

Financial Instruments

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Overview

- Real and financial assets
- Use of financial assets
- Important examples of financial assets

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Real Versus Financial Assets

- Real Assets
 - Assets used to produce goods and services
 - Examples: factories, land, human capital, etc.
- Financial Assets
 - *Claims on real assets* such as
 - stocks
 - bonds
 - Derivatives

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Use of Financial Instruments

- Allocation of Capital
 - Financing of projects
- Consumption Smoothing:
 - saving and borrowing
- Allocation of Risk
 - Diversification
 - Hedging
- Meeting place for investors with different investment needs

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Important Financial Assets

- Fixed Income Securities/Debt instrument
 - No voting right: 'Borrowing instruments'
 - Treasury bonds
 - Municipal bonds
 - Corporate bonds
 - Mortgage-backed securities
- Equity
 - Voting right: 'Ownership in a firm'
 - Residual claim: a stock is a 'claim to funds after all debts have been paid'
 - Limited liability

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Equity continued

Equity

- Future cash-flows are uncertain.
- Maturity is indefinite (until the death of the firm).
- Two main classes of equities
 - Common Stock
 - Preferred Stock

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Important Financial Assets

- **Derivatives**
 - Definition: 'securities whose payoff depends on values of other assets'
 - Examples
 - Options – a right to buy (sell)
 - Futures – an obligation to buy (sell)
 - Bonds with option-feature (convertible or callable bonds)

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Derivatives

- **Examples: Grain futures**
- **Motivation: Hedging**
 - Farmer (price risk associated with selling)
 - Distilleries (price risk from buying)
- **Motivation: Speculation**
 - High leverage and high risk

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Financial Markets How securities are traded

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Overview

- What determines the price?
- Primary markets: new issues
- Secondary markets: re-trade of securities

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Equilibrium prices:

- What determines the price:
 - In economic theory?
 - In reality? (The topic of this class)
- What is the equilibrium price?
- What is the mechanism that drives prices towards equilibrium?

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Primary Markets

- Raises capital
- How new securities are floated (sold):
 - Government securities: typically auctioned.
<http://www.newyorkfed.org/aboutthefed/fedpoint/fed41.html>
 - Corporate securities, Federal Agencies Debt, Municipal Bonds, Mortgage-Baked securities: typically underwritten by investment banks.
- Underwriters: a syndicate of investment banks
 - “Firm commitment” or “Best effort”
 - “Road show”
 - Book building
- Registration through SEC

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Secondary Markets: Investors and brokers

- Investors usually trade through brokers.
- Brokers help investors trade without taking positions themselves (no inventory).
- Broker guarantees counterparty that:
 - an investor can pay for a security he is buying
 - an investor can deliver a security he is selling

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Types of orders an investor may place with his broker

- Market orders
- Limit orders
- Stop orders

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Secondary Markets: How do Brokers Trade?

- Exchanges (e.g. NYSE, AMEX)
 - ✓ auction
- Over the Counter (OTC) Markets (e.g. NASDAQ)
 - ✓ trade with dealers
- Electronic Communication Networks
 - ✓ direct trade among investors

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Market Makers

- Quote bid and ask prices
- Market maker provides a service:
 - Immediacy, liquidity
- Price of this service: bid-ask spread
- Holds inventory
- How does the market maker know where to put the bid and ask prices?

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Market Makers

- NYSE: Specialists, NASDAQ: Dealers
- Why doesn't the MM set high spreads?
 - Competition from other dealers
 - Competition from investors/brokers
 - Exchange rules about price continuity
- How can the MM survive with low spreads? Can, if
 - High volume
 - Low volatility of equilibrium price
 - No private information
- Important: MMs don't want to speculate!

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Some other issues

- Trading costs
- Buying on margin
- Short sales

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Trading Costs

- **Explicit cost: Commission**
 - ✓ fee paid to broker for making the transaction
- **Implicit cost: Bid-ask spread**
- **Depth**

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Buying on Margin

- The investor borrows part of the purchase price of the security from the broker. The broker charges interest rates. The securities are held as collateral by the broker.
$$\text{margin} = (\text{MVA} - \text{Loan}) / \text{MVA}$$
- MVA = Market value of the assets purchased
- Example: 100 shares bought at \$100. Borrowed \$4,000 What is the margin? What is the margin if price declines to \$50?
- Initial margin vs. maintenance margin

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Short Sales

- Short sales (sell something you don't own)
 - Selling shares of a firm I don't own by borrowing security, and later replacing it (cover it)
 - Dividends
 - A profit is made if the short position is covered at a price lower than the one at which it was established.
 - Bearish investment or as a hedge

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Short Sales

- Is it easy to short?
 - *Short sale proceeds* must remain with the broker (broker will pay interests on these proceeds, but can be very low)
 - The investor is also required to deposit a collateral (to *post margin*) as a guarantee against default
 - Short selling is subject to the up-tick rule

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Readings for next class

- Today:
 - RR: BKM 1.1-1.5, 3.1-3.5, 3.6, 3.8; CP1
 - SR: BKM 2.1-2.5
- For next class:
 - RR: RWJ 4, 5.1-5.3 ; CP 2-7

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