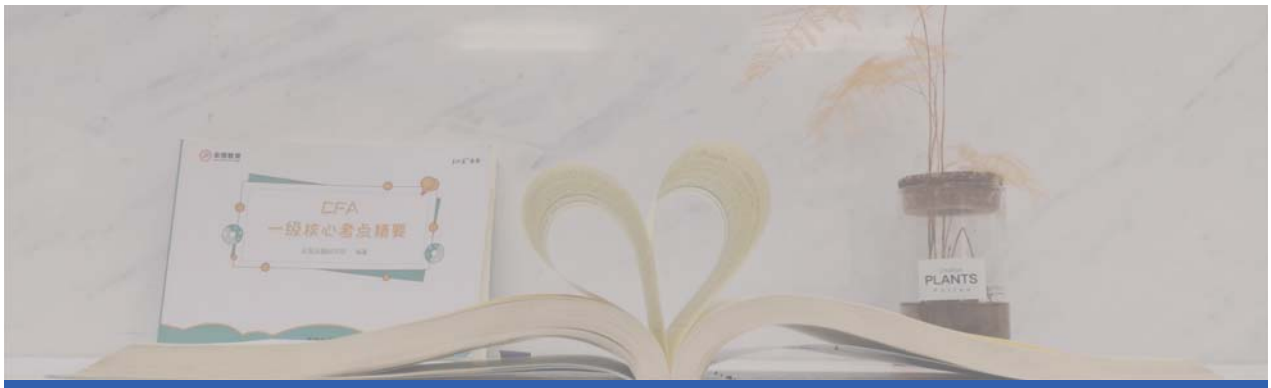


Equity

CFA一级培训项目

讲师：韩霄

韩霄

10年授课，5,000+授课课时

资质证书

- 特许金融分析师（CFA）
- 注册会计师（CPA）
- 美国注册财务策划师（RFP）
- 量化金融分析师（AQF）
- 注册金融风险管理师（CFRM）

服务客户

- 中国银行、广发证券、中国建设银行、中国工商银行、国家进出口银行、交通银行、招商银行、农业银行、上海银行、太平洋保险、平安证券、兴业证券、国泰君安等。

工作经历

- **金程教育资深培训师**、资深证券分析师、美国注册财务策划师协会（大中华管理中心）特聘资深专家；
- 在财务分析、估值建模、兼并收购、投资理财、税务筹划、资产证券化等方面拥有丰富的管理与实战经验。曾就职于全球顶级咨询公司与会计师事务所，并担任某世界500强企业投资总监，主导并参与多个大型企业兼并收购及IPO项目，投资标的及服务的客户包括阿里巴巴、中国中铁、中国南车、TPG Capital、L Capital、野村证券等。
- 先后为数十家国内外银行、保险公司、证券公司、世界500强企业提供专业培训，备受好评，服务的客户包括中国银行、中国建设银行、国家进出口银行、国泰君安等多家大型金融机构。

Equity Investments

1. Market Organization and Structure
2. Security Market Indexes
3. Market Efficiency
4. Overview of Equity Securities
5. Company Analysis: Past and Present
6. Industry and Competitive Analysis
7. Company Analysis: Forecasting
8. Equity Valuation: Concepts and Basic Tools

中文精读

1. 金融市场的组织架构
2. 证券市场指数
3. 市场的有效性
4. 股票投资概述
5. 公司分析：过去与现在
6. 行业和竞争性分析
7. 公司分析：预测
8. 股票估值模型

Framework

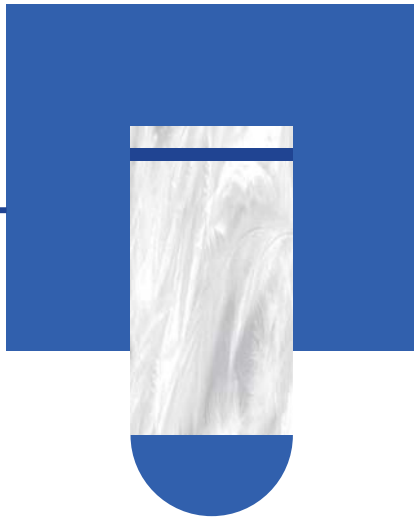
Module

Market Organization and Structure

1. The Functions of the Financial System
2. Types of Financial Intermediaries and Services
3. Classification of Assets
4. Classification of Markets
5. Positions in an Asset
6. Orders and Instructions

The Functions of the Financial System

- Main Functions of the Financial Market
- Well Functioned Financial Market



Main Functions of the Financial Market

- **Main Functions of the Financial Market (Totally Three Functions)**
  - **Achievement of Purposes in the Financial System**
    - ✓ Allow entities to save and borrow money, raise equity capital, manage risks, trade assets currently or in the future, and trade based on their estimates of asset values.
  - **Return Determination**
    - ✓ Determine the returns (i.e., interest rates) that equate the total supply of savings with the total demand for borrowing.
  - **Allocation of Capital**
    - ✓ The financial system allows the transfer of assets and risks from one entity to another as well as across time.

Main Functions of the Financial Market

- **First function: Achievement of Purposes in the Financial System**
  - **Savings**: savers buy stocks, bonds, certificates of deposit, real assets, and other assets.
  - **Borrowing**: borrow money from lenders who require collateral, take an equity position, or investigate the credit risk of the borrower to protect themselves in case of borrower defaults.
  - **Issuing equity**: another method of raising capital is to issue equity, where the capital providers will share in any future profits
  - **Risk management**: entities face risks from changing interest rates, currency values, commodities values, and defaults on debt, among other things. So they would like to find a way to manage these risks.
  - **Exchanging assets**: the financial system also allows entities to exchange assets.
  - **Utilizing information**: investors with information expect to earn a return on that information in addition to their usual return.
    - ✓ **Information-motivated traders**: trade to profit from information that they believe allows them to predict future prices.

Main Functions of the Financial Market

- **Second function: Return Determination**
  - Determine the rate of return that equates the amount of borrowing with the amount of lending (saving) in an economy. Low rates of return increase borrowing but reduce saving (increase current consumption).
  - **Equilibrium Interest Rate:**
    - ✓ The rate at which the amount individuals, businesses, and governments desire to borrow is equal to the amount that individuals, businesses, and governments desire to lend.
    - ✓ Equilibrium rates for different types of borrowing and lending will differ due to differences in risk, liquidity, and maturity.
- **Third function: Allocation of Capital**
  - Investors have to weigh the expected risks and returns of different investments to determine their most preferred investments due to limited availability of capital.
  - This would result in an allocation to capital to its **most valuable uses.**

Well Functioned Financial Market

- **A well functioned financial market:**
  - allows entities to achieve their purposes.
- **Characteristics of a well functioned financial Market**
  - **Complete markets**: savers receive a return, borrowers can obtain capital. hedgers can manage risks, and traders can acquire needed assets.
  - **Operational efficiency:** trading costs are low.
  - **Informational efficiency:** prices reflect fundamental information quickly.
  - **Allocational efficiency:** capital is allocated to its most productive use.

Well Functioned Financial Market

- **Market Regulation**

Problems when there are no regulations	Objectives of market regulations
Fraud and theft: The potential for theft and fraud increases because investment managers take advantage of unsophisticated investors.	Protect unsophisticated investors. Require minimum standards of competency to make it easier to perform valuation.
Insider trading: Investors would exit the market and thus reduced liquidity if they believe traders with inside information will exploit them.	Prevent insiders from exploiting other investors.
Costly information: If obtaining information is relatively expensive, markets will not be as informational efficient and investors will not invest as much.	Require common financial reporting requirements.
Defaults: Parties might not honor their obligations in markets.	Require minimum levels of capital so that participants will honor long-term commitments.

Example

The Functions of the Financial System

- A market is said to be informationally efficient if it features:
  A. market prices that reflect all available information about the value of the securities traded.
  B. timely and accurate information about current supply and demand conditions.
  C. many buyers and sellers that are willing to trade at prices above and below the prevailing market price.

- Correct answer: A

- Which of the following would *least likely* be an objective of market regulation?
  A. Reduce burdensome accounting standards.
  B. Make it easier for investors to evaluate performance.
  C. Prevent investors from using inside information in securities trading.

- Correct answer: A

Summary

Market Organization and Structure

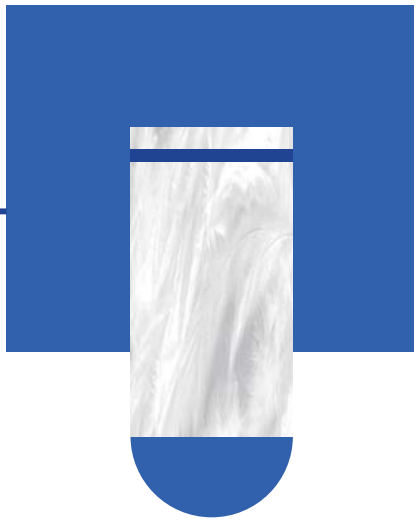
The Functions of the Financial System

Main Functions of the Financial Market

Well Functioned Financial Market

Types of Financial Intermediaries and Services

- Intermediaries of Financial Market



Intermediaries of Financial Market

- **Intermediaries of Financial Market (Summary)**
  - Brokers, Dealers and Exchange
  - Securitizers
  - Depository Institutions
  - Insurance Companies
  - Arbitrageurs
  - Clearinghouses and Custodians

Intermediaries of Financial Market

- **Brokers, Dealers and Exchange**
  - **Brokers:** Brokers help their clients buy and sell securities by finding counterparties to trades in a cost efficient manner.
  - **Block Brokers:** Help with the placement of Large trades. Typically, large trades are difficult to place without moving the market.
  - **Investment Banks:** Help corporations sell common stock, preferred stock, and debt securities to investors.
  - **Dealers:** Facilitate trading by buying for or selling from their own inventory. Dealers provide liquidity in the market and profit primarily from the spread (difference) between the price at which they will buy (bid price) and the price at which they will sell (ask price) the security or other asset.
    - ✓ Dealers that trade with central banks to affect the money supply are referred to as **primary dealers.**
    - ✓ Broker-dealers: Some dealers also act as brokers. Broker-dealers have an inherent conflict of interest.
      - Brokers: should seek the best prices for their clients;
      - Dealers: are to profit through prices or spreads.

Intermediaries of Financial Market

- **Brokers, Dealers and Exchange**
  - **Exchanges:**
    - ✓ Provide a venue for traders.
    - ✓ Now arrange trades on the basis of orders placed by brokers and traders.
  - **Alternative Trading Systems (ATS):**
    - ✓ ATSs are trading places where traders arrange their trades.
    - ✓ However, the trade has a lack of regulatory authority.
      - Many ATSs are known as dark pools because they do not display the orders that their clients send to them.
    - ✓ This also known as electronic communications networks (ECNs) or multilateral trading facilities (MTFs).

Intermediaries of Financial Market

- **Securitizers**
  - Securitizers pool large amounts of securities or other assets together and sell interests in the pool to other investors.
    - ✓ By securitizing the assets, the securitizer creates a diversified pool of assets with more predictable cash flows than the individual assets in the pool.
    - ✓ This creates liquidity in the assets, because the ownership interests are more easily valued and traded.
    - ✓ There are also economies of scale in the management costs of large pools of assets and potential benefits from the manager's selection of assets.
  - Assets that are often securitized include mortgages, car loans, credit card receivables, bank loans, and equipment leases.
  - A firm may set up a **special purpose vehicle (SPV) or special purpose entity (SPE)** to buy firm assets, which removes them from the firm's balance sheet and may increase their value by removing the risk that financial trouble at the firm will give other investors a claim to the assets' cash flows.

Intermediaries of Financial Market

- **Depository Institutions**
  - Absorb deposits by paying interest on customer deposits
  - Provide transaction services on one hand, and then make loans with the deposits on the other hand.
- **Insurance Companies**
  - Insurance companies collect insurance premiums in return for providing risk reduction to the insured.
  - Such intermediaries are able to do this by pooling policyholders with uncorrelated risk of losses.
  - Insurance firms also provide a benefit to investors by managing the risks:
    - ✓ **Moral hazard** occurs because the insured may take more risks once they are protected against losses.
    - ✓ **Adverse selection** those who purchase insurance against risk are more likely than the general population to be at risk..
    - ✓ In **fraud,** the insured purposely cause damage or claim fictitious losses so they can collect on their insurance policies.

Intermediaries of Financial Market

- **Arbitrageurs**
  - Arbitrageurs are intermediaries who seek to gain certain return without bearing any risk.
  - In markets with good information, pure arbitrage is rare because traders will favor the markets with the best prices.
- **Clearinghouses and Custodians**
  - **Clearinghouses:** Act as buyers when customers want to sell assets and as sellers when customers want to buy assets, and thus limit counterparty risk.
  - **Custodians:** Also improve market integrity by holding client securities and preventing their loss due to fraud or other events that affect the broker or investment manager.

Example

Intermediaries of Financial Market

- A financial intermediary buys a stock and then resells it a few days later at a higher price. Which intermediary would this most likely describe?

  A. Broker.

  B. Dealer.

  C. Arbitrageur.

- Correct answer: B

Summary

Market Organization and Structure

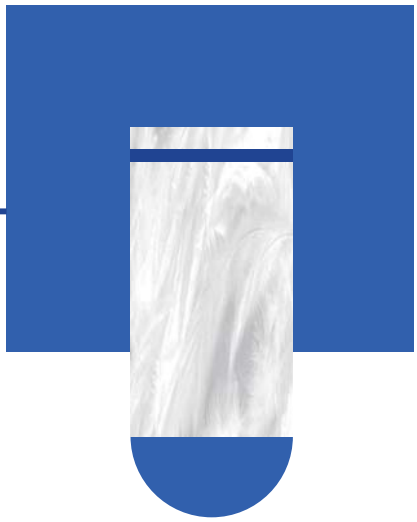
Types of Financial Intermediaries and Services

Intermediaries of Financial Market:

Brokers, Dealers and Exchange, Securitizers, Depository Institutions, Insurance Companies, Arbitrageurs, Clearinghouses and Custodians

Classification of Assets

- Classification of Assets



Classification of Assets

- **Classification of Assets (Summary)**
  - **Financial Assets**
    - ✓ Security
      - Fixed Income vs. Equity Securities
      - Public vs. Private
    - ✓ Currency
    - ✓ Derivative Contracts
      - Financial Derivative Contracts
      - Physical Derivative Contracts
  - **Real Assets**
    - ✓ Commodity
    - ✓ Real Estate

Classification of Assets

- **Classification of Assets - Financial Assets**
  - **Security** (Fixed income vs. Equity Securities)
    - ✓ **Fixed Income Securities:** Make sure the borrowed funds can be repaid.

Bonds	With **longer maturities** (with maturity longer than 10 years)
Notes	**Intermediate term** (with maturity between 2 to 10 years)
Bills	**Short term** (with maturity less than 1 year)
Commercial paper	**Short term** issued by firms (with maturity less than 1-2 years)
Certificates of deposit	Certificates of deposit issued by **banks**
Repurchase agreements	Borrower sells a high quality asset and has both the right and obligation to repurchase it (at a higher price) in the future. Repurchase agreements can be for terms as short as one day.
Convertible debt	Convertible debt are typically convertible into stock, usually at the option of the holder after some period.

Classification of Assets

- **Classification of Assets - Financial Assets**
  - **Security** (Fixed Income vs. Equity Securities)
    - ✓ **Equity Securities:** Represent ownership in a firm.

Common stock	• Own residual rights to the assets of the company; • Right to receive any dividends declared by the boards of directors, and in the event of liquidation, any assets remaining after all other claims are paid.
Preferred stock	• Preferred rights (relative to common shares) to the cash flows and assets of the company; • A specific dividend on a regular basis; • Higher claims to assets relative to common shareholders in the event of corporate liquidation.
Warrants	• Securities issued by a corporation that allow the warrant holders to buy a security issued by that corporation, if they so desire, usually at any time before the warrants expire.

Classification of Assets

- **Classification of Assets - Financial Assets**
  - **Security**
    - ✓ **Pooled Investment Vehicles:**
      - ☐ Individual securities can be combined in pooled investment vehicles.
      - ☐ The securities created by mutual funds, trusts, depositories, and hedge fund are respectively called shares, units, depository receipts, and limited partnership interests.
      - ☐ Include mutual funds, depositories, and hedge funds.

Classification of Assets

- **Classification of Assets - Financial Assets**
  - **Security**
    - ✓ **Pooled Investment Vehicles:**

Mutual funds	• Investment vehicles that pool money from many investors for investment in a portfolio of securities; • May be open-ended or closed-ended.
Exchange-traded funds (ETFs) & exchange-traded notes (ETNs)	• Open-ended funds: investors can trade in secondary markets; • The market price and net asset values of ETFs tend to converge by authorized participant's operation.
Asset-backed securities	• Pooling the asset deriving from assets' values and income payments, e.g., mortgage bonds, credit card debt, or car loans.
Hedge funds	• Organized as limited partnerships(investors → limited partners; fund manager →general partner); • Hedge funds often use leverage; • Funds pay their managers with proportional of their assets and with a contingent incentive fee.

Classification of Assets

- **Classification of Assets - Financial Assets**
  - **Security** (Public vs. Private)
    - ✓ **Public Securities:** trade in liquid markets in which sellers can easily find buyers for their securities.
    - ✓ **Private Securities:** are not traded in public markets which are often illiquid and not subject to regulation.
  - **Currency**
    - ✓ Issued by national monetary authorities.
    - ✓ Some of these currencies are regarded as reserve currencies. Reserve currencies are currencies that national central banks and other monetary authorities hold in significant quantities.

Classification of Assets

- **Classification of Assets - Financial Assets**
  - **Contracts**
    - ✓ Are agreements between two parties that require some action in the future, such as exchanging an asset for cash.

Forward contract	Is an agreement to trade the underlying asset in the future at a price agreed upon today.
Futures contract	Is a standardized forward contract for which a clearinghouse guarantees the performance of all traders.
Swap contract	Is a series of forward contracts.
Option contract	Allows the holder of the option to buy or sell an underlying instrument at a specified price at or before a specified date in the future.
Insurance contract	Pays their beneficiaries a cash benefit if some event occurs.
Credit default swaps	Are insurance contracts that promise payment of principal in the event that a company defaults on its bonds.

Classification of Assets

- **Classification of Assets - Real Assets**
  - **Commodity**
    - ✓ Commodities are goods like precious metals, industrial metals, agricultural products, energy products, and credits for carbon reduction that are traded in spot, forward, and futures markets.
    - ✓ Note: spot markets are for immediate delivery while forwards, futures, and options markets are for the future delivery of physical and financial assets.
  - **Real Assets**
    - ✓ Real assets include such tangible properties as real estate, airplanes, machinery, or lumber stands.
    - ✓ Characteristics:
      - Provide income, tax advantage, diversification benefits
      - Entail substantial management costs
      - Require substantial due diligence before investing

Example

Classification of Assets

- Daniel Ferramosco is concerned that a long-term bond he holds might default. He therefore buys a contract that will compensate him in the case of default. What type of contract does he hold?

  A. Physical derivative contract.

  B. Primary derivative contract.

  C. Financial derivative contract.

- Correct answer: C

Summary

Market Organization and Structure

Classification of Assets

Classification of Assets:

Financial Assets: Security, Currency, Derivative Contracts

Classification of Assets - Real Assets: Commodity, Real Estate

Classification of Markets

- Classification of Markets

Classification of Markets

- **Classification of Markets**
  - Money vs. Capital markets
  - Traditional vs. Alternative markets
  - Primary vs. Secondary markets

Classification of Markets

- **Classification of Markets**
  - **Money vs. Capital markets**
    - ✓ **Money markets:** the market for short-term debt instruments (one-year maturity or less).
    - ✓ **Capital markets:** financial markets that trade securities of longer duration, such as bonds and equities.
  - **Traditional vs. Alternative markets**
    - ✓ **Traditional investment markets:** markets for traditional investments, include all publicly traded debts and equities and shares in pooled investment vehicles that hold publicly traded debts and/or equities.
    - ✓ **Alternative markets:** market for investments other than traditional securities investments.
  - Primary vs. Secondary markets
    - ✓ **Primary market:** the market where newly issued securities are sold. Newly issued securities involve:
      - **IPO (initial public offerings):** first-time issues by firms whose shares are not currently publicly traded.
      - **Seasoned offerings (secondary issues):** new shares issued by firms whose shares are already trading in the marketplace.

Classification of Markets

- **How securities are sold through primary market**
  - **Sold Publicly**
    - ✓ Underwritten Offering (the most common way)
    - ✓ Best Efforts
    - ✓ Indications of Interest
    - ✓ Book building
  - **Sold Privately**
    - ✓ Private placement
  - **Other transaction methods**
    - ✓ Shelf registration
    - ✓ Dividend Reinvestment Plan
    - ✓ Rights Offering

Classification of Markets

- **How securities are sold through primary market - Sold Publicly:**
  - **Underwritten Offering** (the most common way)
    - ✓ Investment bank purchases the entire issue at a price that is negotiated between the issuer and bank.
    - ✓ Investment bank bears the risk of buying the unsold portion of securities if the target number of shares to be issued does not meet.
  - **Best Efforts**
    - ✓ Unlike underwriting offering, the investment bank doesn't purchase the whole issue.
    - ✓ Bank is not obligated to buy the unsold portion if the issue is undersubscribed.
  - **Indications of Interest**

Classification of Markets

- **How securities are sold through primary market- Sold Publicly:**
  - **Difference between underwritten offering and best efforts.**

Underwritten Offering	Best Efforts
Obligated to buy the unsold portion	Not obligated to buy the unsold portion
Investment bank would prefer that the price be set low enough to gain more profit	Investment bank sets the issue price as high as possible to raise the most funds for the issuer

Classification of Markets

- **How securities are sold through primary market- Sold Publicly:**
  - Underwritten Offering
  - Best Efforts
  - **Indications of Interest**
    - ✓ **Indications of Interest:** the investment bank finds investors who agree to buy part of the issue.
    - ✓ This process of gathering indications of interest is called book building, and the investment bank during this process is called book builder or book runner.
    - ✓ If securities must be issued quickly, the process is called accelerated book building.

Classification of Markets

- **How securities are sold through primary market- Sold Privately and other transaction methods:**
  - **Private Placement**
    - ✓ Securities are sold directly to qualified investors, typically with the assistance of an investment bank.
  - **Shelf Registration**
    - ✓ Type of public offering that allows the issuer to file a single, all-encompassing offering circular that covers a series of bond issues.
  - **Dividend Reinvestment Plan**
    - ✓ A dividend reinvestment plan (DRP or DRIP) allows existing shareholders to use their dividends to buy new shares from the firm at a slight discount.
  - **Rights Offering**
    - ✓ In rights offering, existing shareholders are given the right to buy new shares at a discount to the current market price.

Classification of Markets

- **Secondary Capital Markets**
  - The secondary market is the place where securities are traded after their initial offerings.
  - The secondary market supports the primary market by providing:
    - ✓ **Liquidity**
      - Investors who buy stocks in the primary markets want to sell then again to acquire other securities such as risk free bonds and cash.
    - ✓ **Price discovery**
      - New issues of stocks and bonds are based on prices in the secondary markets.

Classification of Markets

- **Secondary Capital Markets**
  - **When** securities are traded in a secondary market.
    - ✓ **Call Markets**
      - Trading for individual stocks occurs **at specific times.**
      - All bids and asks are gathered and then a negotiated price is produced to make the demand quantity as close as possible to the supply quantity.
    - ✓ **Continuous Markets**
      - Trades occur **at any time** when market is open.
      - The price is determined either by an auction process or through a dealer bid-ask process. There are differences between dealer markets and an auction market in continuous markets.

Classification of Markets

- **Secondary Capital Markets**
  - **How** securities are traded in Secondary Markets
    - ✓ Order-Driven Market
    - ✓ Quote-Driven Market
    - ✓ Brokered Markets

Classification of Markets

- **Secondary Capital Markets**
  - **How** securities are traded in Secondary Markets
    - ✓ **Order-Driven Market**
      - In order-driven market, orders are executed using trading rules, which are necessary because traders are usually anonymous. Exchanges and automated trading systems are examples of order-driven markets.
    - ✓ Quote-Driven Market
    - ✓ Brokered Markets

Classification of Markets

- **Secondary Capital Markets**
  - **How** securities are traded in Secondary Markets
    - ✓ **Order-Driven Market**

Classification of Markets

- **Secondary Capital Markets**
  - **How** securities are traded in Secondary Markets —— **Order-Driven Market.**
  - Two sets of rules are used in these markets:
    - ✓ **Order matching rules:** establish an order precedence hierarchy.
      - **Price priority:** trades with the highest bid (buy) and lowest ask (sell) prices are traded first, this is so-called price priority.
      - **Time precedence:** if orders are at the same prices, the earliest arriving orders are traded first.

Classification of Markets

- **Secondary Capital Markets**
  - **How** securities are traded in Secondary Markets
    - ✓ Order-Driven Market
    - ✓ **Quote-Driven Market**
      - Quote-driven market is also referred to as a **dealer market, a price-driven market or an over-the-counter market.** Individual dealers provide liquidity for investors by buying and selling the shares of stock for themselves.
      - Numerous dealers compete against each other to provide the highest bid prices when investors are selling and the lowest asking price when investors are buying stock.
    - ✓ Brokered Markets

Classification of Markets

- **Secondary Capital Markets**
  - **How** securities are traded in Secondary Markets
    - ✓ Order-Driven Market
    - ✓ Quote-Driven Market
    - ✓ **Brokered Markets**
      - In brokered markets, brokers trade with the counterparty they find.
      - This service is especially valuable when the trader has a security that is unique or illiquid.
      - Examples are large blocks of stock, real estate, and artwork.

Classification of Markets

- **Secondary Capital Markets**
  - **How** securities are traded in Secondary Markets
    - ✓ Comparison between Quote-Driven Market and Order-Driven Market.

Quote-Driven Market	Order-Driven Market
Dealers make a market in the stock, which means that they are willing to buy or sell for their own account at a specified bid-and-ask price.	Enough buyers and sellers are trading to allow the market to be continuous

Example

Classification of Markets

- An investor who buys a government bond from a dealer's inventory is said to obtain:
  A. a real asset in a primary market transaction.
  B. a financial asset in a primary market transaction.
  C. a financial asset in a secondary market transaction.

- Correct answer: C

- New issues of securities are transactions in:
  A. the primary market.
  B. the secondary market.
  C. the seasoned market.

- Correct answer: A

Example

Classification of Markets

- In which of the following types of markets do stocks trade any time the market is open?
  A. Exchange markets.
  B. Call markets.
  C. Continuous markets.

- Correct answer: C

Summary

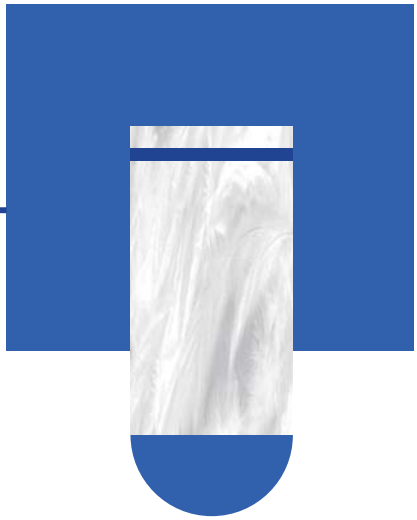
Market Organization and Structure

Classification of Markets

Classification of Markets:
Money vs. Capital markets
Traditional vs. Alternative markets
Primary vs. Secondary markets

Positions in an Asset

- Positions and Short Positions
- Leveraged Positions



Positions in an Asset

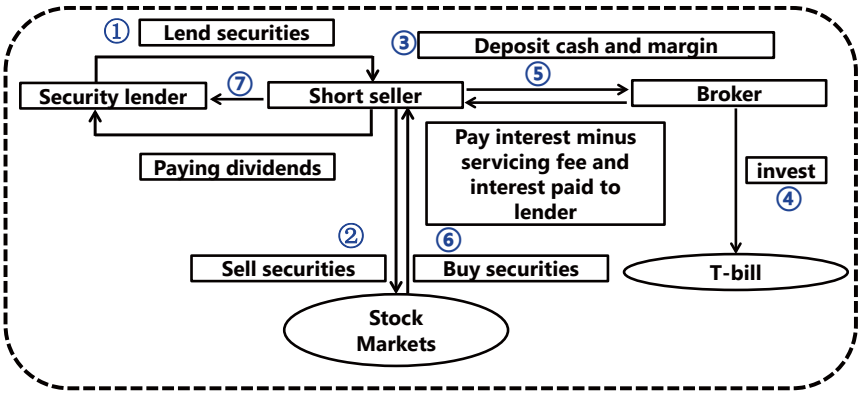
- **Positions an investor can take in an asset**
  - Long Position
  - Short Position
  - Leveraged Position

Positions and Short Positions

- **Long Position**
  - An investor who owns an asset, or has the right or obligation under a contract to **purchase** an asset, is said to have a long position.
  - Benefit form an increase in the price
- **Short Position**
  - For a short-sale, the procedure is as below:
    - ✓ Borrow the stock through your broker and simultaneously sell it in the market.
    - ✓ Return the stocks upon your brokers request
    - ✓ Maintain the proceeds of short-sales as collateral.
  - Benefit from a decrease in the price
  - Unlike a long position, the potential loss of a short sale is unlimited

Positions and Short Positions

- **Short Position**
  - **Payment-in-lieu:** the received dividends and interests must be paid back to the investor who lent the stock



Positions and Short Positions

- **Short Position**
  - **Short Rebate Rate**
    - ✓ The short seller must deposit the proceeds of the short sale as collateral.
    - ✓ The broker earns interest on these funds and may return a portion of this interest to the short seller at a rate referred to as the short rebate rate.
    - ✓ If the security is difficult to borrow, short rebate rate may be lower or negative.

Leveraged Positions

- **Leveraged Positions**
  - **Definition:** An investor is said to be take leveraged positions if he borrowed funds to purchase an asset.
  - **Buy on Margin**: Investors who use leverage to buy securities by borrowing from their brokers are said to buy on margin and the borrowed funds are referred to as a **margin loan.**
  - The interest rate paid on the funds is the **call money rate.**
  - **Leverage Ratio:**
    - ✓ The leverage ratio of a margin investment is the value of the asset divided by the value of the equity position.

Leveraged Positions

- **Leveraged Positions**
  - **Margin Requirement:** the required equity position is called the margin requirement.
    - ✓ **Initial Margin**: a minimum amount of equity at the time of a new margin purchase.
    - ✓ **Maintenance Margin**: the investor's required equity position in the account.
    - ✓ **Margin Call**: if an investor's margin account balance falls below the maintenance margin, the investor will receive a margin call and will be required to either liquidate the position or bring the account back to its **maintenance (minimum) margin requirement.**
  - Computation of the Price Triggering a Margin Call.
    - ✓ Margin Call Price for a **Leverage Position.**

$$P_L^{'} = P_0\left(\frac{1\text{-IM}}{1\text{-MM}}\right)$$

Example

Positions in an Asset

- If an investor purchases a stock for $40 per share with an initial margin requirement of 50% and the maintenance margin requirement is 25%, at what price will the investor get a margin call?
- Answer:

$$\frac{\mathbf{40(1-0.5)}}{\mathbf{1-0.25}} = \mathbf{26.67}$$

  - A margin call is triggered at a price below $26.67.

Example

Positions in an Asset

- An investor buys 1,000 shares of a stock on margin at a price of $50 per share. The initial margin requirement is 40% and the margin lending rate is 3%. The investor's broker charges a commission of $0.01 per share on purchases and sales. The stock pays an annual dividend of $0.30 per share. One year later, the investor sells the 1,000 shares at a price of $56 per share. The investor's rate of return is closest to:

  A. 12%.

  B. 27%.

  C. 36%.

- Correct answer: B

  - The total purchase price is 1,000 × $50 = $50,000. The investor must post initial margin of 40% × $50,000 = $20,000. The remaining $30,000 is borrowed. The commission on the purchase is 1,000 × $0.01 = $10. Thus, the initial equity investment is $20,010. In one year, the sales price is 1,000 × $56 = $56,000. Dividends received are 1,000 × $0.30 = $300. Interest paid is $30,000 × 3% = $900. The commission on the sale is 1,000 × $0.01 = $10. Thus, the profit is $56,000 − $50,000 + $300 − $900 − $20 = $5380. The return on the equity investment is $5380 / $20,010 = 26.89%.

Summary

Market Organization and Structure

Positions and Leverage

Positions and Short Positions

Leveraged Positions

Orders and Instructions

- Orders and Execution Instructions
- Validity Instructions and Clearing Instructions

Orders and Instructions

- When investors want to buy or sell, they must enter orders that specify the size of the trade and whether to buy or sell.
  - **Execution Instructions**: that specify how to trade;
  - **Validity Instructions**: that specify when the order can be filled;
  - **Clearing Instructions**: that specify how to settle the trade.

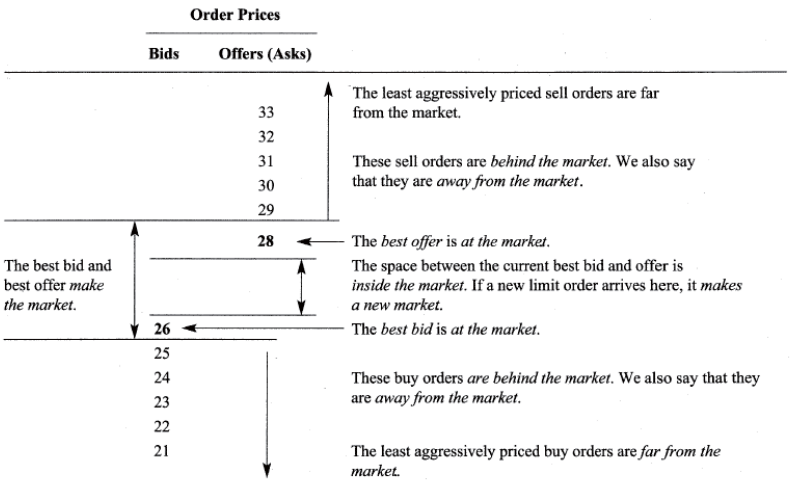
Orders and Execution Instructions

- **Execution Instructions**
  - The most common orders
    - ✓ **Market orders:** orders are the orders to buy or sell a security at the best current price, is the most frequent type of order.
    - ✓ **Limit orders:** orders specify the buy or sell order. Limit orders waiting to execute are called standing limit orders.
      - **Make the market:** a limit buy order at best bid or a limit sell order at the best.
      - **Make a new market:** a limit buy order placed above best bid but below best ask order.
      - **Take the market:** those who trade with them at posted prices are said to.
      - **Behind the market:** a buy order placed below the best bid or a sell order placed above the best offer.
      - **Far from the market:** a behind the market order whose price is far from their best ask/bid.

Orders and Execution Instructions

- **Execution Instructions**
  - Instructions concern the volume of the trade:
    - ✓ **All-or-nothing orders** execute only if the whole order can be filled.
  - Instructions concern the visibility of the trade:
    - ✓ **Hidden orders** are those for which only the broker or exchange knows the trade size.
    - ✓ **Iceberg orders** are orders that traders can also specify certain aspects of the trade so that only part of the trade is visible to the market.

Orders and Execution Instructions



Validity Instructions and Clearing Instructions

- **Validity Instructions:**
  - Validity instructions specify when an order should be executed.
    - ✓ **Day orders:** means the orders expire if unfilled by the end of the trading day.
    - ✓ **Good-till-cancelled orders(GTC):** In practice, most brokers limit how long they will manage an order to ensure that they do not fill orders that their clients have forgotten
    - ✓ **Immediate or cancel orders:** are cancelled unless they can be filled immediately. They are also known as **fill or kill orders.**
    - ✓ **Good-on-close orders:** are only filled at the end of the trading day. If they are market orders, they are referred to as **market-on-close orders.**
    - ✓ **Good-on-open orders:** are only filled at the open of the trading day.

Validity Instructions and Clearing Instructions

- **Validity Instructions:**
  - Validity instructions specify when an order should be executed.
    - ✓ **Stop orders:** are those that are not executed unless the stop price has been met. They are often referred to as stop loss orders because they can be used to prevent losses or to protect profits.
      - **Stop-sell order:** If the investor wants to sell out of the position if the price falls 10% to $45, he can enter a stop-sell order at $45. If the stock trades down to $45 or lower, this triggers a market order to sell.
      - **Stop-buy:** is entered with at stop (trigger) above the current market price. Two primary reasons are: (1) A trader with short position; (2) an investor who believes a stock is undervalued, but does not wish to own it until there are signs.
      - Stop orders reinforce market momentum.
- **Clearing Instructions**
  - Clearing instructions tell the trader how to clear and settle a trade.
  - They are usually standing instructions and not attached to an order.

Example

Orders and Instructions

- A stock is selling at $50. An investor's valuation model estimates its intrinsic value to be $40. Based on her estimate, she would most likely place:
  A. a short-sale order.
  B. a stop order to buy.
  C. a market order to buy.

- Correct answer: A

- Which of the following limit buy orders would be the most likely to go unexecuted?
  A. A marketable order.
  B. An order behind the market.
  C. An order making a new market.

- Correct answer: B

Summary

Market Organization and Structure

Orders and Instructions

Orders and Execution Instructions

Validity Instructions and Clearing Instructions

Summary

Module: Market Organization and Structure

The Functions of the Financial System

Types of Financial Intermediaries and Services

Classification of Assets

Classification of Markets

Positions in an Asset

Orders and Instructions

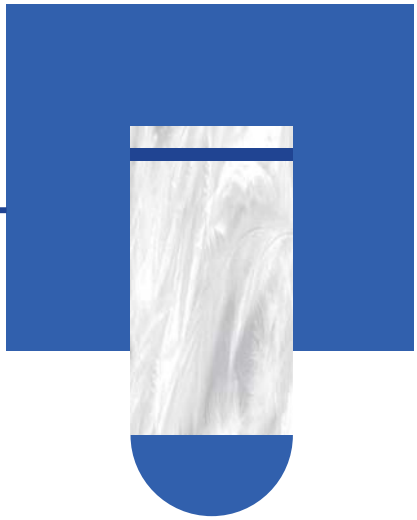
Module

Security Market Indexes

1. Security Market Indexes
2. Price Weighting and Equal Weighting
3. Market Capitalization Weighting and Fundamental Weighting
4. Rebalancing and Reconstitution of an index
5. Other Indexes

Security Market Indexes

- Index Definitions
- Index Construction



Index Definitions

- **Index Definitions**
  - **A security market index:** is used to represent the performance of an asset class, security market, or segment of a market.
    - ✓ **Price index:**
      - A price index uses only the prices of the constituent securities in the return calculation.
      - A rate of return that is calculated based on a price index is referred to as a **price return.**
    - ✓ **Return index:**
      - A return index includes both prices and income from the constituent securities.
      - A rate of return that is calculated based on a return index is called a **total return.**

- **Index Construction**
  - What is the target market the index is intended to measure?
  - Which securities from the target market should be included in the index?
  - How should the securities be weighted in the index?
  - How often should the index be rebalanced?
  - When should the selection and weighting of securities be re-examined?

Summary

Security Market Indexes

Security Market Indexes

Index Definitions

Index Construction

Price Weighting and Equal Weighting

- Weighting Schemes for Stock Indexes
- Methods of Index Construction: Price Weighting and Equal Weighting

Weighting Schemes for Stock Indexes

- **Weighting schemes for stock indexes**
  - Price Weighting
  - Equal Weighting
  - Market Capitalization-Weighting
  - A Float-Adjusted Market Capitalization-Weighting
  - Fundamental Weighting

Methods of Index Construction

- **Price Weighting**
  - A price-weighted index is an arithmetic average of current security prices, which means that indexes movements are influenced by the differential prices of the components. The price-weighted index assumes you purchase an equal number of shares (one) of each stock represented in the index.

$$\text{price-weighted index}=\frac{\text{sum of stock prices}}{\text{number of stocks in index}}$$

  - Two major price-weighted indexes are the Dow Jones Industrial Average (DJIA) and the Nikkei Dow Jones Stock Average.
  - **Features: simplicity**, **high priced stocks tilted.**

Methods of Index Construction

- **Price Weighting**
  - A property unique to price-weighted indexes is that a stock split on one constituent security changes the weights on all the securities in the index. To prevent the stock split and the resulting new weights from changing the value of the index, the index provider must **adjust the value of the divisor**.

$$\text{price-weighted index}=\frac{\text{sum of stock prices before stock split}}{\text{number of stocks in index}}=\frac{\text{sum of stock prices after stock split}}{\text{number of stocks in index adjusted for splits}}$$

  - The main disadvantage of price weighting：it results in arbitrary weights for each security. In particular, a stock split in any one security causes arbitrary changes in the weights of all the constituents' securities.

Methods of Index Construction

- **Equal Weighting**
  - The arithmetic average return of the index stocks for a given time period. Places an equal weight on the returns of all index stock, regardless of their price or market value.
  - Two averaging methodologies to the calculation of an un-weighted index:
    - ✓ **Arithmetic mean:** X_i is the return on each stock

      $$\text{change in average index value}=\frac{\sum x_i}{n}$$

    - ✓ **Geometric mean:** $X_i=1+HPR_i$

      $$\text{change in average index value}=\sqrt[n]{x_1 x_2 \cdots x_n}-1$$

    - ✓ The geometric-averaged index value is always less than the arithmetic-averaged index value.
  - **Features: small cap stocks tilted.**

Summary

Security Market Indexes

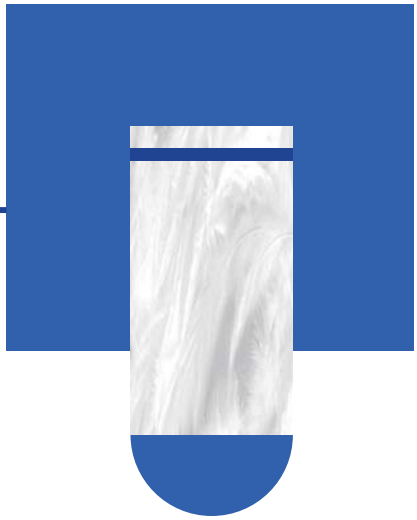
Price Weighting and Equal Weighting

Weighting Schemes for Stock Indexes

Methods of Index Construction: Price Weighting and Equal Weighting

Market Capitalization Weighting and Fundamental Weighting

- Methods of Index Construction: Market Capitalization Weighting and Fundamental Weighting



Methods of Index Construction

- **Market Capitalization Weighting**
  - A market capitalization-weighted index (or value-weighted index): the weight on each constituent security is determined by dividing its market capitalization by the total market capitalization (the sum of the market capitalization) of all the securities in the index.
  - Current index value = $\frac{\text{current total market value of index stocks}}{\text{base year total market value of index stocks}} \times \text{base year index value}$
  - **Features: large cap stocks tilted, momentum effect**

Methods of Index Construction

- **Float-Adjusted Market Capitalization Weighting**
  - The construction method is just like a market capitalization-weighted index.
  - The weight on each constituent security is determined by adjusting its market capitalization for the number of shares of the constituent security that are available to the investing public.

Methods of Index Construction

- **Fundamental Weighting**
  - Weighted by using measures of a company's size that are independent of its security price to determine the weight on each constituent security.
  - **Advantage:** It addresses the disadvantage of market-capitalization weighting method by putting more weights undervalued constituents.
  - **Features: value-tilted, contrarian-style**

Example

Methods of Index Construction

- Use the information in the following table

	As of January 1		As of December 31	
	Share price	Number of shares outstanding(thousands)	Share price	Number of shares outstanding(thousands)
Stock A	$22	1,500	$28	1,500
Stock B	$40	10,000	50	10,00
Stock C	$34	3,000	30	3,000

- The 1-year return on a price-weighted index of these three stocks is *closest* to:

A. 12.5%.

B. 13.5%.

C. 18.0%.

Example

Methods of Index Construction

- Correct answer: A
  - (22+40+34)/3=32
  - (28+50+30)/3=36
  - 36/32-1=0.125

Example

Methods of Index Construction

- The 1-year return on an equal-weighted index of these three stocks is *closest* to:

A. 12.0%.

B. 12.5%.

C. 13.5%.

- Correct answer: C
  - $\frac{(28/22-1)+(50/40-1)+(30/34-1)}{3}=13.5\%$

Example

Methods of Index Construction

- The 1-year return on a market capitalization-weighted index of these stocks is *closest* to:

  A. 12.5%.

  B. 13.5%.

  C. 18.0%.

- Correct answer: C
  - Total portfolio value January 1:
    $22 \times (1{,}500)+40 \times (10{,}000)+34 \times (3{,}000) = 535{,}000$
  - Total portfolio value December 31:
    $28 \times (1{,}500)+50 \times (10{,}000)+30 \times (3{,}000) = 632{,}000$
    $632/535-1=0.18$
  - From a base value of 100, the December 31 index value would be
    $632/535*100=118.13$

Example

Methods of Index Construction

- Market float of a stock is best described as its:

  A. total outstanding shares.

  B. shares that are available to domestic investors.

  C. outstanding shares, excluding those held by controlling shareholders.

- Correct answer: C

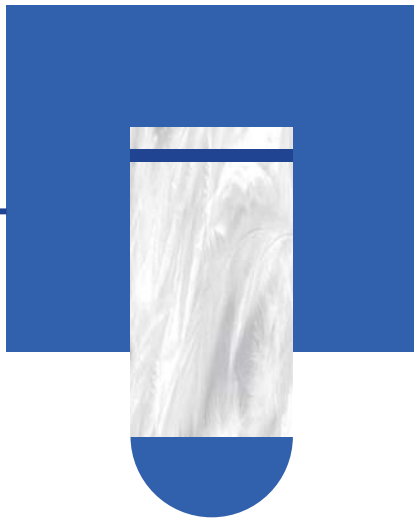
Summary

Security Market Indexes

Market Capitalization Weighting and Fundamental Weighting

Methods of Index Construction:
Market Capitalization Weighting
Float-Adjusted Market Capitalization Weighting
Fundamental Weighting

Rebalancing and Reconstitution of an Index



- Rebalancing and Reconstitution
- Uses of Security-Market Indexes

Rebalancing and Reconstitution

- **Rebalancing and Reconstitution**
  - **Rebalancing**
    - ✓ Used to adjusting the weights of securities in a portfolio to their target weights since price changes may affect the weights of securities used to calculate the indexes.
    - ✓ Rebalancing is done on a periodic basis, usually quarterly.
  - **Reconstitution**
    - ✓ Index reconstitution refers to periodically adding and deleting securities that make up an index.
    - ✓ Securities are deleted if they no longer meet the index criteria and are replaced by other securities.

Uses of Security-Market Indexes

- **Uses of Security-Market Indexes**
  - Reflection of investor confidence.
  - Benchmark of manager performance.
  - Proxies for measure of market return and risk.
  - Proxies for measure of beta and risk-adjusted return.
  - Model portfolio for index funds.

Example

Rebalancing and Reconstitution of an Index

- For which of the following indexes will rebalancing occur most frequently?
  A. A price-weighted index.
  B. An equal-weighted index.
  C. A market capitalization-weighted index.

- Correct answer: B

- The publisher of an index that includes 50 corporate bonds removes from the index three bonds that are nearing maturity and one whose issuer has defaulted and selects four actively traded bonds to replace them in the index. This bond index is said to have been:
  A. redefined.
  B. rebalanced.
  C. reconstituted.

- Correct answer: C

Example

Rebalancing and Reconstitution of an Index

- Which of the following would *most likely* represent an inappropriate use of an index?
  A. As a reflection of market sentiment.
  B. Comparing a small-cap manager against a broad market.
  C. Using the CAPM to determine the expected return and beta.

- Correct answer: B

Summary

Security Market Indexes

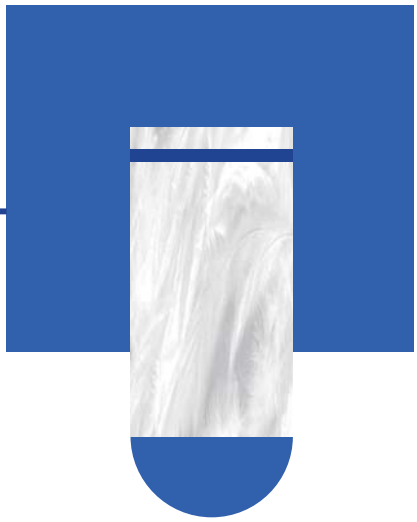
Rebalancing and Reconstitution of an Index

Rebalancing and Reconstitution

Uses of Security-Market Indexes

Other Indexes

- Equity Indexes
- Fixed Income Indexes
- Indexes for Alternative Investments



Equity Indexes

- **Broad Market Index**
  - Provides a measure of a market's overall performance and usually contains more than 90% of the market's total value.
- **Multi-market Index**
  - Typically constructed from the indexes of markets in several countries and is used to measure the equity returns of a geographic region, markets based on their stage of economic development, or the entire world.
- **Multi-market Index with Fundamental Weighting**
  - Uses market capitalization weighting for the country indexes, and uses fundamental factor (e.g., GDP) to weights the country index returns in the global index.
- **Sector Index**
  - Measures the returns for an industry sectors such as health care, financial, or consumer goods firms.
- **Style Index**
  - Measures the returns to market capitalization and value or growth strategies

Fixed Income Indexes

- **Several issues with the construction of fixed income indexes:**
  - **Large universe of securities:**
    - ✓ The fixed income security universe is **much broader** than the universe of stocks.
    - ✓ Are issued not just by firms, but also by governments and government agencies.
    - ✓ **Turnover is high** in fixed income indexes since bond may mature and be replaced in the index.
  - **Dealer markets and infrequent trading:**
    - ✓ Fixed income securities are primarily traded by dealers, so index providers must depend on dealers for recent prices.

Indexes for Alternative Investment

- **Indexes for Alternative Investments - Commodity Indexes**
  - Commodity indexes represent **futures contracts** on commodities such as grains, livestock, metals, and energy.
  - There are several issues relevant to commodity indexes:
    - ✓ A variety of weighting schemes.
    - ✓ Based on futures contracts
    - ✓ Compositions are changed over time,
- **Indexes for Alternative Investments - Real Estate Indexes**
  - Real estate indexes can be constructed using returns based on appraisals of properties, repeat property sales, or the performance of Real Estate Investment Trusts (REITs).
- **Indexes for Alternative Investments - Hedge Fund Indexes**
  - Underlying assets are usually nontraditional assets with high leverage.
  - Hedge funds are largely unregulated.
  - Performance of different indexes are vary substantially.

Example

Other Indexes

- Which of the following is *least accurate* regarding fixed-income indexes?

  A. Replicating the return on a fixed-income security index is difficult for investors.
  B. There is a great deal of heterogeneity in the composition of fixed income security indexes.
  C. Due to the large universe of fixed-income security issues, data for fixed-income securities are relatively easy to obtain.

- Correct answer: C

- Which of the following indexes of alternative investments is *most likely* to be calculated from derivatives prices?

  A. Real estate index.
  B. Commodity index.
  C. Hedge fund index.

- Correct answer: B

Example

Other Indexes

- An index of 200 mid-cap growth stocks is *best* described as:

  A. a style index.
  B. a sector index.
  C. a broad market index.

- Correct answer: A

Summary

Security Market Indexes

Other Indexes

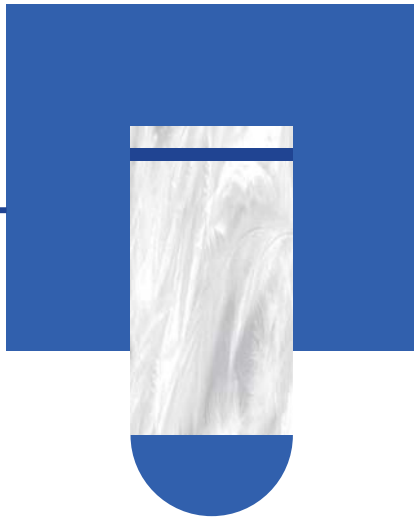
Equity Indexes

Fixed Income Indexes

Indexes for Alternative Investments

Introduction of Market Efficiency

- Concept of Market Efficiency
- Factors Affecting Market Efficiency



Module

Market Efficiency

1. Introduction of Market Efficiency
2. Forms of Market Efficiency
3. Market Anomalies
4. Behavioral Finance

Concept of Market Efficiency

- **Efficient capital market and the assumptions**
  - An **informationally efficient capital market** is one in which the current price of a security fully, quickly, and rationally reflects all available information about that security.
  - The time frame for an asset's price to incorporate information can be used to measure a market's efficiency.
    - ✓ If the time frame of price adjustment allows many traders to earn profits with little risk, then the market is relatively inefficient.
  - An informational efficient capital market is where security prices adjust rapidly to **the infusion of new information**.
  - Prices should be expected to react **only to** the elements of information releases that are **not anticipated fully** by investors.

Concept of Market Efficiency

- **In markets that are highly efficient, investors can typically expect market values to reflect intrinsic values.**
  - The **market value** of an asset is its current price.
  - The **intrinsic value or fundamental value** of an asset is the value that a rational investor with full knowledge about the asset's characteristics would willingly pay.
  - In markets that are highly efficient, investors can typically expect market values to reflect intrinsic values.
  - If markets are not completely efficient, active managers will buy assets for which they think intrinsic values are greater than market values and sell assets for which they think intrinsic values are less than market values.

Factors Affecting Market Efficiency

- **Factors affect the degree of market efficiency**

Number of market participation	• The larger the number of investors, analysts, and traders who follow an asset market, the more efficient market.
Availability of information	• The more information is available to investors, the more efficient the market.
Impediments to trading	• Impediments to arbitrage, such as lack of information, will limit arbitrage activity and allow inefficiency to persist.
Transaction and information costs	• Higher costs of information, analysis, and trading, more inefficient of the market.

Example

Introduction of Market Efficiency

- In an informationally efficient capital market:

  A. active managers can generate abnormal profits.
  B. security prices quickly reflect new information.
  C. investors react to all information releases rapidly.

- Correct answer: B

- The intrinsic value of an asset:

  A. changes through time as new information is released.
  B. is the price at which the asset can be bought or sold at a given point in time.
  C. can be easily determined with a financial calculator, given investor risk preferences.

- Correct answer: A

Example

Introduction of Market Efficiency

- In terms of market efficiency, short selling *most likely*:

  A. leads to excess volatility, which reduces market efficiency.
  B. promotes market efficiency by making assets less likely to become overvalued.
  C. has little effect on market efficiency because short sellers face the risk of unlimited losses.

- Correct answer: B

Summary

Market Efficiency

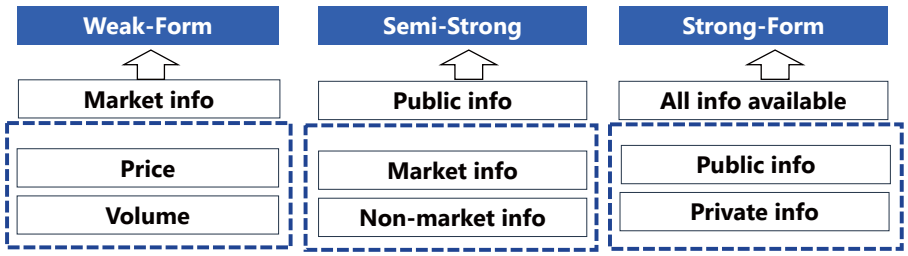
Introduction of Market Efficiency

Concept of Market Efficiency
Factors Affecting Market Efficiency

Forms of Market Efficiency

- Three Forms of Market Efficiency
- Tests, Implications and Conclusions of EMH

Three Forms of Market Efficiency



Types	Assumption	Implication
Weak-Form EMH	Market info.	Technical Analysis ✕
Semi Strong-Form EMH	Public info.	Technical Analysis ✕ Fundamental Analysis ✕
Strong-Form EMH	All info.	Technical Analysis ✕ Fundamental Analysis ✕ Nobody can win the market ✕

Tests, Implications and Conclusions of EMH

- **Tests of EMH**
  - **Abnormal profit** (or risk-adjusted returns) calculations are often used to test market efficiency. If returns are ,**on average, greater than equilibrium expected returns**, we can reject the hypothesis of efficient prices with respect to the information on which the strategy is based.
    - ✓ **Technical analysis** seeks to earn positive risk-adjusted returns by using historical price and volume data.
    - ✓ **Fundamental analysis** is base on public information such as earnings, dividends, and various accounting rations and estimates.
    - ✓ One method **of testing the semi-strong form** is an **event study**, examining abnormal returns before and after the release of new information that affects intrinsic value.

Tests, Implications and Conclusions of EMH

- **Conclusions of EMH**
  - If markets are **semi-strong form efficient**, investors should **invest passively** (i.e., invest in an index portfolio that replicates the returns on a market index).
  - Indeed, the evidence shows that most mutual fund managers can not outperform a passive index strategy over time.
  - Even if markets are efficient, portfolio managers can add value by establishing and implementing portfolio risk and return objectives and by assisting clients with portfolio diversification, asset allocation, and tax management.

Example

Forms of Market Efficiency

- The weak-form EMH asserts that stock prices fully reflect which of the following types of information?

  A. Market only.
  B. Market and public.
  C. Public and private.

- Correct answer: A

- Research has revealed that the performance of professional portfolio managers tends to be:

  A. equal to the performance of a passive investment strategy.
  B. inferior to the performance of a passive investment strategy.
  C. superior to the performance of a passive investment strategy.

- Correct answer: B

Summary

Market Efficiency

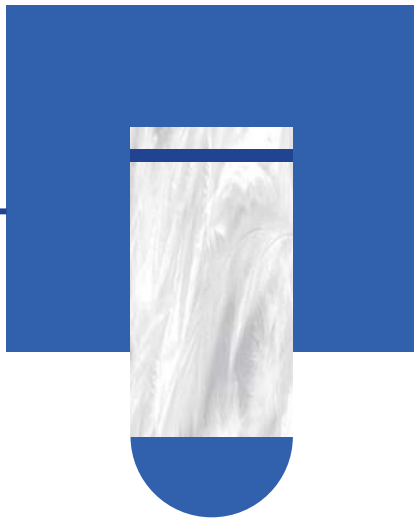
Forms of Market Efficiency

Three Forms of Market Efficiency

Tests, Implications and Conclusions of EMH

Market Anomalies

- Anomalies in Time-series Data
- Anomalies in Cross-sectional Data
- Other Anomalies



Market Anomalies

- **Market Anomalies**
  - **Definition:** something deviates and helps to disprove the EMH
  - Most evidence suggests anomalies are not violations of market efficiency but are due to the methodologies used in anomaly research, such as data mining or failing to adjust adequately for risk.

Anomalies in Time-series Data

- **Market Anomalies-Anomalies in time-series data**
  - **Calendar anomalies**
    - ✓ The **January effect** is the finding that during the first five days of January, stock returns, especially for small firms, significantly higher than the rest of the year.
    - ✓ Explanations for January effect are：
      - **Tax-loss selling,** as investors sell losing positions in December to realize losses for tax purposes and repurchase stocks in January; and
      - **Window dressing**, as portfolio managers sell risky stocks in December to *remove them from year-end statements* and repurchase them in January.

Anomalies in Time-series Data

- **Market Anomalies-Anomalies in time-series data**
  - **The overreaction effect:** refers to the finding that firms with poor stock returns over the previous three or five years (losers) have better subsequent returns than firms that had high stock returns over the prior period.
  - **Momentum anomalies:** High short-term returns are followed by continued high returns.
  - Both the overreaction effect and momentum effects violate the weak form of market efficiency.

Anomalies in Cross-sectional Data

- **Anomalies in cross-sectional data**
  - **Size effect:** This test indicates that stocks of small-sized firms tend to outperform stocks of large-sized firms.
  - **Value effect:** refers to the finding that value stocks [those with lower price-to-earnings (P/E), lower market-to-book (M/B), and higher dividend yields] have outperformed growth stocks (those with higher P/E, higher M/B, and lower dividend yields).

Other Anomalies

- **Other anomalies**
  - **Closed-end investment funds:** The shares of closed-end investment funds trade at prices that sometimes deviate from the net asset value (NAV) of the fund shares, often trading at large discounts to NAV.
  - **Earnings announcements:** The anomaly is that the adjustment process does not occur entirely on the announcement day.
  - **Initial public offerings**: the long-term performance of IPO shares as a group is below average.
  - **Economic fundamentals**: Research has found that stock returns are related to known economic fundamentals such as dividend yields, stock volatility, and interest rates. However, we would expect stock returns to be related to economic fundamentals in efficient markets.
- The majority of the evidence suggests that reported **anomalies are not violations of market efficiency** but are due to the methodologies used in the tests of market efficiency.
- **Investment management based solely on anomalies has no sound economic basis**.

Example

Market Anomalies

- Which of the following *best* describes the majority of the evidence regarding anomalies in stock returns?

  A. Weak-form market efficiency holds, but semi-strong form efficiency does not.

  B. Neither weak-form nor semi-strong form market efficiency holds.

  C. Reported anomalies are not violations of market efficiency but are the result of research methodologies.

- Correct answer: C

Summary

Market Efficiency

Market Anomalies

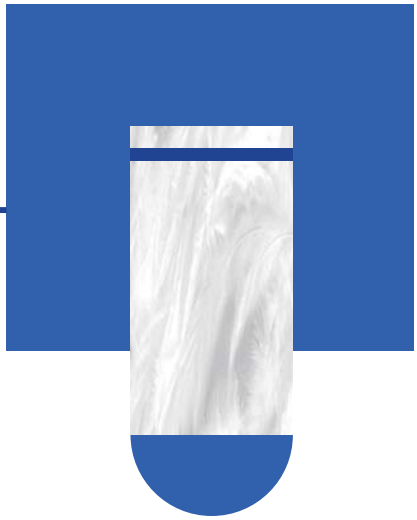
Anomalies in Time-series Data

Anomalies in Cross-sectional Data

Other Anomalies

Behavioral Finance

- Behavioral Finance



Behavioral Finance

- **Behavioral Finance:**
  - Concerns about to what extent the psychological characteristics affect investments either by individuals or groups.
  - Behavioral finance is used to explain some of the market anomalies as irrational decisions.

- **Behavioral biases that have been identified include**
  - **Loss aversion**: refers to the tendency for investors to be more risk averse when faced with potential losses and less risk averse when faced with potential gains.
  - **Overconfidence**: explains that investors or analysts are overconfident in their earning forecasts which result in the overestimation of growth, good news.

Behavioral Finance

- **Behavioral biases that have been identified include**
  - **Herding:** trading that occurs in clusters and is not necessarily driven by information.
  - **Information Cascades:** is the transmission of information from those participants who act first and whose decisions influence the decisions of others.
  - **Representativeness:** Investors assume good companies or good markets are good investments.
  - **Mental accounting**: Investors classify different investments into separate mental accounts instead of viewing them as a total portfolio.
  - **Conservatism:** Investors react slowly to changes.
  - **Narrow framing**: Investors view events in isolation.

Example

Behavioral Finance

- Investors who exhibit loss aversion *most likely*:

  A. have symmetric risk preferences.

  B. are highly risk averse.

  C. dislike losses more than they like equal gains.

- Correct answer: C

Summary

Market Efficiency

Behavioral Finance

Behavioral Finance

Behavioral Biases

Summary

Module: Market Efficiency

Introduction of Market Efficiency

Forms of Market Efficiency

Market Anomalies

Behavioral Finance

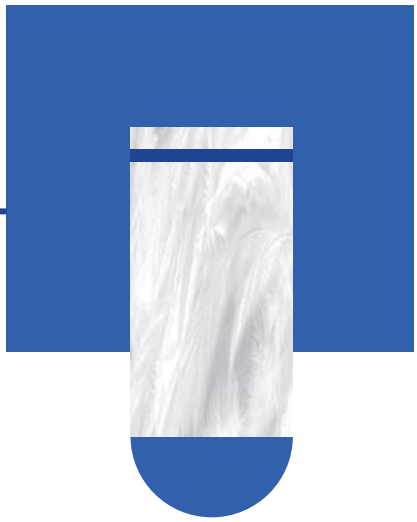
Module

Overview of Equity Securities

1. Types of Equity Investments
2. Non-domestic Equity Securities
3. Risk and Return Characteristics of Equity Securities

Types of Equity Investments

- Characteristics of Equity Securities
- Private Versus Public Equity Securities



Characteristics of Equity Securities

- **Characteristics of Equity Securities**
  - **Common Shares:**
    - ✓ Common shares are the most common form of equity and represent an ownership interest. Common shareholders have a **residual claim** (after the claims of debt holders and preferred stockholders) on firm assets if the firm is liquidated and govern the corporation through **voting rights.**
    - ✓ Common stockholders are able to vote for the board of directors, on merger decisions, and on the selection of auditors.
      - In a statutory voting system, each share held is assigned one vote in the election of each member of the board of directors.
      - Under cumulative voting, shareholders can allocate their votes to one or more candidates as they choose. Cumulative voting makes it possible for a minority shareholder to have more proportional representation on the board.

Characteristics of Equity Securities

- **Characteristics of Equity Securities**
  - **Callable Common Shares**
    - ✓ Callable common shares give the firm the right to repurchase the stock at a pre-specified call price. Investors receive a fixed amount when the firm calls the stock.
  - **Putable Common Shares**
    - ✓ Putable common shares give the shareholder the right to sell the shares back to the firm at a specific price. A put option on the shares benefits the shareholder because it effectively places a floor under the share value.

Callable common share	**Advantage to firm**
Putable common share	**Advantage to shareholder**

Characteristics of Equity Securities

- **Characteristics of Equity Securities**
  - **Preference Shares**
    - ✓ Preference shares (or preferred stock) have features of both common stock and debt.
      - **Features of common stock**: do not mature
      - **Features of debt**: fixed dividend payment, but dividends are not contractual obligation and do not usually have voting rights.
      - Preferred shares have less risk than common shares because the dividend is stable and they have priority over common stock in receiving dividends and in the event of liquidation of the firm.

Characteristics of Equity Securities

- **Characteristics of Equity Securities**
  - **Cumulative Preference Shares**
    - ✓ Usually promised fixed dividends and any dividends that are not paid must be made up before common shareholders can receive dividends.
  - Investors in participating preference shares receive extra dividends if firm profits exceed a predetermined level.

Characteristics of Equity Securities

- **Characteristics of Equity Securities**
  - **Convertible Preference Shares**
    - ✓ Convertible preference shares can be exchanged for common stock at a conversion ratio determined when the shares are originally issued.
    - ✓ It has the following advantages:
      - The preferred dividend is higher than a common dividend.
      - If the firm is profitable, the investor can share in the profits by converting their shares into common stock.
      - Turns more valuable when the common stock price increases.
      - Preferred shares have less risk than common shares.

Private Versus Public Equity Securities

- **Private Equity**
  - Private equity is usually issued to institutional investors via private placements.
- **Private equity has the following characteristics:**
  - **Less liquidity** because no public market for the shares exists.
  - Share price is **negotiated between the firm and its investors**, not determined in a market.
  - More **limited firm financial disclosure** because there is no government or exchange requirement to do so.
  - **Lower reporting costs** because of less onerous reporting requirements.
  - **Potentially weaker corporate governance** because of reduced reporting requirements and less public scrutiny.
  - Greater ability to **focus on long-term prospects** because there is no public pressure for short-term results.
  - Potentially **greater return for investors** once the firm goes public.

Private Versus Public Equity Securities

- **The three main types of private equity investments are:**

Venture Capital	• The capital provided to firms early in their life cycles to fund their development and growth. • Venture capital financing at various stages of a firm's development is referred to as seed or start-up, early stage, or mezzanine financing.
Leveraged Buyout(LBO)	• Investors buy all of a firm's equity using debt financing. If the buyers are the firm's current management, the LBO is referred to as a management buyout(MBO)
Private Investment in Public Equity(PIPE)	• A public firm that needs capital quickly sells private equity to investors. The firm may have growth opportunities, be in distress, or have large amounts of debt.

Example

Types of Equity Investments

- The advantage of participating preferred shares versus non-participating preferred shares is that participating preferred shares can:

  A. obtain voting rights.
  B. receive extra dividends.
  C. be converted into common stock.

- Correct answer: B

- Which of the following *best* describes the benefit of cumulative share voting?

  A. It provides significant minority shareholders with proportional representation on the board.
  B. It prevents minority shareholders from exercising excessive control.
  C. If cumulative dividends are not paid, preferred shareholders are given voting rights.

- Correct answer: A

Example

Types of Equity Investments

- Compared to public equity, which of the following is *least likely* to characterize private equity?

  A. Lower reporting costs.

  B. Potentially weaker corporate governance.

  C. Lower returns because of its less liquid market.

- Correct answer: C

Summary

Overview of Equity Securities

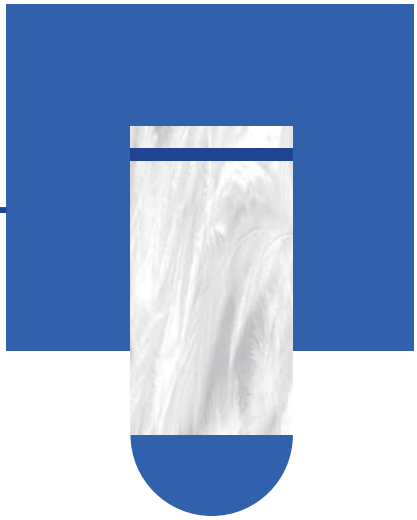
Types of Equity Investments

Characteristics of Equity Securities

Private Versus Public Equity Securities

Non-domestic Equity Securities

- Non-domestic Equity Securities



Non-domestic Equity Securities

- **Trends in the international market**
  - An increasing number of companies have issued shares in markets outside of their home country.
  - the number of companies whose shares are traded in markets outside of their home has increased.
  - An increasing number of companies are dual listed, which means that their shares are simultaneously issued and traded in two or more markets.
- **Companies located in emerging markets have particularly benefited from these trends.**
  - These companies no longer have to be concerned with capital constraints or lack of liquidity in their domestic markets.
  - These companies have found it easier to raise capital in the markets of developed countries because these markets generally have higher levels of liquidity and more stringent financial reporting requirements and accounting standards.

Non-domestic Equity Securities

- **Direct Investing**
  - Buying a foreign firm's securities in foreign markets directly. Some obstacles to direct foreign investment are that:
    - ✓ Investment and return are denominated in a foreign currency.
    - ✓ The foreign stock exchange may be illiquid.
    - ✓ Reporting requirements may be less strict, impeding analysis.
    - ✓ Investors must be familiar with the regulations and procedures.
- **Global Registered Shares**
  - Global registered shares (GRS) are traded in different currencies on stock exchanges around the world.

Non-domestic Equity Securities

- **Depository Receipts**
  - Depository receipts (DRs) represent ownership in a foreign firm and are traded in the markets of other countries in local market currencies.
  - A bank deposits shares of the foreign firm and then issues receipts representing ownership of a specific number of the foreign shares**. The depository bank** acts as a custodian and manages dividends, stock splits, and other events.
    - ✓ **Sponsored DR:** the firm is involved with the issue. A sponsored DR provides the investor voting rights.
    - ✓ **Unsponsored DR:** the firm is not involved with the issue. The depository bank retains the voting rights.

Non-domestic Equity Securities

- **Depository Receipts**
  - Depository receipts (DRs) represent ownership in a foreign firm and are traded in the markets of other countries in local market currencies.
    - ✓ **Global depository receipts (GDRs)** are issued outside the U.S. and the issuer's home country. Most GDRs are traded on the London and Luxembourg exchanges.
    - ✓ **American depository receipts (ADRs)** are denominated in U.S. dollars and trade in the United States.
  - **Basket of listed depository receipts**
    - ✓ A basket of listed depository receipts (BLDR) is an exchange-traded fund (ETF) that is a collection of DRs.

Example

Non-domestic Equity Securities

- Global depository receipts are most often denominated in:

  A. the currency of the country where they trade and issued outside the United States.

  B. U.S. dollars and issued in the United States.

  C. U.S. dollars and issued outside the United States.

- Correct answer: C

Summary

Overview of Equity Securities

Non-domestic Equity Securities

Non-domestic Equity Securities:

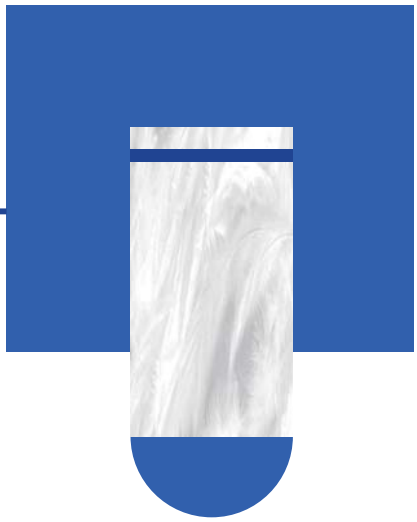
Direct Investing

Global Registered Shares

Depository Receipts

Risk and Return Characteristics of Equity Securities

- Risk and Return Characteristics
- Equity and Company Value



Risk and Return Characteristics

- **Equity Returns:**
  - Dividends
    - ✓ Gains from dividends and the reinvestment of dividends have been an important part equity investors' long-term returns.
  - Capital gains or losses from changes in share prices
  - Foreign exchange gains or losses.
    - ✓ For investors who purchase depository receipts or foreign shares directly also subject foreign exchange gains (or losses)

Risk and Return Characteristics

- **Equity Risk:**
  - Most commonly measured as the standard deviation of returns.
  - **Preferred stock** is less risky than common stock
    - ✓ preferred stock pays a known, fixed dividend
    - ✓ preferred stockholders receive their distributions before common shareholders
    - ✓ have a claim in liquidation priority over the claims of common stock.
  - **Putable shares** are less risky for investor (for both common and preferred shares)
    - ✓ if the market price drops, the investor can put the shares back to the firm at a fixed price
  - **Callable shares** are more risky for investor (for both common and preferred shares)
    - ✓ if the market price rises, the firm can call the shares, limiting the upside potential of the shares.

Risk and Return Characteristics

- **The risk is most commonly measured as the standard deviation of returns (收益的标准差).**

Low ⟵ **Risk** ⟶ **High**

Preferred stock < Common stock

Putable stock < Callable stock

Cumulative preferred stock < Non-cumulative preferred stock

Equity and Company Value

- **The Book Value of Equity**
  - The book value is shareholders' equity on a company's balance sheet.
- **The Market Value of Equity**
  - The market value of equity reflects the collective and differing expectations of investors concerning the amount, timing, and uncertainty of the company's future cash flows.
- **Return on Equity**
  - Return on equity is the primary measure that equity investors use to determine whether the management of a company is effectively and efficiently using the capital they have provided to generate profits.

$$\text{ROE}_t = \frac{\text{NI}_t}{\text{average BV}} = \frac{\text{NI}_t}{(\text{BV}_t + \text{BV}_{t-1})/2}$$

$$\text{Or ROE}_t = \frac{\text{NI}_t}{\text{BV}_{t-1}}$$

Equity and Company Value

- **Cost of Equity:**
  - The expected equilibrium total return (including dividends) on its shares in the market.
    - ✓ At any point in time, a decrease in share price will increase the expected return on the shares and an increase in share price will decrease expected returns, other things equal.
    - ✓ A firm's cost of equity can be interpreted as the minimum rate of return required by investors (in the aggregate) to compensate them for the risk of the firm's equity shares.

Example

Risk and Return Characteristics

- Which of the following types of preferred shares has the *most* risk for investors?

  A. Putable shares.

  B. Callable shares.

  C. Non-putable, non-callable shares.

- Correct answer: B

Summary

Overview of Equity Securities

Risk and Return Characteristics of Equity Securities

Risk and Return Characteristics

Equity and Company Value

Summary

Module: Overview of Equity Securities

Types of Equity Investments

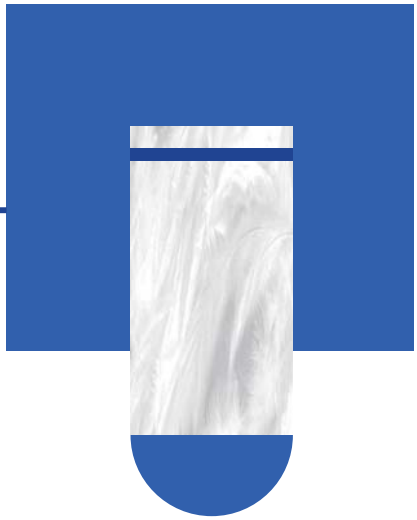
Non-domestic Equity Securities

Risk and Return Characteristics of Equity Securities

Module

Company Analysis: Past and Present

1. Company Analysis: Overview
2. Determining the Business Model
3. Analysis of Historical Financial Results and Position for the Company



Company Analysis: Overview

- Company and Industry Analysis Framework
- Company Research Reports

Company and Industry Analysis Framework

- **Analysis of the company's past and present**
  - Determining business model
  - Analyze revenue, operating profitability, working capital, capital investments and capital structure
- **Industry and competitive analysis**
  - Define industry
  - Analyze industry size, growth and character, profitability, market shares trends through industry survey
  - Analyze industry structure and external influences
  - Evaluate company’s competitive strategy
- **Company forecast**
  - Determine forecast objects and approaches
  - Forecast revenue, operating profitability, working capital, capital investments and capital structure
  - Evaluate key risks and uncertainties

Company Research Reports

- The company research reports presents company and industry analysis, as well as valuation and investment recommendation.
- The structure and content of different reports vary, mainly depending on the analyst's settings.
  - Reports on a public issuer's equity securities for distribution to external clients often consist of **initial report** and **subsequent report.**

Company Research Reports

- Primary users of **initial** company research reports are those who are not already knowledgeable about the company or industry.
- Primary users of **subsequent** company research reports are those who are already familiar with the company or industry and require an update based on new information.

Initial research report elements	Subsequent research report elements
● Front matter ● Recommendation ● Company description ● Industry overview & competitive positioning ● Financial analysis and model ● Valuation ● ESG considerations ● Risks	● Front matter ● Recommendation ● Analysis of new information ● Valuation ● Risks

Example

Company Analysis: Overview

- Which of the following statements about subsequent reports is false?

  A. The structure, content and tone of the report are dependent of the analyst's setting.
  B. The primary users are those who are not already knowledgeable about the company.
  C. The report makes updates to the recommendation after the issuer reports financial results.

- Correct answer: B

- The evaluation of a company's competitive strategy takes place before the:

  A. determining business model.
  B. analysis of capital investments and capital structure.
  C. forecasting of revenue, operating profitability and working capital.

- Correct answer: C

Summary

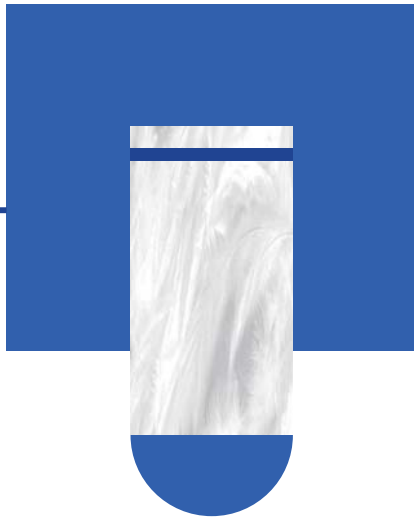
Company Analysis: Past and Present

Company Analysis: Overview

Company and Industry Analysis Framework

Company Research Reports

Determining the Business Model



Determining the Business Model

- The business model summarizes important **drivers** of an issuer's financial results and position, and determines that the business model is the **first step** in the industry and company analysis framework.
- The business model including but is not limited to the following elements, which describes the company's operations.
  - The products or services the company sells
  - Customer and key customer groups
  - Channels, including customer acquisition and product/ service delivery mechanisms
  - How the products or services are priced and paid for
  - Resource, supplier, and partner relationships need to operate effectively

Determining the Business Model

- Analysts can use the following sources of information to answer questions about these elements.
  - Issuer sources.
  - Public third-party sources.
  - Proprietary third-party sources.
  - Proprietary primary research.

Summary

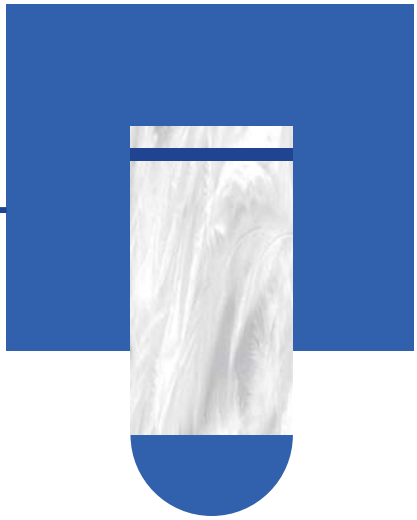
Company Analysis: Past and Present

Determining the Business Model

Determining the Business Model

Analysis of Historical Financial Results and Position for the Company

- Revenue Analysis
- Operating Profitability and Working Capital Analysis
- Capital Investments and Capital Structure



Revenue Analysis

- Analysts can take a **bottom-up** or **top-down** approach to determining revenue drivers and analyzing revenue.
  - **Top-down** approach usually begins at the level of the overall economy**.**
    - ✓ Expresses revenues as a function of drivers such as market share, market size and GDP growth.
  - **Bottom-up** approach begins at the level of the individual company or a unit within the company**.**
    - ✓ Decomposes revenue into drivers such as sales volume and price, or revenue by product line, segment, or geography, which may be further broken down into other drivers.

Revenue Analysis

- Prices are a driver of revenue for every firm, prices are constrained by a company's pricing power.
- Pricing power refers to a company's ability to set prices and other economic terms with customer without affecting its sales volumes.
  - Pricing power is primarily a function of both market structure and a company's competitive positioning in its market.
- The companies have **limited pricing power** if
  - **Numerous** substitutes exist
  - Switching costs are **low**
  - The industries are **fragmented**
  - **Limited** growth
  - **High** exit barriers, **high** fixed costs
  - **Identical** product offerings

Operating Profitability Analysis

- Company's operating costs can be categorized and analyzed in the following three ways:

By operating costs **behavior with output**	By operating costs **nature**	By operating costs **function**
Whether the cost varies or not with output in the short run	What the cost is	The purpose of the cost
● Fixed costs. ● Variable costs.	● Compensation of employees. ● Raw materials. ● Merchandise etc.	● Costs of goods sold. ● General and administrative. ● Research and development.

Operating Profitability Analysis

- A useful classification of operating costs for analysts is fixed versus variable:
  - Operating profit

$$\text{operating profit} = [\text{Q} \times (\text{P} - \text{VC})] - \text{FC}$$

    - ✓ $P - VC$ is the contribution margin.
  - Operating leverage

$$\text{DOL} = \frac{\%\ \Delta\ \text{operating profit}}{\%\ \Delta\ \text{sales}}$$

    - ✓ A firm can increase its DOL by increasing the fixed costs and decreasing the variable costs in its cost base.

Operating Profitability Analysis

- Classification of operating cost by functional is also a commonly used approach.
  - This approach leads to all issuers' income statements appearing similar in structure.
  - Measures of operating profitability:

Profit	Margin
$\text{Gross Profit} = \text{Revenue} - \text{COGS}$	$\text{Gross margin} = \frac{\text{Gross Profit}}{\text{Revenue}}$
$\text{EBITDA} = \text{Gross Profit} - \text{Operating Expense}$	$\text{EBITDA margin} = \frac{\text{EBITDA}}{\text{Revenue}}$
$\text{Operating Profit/EBIT} = \text{EBITDA} - \text{Depreciation and Amortization}$	$\text{EBIT/operating margin} = \frac{\text{EBIT/Operating Profit}}{\text{Revenue}}$

Operating Profitability Analysis

- **Economies of scale**
  - A situation in which costs per unit of a good or service produced **fall** as output grows.
  - **Gross and operating margins** tend to be **positively correlated** with sales levels in an industry that enjoys economies of scale.
  - Factors that can lead to economies of scale include, at higher levels of production, greater bargaining power with suppliers, lower cost of capital, and lower per unit advertising expenses;
  - Evidence of economies: lower proportion of COGS; lower proportion of SG&A.
- **Economies of scope**
  - A decline in costs per unit as the number of product or business lines increases and generally result from shared costs between the product lines.

Working Capital Analysis

- Working capital primarily uses activity ratios to measure a company's working capital management.
  - Net working capital = current assets - current liabilities
    - ✓ Negative net working capital means that suppliers are a source of financing.
  - Net working capital turnover = net revenue / average NWC
  - Cash conversion cycle=average inventory period+ average receivables period- average payables period
    - ✓ Short cash conversion cycle means that the company requires less external financing to fund operations.

Capital Investments and Structure Analysis

- Determining the sources and uses of a company's capital is the first step in evaluating a company's capital investment and structure.

Sources of Capital	Uses of Capital
Debt and equity issuance.	Cash and investments on hand.
Cash flows from operations (e.g. negative NWC).	Positive net working capital.
Asset disposals.	Capital expenditures and additional to intangibles.
	Acquisitions.
	Debt pay-down, stock dividends and repurchases.

Capital Investments and Structure Analysis

- **Evaluating capital investments**
  - **WACC** is described as the cost of financing firm assets

$$\text{WACC} = (w_d)[r_d(1-t)] + (w_{ps})(r_{ps}) + (w_s)(r_s)$$

  - **ROIC** is a measure of the profitability of a company relative to the amount of capital invested by the equity- and debt holders.

$$\text{Return on invested capital} = \frac{\text{after tax operating profit}}{\text{average book value of invested capital}}$$

    - ✓ ROIC reflects how effectively a company's management is able to convert capital into profits.

Capital Investments and Structure Analysis

- **Evaluating capital investments**
  - **ROA**
    - ✓ For unlevered returns, as measured by ROA or ROIC.

$$\text{ROA} = \frac{\text{after tax operating profit}}{\text{Average total assets}}$$

  - **ROE**
    - ✓ The analysts can use ROE and its decomposition as a comprehensive measure of profitability for an issuer.

$$\text{ROE} = \frac{\text{NI}}{\text{Average total equity}}$$

=(Net profit margin) × (Total asset turnover) × (Leverage)

=(Operating profit margin) × (Interest burden) × (Tax burden) × (Total asset turnover) × (Leverage)

Capital Investments and Structure Analysis

- **Evaluating capital structure.**

Sensitivity	Leverage	Coverage ratios	Credit rating
$\text{DFL} = \frac{\%\,\Delta\text{Net income}}{\%\,\Delta\text{Operating income}}$	$\text{Debt} - \text{to} - \text{equity ratio} = \frac{D}{E}$ $\text{Debt} - \text{to} - \text{capital} = \frac{D}{D+E}$ $\text{Debt} - \text{to} - \text{assets} = \frac{D}{A}$ $\textbf{Financial leverage} = \frac{\mathbf{A}}{\mathbf{E}}$	$\text{Debt} - \text{to} - \text{EBITDA ratio} = \frac{D}{\text{EBITDA}}$ $\text{Interest coverage} = \frac{\text{EBIT}}{\text{interest}}$ $\text{Fixed charge coverage} = \frac{(\text{EBIT} + \text{lease payments})}{(\text{interest} + \text{lease payments})}$	Third-party rating agencies

Summary

Company Analysis: Past and Present

Analysis of Historical Financial Results and Position for the Company

Revenue Analysis

Operating Profitability and Working Capital Analysis

Capital Investments and Structure

Summary

Module: Company Analysis: Past and Present

Company Analysis: Overview

Determining the Business Model

Analysis of Historical Financial Results and Position for the Company

Module

Industry and Competitive Analysis

1. Industry Classification
2. Industry Survey
3. Industry Structure and External Influence
4. Competitive Positioning

Industry Classification

- Uses of Industry Analysis
- Third-Party Industry Classification Schemes
- Alternative Methods of Grouping Companies

Uses of Industry Analysis

- **Improve forecasts**
  - Industry analysis is often a critical early step in stock selection and valuation because it provides insights into the issuer's growth opportunities, competitive dynamics, and business risks .
- **Identifying investment opportunities**
  - Industry valuation can be used in an active management strategy to determine which industries to overweight or underweight in a portfolio. Some investors engage in **industry rotation**, which is overweighting or underweighting industries based on the current phase of the business cycle.

Third-Party Industry Classification Schemes

- **The major commercial classification schemes**

	Global Industry Classification Standard (GICS)	Industry Classification Benchmark (ICB)	The Refinitiv Business Classification (TRBC)
Initiator	MSCI and S&P Dow Jones Indices	FTSE Russell	Refinitiv
Coverage	Public companies	Public companies	Public companies, private companies, non-profit, government entities.
Similarities	**Global schemes;** **Reviewed and updated at least annually;** **New companies added more frequently;** **Based on "demand" approach rather than "supply" approach of the schemes.**		

Third-Party Industry Classification Schemes

- **Strengths and Weaknesses of Current Systems (Commercial vs. Governmental)**
  - Unlike commercial classification systems, most government systems do not disclose information about a specific business or company, so an analyst cannot know all of the constituents of a particular category.
  - Generally, commercial classification systems are adjusted more frequently than government classification systems, which may be updated only every five years or so.
  - Government classification systems generally do not distinguish between small and large businesses, between **for-profit** and **not-for-profit** organizations, or between **public** and **private** companies.
  - Many commercial classification systems have the ability to distinguish between large and small companies by virtue of association with a particular equity index, and these systems include **only for-profit** and **publicly** traded organizations.

Third-Party Industry Classification Schemes

- **Rules for classifying companies to industry:**
  - Company has single segment/ business line
    - ✓ Classify based on single segment/ business line.
  - Company has multiple segment/ business lines
    - ✓ Classify based on segment/ business line with ≥ **60% revenue**.
    - ✓ Classify based on segment/ business line with > **50% revenue, profits, or assets.**
    - ✓ Use **discretion** or classify as multi-industry/ conglomerate.

Third-Party Industry Classification Schemes

- **Limitations third-party industry classification schemes:**
  - Groupings of companies with business model variations or that sell substitute products.
  - The classification of multi-product companies.
  - Geographical considerations.
  - Changes in groupings over time that affect prior-period comparability of industry statistics.

Alternative Methods of Grouping Companies

- **Alternative methods of grouping companies**
  - Geography
  - Sensitivity to the business cycle
  - Statistical similarities
  - ESG characteristics

Alternative Methods of Grouping Companies

- Companies can also adopt a method **based on geographical grouping**.
  - The companies are classified by country and then countries are aggregated into categories such as developed, emerging, and frontier markets.
  - Classification by country usually includes:
    - ✓ the country where the issuer is incorporated.
    - ✓ the country of the primary listing of its equity securities.
    - ✓ the location of its headquarters.
    - ✓ market perception.
  - Note that classification by the **geographic composition of revenue** is generally **not** the approach taken.
    - ✓ For example, Toyota is universally classified as a Japanese company. However, its largest market by revenues is North America, which is also the location of most of its assets.

Alternative Methods of Grouping Companies

- Firms can also be classified by their **sensitivity to business cycles**. This system has two main classifications: cyclical and non-cyclical firms.
  - **Cyclical firm**: highly dependent on the stage of the business cycle.
    - ✓ **High earnings volatility**
    - ✓ **High operating leverage**
    - ✓ Includes: basic materials and processing, **consumer discretionary**, energy, financial services, industrial and producer durables, and technology
    - ✓ A cyclical company is one whose profits are strongly correlated with the strength of the overall economy

Alternative Methods of Grouping Companies

- Firms can also be classified by their **sensitivity to business cycles**. This system has two main classifications: cyclical and non-cyclical firms.
  - **Non-cyclical firm:** demand is relatively stable over the business cycle.
    - ✓ Includes: Health care, utilities, telecommunications, and **consumer staples**
    - ✓ **Defensive industries:** least affected by the stage of the business cycle and include utilities, consumer staples (such as food producers), and basic services (such as drug stores)
    - ✓ **Growth industries:** demand so strong they are largely unaffected by the stage of the business cycle

Alternative Methods of Grouping Companies

- **Statistical Methods, such as cluster analysis**, can also be used.
  - This method groups firms that historically have had **highly correlated returns**. The groups (i.e., industries) formed will then have lower returns correlations between groups.
- The companies can be grouped **based on ESG characteristics**.
  - Incorporating ESG elements into various classification standards.
    - ✓ e.g.: the ratio of carbon emissions to revenues .etc.
  - These metrics can be aggregated into composite ESG ratings or scores that enable cross-issuer comparability.

Example

Industry Classification

- Which of the following is a common problem for analysts when using GICS, ICB, and TRBC business industry classification schemes?

  A. They quickly become out of date.
  B. They cover a limited number of countries.
  C. They often classify multi-industry companies inaccurately.

- Correct answer: C

- Which of the following is least likely alternative method of grouping companies by geography.

  A. location of head office.
  B. geographic composition of revenue.
  C. primary listing of its equity securities.

- Correct answer: B

Summary

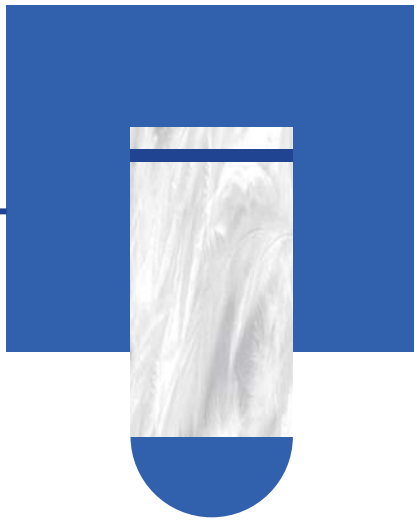
Industry and Competitive Analysis

Industry Classification

Uses of Industry Analysis
Third-Party Industry Classification Schemes
Alternative Methods of Grouping Companies

Industry Survey

- Industry Survey



Industry Survey

- Industry surveys are aimed at accurately understanding and analyzing the industry, making analysts aware of the main issues and opportunities.
- Industry survey include to determining:
  - Industry size and historical growth rate
  - Characterizing industry growth
  - Industry profitability measures
  - Market share trends and major players

Industry Survey

- **Industry size and historical growth rate**
  - Industry size is typically measured by total annual sales from the product or customer perspective.
  - The growth rate is calculated either as year-over-year (YOY) each year or as a compounded annual growth rate over a multi-year period.
  - For private companies, the common practice to estimate industry size from:
    - ✓ Economic indicators published by government agencies.
    - ✓ Third-party consultancy's data obtained from surveys.
    - ✓ Issuer's investor presentations based on proprietary sources.
  - All these data sources require analysts to verify their rationality, otherwise it may lead to ineffective analysis.

Industry Survey

- **Characterizing industry growth**
  - **Style boxes** can be used to describe the pattern of historical growth of the industry. The style box has two dimensions:
    - ✓ **the magnitude of its growth rate. (i.e. mature vs. growth)**
    - ✓ **sensitivity to the business cycle. (i.e. defensive vs. cyclical)**

Mature	Utilities Pharmaceutical	Nature gas Crude oil
Growth	Software Biotechnology	Fintech Semiconductors
	Defensive	**Cyclical**

Industry Survey

- **Industry profitability measures**
  - The best measure of industry profitability is a time series of the distribution of returns on invested capital, which captures after-tax operating profits for each dollar of invested capital and is agnostic about capital structure.
  - For private companies, obtaining these data is seldom feasible. Two common methods to overcome this challenge in practice are:
    - ✓ Measure the profitability of listed companies and assume that the profitability of private competitors is similar. —— either using various sources to estimate the profitability of non-public companies or obtaining data from a government agency or third-party consultancy.

Industry Survey

- **Market share trends and major players**
  - Market share is measured by expressing the annual income of industry participants as a percentage of industry size per year.
    - ✓ Analysts prefer market share trends to point estimation of market share.
  - Another consideration in the analysis is the degree of industry concentration, which is usually measured by **Herfindahl-Hirschman Index (HHI)**

$$\mathrm{HHI} = \sum_{n=1}^{\infty} S_n^2$$

S_n: the market share of market participant n.

    - ✓ Antitrust regulators consider markets with an HHI between 1500 and 2500 is moderately concentrated, over 2500 is highly concentrated.
    - ✓ In highly concentrated markets, HHI has increased over 200 points, often facing regulatory challenges.

Example

Industry Survey

- A market consists of four firms with market shares of 15%, 20%, 30% and 35%. The Herfindahl-Hirschman Index (HHI) is *closest* to:

  A. 2750.
  B. 2500.
  C. 0.275.

- Correct answer: A

Summary

Industry and Competitive Analysis

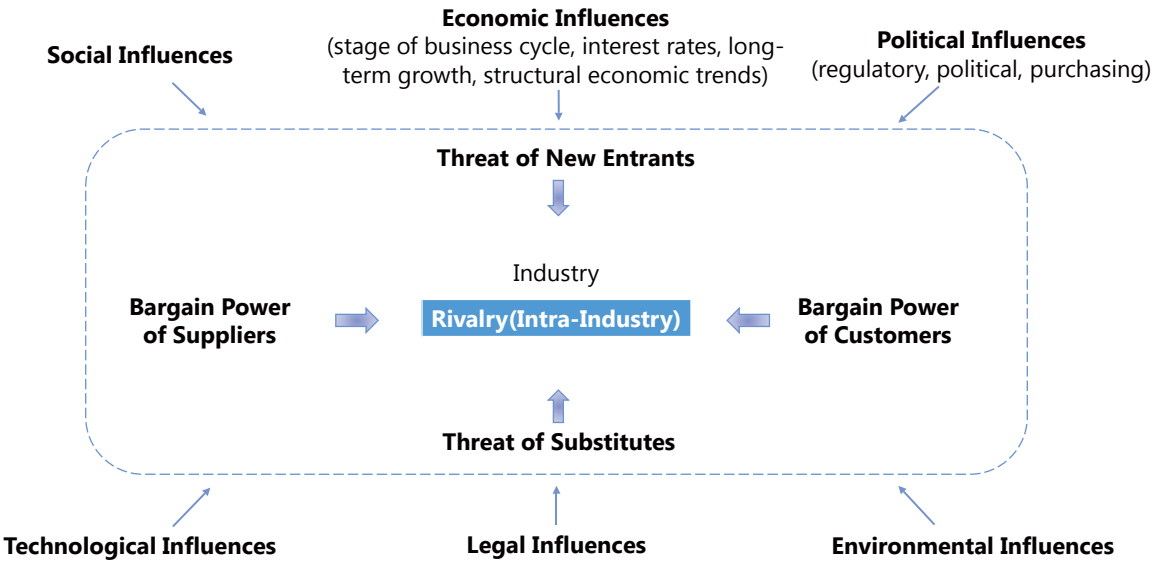
Industry Survey

Industry Survey

Industry Structure and External Influences

- A Framework for Industry Analysis
- Porter's Five Forces
- PESTLE Frameworks

A Framework for Industry Analysis



Porter's Five Forces

- **Porter's Five Forces**
  - Analysis framework developed by **Michael Porter delineates five forces** that determine industry competition:
    - ✓ **Rivalry among existing competitors.** Rivalry increases when many firms of relatively equal size compete within an industry.
    - ✓ **Threat of new entrants**. Industries that have significant barriers to entry will find it easier to maintain premium pricing.
    - ✓ **Threat of substitute products.** Substitute products limit the profit potential of an industry.
    - ✓ **Bargaining power of buyers.** Buyers' ability to bargain for lower prices or higher quality influences industry profitability.
    - ✓ **Bargaining power of suppliers.** Suppliers' ability to raise prices or limit supply influences industry profitability.

PESTLE Frameworks

- **The external influences on industry growth, profitability, and risk**
  - **Political influences**
    - ✓ Political influences include changing fiscal and monetary policies, governments' direct selling and purchasing activities, regulatory changes, and geopolitical conditions and actions.
  - **Economic influences**
    - ✓ Can be cyclical or structural (longer-term) trends, most notably economic output as measured by GDP or some other measure, such as interest rates, inflation and education level.

PESTLE Frameworks

- **The external influences on industry growth, profitability, and risk.**
  - **Social influences**
    - ✓ Including cultural and consumer trends, as well as changes in demographic and lifestyle.
  - **Technological influences**
    - ✓ Change an industry dramatically through the introduction of new or improved products.
    - ✓ There are two types of technological innovation:
      - sustainable innovation: improve product or service performance without fundamental changes in functionality.
      - disruptive innovation: fundamental changes in functionality, existing participants face the "innovator's dilemma" in disruptive innovation

PESTLE Frameworks

- **The external influences on industry growth, profitability, and risk.**
  - **Legal influences**
    - ✓ The legal influences include changes in laws and regulations from courts and policymakers.
  - **Environmental influences**
    - ✓ Consumer perception for certain brands, products, and services.
    - ✓ Increased government regulations and protections.
    - ✓ Potential disruptions to supply chains and the ability to operate, such as an increase in natural disasters or resource shortages in water or energy.

Example

Industry Structure and External Influences

- Two of the five competitive forces in the Porter framework are:
  A. threat of entry and barriers to exit.
  B. power of suppliers and threat of substitutes.
  C. rivalry among competitors and power of regulators.

- Correct answer: B

- Which of the following statements *best* describes the relationship between pricing power and ease of entry and exit? Greater ease of entry:
  A. and greater ease of exit decrease pricing power.
  B. and greater ease of exit increase pricing power.
  C. decreases pricing power and greater ease of exit increases pricing power.

- Correct answer: C

Example

Industry Structure and External Influences

- Which of the following can be analyzed by PESTLE.:

  A. Industry themes.
  B. The level of industry concentration.
  C. Determinants of industry profitability.

- Correct answer: A

- Which of the following is least likely a significant external influence on industry growth?

  A. Social influences.
  B. Macroeconomic factors.
  C. Supplier bargaining power.

- Correct answer: C

Summary

Industry and Competitive Analysis

Industry Structure and External Influences

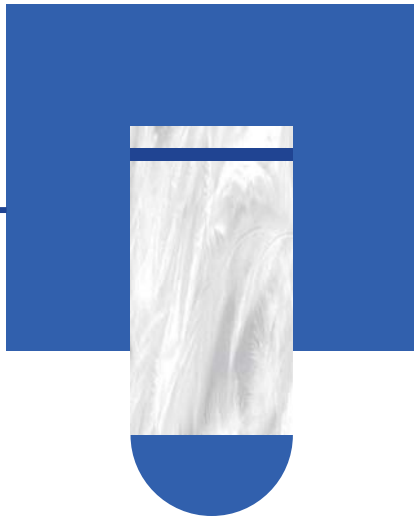
A Framework for Industry Analysis

Porter's Five Forces

PESTLE Frameworks

Competitive Positioning

- Cost Leadership
- Differentiation
- Focus



Competitive Positioning

- **Three Generic Competitive Strategies**
  - **Cost Leadership**
  - **Differentiation**
  - **Focus**

Cost Leadership

- **Cost Leadership**
  - **Cost leadership:** With the same product, the firm seeks to a lower cost.
  - **Means of execution**
    - ✓ Economies of scale from fixed costs and low-cost distribution
    - ✓ Aggressive pricing and culture of strict cost control
  - **Five forces influences**
    - ✓ Threat of new entrants: Capital requirements and scale advantages deter entrants.
    - ✓ Bargaining power of customers: Customers can only bring prices down to the costs of the marginal producer, leaving margin for the cost leaders.
    - ✓ Industry rivalry: Rivals may not be able to compete on price with cost leaders

Cost Leadership

- **Cost Leadership**
  - **Industry appropriateness**
    - ✓ Capital intensive
    - ✓ Price-conscious customers
    - ✓ Customers do not value or notice product differences
    - ✓ Minimal innovation in industry
  - **Risks to the strategy**
    - ✓ Cost inflation
    - ✓ Technological change
    - ✓ Desire for premiumization among customers

Differentiation

- **Differentiation**
  - **Differentiation**: With the same cost, the firm seeks to provide product benefits that other firms do no provide.
  - **Means of execution**
    - ✓ Investments in advertising, proprietary distribution channels, and a strong customer experience culture.
    - ✓ Superior quality, unique features, premium pricing, integration of services, software, and hardware.
  - **Five forces influences**
    - ✓ Threat of new entrants and of substitutions: Customer loyalty to unique product can deter switching.
    - ✓ Bargaining power of customers: Customers may be unable to unwilling to comparison shop or switch.
    - ✓ Bargaining power of suppliers: The company may have the ability to pass along price increases to customers and/or margin to absorb cost increases.

Differentiation

- **Differentiation**
  - **Industry appropriateness**
    - ✓ Price is not foremost concern for customers
    - ✓ Customers value distinctiveness
    - ✓ Innovation in industry, with products varying in features and forms
  - **Risks to the strategy**
    - ✓ Imitation by competitors
    - ✓ Buyers become sophisticated, no longer demand level of service
    - ✓ Pricing premium becomes too high for customers to bear
    - ✓ May preclude high market share, as customers value exclusivity

Focus

- **Focus**
  - **Focus:** The firm targets a niche with either a cost or a differentiation focus.
  - **Means of execution**
    - ✓ Proximity to customers and strong understanding of their needs.
    - ✓ May incorporate elements of strategy from both cost leadership and differentiation, but focused on particular group.
  - **Five forces influences**
    - ✓ Threat of new entrants and of substitutions: Customer loyalty to unique product can deter switching.
    - ✓ Bargaining power of customers: Customers may be unable or unwilling to comparison shop or switch.

Focus

- **Focus**
  - **Industry appropriateness.**
    - ✓ Difficult or uneconomical to serve customer group, product, or geography for other players.
  - **Risks to the strategy.**
    - ✓ Larger competitors outcompete on price.
    - ✓ The differences in demand between the narrow group and industry as a whole narrow.
    - ✓ Buyers become sophisticated, no longer demand level of service.

Example

Competitive Positioning

- Which of the following is the least likely means of executing cost leadership competitive strategy?

  A. Proximity to customers.
  B. Economics of scale from fixed costs.
  C. Favorable access to raw materials.

- Correct answer: A

- Which of the following best describes a low-cost competitive strategy?

  A. Volume sold is typically modest.
  B. Managerial incentives promote operational efficiency.
  C. Success depends heavily on creative marketing and product development.

- Correct answer: B

Summary

Industry and Competitive Analysis

Competitive Positioning

Cost Leadership
Differentiation
Focus

Summary

Module: Industry and Competitive Analysis

Industry Classification

Industry Survey

Industry Structure and External Influence

Competitive Positioning

Module

Company Analysis: Forecasting

1. Forecast Objects, Principles, and Approaches
2. Forecasting

Forecast Objects, Principles, and Approaches

- Forecast Objects
- Forecast Approaches
- Selecting a Forecast Horizon
- Scenario Analysis

Forecast Objects

- Analysts have different forecast objects, but has the following four common forecast objects:
  - **Drivers of financial statement lines**
  - **Individual financial statement lines**
  - **Summary measures**
  - **Ad hoc objects**

Forecast Objects

- **Drivers of financial statement lines**
  - Forecasting drivers rather than financial statement lines outright has the benefit of improved explanatory value and may improve accuracy.
    - ✓ e.g: Analysts do not directly predict revenue, using a top-down approach, consider revenue as a function of market share, target market or market size, and GDP growth drivers.
- **Individual financial statement lines**
  - The analyst directly forecast individual financial statement lines.
  - This approach is often used for lines without clear drivers or less-material items.

Forecast Objects

- **Summary measures**
  - The benefit of using these as forecast objects is efficiency, but less transparency and making it difficult to audit the forecast.
  - This objects is most appropriate if the summary measure is stable and predictable.
- **Ad hoc objects**
  - May not have been reported in historical financial statements.
    - ✓ e.g: issuer's announcing a material legal proceeding, government regulatory action, a tax dispute, or a natural disaster.

Forecast Approaches

- For any objects, there are **four** general forecast approaches that are often combined for use:
  - **Historical results approach**
    - ✓ This approach uses past observed or calculated as a forecast.
    - ✓ Assuming historical recurrence.
      - e.g. The industry has grown on average by 5% each year for the last 10 year, and assuming 5% market growth each year going forward.
    - ✓ This approach may be appropriate for:
      - companies operating in industries where the analyst does not expect the industry structure to change;
      - companies that have a low sensitivity to changes in the business cycle;
      - objects that are not material or that the analyst does not hold an opinion on.

Forecast Approaches

- For any objects, there are **four** general forecast approaches that are often combined for use:
  - **Historical base rates and convergence**
    - ✓ This approach uses an industry or peer group average or median, computed over a long period of time, as a "base rate" for forecasting that an object will converge to over some time frame.
    - ✓ The base rate could also be a macroeconomic variable such as GDP growth.
    - ✓ This approach may be appropriate for:
      - Companies in well-established industries with many publicly traded peers, such as banks, airlines, restaurants, automakers, and retailers;
      - smaller companies that are "maturing into" a financial profile similar to that of larger peers with scale.

Forecast Approaches

- For any objects, there are four general forecast approaches that are often combined for use:
  - **Management guidance approach**
    - ✓ Guidance can be detailed or rather directional and is often updated throughout the year.
    - ✓ Guidance is often provided as a range (e.g., "sales growth of 2%–4%") and embeds many sub-forecasts and assumptions by management.
    - ✓ This approach may be appropriate:
      - when the guidance is provided and when management has demonstrated a track record of reliable estimates.

Forecast Approaches

- For any objects, there are four general forecast approaches that are often combined for use:
  - **Analyst's discretionary forecast approach**
    - ✓ Discretionary forecast approach include surveys, quantitative models, probability distributions.
    - ✓ This approach may be appropriate for:
      - companies in cyclical industries;
      - companies that have no or few comparables;
      - companies that do not provide management guidance, and/or
      - those undergoing a fundamental change like a shift in the competitive or regulatory environment.

Selecting a Forecast Horizon

- The choice of the forecast time horizon is determined by the investment strategy for which the security is being considered, the cyclicality of the industry, company-specific factors, and the analyst's employer's preferences.
  - Most professionally managed investment strategies describe the investment time frame and average holding period in the investment objectives of the strategy.
  - The cyclicality of the industry could also influence the analyst's choice of time frame, because the forecast period should be long enough to allow the business to reach an expected mid-cycle level of sales and profitability.
  - Various company-specific factors, including recent acquisition or restructuring activity, can influence the selection of the forecast period to allow enough time for the realization of the expected benefits from such activity to be reflected in the financial statements.

Scenario Analysis

- Scenario analysis is a practice that allows financial experts to examine events that may happen in the future and predict potential outcomes.
  - Scenario analysis involves changing multiple assumptions at the same time;
  - Sensitivity analysis has the same goal, but involves changing one assumption at a time to see the effect on the estimate of intrinsic value.

Example

Company Forecast: Overview

- Which approach is most appropriate for an analyst to use to forecast revenue for an industry leader in a growth, cyclical industry, and have few comparable companies?

  A. Historical results
  B. Analyst's discretionary forecast
  C. Historical base rates and convergence

- Correct answer: B

Summary

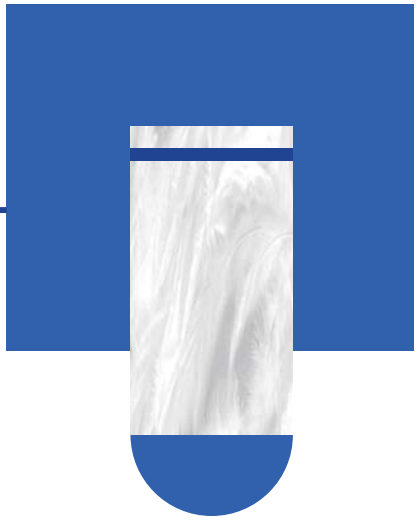
Company Analysis: Forecast

Forecast Objects, Principles, and Approaches

Forecast Objects
Forecast Approaches
Selecting a Forecast Horizon
Scenario Analysis

Forecasting

- Forecasting Revenues
- Forecasting Operating Expenses
- Forecasting Working Capital
- Forecasting Capital Investments and Capital Structure



Forecasting Revenues

- Forecast objects for revenues are typically either **top-down** or **bottom-up** drivers.
  - **A top-down drivers** usually begins at the level of the overall economy.
    - ✓ E.g. growth relative to GDP growth, market growth and market share.
  - **A bottom-up drivers** begins at the level of the individual company or a unit within the company, such as individual product lines, locations, or business segments.
    - ✓ Analysts then aggregate their projections for the individual products or segments to arrive at a forecast of total revenue for the company.
- Any of the four forecast approaches can be used for forecasting revenue objects.

Forecasting Revenues

- **Top-down drivers to modeling revenue**
  - **Growth relative to GDP growth**
    - ✓ First forecasts the growth rate of nominal gross domestic product;
    - ✓ Then considers how the growth rate of the specific company being examined will compare with nominal GDP growth.

$$g_{GDP} + x\% \text{ or } g_{GDP} \times (1 + x\%)$$

  - **Market growth and market share**
    - ✓ First forecasts growth in a particular market;
    - ✓ Then considers the company's current market share, and how that share is likely to change over time.
    - ✓ Analysts often think in terms of percentage point premiums or discounts derived from a company's position in the industrial life cycle or business cycle sensitivity.

Forecasting Revenues

- **Bottom-up drivers to modeling revenue**
  - **Volumes and average selling prices**
    - ✓ Forecasts for volumes and prices of the company's products are prepared individually and multiplied to arrive at a revenue forecast.
  - **Product-line or segment revenues**
    - ✓ Forecasts for individual products, product or business lines, geographic areas, or reporting segments are made and then aggregated into a total revenue forecast.
  - **Capacity-based measure**
    - ✓ Forecasts, for example, in retailing, based on the number of stores and sales per store, or same-store sales growth (for stores that have been open for at least 12 months) and sales related to new-store openings.

Forecasting Revenues

- **Bottom-up drivers to modeling revenue**
  - **Return- or yield-based measures**
    - ✓ Forecasts based on account balances and revenue yields on them.
      - ☐ For example, net interest income for a bank can be calculated as loans multiplied by the average interest rate minus the product of deposits and liabilities and their average interest rate.

- **Separating Recurring and Non-Recurring Revenue or Revenue Growth**
  - An important principle is that non-recurring items and effects should be excluded from a forecast object and considered separately.

Forecasting Operating Expenses

- **Forecasting COGS** as a percentage of sales and forecasting gross margin percentage are equivalent in that a value for one implies a value for the other.
- **Competitors' gross margins** can also provide a useful cross check for estimating a realistic gross margin.
  - Gross margin differences among companies within a sector should logically relate to differences in their business operations;
  - Differences in competitors' gross margins does not always indicate a superior competitive position but instead could simply reflect differences in business models.

Forecasting Operating Expenses

- **Closer examination of the volume and price of a firm's inputs** may improve the quality of a forecast of COGS, especially in the short run.
- Analysts should also consider the **impact of a company's hedging strategy.**
  - Through various hedging strategies, a company can mitigate the impact on profitability.
    - ✓ E.g. The negative impact of increasing sales prices on sales volume can be mitigated by a policy of gradual sales price increases.
- **Gross margin differences** among companies within a sector should logically relate to differences in their business operations.

Forecast COGS = (historical COGS/ revenue)×(estimate of future revenue)
Forecast COGS = (1-gross margin)×(estimate of future revenue)

Forecasting Operating Expenses

- **SG&A operating expenses** have less of a direct relationship with the revenue of a company.
  - **Fixed component**
    - ✓ Research and development expense
      - ☐ Fluctuate less than sales.
    - ✓ Overhead costs majorly determined by
      - ☐ Number of employees at the head office;
      - ☐ Supporting it and administrative operations.
  - **Variable component**: selling and distribution expenses often have a large variable component and can be estimated.
- **Certain expenses within SG&A are more variable than others**. Selling and distribution expenses often have a large variable component and can be estimated as a percentage of sales.

Forecasting Working Capital

- **Working capital forecasts are typically made by using efficiency ratios as the forecast object.**
  - While a historical results approach is common for working capital efficiency ratios, analysts can also use the other forecast approaches.
- **Working capital items:** assumed that the turnover ratios will remain constant.
  - Inventory= forecasted annual COGS/ Inventory turnover ratio
  - Projected accounts receivable=(days sales outstanding)×(forecasted sales/365)
  - Estimate include only the relevant balance sheet items related to revenues and costs (i.e., inventories, trade and other receivables, and trade and other payables) and keep the other items constant

Forecasting Capital Investments and Capital Structure

- **PP&E: primarily changes as a result of capital expenditures and depreciation**
  - Depreciation forecasts are usually based on **historical depreciation** and disclosure about depreciation schedules, whereas capital expenditure forecasts depend on the **analysts' judgment** of the future need for new PP&E;
  - Capital expenditures can be thought of as including both **maintenance capital expenditures**, which are necessary to sustain the current business, and **growth capital expenditures**, which are needed to expand the business.
- **Analysts must also make projections about a company's future capital structure.**
  - Such as leverage ratio, they are often used as the forecast object to project future debt and equity levels.

Example

Forecasting

- An analyst gathers the following information for GFE. The sales by third-party merchants are recognized on a net basis, because GFE does not take control of the inventory. GFE receives 15% of the gross merchandise value (GMV) of third-party sales as commission.

	2X19 (CNY millions)
National retail sales excluding autos	4,165,000
GFE's retail sales	7,336
GFE's third-party merchant sales	1,269
Total GMV	8,605
GFE's retail sales	7,336
Third-party merchant fees	190
Total Revenues	7,526

Example

Forecasting

- Gross merchandise value has increased by an average of 31.6% per year from 2X15 to 2X19 and by 23.8% from 2X18 to 2X19. GFE's GMV as a percentage of national retail sales has increased steadily, from 0.08% in 2X15 to 0.21% in 2X19.

	2X19	Average Growth per Year, 2X15 to 2X19	Growth from 2X18 to 2X19
Average sales/customer account (CNY)	203.78	5.9%	4.6%
# accounts (millions)	36	22.5%	16.1%
GFE's retail sales (CNY millions)	7,336	29.7%	21.4%
Average sales/third-party merchant (CNY)	31,300	13.6%	9.8%
# third-party merchants	40,500	28.5%	28.6%
Third-party merchant sales (CNY millions)	1,269	46.0%	41.2%

Example

Forecasting

- Given the following assumptions, the analyst's forecast of GFE's 2X20 total revenues is closest to:
  - National retail sales excluding autos grows by 3.4%.
  - GFE's market share (i.e., its GMV as a percentage of national retail sales excluding autos) increases by 2 bps.
  - GMV is split 75%/25% between retail sales and third-party merchant sales.
  - The take rate on third-party merchant sales remains the same as in 2X19.

A. 7,800.
B. 8,441.
C. 9,906.

- Correct answer: A

Example

Forecasting

- Forecast of national retail sales excluding autos=(1+3.4%)×4,165,000=4,306,610
- Forecast of GFE's 2X20 GMV=4,306,610×(0.21%+2bps)=9,906.1
- Forecast of GFE's 2X20 retail sales=9,906.1×75%=7,429.58
- Forecast of 2X20 third-party merchant sales=9,906.1×25%=2,476.53
- Forecast of 2X20 third-party merchant fees=2,476.53×15%=371.48
- Forecast of GFE's 2X20 total revenues=7,429.58+371.48=7,801.06

- Correct answer: A

Example

Forecasting

- An analyst who uses bottom-up drivers forecasts the number of customer accounts to increase by 15%, the average sales per customer to increase by 5%, the number of third-party merchants to increase by 28%, and the aver-age sales per third-party merchant to increase by 40%. The analyst's forecast for GFE's 2X20 GMV (in USD millions) is closest to:

  A. 8,860.

  B. 9,210.

  C. 11,140.

- Correct answer: C

Example

Forecasting

- Forecast of GFE's 2X20 retail sales=204×(1+5%) ×36×(1+15%)=8,867.88
- Forecast of 2X20 third-party merchant sales=[40,500×(1+28%) ×31,300×(1+40%)]/1,000,000=2,271.63
- Forecast of GFE's 2X20 GMV=8,867.88+2,271.63=11,139.51

- Correct answer: C

Summary

Company Analysis: Forecast

Forecasting

Forecasting Revenues

Forecasting Operating Expenses

Forecasting Working Capital

Forecasting Capital Investments and Forecasting Capital Structure

Summary

Module: Company Analysis: Forecasting

Forecast Objects, Principles, and Approaches

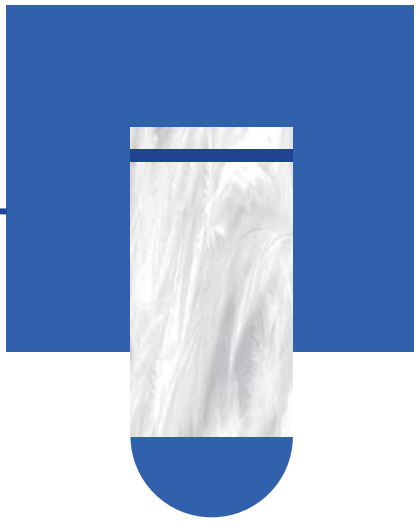
Forecasting

Module

Equity Valuation: Concept and Basic Tool

1. Introduction of Equity Valuation
2. Discounted Cash Flow Models
3. Price Multiples and Enterprise Value Multiples
4. Asset-Based Models

Introduction of Equity Valuation



- Estimated Value and Market Price
- Categories of Equity Valuation Models
- Background for the Dividend Discount Model

Estimated Value and Market Price

- **Intrinsic Value vs. Market Price**
  - Analysts use valuation models to estimate the intrinsic values of stocks and compare them to the stocks' market prices to determine whether individual stocks are overvalued, undervalued, or fairly valued.
  - Market price is assumed to move toward intrinsic value.
  - Things to consider when deciding whether to invest based on estimated intrinsic value:
    - ✓ Percentage difference between market prices and estimated values.
    - ✓ Confidence of the appropriateness of the valuation model.
    - ✓ Confidence of the inputs used in the valuation model.
    - ✓ Reasons why stock is mispriced.
    - ✓ Assume that market price will actually move toward estimated intrinsic value and that it will do so to a significant extent within the investment time horizon.

Categories of Equity Valuation Models

- **Major Categories of Equity Valuation Models**
  - **Discounted Cash Flow Models**
    - ✓ dividend discount models
    - ✓ free cash flow to equity models
  - **Price Multiples**
    - ✓ the ratio of stock price to fundamentals
    - ✓ the ratio of enterprise value to fundamentals
  - **Asset-Based Models**

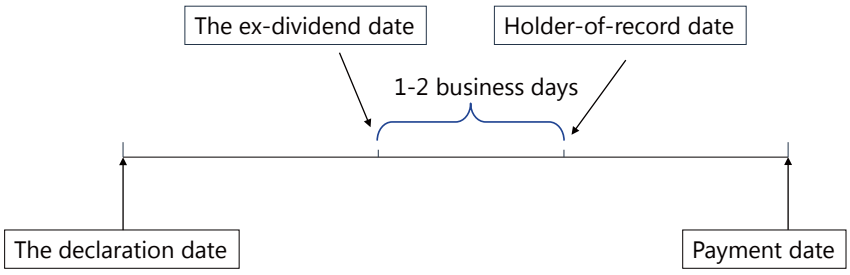
Background for the Dividend Discount Model

- **Dividend**
  - A dividend is a distribution paid to shareholders based on the number of shares owned, and a cash dividend is a cash distribution made to company's shareholders.
- **Extra Dividend or Special Dividend**
  - The dividends paid by a company that does not pay dividends on a regular schedule or a dividend that supplements regular cash dividend with an extra payment.
- **Stock Dividends**
  - Stock dividends is a type of dividend in which a company distributes additional shares of its common stock to shareholders instead of cash.
- **Stock split/ Reverse stock split**

Background for the Dividend Discount Model

- **Definition of share repurchases**
  - A share repurchase is a transaction in which a company uses cash to buy back its own shares.
  - Shares that have been repurchased are not considered for dividends, voting, or computing earnings per share.
- **Key reasons for engaging in share repurchases**
  - Signaling a belief that their shares are undervalued;
  - Flexibility in the amount and timing of distributing cash to shareholders;
  - Tax efficiency in markets where tax rates on dividends exceed tax rates on capital gains;
  - The ability to absorb increase in outstanding shares because of the exercise of employee stock options.

Background for the Dividend Discount Model



- Ex-dividend date is normally set for stocks **one or two business days** before the record date.

Summary

Equity Valuation: Concept and Basic Tool

Introduction of Equity Valuation

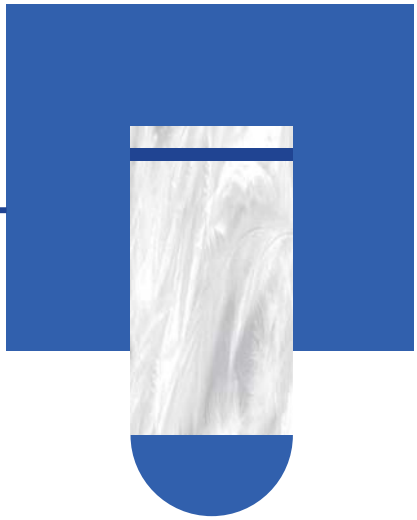
Estimated Value and Market Price

Categories of Equity Valuation Models

Background for the Dividend Discount Model

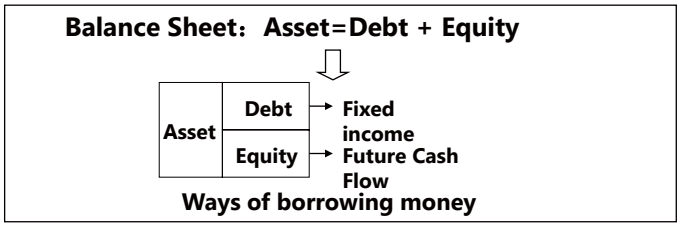
Discounted Cash Flow Models

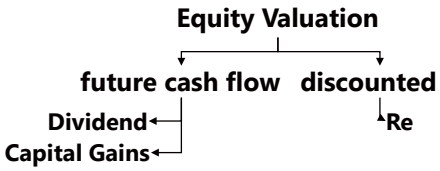
- Introduction of DCF Models
- Preferred Stock Valuation
- The Gordon Growth Model
- Multistage Dividend Discount Models
- Free-Cash-Flow-to-Equity Model



Introduction of DCF Models

- **Introduction of DCF Models**





Preferred Stock Valuation

- **Preferred Stock Valuation**
  - The preferred stock holders are promised to receive a stated dividend for an infinite period.
  - Preferred stock is perpetuity since it has no maturity.
  - Valuation model of a preferred stock:
    - ✓ $V_p=\frac{D_p}{(1+r_p)}+\frac{D_p}{(1+r_p)^2}+\cdots+\frac{D_p}{(1+r_p)^n}=\frac{D_p}{r_p}$

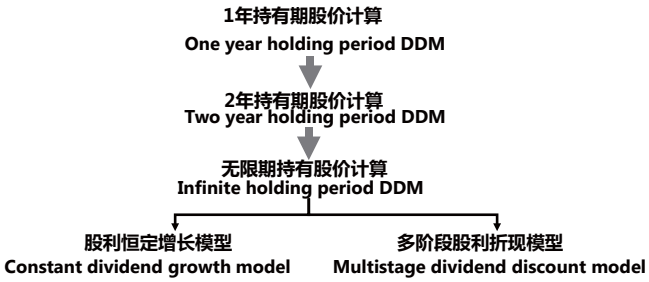
The Gordon Growth Model

- **Target：Gordon Growth Dividend Discount Model (GGM)**

$$p_0=\frac{D_0(1+g)}{r-g}=\frac{D_1}{r-g}$$

- **知识结构总结**

Dividend Discount Model（DDM）知识结构



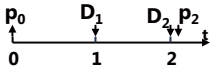
The Gordon Growth Model

- **The Gordon Growth Model (GGM)**
  - **One-year holding period**

$$V=\frac{D_1}{(1+r)}+\frac{P_1}{(1+r)}$$

  - **Two-year holding period**

$$V=\frac{D_1}{(1+r)}+\frac{D_2}{(1+r)^2}+\frac{P_2}{(1+r)^2}$$

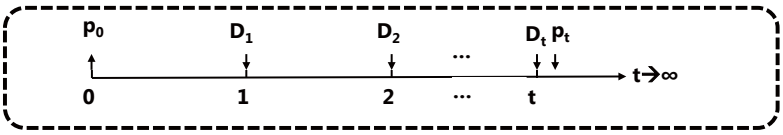


The Gordon Growth Model

- **The Gordon Growth Model (GGM)**
  - **Multiple-Stage Dividend Growth Models**

$$V_0=\frac{D_1}{(1+r)}+\frac{D_2}{(1+r)^2}+\ldots+\frac{D_n}{(1+r)^n}+\frac{P_n}{(1+r)^n}$$

$$P=\frac{D_{n+1}}{r-g}$$



  - **The general DDM**

$$V=\frac{D_1}{(1+r)}+\frac{D_2}{(1+r)^2}+\ldots+\frac{D_\infty}{(1+r)^\infty}=\sum_{t=1}^{n}\frac{D_t}{(1+r)^t}$$

The Gordon Growth Model

- **The Gordon Growth Model (GGM)**
  - **Assumptions**
    - ✓ Dividends grow at a constant rate.
    - ✓ The constant growth rate will continue for an infinite period.
    - ✓ The required rate of return r is greater than the infinite growth rate g...if it is not, the model gives meaningless results.

$$V_0=\frac{D_0(1+g)}{(1+r)}+\frac{D_0(1+g)^2}{(1+r)^2}+\ldots+\frac{D_0(1+g)^\infty}{(1+r)^\infty}$$

$$V_0=\frac{D_0(1+g)}{r-g}=\frac{D_1}{r-g}$$

The Gordon Growth Model

- **The Gordon Growth Model (GGM)**
  - **Limitations**
    - ✓ Very sensitive to estimates of r and g
    - ✓ Difficult with non-dividend stocks
    - ✓ Difficult with unpredictable growth patterns (use multi-stage model)
  - **Important Conclusions**
    - ✓ The wider is the difference between r and g, the smaller the value of the stocks.
    - ✓ Small changes in the difference between r and g will cause large changes in the stocks' value

The Gordon Growth Model

- **Other Variable Parameters**
  - D_0
  - g_c
  - R_e

- **Distribution of EPS**

EPS → Dividend / Retention Rate

$$D_0 = (1 - RR) \times EPS$$

$$p_0 = \frac{D_0(1+g)}{r - g}$$

$$g = ROE \times RR$$

$$r = RFR + \beta(R_{mkt} - RFR)$$

The Gordon Growth Model

- **Other Variable Parameters**
  - **The required rate of return (capital asset pricing model(CAPM))**

$$r = RFR_{nominal} + \beta(R_M - RFR_{nominal})$$

  - **Another way to estimate required rate of return**

$$r = \text{current bond yield} + \text{equity risk premium}$$

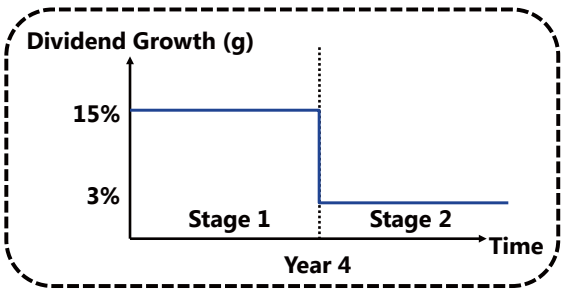
  - **Growth rate in dividends**
    - ✓ Use the historical growth in dividends for the firm.
    - ✓ Use the median industry dividend growth rate.
    - ✓ Estimate the sustainable growth rate.

g=sustainable growth rate = b × ROE

b = retention ratio = 1 – dividend payout rate

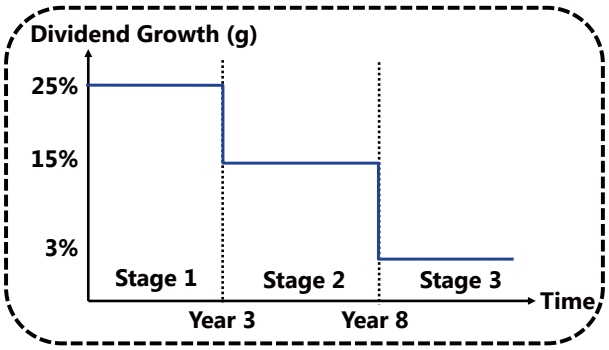
Multistage Dividend Discount Models

- **Multistage Dividend Discount Models**
  - **Two-stage DDM**
    - ✓ the growth rate starts at a high level for a relatively short period of time, then reverts to a long-run perpetual level.



Multistage Dividend Discount Models

- **Multistage Dividend Discount Models**
  - **Three-stage DDM**



Free-Cash-Flow-to-Equity Model

- **Free-Cash-Flow-to-Equity Model**
  - Valuation obtained by using FCFE involves discounting expected future FCFE by the required rate of return on equity. FCFE reflects the firm's capacity to pay dividends.
  - FCFE is useful the firm that does not pay dividends or pays dividends but the dividends paid differ significantly from the company's capacity to pay dividends;

FCFE= net income + depreciation-increase in working capital-fixed capital investment (FCInv)-debt principal repayments + new debt issues

FCFE = Cash Flow from Operations - FC_{Inv} + Net Borrowing

$$V_0=\sum_{t=1}^{\infty}\frac{FCFE_t}{(1+r)^t} \qquad V_0=\frac{FCFE_0(1+g)}{r-g}$$

Example

Discounted Cash Flow Models

- The constant growth model requires which of the following?

  A. g < r.
  B. g > r.
  C. g ≠ r.

- Correct answer: A

- What would an investor be willing to pay for a share of preferred stock that pays an annual $7 dividend if the required return is 7.75%?

  A. $77.50.
  B. $87.50.
  C. $90.32.

- Correct answer: C

Example

Discounted Cash Flow Models

- An analyst estimates that a stock will pay a $2 dividend next year and that it will sell for $40 at year-end. If the required rate of return is 15%, what is the value of the stock?

  A. $33.54.
  B. $36.52.
  C. $43.95.

- Correct answer: B

- What is the intrinsic value of a company's stock if dividends are expected to grow at 5%, the most recent dividend was $1, and investors' required rate of return for this stock is 10%?

  A. $20.00.
  B. $21.00.
  C. $22.05.

- Correct answer: B

Example

Discounted Cash Flow Models

- Assume that a stock is expected to pay dividends at the end of Year 1 and Year 2 of $1.25 and $1.56, respectively. Dividends are expected to grow at a 5% rate thereafter. Assuming that R_e is 11%, the value of the stock is *closest* to:

  A. $22.30.
  B. $23.42.
  C. $24.55.

- Correct answer: C

  - $V2 = \frac{\$1.56 \times 1.05}{0.11 - 0.05} = \$27.3$
  - $V0 = \frac{\$1.25}{1.11} + \frac{\$1.56 + \$27.3}{1.11^2} = \$24.55$

Summary

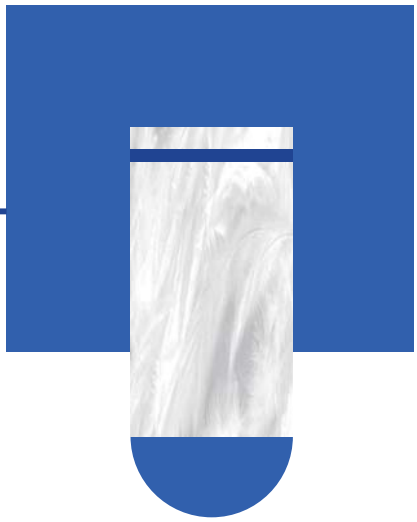
Equity Valuation: Concept and Basic Tool

Discounted Cash Flow Models

Introduction of DCF Models
Preferred Stock Valuation
The Gordon Growth Model
Multistage Dividend Discount Models
Free-Cash-Flow-to-Equity Model

Price Multiples and Enterprise Value Multiples

- Price Multiples
- Enterprise Value Multiples



Price Multiples

- **Price multiples used for valuation include:**
  - **Price to Earnings (P/E)**: This measure is the ratio of the stock price to earnings per share. P/E is arguably the price multiple most frequently cited by the media and used by analysts and investors.
  - **Price to Book Value (P/B)**: The ratio of the stock price to book value per share.
  - **Price to Sales (P/S)**: This measure is the ratio of stock price to sales per share.
  - **Price to Cash Flow (P/CF)**: This measure is the ratio of stock price to some per share measure of cash flow.

Price Multiples

- **Two main ways to apply these price multiples**
  - **Price multiples based on Fundamentals:**
    - ✓ The value justified by (based on) fundamentals or a set of cash flow predictions **(intrinsic value)** therefore are independent of the current market prices.
  - **Price multiples based on Comparables:**
    - ✓ Compare relative values between one firm to another using price multiples with **market price**.

Price Multiples

- **Multiples Based on Fundamentals**
  - The Earnings Multiplier Model Derived from DDM
    - ✓ According to infinite period DDM

$$P_0 = \frac{D_1}{r-g}$$

    - ✓ **Justified P/E:** Assume we divide both sides of the equation by E_1 (expected 12-month earnings), the equation changes to:
      - **Leading P/E:** Expected earnings(dividends) used are of next period.

$$\frac{P_0}{E_1} = \frac{D_1/E_1}{r-g} = \frac{1-b}{r-g} = \frac{p}{r-g}$$

      - **Trailing P/E: Based on actual earnings for the previous period.**

$$\frac{P_0}{E_0} = \frac{D_0/E_0}{r-g} \times (1+g) = \frac{(1-b)\times(1+g)}{r-g} = \frac{p\times(1+g)}{r-g}$$

Price Multiples

- **Multiples Based on Comparables**
  - The methodology involves using a price multiple to evaluate whether an asset is fairly valued, undervalued, or overvalued in relation to a benchmark value of the multiple.
  - Identify companies that are most similar according to a number of dimensions. These dimensions include (but are not limited to) overall size, product lines, and growth rate.
  - The economic rationale underlying the method of comparables is the **law of one price**: Identical assets should sell for the same price.

Price Multiples

- **Multiples Based on Comparables**
  - **Price multiples are widely used because:**
    - ✓ Can be calculated easily.
    - ✓ Can be used both cross-sectional (versus the market or another comparable) and in time series.
  - **Disadvantages of using price multiples**
    - ✓ The conclusion drawn under the comparable and fundamental method may be reverse.
    - ✓ Price multiples may lose validity when firms use different accounting methods.
    - ✓ Price multiples for **cyclical firms** may be highly influenced by current economic conditions.

Enterprise Value Multiples

- **Enterprise Value (cost to acquire the firm)**
  - Enterprise value (EV) is total company value, not equity.
  - EV = market value of common stock + market value of preferred equity + market value of debt– cash and short-term investments
- **Advantages**
  - Useful for comparing firms with different degrees of financial leverage and different tax rates
  - EBITDA is useful for valuing capital-intensive business EB.
  - EBITDA is usually positive even when EPS is not.
  - EBITDA is useful for comparing firms with different effective tax rate.
- **Disadvantages**
  - Market value of debt is often not available.
    - ✓ Market value of similar debt can be used.
    - ✓ Book value of debt can be used.

Example

Price Multiples and Enterprise Value Multiples

- Enterprise value is defined as the market value of equity plus:

  A. the face value of debt minus cash and short-term investments.
  B. the market value of debt minus cash and short-term investments.
  C. cash and short-term investments minus the market value of debt.

- Correct answer: B

- A firm has an expected dividend payout ratio of 60% and an expected future growth rate of 7%. What should the firm's justified forward price-to-earnings (P/E) ratio be if the required rate of return on stocks of this type is 15%?

  A. 5.0×.
  B. 7.5×.
  C. 10.0×.

- Correct answer: B

Summary

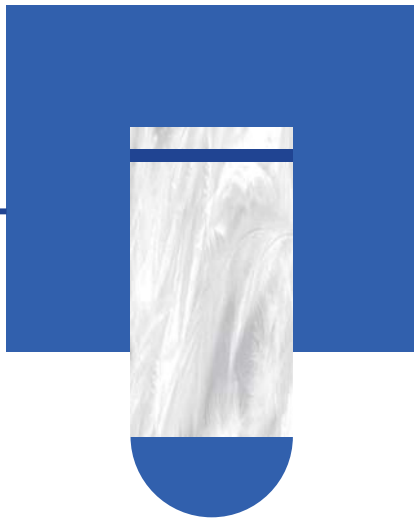
Equity Valuation: Concept and Basic Tool

Price Multiples and Enterprise Value Multiples

Price Multiples

Enterprise Value Multiples

Asset-Based Models



- Asset-Based Valuation
- Comparison of the Three Valuation Methods

Asset-Based Valuation

- An asset-based valuation of a company uses estimates of the **market or fair value of the company's assets and liabilities**. Because market values of the firm assets are usually difficult to obtain, the analyst typically starts with the balance sheet to determine the values of assets and liabilities.
- **The asset-based valuation approach is not applicable when:**
  - Intangible assets or "off the books" assets take up a large proportion.
  - Under a hyper-inflationary condition.
  - Companies with assets don't readily determinable market (fair) value——such as those with significant property, plant, and equipment.
- **The asset-based valuation approach is most applicable when:**
  - Financial companies, natural resource companies, and formerly going-concerns that are being liquidated.
- **Asset-based models are frequently used for valuation of private companies.**

Comparison of the Three Valuation Methods

- **Discounted Cash Flow Models**

Advantages	Disadvantages
• Will grounded in finance theory. • Widely accepted in the analyst community.	• Their inputs must be estimated. • Value estimates are sensitive to inputs.

Comparison of the Three Valuation Methods

- **Price Multiples**

Advantages	Disadvantages
• Evidence that some price multiples are useful for predicting stock returns. • Price multiples are widely used by analysts. • Price multiples are readily available. • They can be used in time series and cross-sectional comparisons. • EV/EBITDA multiples are useful when comparing firm values independent of capital structure or when earnings are negative and the P/E ratio cannot be used.	• Lagging price multiples reflect the past. • May not be comparable across firms if the firms have different size, products, and growth. • Price multiples for cyclical firms may be greatly affected by economic conditions. • A stock may appear overvalued by the comparable method but undervalued by a fundamental method, or vice versa. • Different accounting methods can result in price multiples that are not comparable. • A negative denominator in a price multiple results in a meaningless ratio. The P/E ratio is especially susceptible to this problem.

Comparison of the Three Valuation Methods

- **Price Multiples**

Advantages	Disadvantages
• They are based on theoretically sound valuation models. • They correspond to widely accepted value metrics.	• Price multiples based on fundamentals will be vary sensitive to the inputs (especially the k-g denominator).

- **Asset-Based Models**

Advantages	Disadvantages
• They can provide floor values • Reliable when the firm has primarily tangible short-term assets, assets with ready market values, or when the firm is being liquidated. • They are increasingly useful for valuing public firms that report fair values.	• Market values are difficult to obtain. • Market values are different than book values. • Inaccurate when a firm has a high proportion of intangible assets. • Assets can be difficult to value during periods of hyperinflation.

Example

Asset-Based Models

- Which of the following is *least likely* a rationale for using price multiples?

  A. Price multiples are easily calculated.
  B. The fundamental P/E ratio is insensitive to its inputs.
  C. The use of forward values in the divisor provides an incorporation of the future.

- Correct answer: B

- Which type of valuation model is viewed as having the disadvantage of producing results that may not be comparable across firms?

  A. Asset-based models.
  B. Price multiple models.
  C. Discounted cash flow models.

- Correct answer: B

Example

Asset-Based Models

- Which of the following firms would *most appropriately* be valued using an asset based model?

  A. An energy exploration firm in financial distress that owns drilling rights for offshore areas.

  B. A paper firm located in a country that is experiencing high inflation.

  C. A software firm that invests heavily in research and development and frequently introduces new products.

- Correct answer: A

Summary

Equity Valuation: Concept and Basic Tool

Asset-Based Models

Asset-Based Valuation

Comparison of the Three Valuation Methods

Summary

Module: Equity Valuation: Concept and Basic Tool

Introduction of Equity Valuation

Discounted Cash Flow Models

Price Multiples and Enterprise Value Multiples

Asset-Based Models

问题反馈

- 如果您认为金程**课程讲义/题库/视频**或其他资料中**存在错误，欢迎您告诉我们**，所有提交的内容我们会在最快时间内核查并给与答复。
- **如何告诉我们？**
  - 将您发现的问题通过扫描右侧二维码告知我们，具体的内容包含:
    - ✓ 您的姓名或网校账号
    - ✓ 所在班级
    - ✓ 问题所在科目(若未知科目，请提供章节、知识点和页码）
    - ✓ 您对问题的详细描述和您的见解
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