Financial Markets and Instruments

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What you need to know about the course

- How long

- To pass

- Materials

- Remember

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Financial instruments on the money market

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Money market instruments

Money market – a market of short-term financial instruments for which time to maturity is lower than one year

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Money market instruments

- Certificates of deposit
- Treasury/commercial bills
- Promissory notes
- Interbank deposits

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Basic definitions

- **Time to maturity** - the number of years during which the issuer will have obligations to the financial instrument holder

- **Maturity date** – the time after which the debt becomes due and the capital must be repaid

- **Face value** – the value which the issuer of the financial instruments is obliged to pay to the holder at the time of maturity

- **Issue value** – the price at which the financial instruments are sold by the issuer in the primary market

- **Market value** – the price that must be paid for the financial instruments on the secondary market

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Certificates of deposit

Definition:

Instruments with income basis. They are most often sold at a price equal to the face value from which interest is calculated. On the date of the maturity of the certificate, the holder receives the face value plus interest.

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The rate of return from a certificate of deposit in the case of holding a certificate to maturity

$$r = \left[\frac{FV \times \left(1 + i \times \frac{N_{im}}{360}\right)}{P} - 1 \right] \times \frac{365}{N_{pm}}$$

r – rate of return
FV – face value
i – interest rate of the certificate of deposit
Nim – the number of days between the issue date and the maturity date
P – price of the instrument
Npm – the number of days between the date of purchase and the maturity date

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The rate of return on the certificate of deposit in the case of the sale of the certificate before the maturity date

$$r = \left[\frac{1 + r_p \times \frac{N_{pm}}{365}}{1 + r_s \times \frac{N_{sm}}{365}} - 1 \right] \times \frac{365}{N_{pm} - N_{sm}}$$

r – rate of return
rp – market rate of return on the date of purchase
Npm – the number of days between the purchase date and the maturity date
rs – market rate of return on the date of sale
Nsm – the number of days between the date of sale and the maturity date

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Valuation of the certificate of deposit

$$P = \frac{FV \times \left(1 + i \times \frac{N_{im}}{360}\right)}{1 + r \times \frac{N_{pm}}{365}}$$

P – price of instrument
r – rate of return
FV – face value
i – interest rate of the deposit certificate
Nim – the number of days between the issue date and the maturity date
Nsm – the number of days between the date of purchase and the maturity date

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Treasury bills

Definition:

Financial instruments with a discount basis. Treasury bills are sold at a price lower than the face value, which their holders receive on the date of maturity. The issuer is the state treasury.

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The discount rate in case of holding the treasury bill until maturity

$$d = \left(1 - \frac{P}{FV}\right) \times \frac{360}{N_{pm}}$$

d – discount rate
P – price of treasury bill
FV – face value
Npm – the number of days between the date of purchase and the maturity date

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The rate of return in case of holding the treasury bill until maturity

$$r = \left(\frac{FV}{P} - 1\right) \times \frac{360}{N_{pm}}$$

r – rate of return
P – price of treasury bill
FV – face value
Npm – the number of days between the date of purchase and the maturity date

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The rate of return on the treasury bills in the case of the sale of the bills before the maturity date

$$r = \left[\frac{1 + r_p \times \frac{N_{pm}}{365}}{1 + r_s \times \frac{N_{sm}}{365}} - 1\right] \times \frac{365}{N_{pm} - N_{sm}}$$

r – rate of return
rp – market rate of return on the date of purchase
Npm – the number of days between the purchase date and the maturity date
rs – market rate of return on the date of sale
Nsm – the number of days between the date of sale and the maturity date

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Valuation of the treasury bills

$$P = \frac{FV}{1 + r \times \frac{N_{pm}}{360}}$$

P – price of the treasury bill
r – rate of return
Npm – the number of days between the date of purchase and the maturity date

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