Summary

- **Importance:** ☆☆
- **Content:**
  - Uses of security market indices
  - Types of equity indices
  - Fixed income indices
  - Alternative investment indices
- **Exam tips:**
  - 了解证券市场指数的用途
  - 了解和区别不同权益指数
  - 了解固收指数和另类投资指数的特征

Concepts of Market Efficiency

Tasks:

- Describe market efficiency and related concepts
- Distinguish between market value and intrinsic value
- Explain factors that affect a market's efficiency

Concepts of Market Efficiency

- **An informationally efficient market** is a market in which asset prices reflect new information quickly and rationally.
  - A passive investment strategy is preferred to an active investment strategy due to lower costs.
  - Prices react only to the "unexpected" information.

Concepts of Market Efficiency

- **Market Value** is the price at which an asset can currently be bought or sold.
- **Intrinsic value(内在价值)** is the value if investors had a complete understanding of asset's investment characteristics.
  - In an efficient market, market prices accurately reflect intrinsic values.

Concepts of Market Efficiency

Factors that Affect Market Efficiency

- Market Participants
  - The larger the number of participants, the more efficient the market.
- Information Availability
- Limits to Trading
  - Limits to trading, such as arbitrage, short selling, will impede market efficiency.
- Transaction Costs and Information-Acquisition Costs

Practice

Which of the following regulations will most likely contribute to market efficiency? Regulatory restrictions to:

A. Short selling

B. Foreign traders

C. Insider trading with nonpublic information

Answer: C

Regulation to restrict unfair use of nonpublic information encourage greater participation in the market, which increases market efficiency.

Summary

- **Importance:** ☆
- **Content:**
  - Definition of market efficiency
  - Market value and intrinsic value
  - Factors that affect market efficiency
- **Exam tips:**
  - 了解有效市场的定义
  - 区别市场价值和内在价值
  - 了解影响市场有效性的因素

Forms of Market Efficiency

Tasks:

- Describe weak-form, semi-strong form, and strong form market efficiency
- Explain the implications of each form of market efficiency for investment analysis and management

Forms of Market Efficiency

- **Weak-Form Efficient Market Hypothesis** (弱势有效市场假设): securities prices reflect all historical price and trading volume information.
  - Investors cannot earn abnormal profit using technical analysis.
    - ✓ **Technical analysis**(技术分析) involves the analysis of historical trading information in an attempt to identify recurring patterns that can be used to guide investment decisions.

Forms of Market Efficiency

- **Semi-Strong Form Efficient Market Hypothesis** (半强有效市场假设): securities prices accurately and quickly reflect all publicly known and available information.
  - The semi-strong form encompasses the weak form.
  - Investors cannot earn abnormal profits using fundamental analysis.
    - ✓ **Fundamental analysis** (基本面分析) is the examination of publicly available information and the formulation of forecasts to estimate the intrinsic value of assets.

Forms of Market Efficiency

- **Strong-Form Efficient Market Hypothesis**(强势有效市场假设): securities prices fully reflect both public and private information.
  - Strong form encompasses semi-strong and weak form.
  - Insiders cannot earn abnormal returns from trading on private information.

Forms of Market Efficiency

Three Forms of Market Efficiency

	Market Prices Reflect:		
Forms of Market Efficiency	**Past Market Information**	**Public Information**	**Private Information**
Weak-Form	√		
Semi-Strong Form	√	√	
Strong Form	√	√	√

Forms of Market Efficiency

Roles for Portfolio Manager in Efficient Market

- Establish portfolio risk/return objectives
- Portfolio diversification
- Implement asset allocation based on risk/return objectives
- Tax minimization

Practice 1

With respect to the efficient market hypothesis, if security prices reflect only past prices and trading volume information, then the market is:

A. Weak form efficient

B. Strong form efficient

C. Semi strong form efficient

Answer: A

The weak form efficient market hypothesis is defined as a market where security prices fully reflect all market data, which refers to all past price and trading volume information.

Practice 2

Fundamental analysts assume that markets are:

A. weak-form inefficient

B. semi-strong form efficient

C. semi-strong form inefficient

Answer: C

Fundamental analysts are publicly available information to estimate a security's intrinsic value to determine if the security is mispriced, which is inconsistent with the semi-strong form of market efficiency. Semi-strong form market efficiency states that investors cannot earn abnormal returns by trading based on publicly available information.

Summary

- **Importance:** ☆☆☆
- **Content:**
  - Forms of market efficiency
  - Roles for portfolio managers in efficient market
- **Exam tips:**
  - 区别不同有效市场假设，理解不同有效市场对投资分析和管理的影响
  - 了解组合经理在有效市场的作用

Market Anomalies

Tasks:

- Describe selected market anomalies

Market Anomalies

- **Market Anomaly (市场异常):** a price change cannot be linked to current relevant information or to the release of new information.

Sampling of Observed Pricing Anomalies		
Time Series	**Cross-Sectional**	**Other**
January Effect Day-of-the-Week Effect Weekend Effect Turn-of-the-Month Effect Holiday Effect Time-of-Day Effect Momentum Overreaction	Size Effect Value Effect	Closed-end Fund Discount Earnings Surprise Initial Public Offerings Distressed Securities Effect Stock Splits Super Bowl

Market Anomalies

Time-Series Anomalies - Calendar Anomalies

- **January Effect/Turn-of-the-year effect**: stock returns in January are significantly higher compared to the rest of the months of the year. This may be due to "tax-loss selling" and "window dressing".
- **Turn-of-the-month effect**: returns tend to be higher on the last trading day of month and the first three trading days of next month.

Market Anomalies

Time-Series Anomalies - Calendar Anomalies

- **Day-of-the-week effect**: the average Monday return is negative and lower than the average returns for the other four days.
- **Weekend effect**: returns on weekends tend to be lower than returns on weekdays.
- **Holiday effect**: returns on stocks in the day prior to market holidays tend to be higher than other days.

Market Anomalies

Time-Series Anomalies – Momentum and Overreaction Anomalies

- Investors overreact to the release of unexpected public information.
- Stocks with poor performance over the past three to five years have better subsequent returns than stocks with high returns over the prior period.

Market Anomalies

Cross-Sectional Anomalies

- **Size Effect**: small-cap stocks tend to outperform large-cap stocks on a risk-adjusted basis.
- **Value Effect**: value stocks, which are generally referred to as stocks with below-average P/E ratios and P/B ratios, have consistently outperformed growth stocks.

Market Anomalies

Other Anomalies

- **Closed-End Fund Discounts**: closed-end funds generally trade at a discount from their Net Asset Value (NAV).
- **Earnings Surprise**: slow adjustment of prices for unexpected earnings (earnings surprise) .
- **Initial Public Offerings (IPOs)**: investors able to buy IPO shares at their offering prices may earn abnormal profits. But the long term performance is generally below average.
- **Economic fundamentals**: stock returns are related to known economic fundamentals, such as dividend yields, stock volatility, and interest rates.

Practice

Which of the following market anomalies is inconsistent with weak-form market efficiency?

A. Earning surprise

B. Momentum pattern

C. closed-end fund discount

Answer: B

Trading based on historical momentum indicates that price patterns exist and can be exploited by using historical price information. A momentum trading strategy that produces abnormal returns contradict the weak-form market efficiency.

Summary

- **Importance:** ☆☆
- **Content:**
  - Times-series anomalies
  - Cross-sectional anomalies
  - Other anomalies
- **Exam tips:**
  - 了解各类市场异常，及其与有效市场假设的关系

Behavioral Finance

Tasks:

- Contrast the behavioral finance view of investor behavior to that of traditional finance

Behavioral Finance

- **Behavioral Finance** examines investor behavior and how this behavior affects the financial markets.
  - **Loss Aversion**(厌恶损失): investors dislike losses more than they like comparable gains. This can explain the overreaction anomaly.
  - **Overconfidence**(过度自信): investors place too much emphasis on their ability to process and interpret information about a security, which leads to mispricing.

Behavioral Finance

- **Representativeness**(代表性): investors assume that good companies are good investments.
- **Gambler's fallacy**(赌徒谬论): recent outcomes affect investors' estimates of future probabilities.
- **Mental accounting** (精神账户): investors keep track of the gains and losses for different investments in separate mental accounts rather than viewing them as a total portfolio.
- **Conservatism**(保守主义): investors are slow to react to changes.

Behavioral Finance

- **Disposition effect**(处置效应): investors tend to avoid realizing losses but seek to realize gains.
- **Information Cascades**(信息瀑布): transmission of information from those acting first and whose decisions influence others.
  - ✓ This behavior is consistent with rationality.
  - ✓ **Herding behavior** (羊群效应): trading occurs in clusters and is not necessarily driven by information.

Practice

Observed overreactions in markets can be explained by an investor's degree of:

A. Risk aversion

B. Loss aversion

C. Confidence in the market

Answer: B

Behavioral theories of loss aversion can explain observed overreaction in markets, such that investors dislike losses more than comparable gains

Summary

- **Importance:** ☆☆
- **Content:**
  - Behavioral finance
- **Exam tips:**
  - 了解行为金融学的相关概念

Overview of Equity Securities[1]

Tasks:

- Describe characteristics of types of equity securities
- Describe differences in voting rights and other ownership characteristics among different equity classes
- Distinguish between public and private equity securities
- Compare the risk and return characteristics of different types of equity securities

Overview of Equity Securities[1]

- **Common Shares(普通股)**
  - represent an ownership interest in a company.
  - Share in the operating performance of the company.
  - Have a residual claim on company's net assets in liquidation.
  - The payments of dividend are not contractually obligation.
  - Participate in the governance process through voting rights.

Overview of Equity Securities[1]

- **Voting Rights**
  - **Proxy Voting**: allows a designated party to vote on the shareholders' behalf.
  - **Statutory Voting(法定投票)**: each share represents one vote.
  - **Cumulative voting(累计投票)**: total voting rights are based on the number of shares owned multiplied by the number of board directors being elected. Shareholders can direct their total voting rights to specific candidates.
  - Companies can issue different classes of common shares, with each class offering different ownership rights.

Overview of Equity Securities[1]

- **Common Shares**
  - **Callable Common Shares(可赎回普通股)**: give the issuing company the option (or right), but not the obligation, to buy back shares from investors at a predetermined call price.
  - **Putable Common Shares**(可卖回普通股): give investors the option (or right) to sell their shares back to the issuing company at a predetermined put price.

Overview of Equity Securities[1]

- **Preference Shares(优先股)** have characteristics of both debt securities and common shares.
  - Similar to debt securities:
    - ✓ The dividends are fixed.
    - ✓ Do not have voting rights
    - ✓ Do not share in the operating performance of the company
  - Similar to common shares:
    - ✓ Preference shares can be perpetual.
    - ✓ Dividends are not contractual obligations.
    - ✓ Can be callable or putable.

Overview of Equity Securities[1]

- **Cumulative Preference Shares**(可累计优先股): the unpaid dividends in the prior periods accrue over time and must be paid in full before dividends on common shares can be paid.
- **Participating Preference Shares**(参与优先股)entitle the shareholders to receive the standard preferred dividend plus the opportunity to receive an additional dividend if the company's profits exceed a pre-specified level.

Overview of Equity Securities[1]

- **Convertible Preference Shares**(可转优先股)entitle shareholders to convert their shares into a specified number of common shares.
  - earn a higher dividend
  - share in the profits of the company
  - benefit from a rise in common shares' price through the conversion
  - have less price volatility than underlying common shares

Overview of Equity Securities[1]

- **Private Equity Securities** have the following characteristics:
  - No active secondary markets
  - Less transparent than public securities.
  - Greater ability to focus on long-term prospects because there is no public pressure for short-term results.
  - Lower reporting costs
  - Potentially greater return for investors once the firm goes public.

Overview of Equity Securities[1]

- Types of private equity investments:
  - **Venture Capital investments** provide financing to companies that are in the early stages of development and require additional capital for expansion.
  - **Leveraged Buyout (LBO):** investors use debt to purchase all of the outstanding common shares of a firm.
  - **Private Investment in Public equity (PIPE)**: a public company quickly sell ownership position to private investors.

Overview of Equity Securities[1]

Risk and Return Characteristics of Equity Securities

- **Equity returns**: price change, dividend, and foreign exchange gains (losses) in the case of foreign investments.
  - The compounding that results from reinvested dividends can be an important source of return.
- **Risk of equity securities**
  - Preference shares are less risky than common shares.
  - Putable shares are less risky than callable or non-callable shares.
  - Cumulative/participating preference shares are less risky than non-cumulative/non-participating preference shares.

Practice 1

From an investor's point of view, which of the following equity securities is the least risky?

A. Putable preference shares

B. Callable preference shares

C. Non-callable preference shares

Answer: A

Putable shares, whether common or preference, give the investor the option to sell the shares back to the issuer at a predetermined price. This creates a floor for the share's price that reduces the uncertainty of future cash flows.

Practice 2

Which of the following is not a characteristics of common equity?

A. It represents an ownership interest in the company

B. Shareholders participate in the decision-making process

C. The company is obligated to make periodic dividend payments

Answer: C

The company is not obligated to make dividend payments. It is at the discretion of the company whether or not it chooses to pay dividends.

Summary

- **Importance:** ☆☆
- **Content:**
  - Common and preference shares
  - Callable and putable shares
  - Statutory and cumulative voting
  - Cumulative, participating, convertible preference shares
  - Private equity securities
- **Exam tips:**
  - 了解各类权益证券的特征
  - 区别法定投票机制和累计投票机制

Overview of Equity Securities[2]

Tasks:

- Describe methods for investing in non-domestic equity securities
- Explain the role of equity securities in the financing of a company's assets
- Distinguish between market and book value of equity
- Compare a company's cost of equity, return on equity, investors' required rates of return

Overview of Equity Securities[2]

- **Depository Receipts (DRs)(存托凭证):** represent ownership in a foreign company.
  - The price of each DR is affected by factors affecting the price of the underlying shares.
    - ✓ **Sponsored DR(参与型存托凭证)**: foreign company has a direct involvement in the issuance. Investors have the same rights as the direct owners of the common shares.
    - ✓ **Unsponsored DR(非参与型存托凭证)**: foreign company has no involvement with the issuance. Investors have right to receive dividends, but no voting rights, which is held by the issuer of DRs.

Overview of Equity Securities[2]

- **Global Depositary Receipts** are issued outside of the company's home country and outside of the United States.
- **American Depository Receipts** is a US dollar-denominated security that trades like a common share on US exchange.
- **Global Registered Shares** are common shares that are traded on different stock exchanges around the world in different currencies.
- **Basket of Listed Depository Receipts**: is an exchange-traded fund that represents a portfolio of depository receipts.

Overview of Equity Securities[2]

Roles of Equity Securities

- Companies issue equity securities:
  - To make acquisitions
  - To provide option-based incentives to employees
  - To finance their operating activities (buy long-lived assets, R&D, etc)

Overview of Equity Securities[2]

- **Book value** of equity = total assets minus total liabilities.
  - Book value and market value are rarely equal.
  - Management actions can directly affect the book value, but they can only indirectly affect the market value.

Overview of Equity Securities[2]

- **Return on Equity (ROE)** is used by investors to determine whether the management is efficiently using the equity capital to generate profits.

$$ROE_t = \frac{NI_t}{(BVE_t + BVE_{t-1})/2}$$

Overview of Equity Securities[2]

- **Cost of equity**: the expected equilibrium return on a company's shares in the market.
  - Cost of equity can be interpreted as the minimum return required by investors to compensate them for the risk.
  - If an investor's required return exceeds the cost of equity, he/she will sell the shares.
  - Two models commonly used to estimate cost of equity: the dividend discount model (**DDM**), and the capital asset pricing model (**CAPM**).

Practice 1

When investing in unsponsored depository receipts, the voting rights to the shares in the trust belong to:

A. The depository bank

B. The investors in the depository receipts

C. The issuer of the shares held in the trust

Answer: A

In an unsponsored DR, the depository bank owns the voting rights to the shares. The bank purchases the shares, places them into a trust, and then sells shares in the trust-not the underlying shares-in other markets.

Summary

- **Importance:** ☆☆
- **Content:**
  - Methods of investing in foreign equity securities
  - Roles of equity securities
  - Book value and market value of equity
  - Return on equity and cost of equity
- **Exam tips:**
  - 重点掌握国外股票投资的不同方式
  - 了解企业股权融资的通途
  - 区分股票的账面价值和市场价值，权益回报，权益成本和投资者要求回报率

Introduction to Industry Analysis

Tasks:

- Explain uses of industry analysis
- Compare methods by which companies can be grouped, industry classification systems, classify a company
- Explain the factors that affect the sensitivity of a company to the business cycle
- Explain how a company's industry classification can be used to identify a potential "peer group"

Introduction to Industry Analysis

Uses of Industry Analysis

- Understanding a company's business environment
- Identifying active equity investment opportunities
- Portfolio performance attribution

Introduction to Industry Analysis

Approach to Identify Similar Companies

- **Product or services supplied**: an industry is defined as a group of companies offering similar products or services.
- **Business-cycle sensitivities**: companies are grouped on the basis of their relative sensitivity to the business cycle.
- **Statistical similarities**: the grouping is based on the correlations of past securities' returns.
  - Often result in non-intuitive groups of companies.
  - The composition may vary by time and region.
  - No guarantee that past correlations will continue in the future
  - Carry the inherent dangers of all statistical methods.

Introduction to Industry Analysis

Industry Classification Systems

- **Commercial Industry Classification Systems**
- **Governmental Industry Classification Systems**
  - *International Standard Industrial Classification of All Economic Activities, North American Industry Classification System.*
  - **Weaknesses**
    - ✓ No disclosure about constituents of a particular industry.
    - ✓ No distinction between small and large, for-profit and not-for-profit, public and private companies.

Introduction to Industry Analysis

Business Cycle Sensitivity

- **Cyclical company**: profits are strongly correlated with the business cycle(housing, autos, etc)
- **Non-cyclical company**: profits are independent of the business cycle(food, health care, etc)
  - **Defensive**: Basic goods and services with relatively stable demand
  - **Growth**: Demand is so strong that the firm is largely unaffected by business cycle

Introduction to Industry Analysis

Business Cycle Sensitivity

- **Limitations of Classifying a company as "growth", "defensive", "cycle"**
  - Placement of companies in one of the two groups is arbitrary. e.g. severe recessions affect all companies.
  - Different countries frequently progress through the various stages of the business cycle at different times.

Introduction to Industry Analysis

- **Peer group(同类组)**: a group of companies engaged in similar business activities whose economics and valuation are influenced by closely related factors.
- **Steps in constructing a peer group**

1. Examine commercial classification system for identifying companies in the same industry.
2. Review the subject company's annual report for specific competitors.
3. Review industry publications to identify comparable companies.
4. Confirm that companies have similar business activities, demand drivers, cost structure drivers, availability of capital.

Practice

A company that is sensitive to the business cycle would most likely?

A. Not have growth opportunities

B. Experience below-average fluctuation in demand

C. Sell products that the customer can purchase at a later date if necessary

Answer: C

Customers' flexibility as to when they purchase the product makes the product more sensitive to the business cycle.

Summary

- **Importance:** ☆
- **Content:**
  - Uses of industry analysis
  - Approach to identify similar companies
  - Current industry classification systems
  - Peer group
- **Exam tips:**
  - 解释行业分析的用途
  - 了解公司分类的方法
  - 区别商业和政府行业分类系统
  - 了解确定公司“同类组”的方法

Strategic Analysis of Industry

Tasks:

- Describe the elements that need to be covered in a thorough industry analysis
- Describe the principles of strategic analysis of an industry
- Explain the effects of barriers to entry, industry concentration, industry capacity, and market share stability on pricing power and price competition

Strategic Analysis of Industry

- **Strategic Analysis:** analysis of the competitive environment with an emphasis on the implications of the environment for corporate strategy.

Strategic Analysis of Industry

Elements in strategic analysis

- Barriers to entry/success
- Industry concentration
- Influence of industry capacity on pricing
- Industry stability
- Life cycle
- Competition
- Demographic/Government/Social/Technological influences
- Whether the industry is growth, defensive, or cyclical
- Position industry on **experience curve** (cost per unit relative to output)

Strategic Analysis of Industry

- Intensity of industry competition depends on:
  - Rivalry among existing competitors
  - Threat of new entrants
  - Threat of substitute products
  - Bargaining power of buyers
  - Bargaining power of suppliers

Strategic Analysis of Industry

Barriers to Entry

- Barriers to entry are determined by capital requirements, intellectual capital, regulation, etc.
- Industries with low barriers to entry is likely to be competitive, and often have little pricing power.
- High barriers to entry do not guarantee pricing power when:
  - Price is a large component of customers' purchase decision
  - Companies have high barriers to exit, which means they are prone to overcapacity.
- Barriers to entry can change over time.

Strategic Analysis of Industry

Industry Concentration

- Fragmental industries tend to be highly price competitive.
- Concentrated industries do not guarantee pricing power.
- Relative market shares have a greater impact on pricing power than absolute market shares.

Strategic Analysis of Industry

Market Share Stability

- Market share stability is influenced by *barriers to entry, frequency of new product introductions, product differentiation*.
  - Stable market shares typically indicate less competitive industries.
  - Unstable market shares often indicate highly competitive industries with limited pricing power.

Strategic Analysis of Industry

Industry Capacity

- Under-capacity leads to more pricing power as demand exceeds supply.
- Over-capacity leads to price cutting and a competitive environment as supply exceeds demand.
- Capacity is fixed in the short term and variable in the long term.
- Physical capacity is hard to re-deploy, and producers may overshoot long-run demand.
- Non-physical capacity(financial and human capital) can be quickly shifted to new uses.

Strategic Analysis of Industry

External Factors that affect an Industry

- **Macroeconomic influence**: GDP, interest rates, the availability of credit, inflation, etc.
- **Technological influence**: new technologies create new or improved products that can radically change an industry.
- **Demographic influences**: changes in population size, the distributions of age and gender, etc.
- **Governmental influences**: tax, regulations.
- **Social influences**: how people work, spend their money, enjoy their leisure time, etc

Practice

Which of the following is not one of Porter's five forces?

A. Intensity of rivalry

B. Bargaining power of suppliers

C. Threat of government intervention

Answer: C

Although the threat of government intervention may be considered an element of some of Porter's five forces, it is not one of the listed forces.

Summary

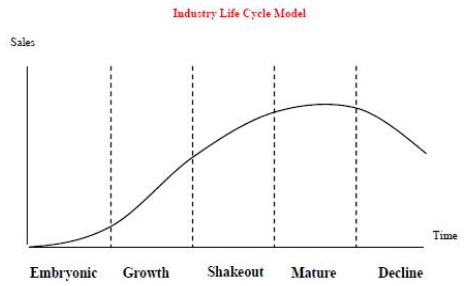
- **Importance:** ☆ ☆
- **Content:**
  - Elements of strategic analysis
  - Porter's five forces
  - Barriers to entry, industry concentration, market share stability, industry capacity
  - External factors that affect an industry
- **Exam tips:**
  - 重点掌握波特模型，进入壁垒，行业集中，市场份额稳定性，和行业产能对公司定价权的影响
  - 了解影响行业的五个外部因素

Industry Life Cycle and Firm Competitive Strategies

Tasks:

- Describe industry life cycle models
- Classify an industry as to life cycle
- Describe limitations of the life cycle models
- Describe the elements that should be covered in a thorough company analysis

Industry Life Cycle and Firm Competitive Strategies



Industry Life Cycle and Firm Competitive Strategies

- **Embryonic stage(初期阶段)**: the industry is just beginning to develop.
  - Slow growth: customers tend to be unfamiliar with the products.
  - High prices: sales and production are not yet sufficient to achieve economies of scale.
  - Substantial investment is generally required.
  - The risk of failure is high.

Industry Life Cycle and Firm Competitive Strategies

- **Growth stage(增长阶段)**:
  - Rapid growth: demand is fueled by new customers.
  - Falling prices: economies of scale are achieved, and distribution channels develop.
  - Improving profitability: sales rise and economies of scale are attained.
  - Relatively low competition: rapidly expanding demand allows companies to grow without needing to capture market share from competitors.
  - Threat from new entrants is usually highest as barriers to entry are relatively low.

Industry Life Cycle and Firm Competitive Strategies

- **Shakeout stage(震荡阶段)**:
  - Slowing growth: demand approaches market saturation.
  - Intense competition: growth becomes increasingly dependent on market share gains.
  - Increasing over-capacity: company investments exceed demand growth.
  - Declining profitability: companies cut prices to fill excess capacity.
  - Increasing failure

Industry Life Cycle and Firm Competitive Strategies

- **Mature stage(成熟阶段)**:
  - Little or no growth: market is saturated and growth is limited to replacement demand and population expansion.
  - Increasing consolidation: market evolves to oligopoly due to merges and acquisitions.
  - High barriers to entry: surviving companies tend to have brand loyalty and efficient cost structures.
  - Stable pricing: companies are interdependent and try to avoid price wars. But periodic price wars do occur during periods of declining demand.
  - Companies with superior products gain market share and grow faster than industry average.

Industry Life Cycle and Firm Competitive Strategies

- **Decline stage(下降阶段)**:
  - Negative growth: demand declines due to technological substitution, social changes, and global competition.
  - Declining prices: excess capacity, and price wars often occur.
  - Consolidation: weaker companies exit, merge, or redeploy capital into different products/services.

Industry Life Cycle and Firm Competitive Strategies

- **Limitations of Industry Life-Cycle Analysis:**
  - The evolution of an industry does not always follow a predictable pattern.
  - Various external factors may cause stages to be longer or shorter, or to be skipped altogether.
  - Life-cycle models tend to be most useful for analyzing industries during periods of stability.
  - Not all companies in an industry experience similar performances.

Industry Life Cycle and Firm Competitive Strategies

Firm's competitive strategy

- **Cost leadership (low cost)**: Lowest costs of production , lowest prices; sell enough volume to earn superior return.
- **Product or service differentiation**: Distinctive in terms of type, features, quality, or delivery; achieve price premium.

Practice

In which of the following life cycle phases are price wars most likely to be absent?

A. Mature

B. Decline

C. Growth

Answer: C

The growth phase is not likely to experience price wars because expanding industry demand provides companies the opportunities to grow even without increasing market share. When industry growth is stagnant, companies may only be able to grow by increasing market share, e.g. by engaging in price competition.

Summary

- **Importance:** ☆☆☆
- **Content:**
  - Industry life cycle models
  - Firm's competitive strategies
- **Exam tips:**
  - 重点理解行业生命周期五个阶段的特征，能根据公司特征判定其所处的生命周期阶段
  - 了解行业生命周期模型的局限性
  - 了解公司可采取的两种竞争策略

Equity Valuation: Discounted Cash Flow Model

Tasks:

- Describe major categories of equity valuation models
- Explain the rationale for using present value models
- Calculate the intrinsic value of a preferred stock
- Calculate the intrinsic value of an equity security using Gordon growth model or two-stage dividend discount model
- Identify companies for which the constant growth or multistage dividend discount model is appropriate

Equity Valuation: Discounted Cash Flow Model

- Estimated value > market price **undervalued**.
- Estimated value = market price **fairly valued**.
- Estimated value < market price **overvalued**.

Equity Valuation: Discounted Cash Flow Model

Major Categories of Equity Valuation Models

- **Present value models** (**discounted cash flow models**): the intrinsic value of a security is the present value of the future cash flow expected to be received from the security.
- **Multiplier models** (**market multiple models**): are based chiefly on share price multiples or enterprise value multiples. For example, P/E, P/B, P/S, P/CF.
- **Asset-based valuation models**: the intrinsic value of a common share is the estimated value of the assets minus the estimated value of its liabilities and preferred shares.

Equity Valuation: Discounted Cash Flow Model

- **Rationale** for using the present value models:
  - Investors expect a rate of return over the investment period.
  - The value of an investment should equal to the present value of the expected future benefits.
- **Dividend Discount Model (DDM)**: the intrinsic value of a share is the present value of expected future dividends.

$$V_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+r)^t}$$

V_0 = value of a share of stock today, at t = 0
D_t = expected dividend in year t, assumed to be paid at the end of the year
r = required rate of return on the stock

Equity Valuation: Discounted Cash Flow Model

- **N holding periods** : the intrinsic value is the present value of the expected dividends for n periods plus the present value of the expected price in n periods.

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

V_0 = value of a share of stock today, at t = 0
D_t = expected dividend in period n, assumed to be paid at the end of the year
r = required rate of return on the stock
P_n = the terminal value

Equity Valuation: Discounted Cash Flow Model

- **Free-Cash-Flow-to-Equity(FCFE) Valuation Model** : the intrinsic value is the present value of the expected FCFE.
  - FCFE is a measure of dividend-paying capacity.
  - FCFE model is appropriate for a non-dividend-paying stock.

FCFE = CFO –Fixed Capital Investments + Net borrowing

CFO(cash flow from operations) = net income + non-cash expenses – investment in working capital

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

Equity Valuation: Discounted Cash Flow Model

Valuation of Preferred Stock

- For a non-callable, non-convertible perpetual preferred share paying a dividend D each period, and assuming a constant required rate of return r over time:

$$V_0 = \frac{D}{r}$$

Equity Valuation: Discounted Cash Flow Model

- **The Gordon Growth Model** (戈登增长模型)assumes dividends grow indefinitely at a constant rate.
  - Appropriate for valuing the equity of dividend-paying companies relatively insensitive to the business cycle and in a mature phase.

$$V_0 = \frac{D_1}{r - g_c} = \frac{D_0(1+g_c)}{r - g_c} \qquad r = r_f + \beta(r_M - r_f)$$

g_c = Retention Rate*ROE

- g_c = sustainable growth rate
- Earnings retention rate = 1 – dividend payout ratio
- ROE = return on equity

Equity Valuation: Discounted Cash Flow Model

- **Assumptions** of the Gordon Model:
  - The dividend growth rate is forever and never change
  - The required rate of return is constant over time
  - The dividend growth rate is less than the required rate of return

Equity Valuation: Discounted Cash Flow Model

- **Two-stage DDM models** assumes the company experiences an initial and finite period of high growth, followed by an infinite period of sustainable growth.
  - Appropriate for a company already moved through its growth phase and is currently in the transition phase prior to moving to the maturity phase.
  - The Gordon Growth Model is used to estimate the terminal value at the end of period of high growth.

$$V_0 = \sum_{t=1}^{n} \frac{D_0(1+g_h)^t}{(1+t)^t} + \frac{V_n}{(1+r)^n} \qquad V_n = \frac{D_{n+1}}{r-g_l}$$

Practice 1

An investor expects a share to pay dividends of 3.00 and 3.15 at the end of years 1 and 2, respectively. At the end of the second year, the investor expects the shares to trade at 40. the required rate of return on the shares is 8%. If the investor's forecasts are accurate and the market price of the share is currently 30. The most likely conclusion is that the shares are:

A. Overvalued

B. Undervalued

C. Fairly valued

Answer: B

$$V_0 = \frac{3.00}{(1.08)^1} + \frac{3.15}{(1.08)^2} + \frac{40}{(1.08)^2} = 39.77 > 30$$

Practice 2

The Beasley Corporation has just paid a dividend of 1.75 per share. If the required rate of return is 12.3 percent per year and dividends are expected to grow indefinitely at a constant rate of 9.2% per year, the intrinsic value of Beasley Corporation is closest to:

A. 15.54

B. 56.45

C. 61.65

Answer: C

$$V_0 = \frac{D_1}{r-g} = \frac{1.75(1+9.2\%)}{12.3\%-9.2\%} = 61.65$$

Practice 3

The following information is available about a company:

Next year's sales revenue	$180 million
Next year's net profit margin	15%
Dividend payout ratio	60%
Dividend growth rate expected during Years 2 and 3	25%
Dividend growth rate expected after Year 3	5%
Investors' required rate of return	12%
Number of outstanding shares	8.1 million

according to the two-stage dividend discount model is *closest* to:

A. $39.36.

B. $52.86.

C. $49.20.

Practice 3

Answer: A

Net profit margin = Net earnings/Sales

Net earnings = Net profit margin × Sales;

Dividends per share (D_n) = (Net earnings × Payout ratio)/Number of outstanding shares;

Therefore, D_1 = ($180 million × 0.15 × 0.60)/8.1 million = $2.00

D_2 = $2.00(1 + 0.25) = $2.50

D_3 = $2.00(1 + 0.25)^2= $3.13

D_4 = $2.00(1 + 0.25)^2(1 + 0.05) = $3.28

V_3 =3.28/(0.12-0.05)=46.86

V_0 =2/1.12 +2.5/1.12^2 +(3.13+46.86)/1.12^3=39.36

Summary

- **Importance:** ☆☆☆
- **Content:**
  - Major categories of equity valuation models
  - Dividend discount models and FCFE models
  - Valuation of preferred stock
  - Gordon growth model and two-stage model
- **Exam tips:**
  - 了解权益证券的三类估值方法
  - 掌握红利或权益自由现金流折现估值法
  - 计算优先股价值
  - 通过戈登增长模型或两阶段模型计算股票价值，判断这两种模型的适用条件

Equity Valuation: Multiplier Model

Tasks:

- Explain the rationale for using price multiples to value equity, how the price to earnings multiple relates to fundamentals, and the use of multiples based on comparables
- Calculate and interpret P/E, P/CF, P/S, P/B
- Describe enterprise value multiples and their use in estimating equity value

Equity Valuation: Multiplier Model

- **Price Multiple** compares the share price with some sort of monetary flow or value
  - E.g., P/E, P/B, P/S, P/CF
- **Trailing Price Multiples**(实际价格乘数) use trailing or current values of the divisor.
- **Leading price Multiples**(预期价格乘数) use leading or forward values of the divisor.

Equity Valuation: Multiplier Model

- **Price Multiples based on fundamentals**: the stock value is justified by fundamentals or a discount cash flow model.

$$\frac{P_0}{E_1} = \frac{D_1 / E_1}{r-g} = \frac{\text{dividendpayoutratio}}{r-g}$$

- The P/E ratio is inversely related to the required rate of return, and positively related to the growth rate.
- The relationship between P/E and payout ratio is ambiguous because a higher payout ratio may imply a slower growth rate.

Equity Valuation: Multiplier Model

- **The Method of Comparables**
  - The comparable method uses a price multiple to evaluate whether an asset is *fairly valued, undervalued, or overvalued* relative to a benchmark value.
    - ✓ Choices for the benchmark include: *the multiple of a closely similar stock, average or median value of the multiple for the industry*

Equity Valuation: Multiplier Model

- **Advantages of Price Multiples**
  - Allow for relative comparisons, both cross-sectional and in time series.
  - Price multiples are popular among investors
- **Disadvantages of Price Multiples**
  - May generate a contradictive conclusion with those of the discounted cash flow methods.
  - Differences in accounting standards and/or methods can result in multiples not easily comparable.
  - The multiples for cyclical companies may be highly influenced by current economic conditions.

Equity Valuation: Multiplier Model

- **Enterprise Value =**

  market value of common stock + market value of preferred stock + market value of debt – cash and cash equivalents

  - Enterprise value is often viewed as the cost of a takeover.

$$\text{Enterprise Value Multiple} = \frac{\text{Enterprise Value}}{\text{EBITDA}}$$

  - Enterprise value is most useful when comparing companies with significant differences in capital structure.
  - EBITDA is usually positive

Practice 1

A price earnings ratio that is derived from the Gordon growth model is inversely related to the:

A. Growth rate

B. Dividend payout ratio

C. Required rate of return

Answer: C

P/E is inversely related to the required rate of return, r, and directly related to the growth rate, g, and the dividend payout ratio, D/E.

Practice 2

Calculating Enterprise Value	
Stock price	$40
Shares outstanding	200,000
Market value of long-term debt	$600,000
Book value of long-term debt	$900,000
Book value of total debts and liabilities	$2,100,000
Cash and cash equivalents	$250,000
EBITDA	$1,000,000

Practice 2

Solution:

Step 1: Determine market value of short term debt and liabilities

Assume book value = market value for short-term items

Book value of total debt - book value of long-term debt =

$2 ,100 ,000 —$900 ,000 = $1 ,200,000

Step 2: Market value of total debt = market value of long-term debt + short-term debt

= $600,000 + $1 ,200,000 = $1 ,800,000

Step 3: Market value of equity = stock price x number of shares

= $40 x 200,000 = $8,000,000

Practice 2

Solution:

Step 4: EV = debt + equity - cash
= $1 ,800,000 + $8 ,000 ,000 —$250 ,000
= $9,550,000

Step 5: EV / EBITDA
= $9,550,000 / $1 ,000,000 = 9.6

Step 6: Compare to competitor or industry average, low values indicate underpriced

Summary

- **Importance:** ☆☆☆
- **Content:**
  - P/E, P/S, P/CF, P/B, Enterprise value multiple
  - Trailing or leading price multiples
  - Price multiples based on fundamentals or comparables
  - Advantages or disadvantages of price multiple models
- **Exam tips:**
  - 解释价格乘数估值的原理，及其优缺点
  - 区别实际和预期价格乘数
  - 理解和计算基于基本面价值的市盈率
  - 理解和计算企业价值乘数

Equity Valuation: Asset-Based Valuation Model

Tasks:

- Describe asset-based valuation models and their use in estimating equity value

Equity Valuation: Asset-Based Valuation Model

Market value of Equity =

market value of assets – market value of liabilities

- Asset-based valuation works well for companies that:
  - Primarily tangible short term assets
  - Assets with ready market values
  - The firm cease to operate and is being liquidated.

Equity Valuation: Asset-Based Valuation Model

- Asset-based valuation is problematic when:
  - Companies with assets that do not have easily determinable market values. (e.g. PPE)
  - Fair values of assets and liability can be very different from their book values
  - It may understate a company values because some important intangible assets, such as good business reputation, are not shown on the balance sheet. Thus it gives a "floor" value.
  - Asset values are more difficult to estimate in a hyper-inflationary environment.

Practice

Which of the following is most likely a reason for using asset-based valuation?

A. The analyst is valuing a privately held company

B. The company has a relatively high level of intangible assets

C. The market values of assets and liabilities are different from the balance sheet values

Answer: A

Asset-based valuations are most often used when an analyst is valuing private firms. Both B and C are considerations in asset-based valuations but are more likely to be reasons to avoid that valuation model rather than reasons to use it.

Summary

- **Importance:** ☆☆
- **Content:**
  - Asset-based valuation model
  - Advantages and disadvantages of asset-based model
- **Exam tips:**
  - 了解基于资产估值法的原理
  - 重点掌握基于资产估值法的适用和不适用条件