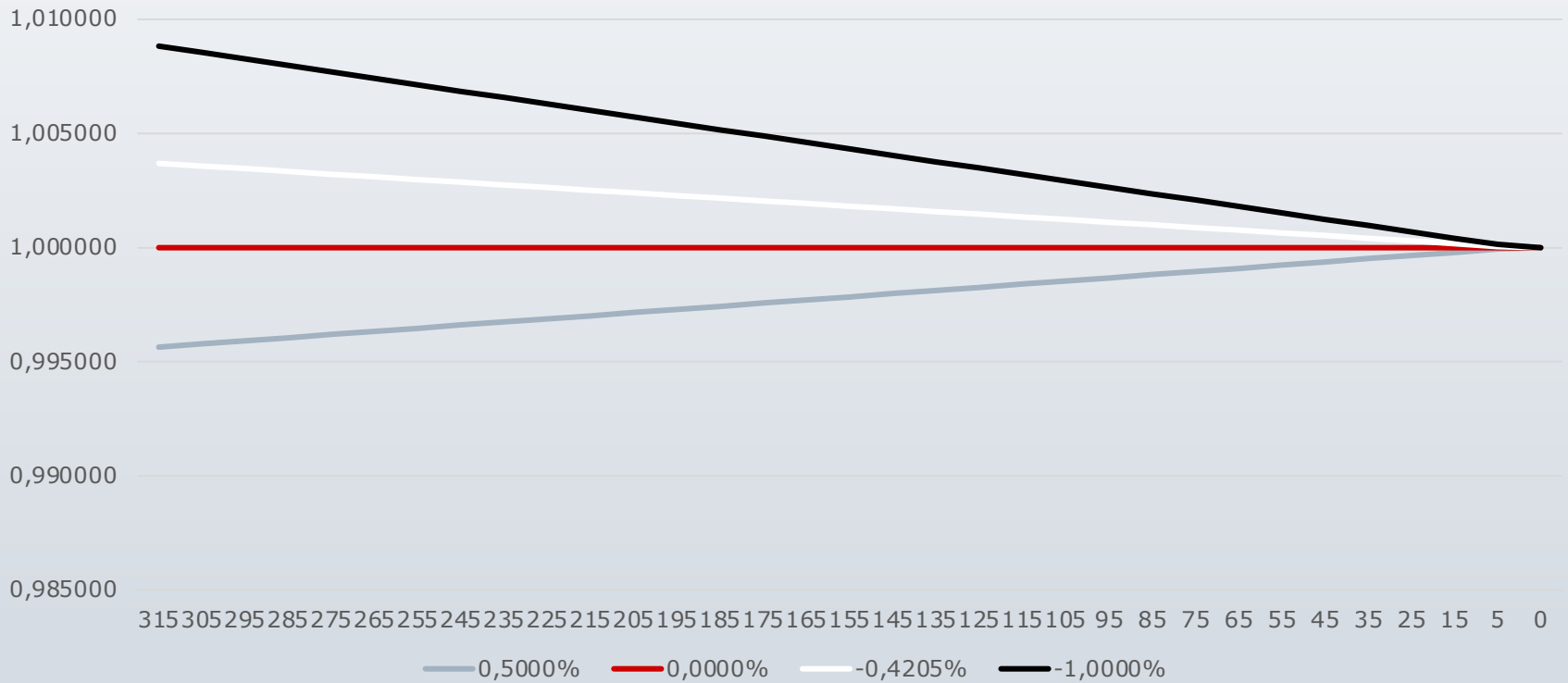
#### **NON-COMPETITIVE PART OF THE AUCTION**

Amount available (EUR)	-
Total bids (EUR)	-
Average price (%)	-

**TOTAL ISSUED AMOUNT (EUR) 220,000,000**

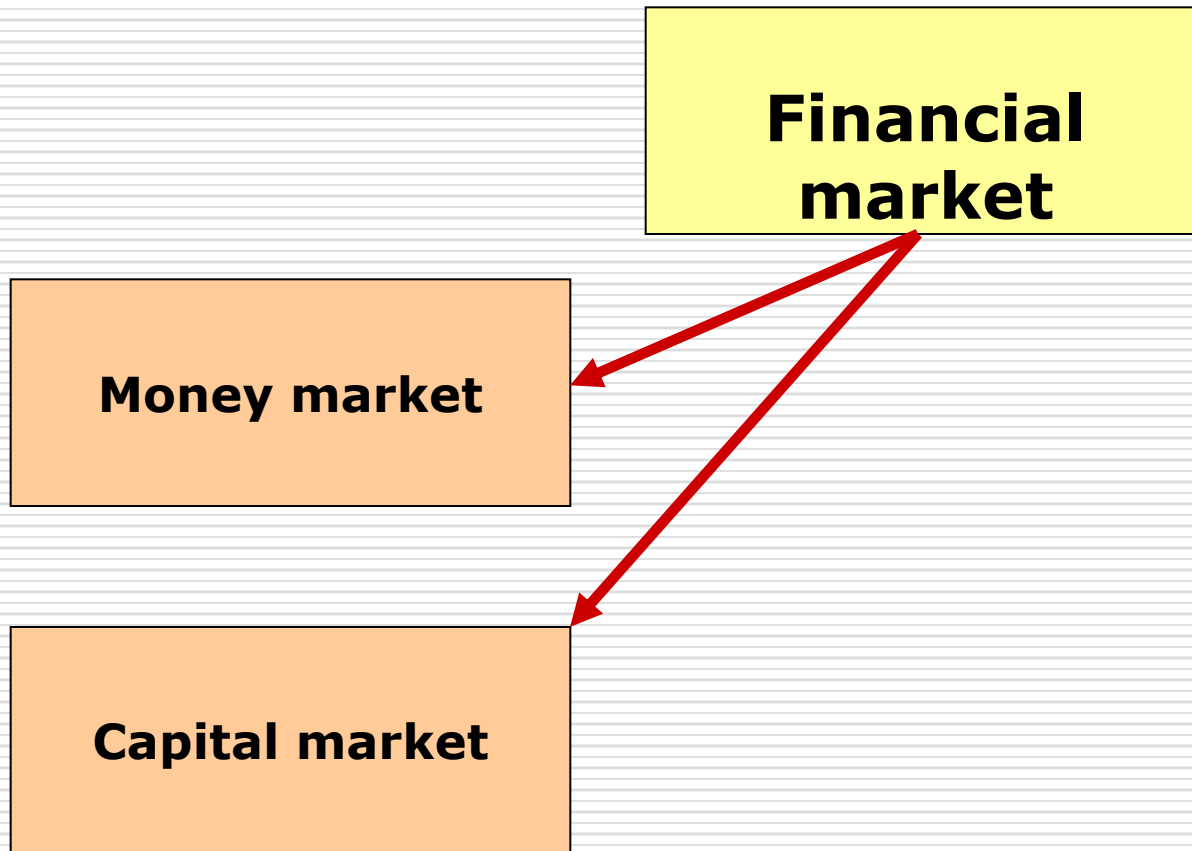


Price of Treasury Bill in relationship of interest rates and numbers of days to maturity



# Financial markets segmentation

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# Capital market

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- ❑ the market for long- term securities, such as **corporate stocks and bonds**.
- ❑ The capital market is the market for securities, where companies and the government can raise long-term funds.
- ❑ The capital markets consist of the primary market, where new issues are distributed to investors, and the secondary market, where existing securities are traded.

# Capital market

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- Instruments:
  - Stocks
  - Notes and Bonds
  - Mortgages
  - Government bonds
  - Consumer loans



# Characteristics of Corporate Stock

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- All corporate stock represents an ownership interest in a corporation, conferring on the holder a number of rights as well as risks.
- *Common stock* represents a residual claim owner has the right on share in the net earningsinst the assets of the issuing firm, of the firm when it is profitable and to share in the net market value (after all debts are paid) of the company's assets if it is liquidated.

# Characteristics of Corporate Stock

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- ❑ *Preferred stock* carries a stated annual dividend expressed as a percent of the stock's par value.
- ❑ Preferred stockholders have a prior claim over the firm's assets and earnings relative to the claims of common stockholders, but creditors must still be paid first.
- ❑ Preferred shares generally provide less income but are less risky than common stock.

# Characteristics of the Corporate Stock Market

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- There are two main branches of the market for trading corporate stock.
- ① *Organized exchanges* – Trading is governed by regulations and formal procedures designed to ensure competitive pricing and an active market for the stock of the largest firms.
- ② *Over-the-counter (OTC) market* – This more informal market involves the trading of stock through brokers.

# The Major Organized Exchanges in USA

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- The New York Stock Exchange (NYSE) and Chicago Board of Trade (CBOT) are organized exchanges. They have:
  - a physical location for trading
  - formal trading rules
  - listing requirements
  - a board of directors
  - member firms

Dow Jones Industrial Average



SOURCE: TRADINGECONOMICS.COM

# The Informal Over-the-Counter Market

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- There is no central trading location for the OTC market, but only an electronic communications network.
- ◆ Many traders also act as principals, taking “positions of risk” by buying securities outright for their own portfolios in addition to the portfolios of their customers.

# Characteristics of Corporate Notes and Bonds

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- ❑ A *note* has an original maturity of five years or less, while a *bond* carries an original maturity of more than five years.
- ❑ Both securities promise the investor an amount equal to the security's nominal value at maturity plus interest payments at specified intervals.
- ❑ They are generally issued in units of €1,000.

# Characteristics of Corporate Notes and Bonds

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- ❑ Corporate bonds tend to be issued with longer maturities when both interest rates and inflation are low.
- ❑ During periods of rapid economic expansion, when the supply of credit is relatively scarce, the cost of borrowing rises.
- ❑ Yields on the highest-grade bonds tend to move closely with government bond yields.



# The Secondary Market for Corporate Bonds

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- ❑ The secondary market for corporate bonds is relatively limited compared to the markets for other long-term securities like common stock and municipal bonds.
- ❑ The number of active individual investors is small and institutional investors tend to follow a *buy and hold* strategy.

# The Marketing of Corporate Notes and Bonds

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- New corporate bonds may be offered publicly in the open market to all interested buyers through a *public sale*, or sold privately to a limited number of investors via a *private* or *direct placement*.
- The majority of corporate bond sales are public sales. Private placements are, however, popular among smaller companies and firms with unique financing requirements.

# Bank Loans to Business Firms

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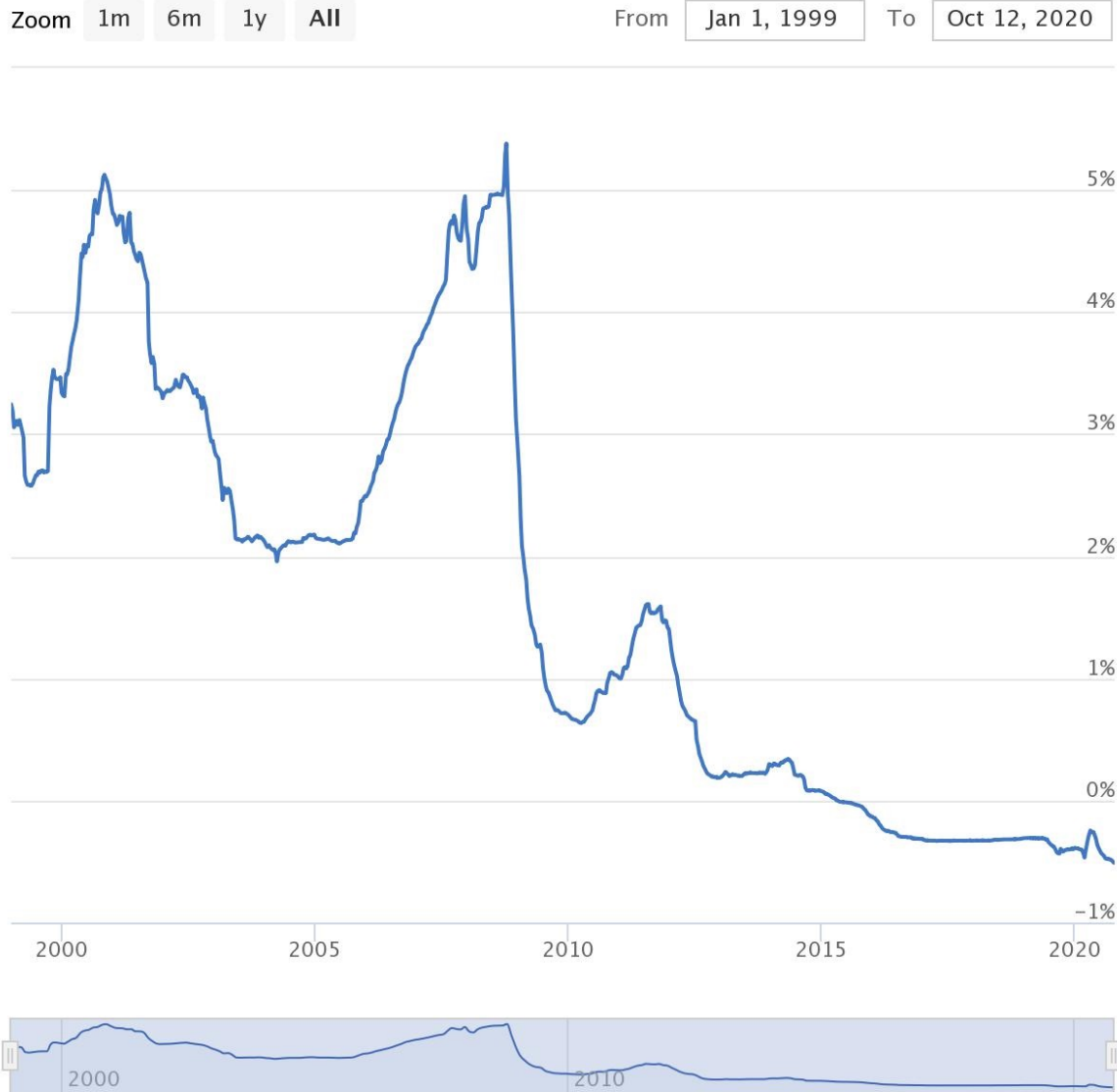
- Commercial banks are direct competitors with the corporate bond markets in making both short-term and long-term loans to businesses.

# Bank Loans to Business Firms

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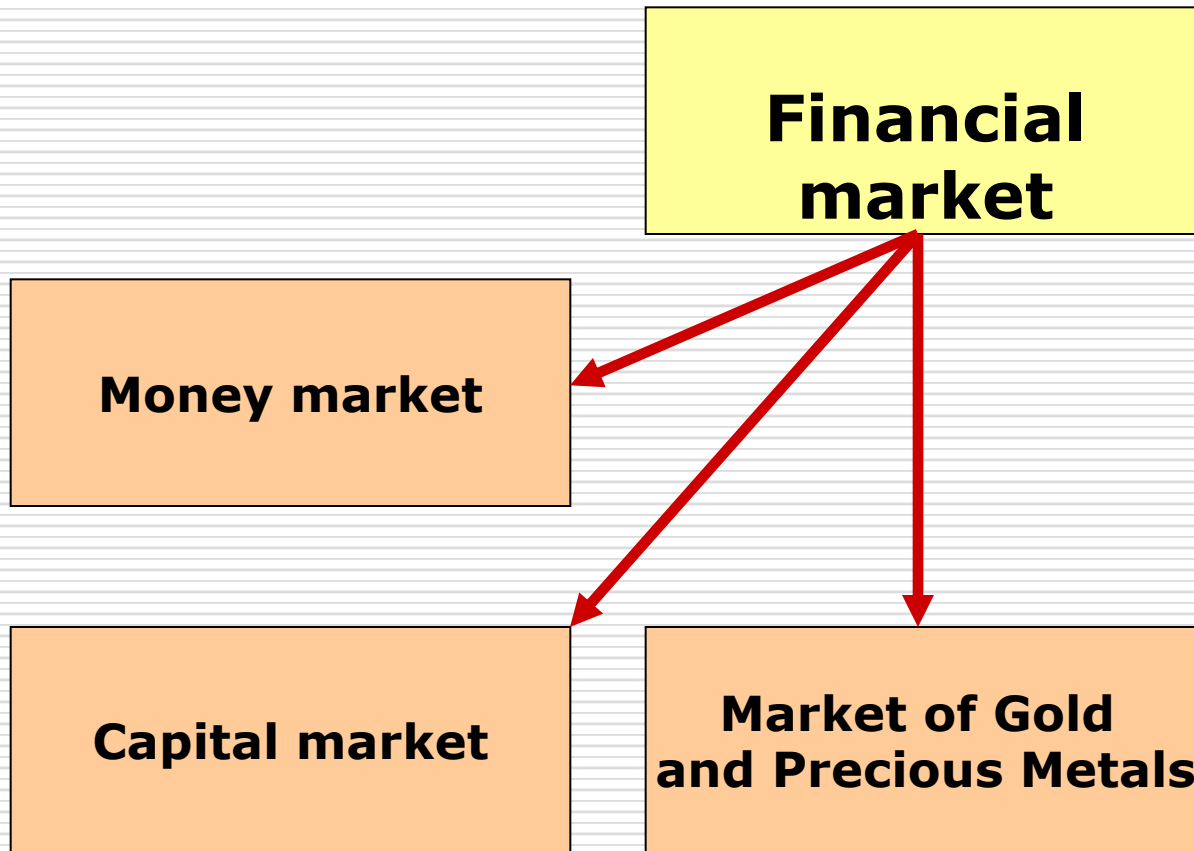
- The *prime bank rate*, or *base rate*, is the annual percentage rate that banks quote to their most creditworthy customers.
- Traditionally, the prime rate was set by one or more of the nation's leading banks, and the other banks followed the leader.

# EURIBOR



# Financial markets segmentation

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# Market of Gold and Precious Metals

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- Demand and Supply for Precious Metals
- Main Marketplaces:
  - London, New York, Tokio
- Result: Price

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### 30 Year Gold Price in USD/oz

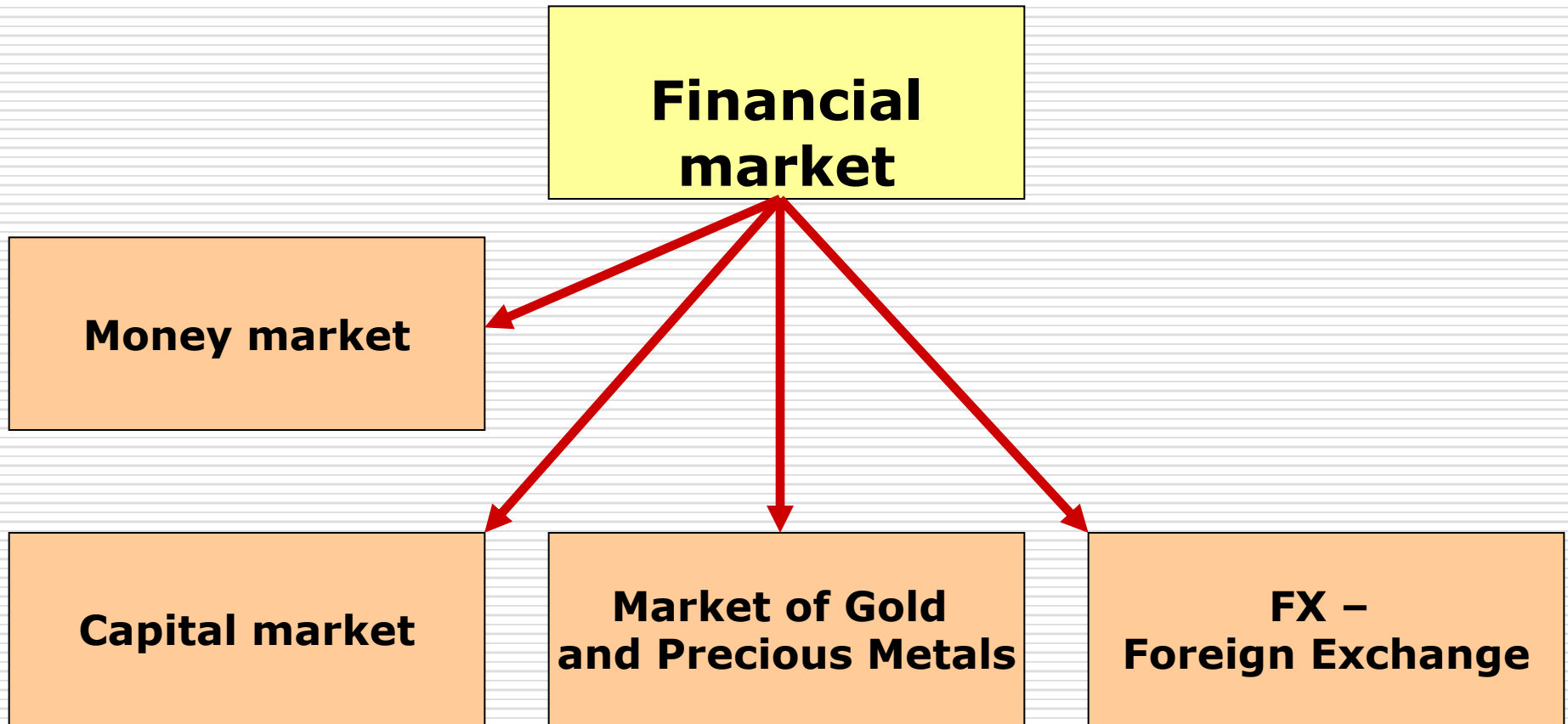


**Amount:** 1 ounce (troy) (oz t) of gold  
**Equals:** 31.10 grams (g) in gold



# Financial markets segmentation

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# Financial relations of a bussiness with foreign markets

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1. Export and import of goods and services
2. Collection and delivery of international financial loans
3. Transfer of capital related to investments
4. Payments between MNC - mother and subsidiary
5. Other

# Reasons to enter foreign exchange market

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- In general, three:
- Hedging - to hedge against the risk
- Trading - trading for profit
- Arbitrage - risk-free profits by achieving different prices in different markets

# Exchange rate quotation

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## □ Direct

- The price of foreign currency expressed in domestic currency units
- 0,780 EUR/USD

## □ Indirect

- The price of domestic currency expressed in units of foreign currency
- 1,282 USD/EUR

# Exchange rate movements

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- Depreciation – decrease of value
- Appreciation - increase of value

## Slovak koruna (SKK)

Latest (14 October 2008): **EUR 1 = SKK 30.455**

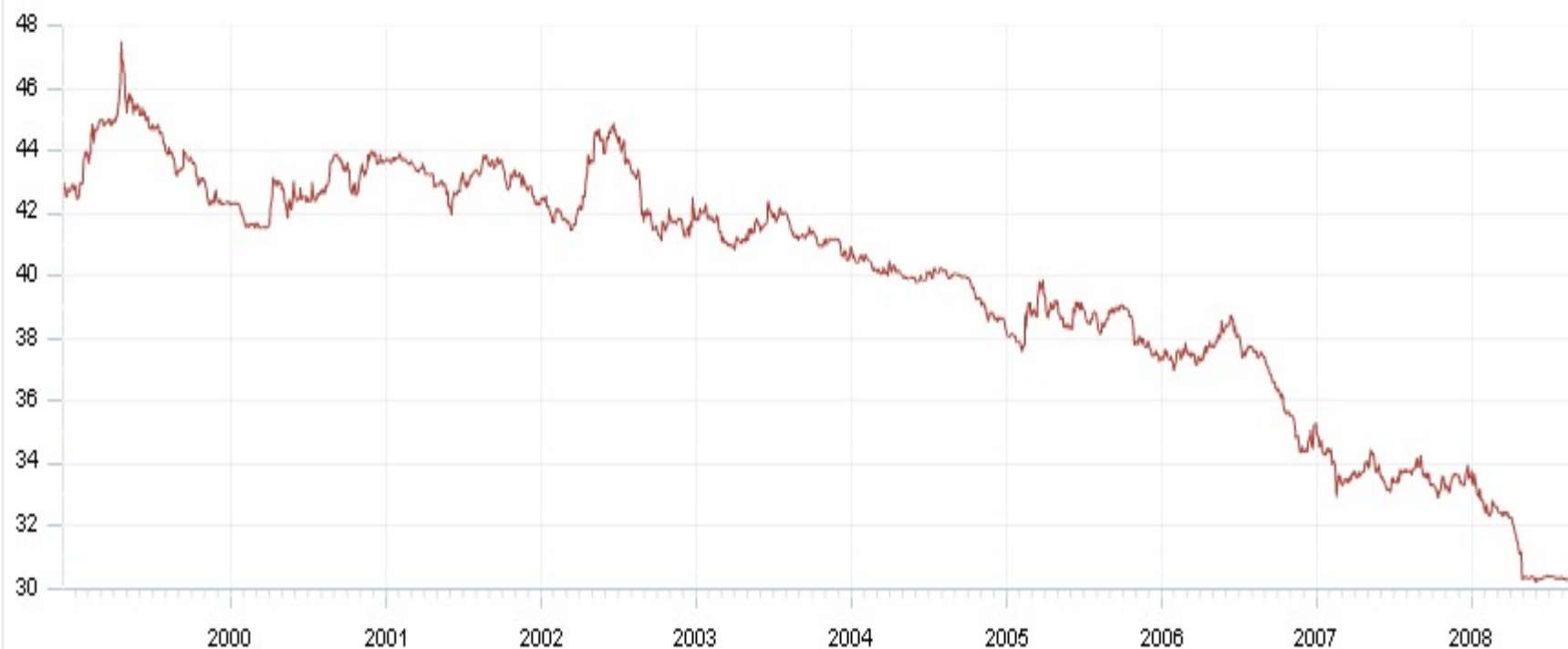
Change: ▼ -0.105 (-0.34%)

Select date range: [1m](#) | [3m](#) | [6m](#) | [1y](#) | [2y](#) | [5y](#) | [All](#)

[See EUR vs. SKK](#)

Change from 4 January 1999 to 14 October 2008: ▼ -12.536 (-29.16%)

Minimum (1 July 2008): 30.196 - Maximum (19 May 1999): 47.484



**Latest (13 October 2020): EUR 1 = USD 1.1787 -0.0012 (-0.1%)**

**Change from 4 January 1999 to 14 October 2020**

**Minimum (26 October 2000): 0.8252 - Maximum (15 July 2008): 1.5990 -**

**Average: 1.1997**



□ Source: ECB (<https://www.ecb.europa.eu/stats/exchange/eurofxref/html/eurofxref-graph-usd.en.html>)

# Factors influencing the exchange rate

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- Continuously:
  - Inflation
  - Interest rate
  - Exchange rate System
  - Balance of Payments



# Factors influencing the exchange rate

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## □ Short run:

Short-term fluctuations in normal commercial and financial transactions

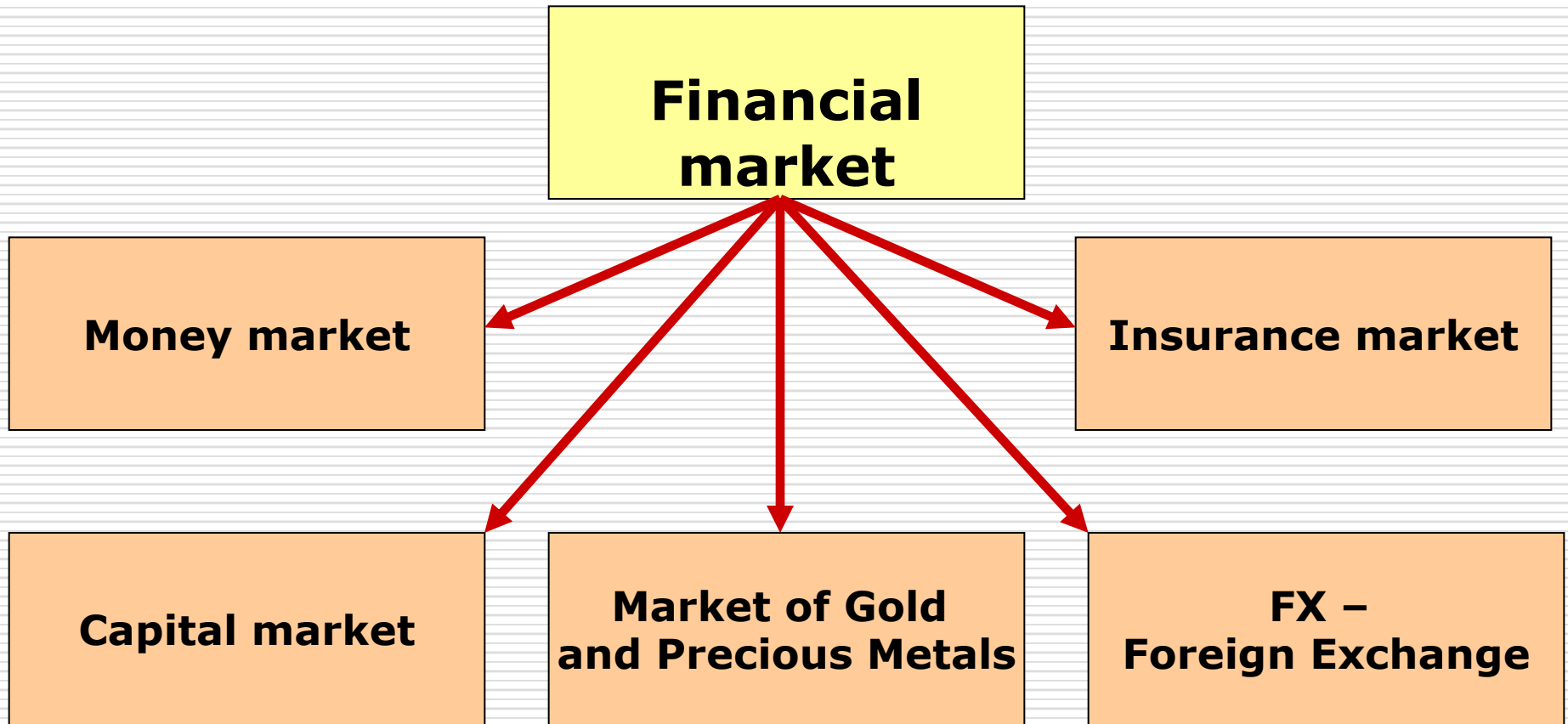
Speculative movements of capital

The central bank

Other factors: politics, natural disasters

# Financial markets segmentation

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# Insurance Market

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- Supply and Demand for the risk decrease
- Price: Insurance Premium
- Life vs. Non-Life



**□ Thank you for your attention**