

5. Equity

5.1. Overview of Financial Market: Function & Regulation

5.1.1. 重要知识点

5.1.1.1. Main functions of the financial market

- Fulfill different entities' requirements;
 - To save money for the future;
 - To borrow money for current use;
 - To raise equity capital;
 - To manage risks;
 - To exchange assets for immediate and future deliveries;
 - To trade on information.
- Determine interest rates;
- The allocation of capital to the best uses.

5.1.1.2. The objectives of market regulation are to

- Control fraud;
- Control agency problems;
- Promote fairness;
- Set mutually beneficial standards;
- Prevent undercapitalized financial firms from exploiting their investors by making excessively risky investments;
- Ensure that long-term liabilities are funded.

5.1.1.3. Characteristics of a good market

- Complete markets;
- Operational efficiency;
- Informational efficiency;
- Allocational efficiency.

5.1.2. 基础题

Q-1. Which of the following is most likely one of the main functions of the financial system?

- A. Determining an equilibrium interest rate.
- B. Ensuring that markets are informationally efficient.
- C. Ensuring that all investment projects receive sufficient funding.

5.2. Intermediaries of Financial Markets

5.2.1. 重要知识点

5.2.1.1. Brokers and dealers, exchanges

- **Brokers** are agents who fill orders for their clients. They do not trade with their clients. Instead, they search for traders who are willing to take the other side of their clients' orders.
- **Dealers** fill their clients' orders by trading with them. When their clients want to sell securities or contracts, dealers buy the instruments for their own accounts. If their clients want to buy securities, dealers sell securities that they own or have borrowed. Dealers profit when they can buy at prices that on average are lower than the prices at which they sell.
- **Exchanges** provide places where traders can meet to arrange their trades.

5.2.1.2. Securitizers

- Buy assets, place them in a pool, and then sell securities that represent ownership of the pool;
- The financial intermediary avoids placing the assets and liabilities on its balance sheet by setting up a special corporation or trust that buys the assets and issues the securities. That corporation or trust is called a special purpose vehicle (SPV) or alternatively a special purpose entity (SPE).

5.2.1.3. Arbitrageurs

- The purest form of arbitrage involves buying and selling the same instrument in two different markets;

5.2.1.4. Hedgers

- Hedgers trade to offset or insure against risks that concern them;
- The hedger and the other entity face exactly the opposite risks, so the transfer makes both more secure.

5.2.1.5. Clearinghouses and custodians

- Clearinghouses arrange for final settlement of trades.
 - Act only as escrow agents (transferring money from the buyer to the seller while transferring securities from the seller to the buyer);
 - Guarantee contract performance;
 - Require that their members have adequate capital and post-performance bonds (margins);
 - Limit the aggregate net (buy minus sell) quantities that their members can settle.

5.2.2. 基础题

Q-2. As financial intermediaries, arbitrageurs primarily offer liquidity to buyers and sellers who arrive at:

- A. different markets at the same price
- B. the same market at different prices
- C. different markets at different prices

5.3. Classification of Assets and Market

5.3.1. 重要知识点

5.3.1.1. Classification of assets

- **Financial assets**
 - **Security:**
 - ◆ Fixed income securities: predetermined payment schedules that usually include interest and principal payments.
 - ◆ Equity securities: represent ownership in a firm and include common stock, preferred stock, and warrants.
 - ◆ Pooled investment vehicles: include mutual funds, trusts, depositories and hedge funds.
 - **Derivative contracts:** finance derivative contracts, physical derivative contracts;
 - **Currency.**

- **Real assets**
 - Commodity
 - Real Estate: include such tangible properties as real estate, airplanes, machinery, or lumber stands;

5.3.1.2. Classification of market

- **Money market and capital market**
 - **Money markets** trade debt instruments maturing in one year or less;
 - **Capital markets** trade instruments of longer duration, whose values depend on the credit-worthiness of the issuers and on payments of interest or dividends that will be made in the future and may be uncertain.
- **Primary market and secondary market**
 - **Primary market:** the market where securities are first sold and the issuers receive the proceeds.
 - **Secondary market:** the market where securities are traded among investors.
- **Traditional market and alternative market**
 - **Traditional investment markets:** markets for traditional investments, which 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. The term usually encompasses direct and indirect investment in real estate and commodities; hedge funds, private equity, and other investments requiring specialized due diligence.

5.4. Primary Market

5.4.1. 重要知识点

5.4.1.1. Primary capital markets

- The markets in which companies and governments raise capital (funds).

5.4.1.2. Public offering

- **Underwritten offering 包销:** The investment bank guarantees the sale of the issue at an offering price that it negotiates with the issuer;
- **Best efforts 代销:** the investment bank acts only as broker. If the offering is undersubscribed, the issuer will not sell as much as it hoped to sell.
- **Indications of interest:** the investment bank gathers investors who are interested in the issue and willing to buy a portion of them. This process of investment banks line up subscribers who will buy the security is called **book building**.

➤ Other offering in primary market

- Private placement;
- Shelf registration;
- A dividend reinvestment plan;
- Rights offering.

5.4.2. 基础题

- Q-3.** A German listed company has given existing shareholders the chance to buy new shares in order to raise new capital. The existing shareholders could purchase two new shares at a subscription price of €5.28 per share for every 10 shares held. This is an example of

a(n):

- A. rights offering.
- B. initial public offering.
- C. private placement.

Q-4. When issuing additional bond to the general public without having to prepare a new offering circular for each bond issue, which of the following issuance mechanisms is most likely an option for well-established issuers?

- A. shelf registration
- B. private placement
- C. underwritten offering

5.5. Secondary Market

5.5.1. 重要知识点

5.5.1.1. Function of the secondary market

- Corporations and governments can raise money in the primary markets at lower cost when their securities will trade in liquid secondary markets.
- Trading in the secondary market helps identify the proper price for the offering.

5.5.1.2. Call markets & continuous markets (重点)

Call Markets	Continuous Markets
At specific times	At any time when market is open
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.	The price is determined either by an auction process or through a dealer bid-ask process.

5.5.1.3. Quote-driven Market, order driven market and brokered market

- **Quote-driven market:** 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.
- **Order-driven markets:** A market (generally an auction market) that uses rules to arrange trades based on the orders that traders submit; in their pure form, such markets do not make use of dealers;
- **Brokered markets:** A market in which brokers arrange trades among their clients. Brokered markets are common for transactions of unique instruments, such as real estate properties, intellectual properties, or large blocks of securities.

5.5.2. 基础题

Q-5. A trader seeking to sell a very large block of stock for her client will most likely execute the trade in a(n):

- A. order-driven market.
- B. quote-driven market.
- C. brokered market.

Q-6. For order precedence hierarchy in Order Matching Rules, what is the first and secondary precedence rules, respectively?

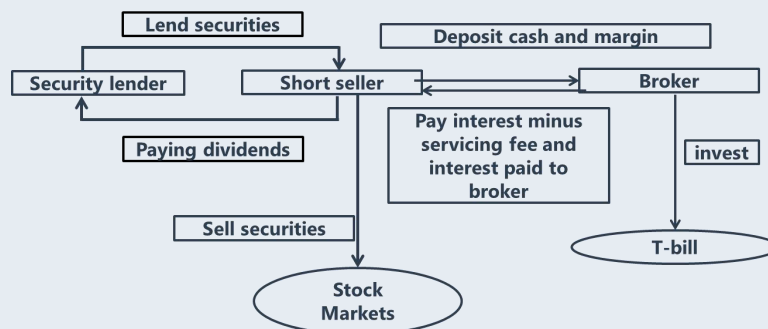
- A. Price, Order quantities.
- B. Time, Price.
- C. Price, Time.

5.6. Long & Short Position in Transaction

5.6.1. 重要知识点

5.6.1.1. Short sale 的作用，掌握过程

- Short sellers borrow securities from security lenders who are long holders. The short sellers then sell the borrowed securities to other traders;
- Short sellers close their positions by repurchasing the securities and returning them to the security lenders;
- Lenders require that the short seller leave the proceeds of the short sale on deposit with them as collateral for the stock loan;
- The short sellers will pay the long sellers all dividends or interest that they otherwise would have received had they not lent their securities.



5.6.2. 基础题

Q-7. Which of the following statements is most accurate concerning a short position of 200 shares of a stock at \$65 per share?

- A. Maximum loss of \$13,000.
- B. Maximum gain of \$13,000.
- C. Unlimited maximum gain.

Q-8. Which of the following is the least accurate statement about the short sale of stocks?

- A. The short seller must pay all dividends or interest to the lender of shares.
- B. Short sales involve time limits for returning the shares borrowed to the lender.
- C. A short sale can be made only on an uptick or a zero-uptick trade if the previous trade was an uptick trade.

5.7. Leverage Position in Transaction

5.7.1. 重要知识点

5.7.1.1. Margin transaction 掌握概念及计算

- 概念: Margin transactions involve buying securities with borrowed money.
- 计算 *Tigger price (margin of long position)* $= P_0 \left(\frac{1-IM}{1-MM} \right)$
 - IM=initial margin
 - MM=maintenance margin

5.7.1.2. Leverage ratio

➤ $\text{Leverage Ratio} = \text{Asset/Equity} = 1/\text{Margin}$

5.7.2. 基础题

Q-9. Tom buys stock on margin and holds the position for exactly one year, during which time the stock pays a dividend. For simplicity, assume that the interest on the loan and the dividend are both paid at the end of the year.

Purchase price	\$20/share
Sale price	\$15/share
Shares purchased	1,000
Leverage ratio	2.5
Call money rate	5%
Dividend	\$0.10/share
Commission	\$0.01/share

What is the total return on this investment?

- A. -68.88%.
- B. -68.91%
- C. -70.13%.

Q-10. An investor gathers the following information about a transaction:

Purchase price of stock per share	\$40
Initial margin deposit required	50%
Annual call money rate	4%

Based only on this information, if the stock is sold one year after purchase for \$50 per share and the interest on the loan is paid at the end of the year, the investor's rate of return is closest to:

- A. 21.0%
- B. 25.0%
- C. 46.0%

Q-11. An investor has net capital of £20 million and borrow an additional £5 million at 4% per annum. The investors return for the year is 9%. What would the return be if the investor did not add any leverage?

- A. 6.7%
- B. 8.0%
- C. 10.3%

Q-12. An investor purchases stocks on margin with the following information:

Stock purchase price per share: \$100

Initial equity per share: \$50

Maintenance margin requirement: 20%

The price below which the investor would receive a margin call would be:

- A. \$20
- B. \$63
- C. \$80

Q-13. A trader buys stocks on margin with the following information:

Stock purchase price per share: \$100

Initial equity per share: \$60

Stock price per share at the time of margin call: \$50

The trader maintenance margin requirement would be:

- A. 20%
- B. 35%
- C. 50%

5.8. Execution Instructions

5.8.1. 重要知识点

5.8.1.1. Execution instructions 的分类

- **Market orders** are the orders to buy or sell a security at the best current price, is the most frequent type of order.
- **Limit orders** specify the buy or sell order. Limit orders waiting to execute are called standing limit orders.
 - **Make a new market:** if the buy order is placed above the best bid but below the best offer, traders say the order makes a new market because it becomes the new best bid.
 - **Make the market:** a buy order placed at the best bid.
 - **Take the market:** those who trade with them at posted prices are said to.
 - **Behind the market:** prices specified in orders that are worse than the best current price.
 - **Far from the market:** same as behind the market but the price is much further from the best bid/ask price.
- **All-or-nothing orders execute only if the whole order can be filled.**
- **Hidden orders** are exposed only to the brokers or exchanges that receive them. These agencies cannot disclose hidden orders to other traders until they can fill them.
- **Iceberg orders:** any additional size is hidden from the public but can be filled if a suitably large order arrives.

5.8.2. 基础题

Q-14. Consider an order-driven market that allows hidden orders. The following four sell orders of the stock A are currently in the market's limit order book. Which of the order takes precedence over the others, based on the commonly used order precedence hierarchy?

Order	Time of Arrival (HH:MM:SS)	Limit Price (€)	Special Instruction (If Any)
I	13:52:01	45.45	
II	13:52:08	45.20	Hidden order
III	13:53:04	45.20	
IV	13:53:49	45.20	

- A. Order I (time of arrival of 13:52:01).
- B. Order II (time of arrival of 13:52:08).

C. Order III (time of arrival of 13:53:04).

Q-15. Consider the following limit orders for a particular stock. The bid and ask sizes are number of shares in hundreds.

Bid Size	Limit Price (\$)	Offer Size
6	66.40	
16	66.50	
8	66.59	
	67.50	14
	68.90	12
	68.91	14

A new buy limit order is placed for 300 shares at \$66.65. This limit order is said to:

- A. take the market.
- B. make the market.
- C. make a new market.

Q-16. A trader gathers the following limit order information about a stock:

Bid Size (number of shares) Share Price (\$) Offer Size (number of shares)

450	49.50	---
330	49.65	---
---	49.80	200
---	49.95	220
---	50.10	260

If the trader submits a fill or kill buy order for 500 shares at a limit price of \$50.00, the trader's average price per share for this trade will be closest to:

- A. \$49.50.
- B. \$49.88.
- C. \$49.92.

Q-17. A stock's opening ask price is \$8. At the open, a trader places a day order, stop \$10, and limit \$13 buy order. If the market for the stock is uninterrupted and the order does not execute, the stock most likely traded at prices:

- A. less than \$10
- B. greater than \$10, but less than \$13
- C. greater than \$13

5.9. Validity Instructions

5.9.1. 重要知识点

5.9.1.1. Validity instructions 的分类

- **Day orders:** orders are good for the day on which it is submitted. If it has not been filled by the close of business, the order expires unfilled.

- **Good-till-cancelled orders (GTC):** orders will continue to work until the order fills or is canceled.
- **Immediate or cancel orders:** orders are cancelled unless they can be filled immediately. They are also known as fill or kill orders.
- **Good-on-close orders:** orders can only be filled at the close of trading.
- **Good-on-open orders:** orders are only filled at the open of the trading day.
- **Stop orders** are orders in which traders have specified a stop price condition. The stop order may not be filled until the stop price condition has been satisfied.
 - **Stop-sell order:** the stop price condition suspends execution of the order until a trade occurs at or below the stop price. After that trade, the stop condition is satisfied and the order becomes valid for execution, subject to all other execution instructions attached to it;
 - **Stop-buy:** a buy order with a stop condition becomes valid only after a price rises above the specified stop price.

5.9.2. 基础题

Q-18. A trader who has bought a stock at \$30 is concerned about a downside movement in the stock and would like to place an order that guarantees selling it at \$25. Which of the following will *most likely* help the trader achieve her objective?

- A. “GTC, stop 25, market sell” order.
- B. Buy “put option” with a strike price of 25.
- C. “GTC, stop 25, limit 25 sell” order.

5.10. Security Market Index

5.10.1. 重要知识点

5.10.1.1. The functions of the market index

- 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.

5.10.1.2. Characteristics of equity indexes 注意掌握不同组合的构成。

- **Broad market index:** 涵盖市场总市值的 90%以上;
- **Multi-market index:** 由多个国家的指数构成;
- **Multi-market index with fundamental weighting:** 由多个国家的指数构成,同时考虑了基本面因素(比如 GDP);
- **Sector Index:** represent and track different economic sectors—such as consumer goods, energy, finance, health care, and technology—on either a national, regional, or global basis.
- **Style index:** represent groups of securities classified according to market capitalization, value, growth, or a combination of these characteristics.

5.10.1.3. Rebalancing and reconstitution

- **Rebalancing** refers to adjusting the weights of the constituent securities in the index.

- **Reconstitution** is the process of changing the constituent securities in an index.

5.10.2. 基础题

Q-19. Reconstitution of a security market index is most likely required when:

- A. weights for constituent securities change
- B. a stock split occurs on a constituent security
- C. constituent securities no longer meet the target criteria

5.11. Different Weighting Method in Securities' Index

5.11.1. 重要知识点

5.11.1.1. 计算:

➤ **Price-weighted index**

- Assumption: purchasing an equal number of shares of each stock in the index.

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

- The divisor of a price-weighted index is adjusted for stock splits.
- Disadvantage: a high-priced stock will have a relatively greater effect on the index than a low-priced stock with the same percentage change of the stock price.

➤ **Market capitalization-weighted index**

- Assumption: making proportionate market value investments in each stock.

$$\text{Market capitalization-Weighted Index} = \frac{\text{current total market value of the stocks}}{\text{base year total market value of the stocks}} \times \text{base year index value}$$

- Disadvantage: a greater market capitalization stock will have a relatively greater effect on the index than a lower market capitalization stock with the same percentage change of the stock price.

■ **Momentum effect**

➤ **Equal-weighted index**

- Places an equal weight on the returns of all index stock, regardless of their price or market value.
- Assumption: Investing the same dollar in each stock in the index.

$$\text{Equal-weighted index} = (1 + \text{average percentage change in index stocks}) \times \text{initial index value}$$

◆ HPR_i is the return on each stock:

- Disadvantage: small-size firm tilted, **most frequent rebalancing**

➤ **Fundamental weighting:**

- Weighting by using measures of a company's earnings, revenue, assets or cash flow that are independent of its security price to determine the weight on each constituent security.
- Features: value-tilted, contrarian-style

5.11.2. 基础题

Q-20. Hari Raju, CEO of Securities Tracking Associates (STA), is thinking of devising a new

index for the Indian stock market. However, he does not like an index that requires adjustment for stock splits. Given this preference, Raju would be least likely to develop which of the following types of Indexes?

- A. Equal-weighted Index.
- B. Price-weighted Index.
- C. Value-weighted Index.

Q-21. A price-weighted index series is composed of the following three stocks:

Stock	Price before Split	Price after Split
	End of Day 1	End of Day 2
A	\$5	\$7
B	\$10	\$8
C	\$30	\$15

If stock C completes a two-for-one split at the end of Day 1, the value of the index after the split (at the end of Day 2) is closest to:

- A. 15.
- B. 10.
- C. 12.

Q-22. Compared with its market-value-weighted counterpart, a fundamental-weighted index is least likely to have a:

- A. momentum effect.
- B. contrarian effect.
- C. value tilt.

Q-23. An analyst gathers the following information for an equal-weighted index

Security	Beginning-of-period price	End-of-period price
1	\$20	\$25
2	\$30	\$27
3	\$40	\$43

The index return during the period is closest to:

- A. 4.48%
- B. 5.56%
- C. 7.50%

Q-24. An analyst collects the following information for a price-weighted index comprised of stocks A, B and C:

Stocks	Beginning of Period Price (€)	End of Period Price (€)	Total Dividends (€)
A	50.00	54.00	2.00
B	70.00	50.00	3.00
C	30.00	32.00	2.00

The price return of the index is:

- A. -4.6%.

- B. -9.3%.
C. -13.9%.

Q-25. An analyst collects the following information for a market-capitalization-weighted index comprised of securities X, Y, and Z.

Security	Beginning of Period Price (¥)	End of Period Price (¥)	Dividends Per Share (¥)	Shares Outstanding
X	1,500	1,700	50	3,000
Y	2,500	1,500	55	5,000
Z	1,000	1,200	50	7,500

The total return of the index is *closest to*:

- A. -5.35%
B. -8.57%
C. -11.84%

Q-26. One month after inception, the price return version and total return version of a single index (consisting of identical securities and weights) will be equal if:

- A. market prices have not changed.
B. capital gains are offset by capital losses.
C. the securities do not pay dividends or interest.

Q-27. Which type of indices undergo regular rebalancing by the index provider?

- A. Market capitalization-weighted indices
B. Price-weighted indexes
C. Equal-weighted indexes

5.12. Other Market Index

5.12.1. 重要知识点

5.12.1.1. Several issues with the construction of fixed income indexes

- The number of fixed-income securities is many times larger than the number of equity securities. (Large universe);
- Fixed-income markets are predominantly dealer markets and are relatively illiquid;
- High turnover.

5.12.1.2. Alternative investment indexes

- **Commodity indexes:** commodity indices consist of **futures contracts** on one or more commodities, such as agricultural products, livestock, precious and common metals, and energy commodities.
- **Real estate indexes:** Real estate indices can be categorized as appraisal indices, repeat sales indices, and real estate investment trust (REIT) indices.
- **Hedge fund indexes:** Most of these indices are equal weighted and represent the performance of the hedge funds within a particular database. Performance survivorship bias suffered overlap and survivorship bias.

5.12.2. 基础题

Q-28. Which of the following statements is least accurate with respect to fixed-income

12-50

indices?

- A. The indices are susceptible to turnover of the underlying securities.
- B. Compared with equity indices, it is easier and less expensive to replicate fixed-income indices.
- C. Many of the underlying securities in the index tend to be illiquid.

Q-29. Which of the following statements regarding sector indexes is most accurate? Sector indexes:

- A. A track different economic sectors and cannot be aggregated to represent the equivalent of a broad market index.
- B. provide a means to determine whether an active investment manager is more successful at stock selection or sector allocation.
- C. apply a universally agreed upon sector classification system to identify the constituent securities of specific economic sectors, such as consumer goods, energy, finance, health care.

Q-30. Which of the following statements regarding alternative investment indexes is most accurate?

- A. A commodity index return should be consistent with the return based on changes in the prices of the underlying commodities.
- B. Real estate indexes represent both the market for real estate securities and the market for real estate.
- C. Hedge fund index accurately reflects actual hedge fund performance.

5.13. Efficient Market Hypothesis

5.13.1. 重要知识点

5.13.1.1. EMH 掌握概念

- **Efficient market:** security price adjust rapidly to infusion of new information, and therefore current security prices fully reflect all available information.

5.13.1.2. Factors affect the degree of market efficiency

- **The number participants** such as investors, financial analysts who follow or analyze a security or asset should be positively related to market efficiency.
- **Information availability** (e.g., an active financial news media) and financial disclosure should promote market efficiency.
- Market efficiency is impeded by any **limitation on arbitrage resulting** from operating inefficiencies, such as difficulties in executing trades in a timely manner, prohibitively high trading costs.
- **Higher costs of information**, analysis, and trading, more inefficient of the market.

5.13.1.3. 区分 strong-form EMH & semi-strong form EMH & weak-form EMH 定义

- **Strong form EMH** states that stock prices fully reflect all information from public and private sources;
- **Semi-strong form EMH** states that stock prices reflect all publicly known and available information;
 - If markets are semi-strong-form efficient, then passive portfolio management strategies are most likely to outperform active trading strategies.
- **Weak form EMH** states that stock prices fully reflect all past market data.

5.13.1.4. 如果 EMH 成立哪种分析无效

- Weak form: 技术分析无效;
- Semi-strong form: 基本面分析无效;
- Strong form: 全部无效, 不可能打败市场。

5.13.1.5. 检验 (包含 6 anomalies)

- **Tests for weak-form EMH (success)**
 - Statistical tests of independence
 - ◆ Auto correlation tests;
 - ◆ Runs tests.
 - Tests of trading rules
- **Tests for semi-strong form EMH**
 - Event studies(success).
- **Tests for strong-form EMH**
 - Corporate insider trading (1970s 以前 fail, 1980s 以后成功);
 - Stock exchange specialists(fail);
 - Security analysts (success).

5.13.2. 基础题

Q-31. A passive investor most likely outperforms an active investor when:

- A. there are few market participants
- B. asset prices reflect information quickly
- C. assets are trading above their intrinsic value.

Q-32. If markets are efficient, the information from the annual reports is reflected in the stock prices; therefore, the gradual changes must be from the release of additional new information. After the public announcement of the merger of two firms, an investor makes abnormal returns by going long on the target firm and short on the acquiring firm. This most likely violates which form of market efficiency?

- A. Semi-strong-form only
- B. Semi-strong-form and strong-form
- C. Weak-form and semi-strong-form

Q-33. Which of the following statements about the forms of market efficiency is least accurate?
If the form of market efficiency is:

- A. semi-strong, then security prices fully reflect all past market data.
- B. weak, then investment strategies based on fundamental analysis could achieve abnormal returns.
- C. strong, then prices reflect only private information.

Q-34. The following table shows information on three different investment strategies with same systematic risk:

		Annualized Data	
Strategy	Type of Strategy	Fees and Expenses(%)	Net Return(%)
A	Passive	0.6	15.4

B	Uses technical analysis	2	14
C	Uses fundamental analysis	1.5	

The net return that causes Strategy 3 to be most consistent with the strong form of market efficiency is:

- A. 14.5%.
- B. 16%.
- C. 17%.

Q-35. If securities markets are semi-strong-form efficient, the most appropriate role of a portfolio manager is to:

- A. invest by analyzing publicly available information to consistently generate abnormal returns.
- B. manage portfolios with appropriate diversification and asset allocation, taking into consideration investor preferences.
- C. exploit appropriate trading rules and serial correlations for achieving excess returns.

Q-36. Which of the following statements is most accurate in an efficient market?

- A. Securities market prices respond over time to changes in economic information.
- B. Securities market prices fully reflect their fundamental values.
- C. Active strategies will lead to excess risk adjusted portfolio returns.

Q-37. An observation that stocks with above average price-to-earnings ratios have consistently underperformed those with below average price-to-earnings ratios least likely contradicts which form of market efficiency?

- A. Weak form
- B. Semi-strong form
- C. Strong form

Q-38. Suppose that the future cash flows of an asset are accurately estimated. The asset trades in a market that you believe is efficient based on most evidence, but your estimate of the asset's intrinsic value exceeds the asset's market value by a moderate amount. The most likely conclusion is that you have:

- A. overestimated the asset's risk.
- B. underestimated the asset's risk.
- C. identified a market inefficiency.

Q-39. If the market for the bond is efficient, the bond's market price is most likely to fully reflect the bond's value after default:

- A. in the period leading up to the announcement.
- B. in the first trade prices after the market opens on the announcement day.
- C. when the issuer actually misses the payment on the interest payment date.

Q-40. Which factor would contribute the most to improving market efficiency?

- A. Imposing restrictions on short selling practices
- B. Reducing transaction fees and associated costs
- C. Limiting participation of international investors

5.14. Market Anomalies

5.14.1. 重要知识点

5.14.1.1. Anomalies in time-series data

- **Calendar anomalies:** January effect shows that returns in January are significantly higher than the rest of the months in that year (reasons: **window dressing, tax loss selling**). Others includes the day-of-the-week effect, the weekend effect, turn-of-the-month effect and holiday effect.
- **The overreaction effect:** indicate investors overreact to the release of unexpected public information. Therefore, stock prices will be inflated (depressed) for those companies releasing good (bad) information.
- **Momentum anomalies:** refer to when securities that have experienced high returns in the short term tend to continue to generate higher returns in subsequent periods.

5.14.1.2. Anomalies in cross-sectional data

- **The size effect:** results from the observation that equities of small-cap companies tend to outperform equities of large-cap companies on a risk-adjusted basis;
- **The value effect:** A number of global empirical studies have shown that value stocks, which are generally referred to as stocks that have below-average price-to-earnings (P/E) and market-to-book (M/B) ratios, and above-average dividend yields, have consistently outperformed growth stocks over long periods of time.

5.14.1.3. Other anomalies

- **Closed-end investment funds:** Theoretically, these shares should trade at a price approximately equal to their net asset value (NAV) per share. An abundance of research, however, has documented that, on average, closed-end funds trade at a discount from NAV. Explanation for the discount is that tax liabilities are associated with unrealized capital gains/losses and liquidity;
- **Earnings Surprise:** The unexpected part of the earnings announcement, or earnings surprise, is the portion of earnings that is unanticipated by investors and, according to the efficient market hypothesis, merits a price adjustment. Positive (negative) surprises should cause appropriate and rapid price increases (decreases). Most of the results indicate that earnings surprises are reflected quickly in stock prices, but the adjustment process is not always efficient;
- **Initial public offerings:** The percentage difference between the issue price and the closing price at the end of the first day of trading is often referred to as the degree of underpricing;
- **Economic fundamentals:** researchers have documented that equity returns are related to prior information on such factors as interest rates, inflation rates, stock volatility, and dividend yields.

5.14.1.4. Implications for investment strategies

- In fact, most researchers conclude that observed anomalies are not violations of market efficiency but, rather, are the result of statistical methodologies used to detect the anomalies. As a result, if the methodologies are corrected, most of these anomalies disappear.
- Another point to consider is that in an efficient market, overreactions may occur,

but then so do under-reactions. Therefore, on average, the markets are efficient.

- Investors face challenges when they attempt to translate statistical anomalies into economic profits.

5.14.2. 基础题

Q-41. If a researcher conducting empirical tests of a trading strategy using time series of returns finds statistically significant abnormal returns, then the researcher has most likely found:

- A. a market anomaly.
- B. evidence of market inefficiency.
- C. a strategy to produce future abnormal returns.

Q-42. Researchers have found that value stocks have consistently outperformed growth stocks. An investor wishing to exploit the value effect should purchase the stock of companies with above-average:

- A. dividend yields.
- B. market-to-book ratios.
- C. price-to-earnings ratios.

Q-43. 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.

5.15. Behavioral Finance

5.15.1. 重要知识点

5.15.1.1. Behavioral finance

- **Traditional finance models**, including efficient markets, are based on an assumption that the market as a whole act rationally, although some individual investors may not.
- **Behavioral finance:** investors dislike losses more than they like gains of an equal amount.
- Investors sometimes **overestimate their ability to value securities**. If there is a prevalence of investor overconfidence, securities will be mispriced. However, it appears that this mispricing may be hard to predict. Overconfidence in their estimates also causes investors to hold portfolios that are not well diversified, increasing their portfolio risk but not overall market risk.
- Other behavioral biases that have been identified include.
 - **Gambler's fallacy:** recent results affect investor estimates of future probabilities.
 - **Disposition effect:** investors are willing to realize gains but unwilling to realize losses.
 - **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.

5.15.2. 基础题

Q-44. The behavioral bias in which investors tend to avoid realizing losses but rather seek to realize gains is best described as:

- A. mental accounting.
- B. the gambler's fallacy.
- C. the disposition effect.

Q-45. In behavioral finance, which of the following statements best describes the bias of conservatism? Investors:

- A. tend to be slow to react to new information and continue to maintain their prior views or forecasts.
- B. focus on issues in isolation and respond to the issues based on how the issues are posed.
- C. assess new information and probabilities of outcomes based on similarity to the current state.

Q-46. In relation to behavioral finance, which of the following biases is considered the least influential in explaining pricing anomalies?

- A. Representativeness
- B. Risk aversion
- C. Anchoring

5.16. Overview of Equity Investment

5.16.1. 重要知识点

5.16.1.1. Characteristics of various types of equity securities

- Common shares
 - Statutory voting system;
 - Cumulative voting.
 - Putable common shares: 股东有权按照预定价格卖回给公司。
 - Callable common shares: 公司有权按照预定价格回购股票。
- Preference shares: 两优先一固定(股利支付优先, 资产清偿优先, 股息率固定), 股利支付非强制义务, 一般没有投票权, 没有到期期限。
 - Cumulative preference: 当期未获得的优先股股利可以累积到下期。
 - Participating preference shares: 当公司利润超过预先设定值后, 该类股东可以获得额外股利。

- Convertible preference shares: 该类股东有权利将原股份转为普通股.

5.16.1.2. The returns on equity investments: price changes, dividend payments, and, in the case of equities denominated in a foreign currency, gains or losses from changes in exchange rates.

5.16.1.3. Risks of various types of equity securities

- Preferred stock < Common stock
- Puttable stock < Callable stock
- Cumulative preferred stock < Non-cumulative preferred stock

5.16.1.4. Characteristics of private equity

- **Highly illiquid** because there is no active secondary market;
- Require **negotiations** between investors in order to be traded;
- **Financial statements and other important information** needed to determine the fair value of private equity securities may be **difficult to obtain**;
- Private equity **eliminates certain costs** that are necessary to operate a publicly traded company;
- Private equity firms score lower in terms of **corporate governance** effectiveness;
- Feels less pressured to focus on short-term results therefore **greater ability to focus on long-term objects**;
- Private equity provides investors with greater total return potential.

5.16.2. 基础题

Q-47. Which of the following is *incorrect* about the risk of an equity security? The risk of an equity security is:

- A. based on the uncertainty of its cash flows.
- B. based on the uncertainty of its future price.
- C. measured using the standard deviation of its dividends.

Q-48. Compared with public equity markets, which of the following statements is most accurate about private equity markets? Operating in the private market:

- A. offers stronger incentives to improve corporate governance.
- B. allows management to better adopt a long-term focus.
- C. allows more opportunities to raise capital.

Q-49. Which of the following statements is most accurate?

- A. Investors owning a small number of common shares would prefer statutory voting to cumulative voting.
- B. Convertible preference shares are more volatile and riskier than the underlying common shares.
- C. Puttable common shares provide benefits to both the issuing company and investors.

Q-50. All else being equal, which type of security provides investors with the greatest certainty about future cash flows?

- A. Callable common shares
- B. Puttable preference shares
- C. Non-callable, non-puttable preference shares

Q-51. Convertible preference shares often provide holders with the opportunity to exchange them for common shares. Which of the following statements best describe the benefits they offer to investors?

- A. They carry higher risk compared to regular preferred shares.
- B. They are generally offered by small start-up companies seeking funding.
- C. Investors enjoy potential capital appreciation as the common shares increase in value.

5.17. Non-Domestic Investment

5.17.1. 重要知识点

5.17.1.1. Methods for investing in non-domestic equity

- **Direct investing:** buy and sell securities directly in foreign markets. This means that: all transactions are in the company's domestic currency; investors must be familiar with the trading, clearing, and settlement regulations and procedures of that market; and the market may be less liquid.
- **Global registered shares:** a common share that is traded on different stock exchanges all over the world in different currencies.
- **Depository receipts (DRs)** is a security that trades like an ordinary share on a local exchange and represents an economic interest in a foreign company. A depository receipt is created when the equity shares of a foreign company are deposited in a bank (i.e., the depository) in the country on whose exchange the shares will trade. The depository then issues receipts that represent the shares that were deposited. The number of receipts issued and the price of each DR is based on a ratio, which specifies the number of depository receipts to the underlying shares.
 - A **global depository receipt (GDR)** is issued outside of the company's home country and outside of the United States.
 - An **American depository receipt (ADR)** is a US dollar-denominated security that trades like a common share on US exchanges. They enable foreign companies to raise capital from US investors. Note that an ADR is one form of a GDR; however, not all GDRs are ADRs because GDRs cannot be publicly traded in the United States. However, the issuing companies must fulfill all SEC requirements.

	Level I	Level II	Level III	Rule 144A
Stock Exchange	Over-the-counter (OTC) Markets	NYSE NASDA AMEX	NYSE NASDA AMEX	Private Equity
SEC Registration	Required	Required	Required	Not required
If Permit Fundraising in US	No	No	Yes	No
Listing cost	Low	Higher	Highest	low

5.17.2. 基础题

Q-52. A non US investor expects the US dollar to appreciate in the future. Which of the following investment behaviors will investors engage in?

20-50

1. Investment in ADRs
 2. Directly holding US stocks
- A. 1
 - B. 2
 - C. 1&2

Q-53. 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.

Q-54. For a US investor, which of the following statements concerning investing in depository receipts (DRs) is least accurate?

- A. Investors in unsponsored DRs would have the same voting rights as the direct owners of common shares.
- B. Investing in DRs could provide arbitrage opportunities and entail currency risk.
- C. Sponsored DRs are subject to greater reporting requirements than unsponsored DRs.

Q-55. What term refers to tradable common shares issued by foreign companies in multiple stock exchanges across different countries in local currencies?

- A. A basket of listed depository receipts.
- B. American depository receipts
- C. Global depository receipts

5.18. Industry and Competitive Analysis

5.18.1. 重要知识点

5.18.1.1. The uses of industry analysis

- Improve forecasts;
- Identifying investment opportunities.

5.18.1.2. The major commercial classification schemes

	Global Industry Classification Standard (GICS). 全球行业分类标准	Industry Classification Benchmark (ICB). 国际分类基准	The Refinitiv Business Classification (TRBC). 路孚特商业分类
发起人	MSCI and S&P Dow Jones Indices	FTSE Russell	Refinitiv
覆盖面	上市公司	上市公司	上市公司、私营公司、非营利组织、政府实体。
分类层级 (由低到高)	Sub-industries industries industry groups	Subsectors Sectors Supersectors	Activities Industries industry groups

	sectors	industries	business sectors economic sectors
相似性	Global schemes. Reviewed and updated at least annually. New companies added more frequently. Based on “demand” approach rather than “supply” approach of the schemes.		

5.18.1.3. Limitations third-party industry classification schemes

- Analysts may find that industry groupings in the third-party schemes are either too narrow or too broad, as the scheme providers use discretion in constructing groups based on product similarity and business model.
- The classification of multi-product companies.
- Geographical considerations.
- Changes in groupings over time that affect prior-period comparability of industry statistics.

5.18.1.4. Alternative methods of grouping companies

- Based on **Geographical grouping**. The companies are classified by country and then countries are aggregated into categories such as developed, emerging, and frontier markets. 【注意】通常不采用按收入的地域构成进行分类。
- Companies are sometimes grouped on the basis of their relative sensitivity to the business cycle. This method often results in two broad groupings of companies—**cyclical and non-cyclical**;
- **Statistical approaches** to grouping companies are typically based on the correlations of past securities’ returns.

5.18.1.5. Industry Survey

- Industry size and historical growth rate
- Characterizing industry growth.
- Industry profitability measures
- 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
 - Another consideration in the analysis is the degree of industry concentration, which is usually measured by Herfindahl-Hirschman Index (HHI)

$$HHI = \sum_{i=1}^n S_i^2$$

5.18.1.6. Principles of strategy analysis of an industry

- **Industry Structure (Michael Porter’s “five forces” framework)**
 - The **threat of entry** to the industry, which depends on barriers to entry, or how difficult it would be for new competitors to enter the industry;
 - The **power of suppliers**, which may be able to raise prices or restrict the supply of key inputs to a company;
 - The **power of buyers**, which can affect the intensity of competition by exerting influence on suppliers regarding prices (and possibly other factors such as product quality);
 - The **threat of substitutes**, which can negatively affect demand if customers

choose other ways of satisfying their needs;

- The **rivalry among existing competitors**, which is a function of the industry's competitive structure.

➤ **External Influences (PESTLE framework)**

- **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.
- **Social influence** include 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.
 - ✓ **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.
- The **legal influences** include changes in laws and regulations from courts and policymakers.
- **Environmental influences**

5.18.1.7. Industry concentration

- Concentrated industries **do not always** have pricing power or that fragmented industries do not;
- The **relative market shares** of competitors matter as much as their **absolute market shares**;
- If the industry sells a commodity product that is difficult—or impossible—to differentiate, the **incentive to compete on price increases** because a lower price frequently results in greater market share;
- Capital-intensive industries can be **prone to overcapacity**, which mitigates the benefits of industry concentration.

5.18.1.8. Barriers of entry

- Industries with low barriers to entry often have little pricing power;
- Money, intellectual capital, and attractiveness for customer should be considered to assess the ease of entry;
- Way to investigate the issue is by looking at historical data. If the same ten companies that dominate an industry today dominated it ten years ago, barriers to entry are probably fairly high;
- High barriers to entry do not guarantee pricing power, because incumbents may compete fiercely among each other;
- Do not confuse barriers to entry, however, with barriers to success.

5.18.1.9. Industry Capacity

- Tight, or limited, capacity gives participants more pricing power as demand for the product or service exceeds supply, whereas overcapacity leads to price cutting and a very competitive environment as excess supply chases demand;

- Capacity is fixed in the short term and variable in the long term;
- Capacity additions frequently overshoot long-run demand;
- Note that capacity need not be physical;
- If new capacity is physical, it will take longer for new capacity to come on line to meet an increase in demand, resulting in a longer period of tight conditions.

5.18.1.10. Market share stability

- Examining the stability of industry market shares over time is similar to thinking about the frequency with which new players enter an industry;
- **Unstable market** shares often indicate highly competitive industries that have limited pricing power;
- **High switching costs** for orthopedic devices coupled with slow innovation resulted in a lower benefit from switching, which led to greater market share stability.

5.18.1.11. Summary

- Higher barriers to entry reduce competition.
- Greater concentration (a small number of firms control a large part of the market) reduces competition, whereas market fragmentation (a large number of firms, each with a small market share) increases competition.
- Unused capacity in an industry, especially if prolonged, results in intense price competition.
- Stability in market share reduces competition. For example, loyalty of a firm's customers tends to stabilize market share and profits.
- More price sensitivity in customer buying decisions results in greater competition.
- Greater maturity of an industry results in slowing growth.

5.18.1.12. Competitive Positioning

- **Cost leadership:** With the same product, the firm seeks to a lower cost.
- **Differentiation:** With the same cost, the firm seeks to provide product benefits that other firms do not provide.
- **Focus:** The firm targets a niche with either a cost or a differentiation focus.

5.18.2. 基础题

Q-56. A change in which of the following best describes a macroeconomic influence on industry growth?

- A. The cost of debt.
- B. Personal spending habits.
- C. Population size.

Q-57. Which of the following is not a limitation of the cyclical/non-cyclical descriptive approach to classifying companies?

- A. A cyclical company may have a growth component in it.
- B. Business-cycle sensitivity is a discrete phenomenon rather than a continuous spectrum.
- C. A global company can experience economic expansion in one part of the world while experiencing recession in another part.

Q-58. Which of the following industry characteristics is most closely associated with a low level of price competition?

- A. Limited capacity
- B. Customers that are price sensitive
- C. Low concentration of market share

Q-59. Companies pursuing cost leadership will most likely:

- A. invest in productivity-improving capital equipment.
- B. establish strong market research teams to match customer needs with product development.
- C. engage in defensive pricing when the competitive environment is one of high rivalry.

Q-60. An equity analyst follows two industries with the following characteristics:

Industry 1:

A few companies with proprietary technologies, products with unique features, high switching costs, and minimal regulatory influences.

Industry 2:

A few companies producing relatively similar products, sales varying with disposable income and employment levels, high capital costs and investment in physical plants, rapid shifts in market shares of competing firms, and minimal regulatory influences.

Based on the above information, the analyst will most appropriately conclude that, compared with the firms in Industry 2, those in Industry 1 would potentially have:

- A. over-capacity problems.
- B. high bargaining power of customers.
- C. larger economic profits.

Q-61. Which of the following best describes a industry-level force in a comprehensive market analysis?

- A. Economic trend
- B. Fiscal and monetary policies
- C. The availability of lower priced alternative brands

Q-62. Which of the following is true about commercial industry classification systems?

- A. They are updated more frequently than government classification systems.
- B. They are updated as frequently as government classification systems.
- C. They are updated less frequently than government classification systems.

Q-63. What is the basis for classification in the Global Industry Classification Standard (GICS)?

- A. Products and/or services provided by companies.
- B. Statistical similarities among companies.
- C. Business cycle sensitivity.

Q-64. Which of the following factors is most likely to influence the bargaining power of buyers within an industry according to Porter's five forces framework?

- A. The number of customers for the industry's products.
- B. The availability of lower priced alternative brands.
- C. The concentration of the industry.

Q-65. What are some external factor that might impact an industry's expansion potential?

- A. Organizational costs
- B. Operational efficiency improvements
- C. Technological influences

5.19. Company Analysis: Forecasting

5.19.1. 重要知识点

5.19.1.1. 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.
- **Individual financial statement lines.** The analyst directly forecast individual financial statement lines. This approach is often used for lines without clear drivers, for less-material items, and for items that the analyst does not have a perspective on.
- **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.

5.19.1.2. Forecast Approaches

- **Historical results approach.** This approach uses past observed or calculated as a forecast. Assuming historical recurrence. 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.
- **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. 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.
- **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.
- **Analyst’s discretionary forecast approach.** Discretionary forecast approach include surveys, quantitative models, and 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.
- Those undergoing a fundamental change like a shift in the competitive or regulatory environment.

【注意】对于任何目标，上面四种通用的预测方法都可使用，通常它们结合使用

5.19.1.3. Forecasting revenue

- 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.
 - 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.

5.19.1.4. Forecasting Operating Expenses

- Forecasting COGS as a percentage of sales and forecasting gross margin percentage.
- 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.
- 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.
- Gross margin differences among companies within a sector should logically relate to differences in their business operations.

$$\text{Forecast COGS} = (\text{historical COGS} / \text{revenue}) \times (\text{estimate of future revenue})$$

$$\text{Forecast COGS} = (1 - \text{gross margin}) \times (\text{estimate of future revenue})$$
- 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.

5.19.1.5. 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.
 - $\text{Inventory} = \text{forecasted annual COGS} / \text{Inventory turnover ratio}$.
 - $\text{Projected accounts receivable} = (\text{days sales outstanding}) \times (\text{forecasted sales} / 365)$.
 - 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.

5.19.1.6. Forecasting Capital Investments and Capital Structure

- PP&E: primarily changes as a result of capital expenditures and depreciation.
PP&E:
 - 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.

5.19.2. 基础题

Q-66. What type of forecast objects is most likely to be considered as a top-down driver for a insurance company's revenue?

- A. Net profit margin
- B. Expansion into new markets
- C. Increase in customer base

Q-67. Which financial statement forecasting approach is best suited for companies in well-established industries with many publicly traded peers?

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

Q-68. What is the most accurate statement regarding forecasting Selling, General and Administrative costs?

- A. Corporate-wide expenditures tend to be constant costs
- B. Marketing and delivery charges can be estimated as a portion of total revenue
- C. Overall SG&A costs exhibit a stronger connection with revenues compared to cost of goods sold

5.20. Discount Cash Flow Model

5.20.1. 重要知识点

5.20.1.1. Types of dividend

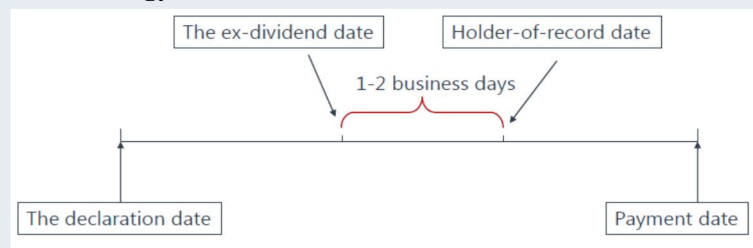
➤ Cash dividend

- Reduces both the value of the company's assets and the market value of equity.
- No effect on shareholder wealth.
- Types of cash dividend
 - ◆ Regular dividends (dividends are paid on a consistent schedule);
 - ◆ Special dividends (dividends are paid irregularly, on cash);
 - ◆ Liquidating dividends (dividends are paid when a company goes liquidating).

➤ Stock dividends & stock splits

- Both create more shares;
- A proportionate drop in the price per share;
- No effect on shareholder wealth.
- Reverse stock splits
 - ◆ Increase the share price;
 - ◆ Reduce the number of shares outstanding;

5.20.1.2. Payment Chronology



- Ex-Dividend date is usually one or two business days before Holder-of-Record Date.

5.20.1.3. DDM 计算

➤ The general DDM

$$\text{value} = \frac{D_1}{(1+r_e)^1} + \frac{D_2}{(1+r_e)^2} + \frac{D_3}{(1+r_e)^3} + \dots + \frac{D_n}{(1+r_e)^n}$$

➤ Multiple-year holding period DDM

$$\text{value} = \frac{D_1}{(1+r_e)^1} + \frac{D_2}{(1+r_e)^2} + \frac{P_2}{(1+r_e)^2}$$

➤ Preferred stock valuation

$$\text{value} = \frac{D_p}{r_p}$$

➤ The constant growth DDM

$$PV_0 = \frac{D_0(1+g_c)}{r_e - g_c} = \frac{D_1}{r_e - g_c} \text{ (GGM)}$$

➤ Assumption

- The firm expects to pay a dividend, D_1 , in one year;
- Dividends will grow at a constant rate, g , forever;
- The growth rate (g) is less than the required rate(r).

- **Limitations**
 - Very sensitive to estimates of r and g ;
 - Difficult with non-dividend stocks;
 - Difficult with unpredictable growth patterns(use multi-stage model).
- **Dividends grow at a constant rate g** , 通过公式的变形, 求 r 和 g 的关系。

$$r_e = \frac{D_1}{P V_0} + g_c$$

- **Sustainable growth (g)=(1-dividend payout ratio)×ROE**

5.20.1.4. required rate of return 所包含的三个因素: RFR_{real} , $\pi_{Expected}$, RP 。

- $r = \text{required rate of return} = (1 + RFR_{real})(1 + \pi_{Expected})(1 + RP) - 1$
- $r = \text{required rate of return (approximate)} \approx RFR_{real} + \pi_{Expected} + RP$
- $g = (RR) \times (ROE)$

5.20.1.5. Free cash flow to equity model

- $FCFE = \text{net income} + \text{depreciation} - \text{working capital investment (WC}_{Inv}) - \text{fixed capital investment (FC}_{Inv}) - \text{debt principle repayments} + \text{new borrowing}$
- $FCFE = CFO - FC_{Inv} + \text{net borrowing}$
- The required return for equity is calculated using CAPM model

5.20.2. 基础题

Q-69. An analyst gathers the following information about a company's non-callable, non-convertible preferred stock:

Par value per share	€ 100
Annual dividend per share	€ 5
Required rate of return	6%
Years to maturity	3

The preferred stock's intrinsic value per share is closest to:

- A. € 83.33
- B. € 88.65
- C. € 97.33

Q-70. Which of the following most accurately reflects dividend payment chronology?

- A. Holder-of-record date, ex-dividend date, payment date
- B. Declaration date, holder-of-record date, ex-dividend date
- C. Declaration date, ex-dividend date, holder-of-record date.

Q-71. An investor evaluating a company's common stock for investment has gathered the following data.

Current year's earnings per share	\$2.50
Dividend payout ratio	60%
Dividend growth rate expected during Year 1 and 2	25%
Dividend growth rate expected after Year 2	5%
Investors' required rate of return	12%

The value per share of this common stock is closest to:

- A. \$28.57.
- B. \$31.57.
- C. \$38.70.

Q-72. The following information is available about a company:

Next year's sales revenue	\$200million
Next year's net profit margin	20%
Dividend payout ratio	45%
Dividend growth rate expected during Years 2 and 3	18%
Dividend growth rate expected after Year 3	5%
Investors' required rate of return	15%
Number of outstanding shares	18million

The current value per share of the company's common stock according to the two-stage dividend discount model is closest to:

- A. \$22.46.
- B. \$22.14.
- C. \$12.28.

Q-73. Which of the following is the most appropriate reason for using a free-cash-flow-to-equity (FCFE) model to value equity of a company?

- A. FCFE models provide more accurate valuations than the dividend discount model.
- B. A firm's borrowing activities could influence dividend decisions, but they would not affect FCFE.
- C. FCFE is a measure of the firm's dividend paying capacity.

Q-74. Which of the following firms would most likely be appropriated valued using the constant growth DDM?

- A. An auto manufacturer.
- B. A producer of bread and snack foods.
- C. A biotechnology firm in existence for two years.

Q-75. An investor has gathered the following data for a company's common stock:

Current dividend per share (D₀): \$2.00

Dividend payout ratio: 50%

Return on Equity (ROE): 10%

Required rate of return: 8%

Using the Gordon Growth Model, calculate the intrinsic value per share of the stock.

- A. \$42
- B. \$66
- C. \$70

5.21. Price Multiple Model

5.21.1. 重要知识点

5.21.1.1. P/E Ratio 计算, 区分 trailing P/E (P_0 / E_0), leading P/E (P_0 / E_1).

- Justified P/E (使用 GGM 模型演算而来的 P/E)

- Leading P/E

$$\frac{P_0}{E_1} = \frac{(D_1 / E_1)}{r - g} ; \quad \frac{P_0}{E_1} = \frac{1 - b}{r - g}$$

- Trailing P/E

$$\frac{P_0}{E_0} = \frac{(D_1 / E_0)}{r - g} = \frac{(1 - b)(1 + g)}{r - g}$$

5.21.1.2. Enterprise value to EBITDA (EV/EBITDA)

➤ 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;
- EBITDA is useful for valuing capital-intensive business;
- EBITDA is usually positive even when EPS is not.

➤ Disadvantages

- Market value of debt is often not available;
- Market value of similar debt can be used;
- Book value of debt can be used.

5.21.1.3. Compare the advantages and disadvantages of each category of valuation model.

➤ Cash flow models

- Advantages of discounted cash flow models
 - ◆ They are based on the finance theory;
 - ◆ They are agreed on among the analysts.
- Disadvantages of discounted cash flow models
 - ◆ Appropriate estimation for input is needed;
 - ◆ The result is highly sensitive to inputs.

➤ Price multiples

- The major advantage of using price multiples
 - ◆ Allow for relative comparisons, both cross-sectional and in time series;
 - ◆ Appropriate to value a particular industry or sector in which the expected best performing stocks are needed to identify;
 - ◆ Price multiples are popular with investors;
 - ◆ Many multiples are readily available from financial websites and newspapers.
- Advantages of EV/EBIT
 - ◆ Using EV/EBIT instead of market capitalization to determine a multiple can be useful to analysts. Even where the P/E is problematic because of negative earnings;
 - ◆ EV/EBIT is most useful when comparing companies with significant differences in capital structure.
- Disadvantages of price multiple model
 - ◆ Price multiples are lagging indicators and indicate the past performance;
 - ◆ The multiples for cyclical companies may be highly influenced by current economic conditions;

- ◆ A stock may be relatively undervalued when compared with its benchmarks but overvalued when compared with an estimate of intrinsic value as determined by one of the discounted cash flow methodologies;
 - ◆ Differences in reporting rules among different markets and in chosen accounting methods can result in revenues, earnings, book values, and cash flows that are not easily comparable;
 - ◆ Denominators for price multiples are easily be negative for some firms. Negative price multiples are meaningless and useless.
- **Price multiple valuations on fundamentals**
- Advantages of price multiple valuations based on fundamentals
 - ◆ They are grounded in valuation models that are sound in theory;
 - ◆ They conform to the value metrics.
 - Disadvantages of price multiple valuations based on fundamentals
 - ◆ Little change in inputs will cause large change in price multiples, e.g. the $r - g$ denominator.

5.21.2. 基础题

Q-76. An investor gathers the following data. To estimate the stock's justified forward P/E, the investor prefers to use:

- the earnings growth rate rather than the dividends growth rate and
- the average of the payout ratios over the relevant period, in this case 2006-2009, rather the most recent payout ratio.

Year	EPS	DPS	ROE
2009	\$3.20	\$1.92	12%
2008	\$3.60	\$1.80	17%
2007	\$2.44	\$1.71	13%
2006	\$2.50	\$1.60	15%

The yield on 10-year T-notes is 3 percent and the current equity risk premium is 6.5 percent. If beta is 1.3, then the stock's justified forward P/E is closest to:

- A. 12.
- B. 16.
- C. 21.

Q-77. An analyst has determined that the appropriate EV/EBITDA for Rainbow Company is 10.2. The analyst has also collected the following forecasted information for Rainbow Company:

EBITDA = \$22,000,000

Market value of debt = \$56,000,000

Cash = \$1,500,000

The value of equity for Rainbow Company is *closest* to:

- A. \$169 million.
- B. \$224 million.
- C. \$281 million.

Q-78. Which of the following multiples is most useful when comparing companies with significant differences in capital structure?

- A. EV/EBITDA
- B. Price-to-book ratio
- C. Price-to-cash flow ratio

Q-79. An analyst collects the following information about a company's equity security:

- Trailing price-to-earnings multiple: 15x
- Last year's EPS: \$5.00
- Forecasted EPS growth rate: 15%

If the analyst estimates that the security is undervalued by \$10, the estimated intrinsic value is closest to:

- A. \$85.
- B. \$92.
- C. \$72.

Q-80. A firm reports negative earnings for the year just ended. The price multiple of the firm's stock that is least likely to be meaningful is:

- A. trailing price to earnings.
- B. price to cash flow.
- C. leading price to earnings.

Q-81. 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.

Q-82. An analyst has collected the following data about a firm:

Earnings retention ratio: 60%

Cost of equity: 10%

Return on equity: 15%

What is the justified forward P/E ratio for the company's stock?

- A. 10.0
- B. 8.0
- C. 40.0

5.22. Asset-Based Model

5.22.1. 重要知识点

5.22.1.1. 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.
- Most applicable when the market value of the corporate assets is readily determinable and the intangible assets are a relatively small proportion of corporate assets.
- Asset-based valuation models are frequently used together with multiplier models

to value private companies.

➤ **Asset-based models**

■ **Advantages**

- ◆ This model offered a minimum value for analyst;
- ◆ The model is reliable when the firm has a high portion of tangible assets and current assets;
- ◆ They become more popular in evaluating public firms that have fair values reported.

■ **Disadvantages of asset-based models**

- ◆ They are not suitable with assets that do not have easily determinable market (fair) values;
- ◆ They are not suitable with asset and liability whose fair values can be very different from the book values;
- ◆ They are not suitable with assets that are “intangible” are shown on the books of the company;
- ◆ They are not suitable in a hyper-inflationary environment.

5.22.2. 基础题

Q-83. An asset-based valuation model is most applicable for a company with significant:

- A. intangible assets.
- B. property, plant, and equipment.
- C. proportions of current assets and current liabilities and few intangible assets.

Q-84. Which of the following statements concerning different valuation approaches is most accurate?

- A. The justified forward price-to-earnings ratio (P/E) approach offers the advantage of incorporating fundamentals and presenting intrinsic value estimations.
- B. One advantage of the three-stage dividend discount model (DDM) model is that it is equally appropriate to young companies entering the growth phase and those entering the maturity phase.
- C. It is advantageous to use asset-based valuation approaches rather than forward-looking cash flow models in the case of companies that have significant intangibles.

Q-85. 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.

Q-86. Which of the following equity valuation model is most likely used to compare the relative value of a security to its benchmark?

- A. Multiplier model
- B. Present value model
- C. Asset-based valuation model

Solutions

5. Equity

5.1. 基础题

Q-1. Solution: A.

One of the main functions of the financial system is to determine the equilibrium interest rate, which is the only interest rate that would exist if all securities were equally risky, had equal terms, and were equally liquid.

Informational market efficiency is not a key function of the financial system, rather that of regulatory framework

The financial system provides sufficient funding only to the most productive projects. An important function of the financial system is to direct resources away from wealth-diminishing projects.

Q-2. Solution: C.

Arbitrageurs trade when they can identify opportunities to buy and sell identical or essentially similar instruments at different prices in different markets.

Q-3. Solution: A.

This is an example of right offering. Right offering refers to the right of existing shareholders to purchase new shares at a specific price. The amount of purchase depends on the number of shares held.

Q-4. Solution: A.

A shelf registration allows certain authorized issuers to offer additional bonds to the general public without having to prepare a new and separate offering circular for each bond issue.

Q-5. Solution: C.

Instruments that are infrequently traded and expensive to carry as inventory (e.g., very large blocks of stock, real estate properties, fine art masterpieces, and liquor licenses) are executed in brokered markets. Organizing order-driven markets for such instruments is not sensible because too few traders would submit orders to them.

Q-6. Solution: C.

The first rule is price priority: The highest priced buy orders and the lowest priced sell orders go first. They are the most aggressively priced orders. Secondary precedence rules determine how to rank orders at the same price. Most trading systems use time precedence to rank orders at the same price.

Q-7. Solution: B.

The potential gains on a short position are limited, the potential losses are unlimited. The lowest market price per share an investor can repurchase the stock to return to the security's lender is \$0, so the maximum gain is $(\$65 - \$0) \times 200 = \$13,000$.

Q-8. Solution: B.

Short sales have no time limits. However, if the lender of shares decides to sell them, the broker must find another investor willing to lend the shares.

Q-9. Solution: B.

To find the return on this investment, first determine the initial equity and then determine the equity remaining after the sale. The total purchase price is \$20,000. The leverage ratio of 2.5 indicates that the buyer's equity financed 40 percent = $(1 \div 2.5)$ of the purchase price. Thus, the equity investment is \$8,000 = 40% of \$20,000. The \$12,000 remainder is borrowed. The actual investment is slightly higher because the buyer must pay a commission of \$10 = $\$0.01/\text{share} \times 1,000$ shares to buy the stock. The total initial investment is \$8,010. At the end of the year, the stock price has declined by \$5/share. The buyer lost \$5,000 = $\$5/\text{share} \times 1,000$ shares as a result of the price change. In addition, the buyer has to pay interest at 5 percent on the \$12,000 loan, or \$600. The buyer also receives a dividend of \$0.10/share, or \$100. The trader's equity remaining.

Initial investment	\$8,010
Purchase commission	-10
Trading gains/losses	-5,000
Margin interest paid	-600
Dividends received	100
Sales commission paid	-10
Remaining equity	\$2,490

so that the return on the initial investment of \$8,010 is $(2,490 - 8,010)/8,010 = -68.91\%$.

Q-10. Solution: C.

$$\text{Leveraged return} = (r \cdot (E+D) - r_d \cdot D) / E = r + (r - r_d) \cdot D/E$$

$$\text{unleveraged return} = (50 - 40) / 40 = 25\%$$

$$D/E = (D+E)/E - 1 = 1/(\text{initial margin ratio}) - 1 = 1/(50\%) - 1 = 1$$

$$\text{Leveraged return} = 25\% + (25\% - 4\%) \times 1 = 46\%$$

Q-11. Solution: B.

$$\text{Leveraged return} = (r \cdot (E+D) - r_d \cdot D) / E = r + (r - r_d) \cdot D/E$$

$$\text{unleveraged return} = (\text{leveraged return} \cdot E + r_d \cdot D) / (D+E)$$

$$\text{Unleveraged return} = (9\% \times 20 + 4\% \times 5) / (20+5) = 8\%$$

Q-12. Solution: B.

A is Incorrect because at a share price of \$20 and a margin loan of \$50, equity will be negative. \$20 is 20% of the current price of \$100 per share.

B is Correct because the original equity of \$50 indicates a margin loan of \$50 (\$100 - \$50). At a stock price of \$62.5, equity will equal \$62.5 less the \$50 margin loan, or \$12.5, which is 20% of the equity per share. $\$12.5 / \$62.5 = 20\%$. To reach this answer through calculation, determine where the equity per share equals the 20% margin requirement:

$$\text{Equity} / \text{Share} = (P - L) / P = \text{maintenance margin}; \text{ Where } P = \text{Share price and } L = \text{Loan amount};$$

$$0.20 = (P - \$50) / P; P \approx \$62.5.$$

$$\text{C is Incorrect because } (1 - \text{maintenance margin}) \times \text{price} = (1 - 0.2) \times \$100 = \$80.00.$$

Q-13. Solution: A.

$$\text{Margin call price} = P_0 \cdot [(1 - IM) / (1 - MM)]$$

$$\text{Initial maintenance requirement} = 60 / 100 = 60\%$$

$$MM = 1 - (P_0/P_c) \times (1 - IM)$$

$$\text{Maintenance margin requirement} = 1 - (100/50) \times (1 - 60\%) = 20\%$$

Q-14. Solution: C.

Order III (time of arrival of 13:53:04) has precedence. In the order priority hierarchy, the first rule is price priority. Based on this rule, sell orders II, III and IV take precedence over order I. Because order II is a hidden order, III and IV take precedence. Finally, based on the time priority of the same price and the same display state, order III takes precedence over order IV.

Q-15. Solution: C.

The new buy order is at \$66.65, which is better than the current best bid of \$66.59. Therefore, the buy order is making a new market. Had the new order been at \$66.59, it would be said to make the market. Because the new buy limit order is at a price less than the best offer of \$67.50, it will not immediately execute and is not taking the market.

Q-16. Solution: B.

A is Incorrect because this would mistake a bid and an offer by incorrectly concluding that a size/order of 20 corresponds to \$49.50.

B is Correct because a limit order conveys almost the same instruction: Obtain the best price immediately available, but in no event accept a price higher than a specified limit price [\$50.00] when buying. Furthermore, immediate or cancel orders (IOC) are good only upon receipt by the broker or exchange. If they cannot be filled in part or in whole, they cancel immediately. In some markets these orders are also known as fill or kill orders. That is, 15 units of the stock would trade or execute immediately at: 200 units at \$49.80 and 220 units at \$49.95. The average trade price per unit = $((200 \times \$49.80) + (220 \times \$49.95)) / 420 \approx \$49.88$.

Q-17. Solution: A.

Stop \$10 and limit \$13 buy order, means when the price is higher than \$10, stop loss buy is activated, and the buy price is limited to no more than \$13. Since the opening selling price of the day is \$8, the order is not executed and the stock price is not interrupted, that is to say, the stock trading price does not exceed \$10, so the stop loss buy is not activated.

Q-18. Solution: B.

Option contracts can be viewed as limit orders for which execution is guaranteed at the strike price. Therefore, a “put buy” order at a strike price of 25 will guarantee selling the stock at 25.

Q-19. Solution: C.

Reconstitution is the process of changing the constituent securities of an index when they no longer meet the target criteria.

Q-20. Solution: B.

A price-weighted index, such as the Dow Jones Industrial Average, is computed by summing up the prices of individual stocks and dividing by a divisor that is adjusted for stock splits such that the index value is the same before and after the split.

Q-21. Solution: A.

The value of the price-weighted index is determined by dividing the sum of the security values by the divisor, which is typically set at inception to equal the initial number of securities in the index. In the case of a stock split, the index provider must adjust the value of the divisor by dividing the sum of the constituent prices after the split by the value of the index before the split. This adjustment results in a new divisor that keeps the index value at the same level as before the split. The new divisor will then be used to calculate the index value after the split.

$$\text{Index before the split} = \frac{5 + 10 + 30}{3} = 15$$

$$\text{New divisor, X: } 15 = \frac{5 + 10 + 15}{x}, X = 2$$

$$\text{Index after the split} = \frac{7 + 8 + 15}{2} = 15$$

Q-22. Solution: A.

The momentum effect is a characteristic of a market-capitalization-weighted index, not a fundamental index.

The fundamental indexes generally have a contrarian effect in that the portfolio weights will shift away from securities that have increased in relative value whenever the portfolio is rebalanced.

Fundamental weighting leads to a value tilt because the ratios of book value, earnings, dividends, etc., to market value of the firms in a fundamental index tend to be larger than those of the firms in its market-capitalization-weighted counterpart.

Q-23. Solution: C.

Equal weighting method assigns an equal weight to each constituent security at inception.

$$\text{Security 1 return} = (25-20)/20 = 25\%$$

$$\text{Security 2 return} = (27-30)/30 = -10\%$$

$$\text{Security 3 return} = (43-40)/40 = 7.5\%$$

$$\text{Index return} = (25\% - 10\% + 7.5\%)/3 = 7.5\%$$

Q-24. Solution: B.

The price return of the price-weighted index is the percentage change in price of the index: $(136-150)/150 = -9.3\%$.

Security	Beginning of Period Price (f)	End of Period Price (f)
A	50.00	54.00
B	70.00	50.00
C	<u>30.00</u>	<u>32.00</u>
TOTAL	150.00	136.00

Q-25. Solution: B.

The total return of the market-capitalization-weighted index is calculated below:

Security	Beginning of Period Value (V)	End of Period Value (V)	Dividend Value (V)
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X	4,500,000	5,100,000	150,000
Y	12,500,000	7,500,000	275,000
Z	7,500,000	9,000,000	375,000
Total	24,500,000	21,600,000	800,000

So return= (End Value + Dividend – Begin Value)/ Begin Value= -8.57%

Q-26. Solution: C.

The difference between a price return index and a total return index consisting of identical securities and weights is the income generated over time by the underlying securities. If the securities in the index do not generate income, both indices will be identical in value.

Q-27. Solution: C.

C is Correct because rebalancing is necessary because the weights of the constituent securities change as their market prices change. The weights of the securities in the equal-weighted index at the end of the period are no longer equal. Therefore equal-weighted indexes are regularly rebalanced.

Q-28. Solution: B.

Compared with equity indices, the large number of fixed-income securities—combined with the lack of liquidity of some securities—has made it more costly and difficult for investors to replicate fixed-income indices and duplicate their performance.

Q-29. Solution: B.

Sector indexes provide a means to determine whether a portfolio manager is more successful at stock selection or sector allocation.

Q-30. Solution: B.

The performance of commodity indexes can also be quite different from their underlying commodities because the indexes consist of futures contracts on the commodities rather than the actual commodities.

The voluntary performance reporting for Hedge fund index is the potential for survivorship bias and, therefore, inaccurate performance representation.

Q-31. Solution: B.

In an efficient market, a passive investment strategy (i.e., buying and holding a broad market portfolio) that does not seek superior risk-adjusted returns can be preferred to an active investment strategy because of lower costs (for example, transaction and information-seeking costs). In inefficient markets, an active investment strategy may outperform a passive investment strategy on a risk-adjusted basis.

Q-32. Solution: B.

In a semi-strong-form efficient market, prices adjust quickly and accurately to new information. In this case, prices would quickly adjust to the merger announcement, and if the market is a semi-strong-form efficient market, investors acting after the merger announcement would not be able to earn abnormal returns. Therefore, the market is not semi-strong-form efficient. A market that is not semi-strong-form efficient is also not strong-form efficient. Thus, violating the

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semi-strong-form efficiency also implies violating the strong-form efficiency. However, the market could still be weak-form efficient because past prices are not being used to make abnormal profits. Thus, we cannot say that the weak-form market efficiency has been violated.

Q-33. Solution: C.

If markets are strong-form efficient, prices reflect not only private information but also past market data and public information. If markets are weak-form efficient, investment strategies based on fundamental analysis of public information and past market data could achieve abnormal returns. The semi-strong form of market efficiency also encompasses the weak form. Therefore, security prices reflect not only publicly known and available information but also all past market data.

Q-34. Solution: A.

The strategy based on fundamental analysis must achieve a net return higher than the net return of the passive strategy for a violation of the strong form of market efficiency to occur on a risk-adjusted basis. This threshold Gross return = Net return + Fees and expenses = 15.4% + 0.6% = 16%. Anything in excess of 16% would violate the strong form of market efficiency for the fundamental analysis strategy.

The net return is 16% - 1.5% = 14.5%.

Q-35. Solution: B.

If markets are semi-strong-form efficient (which also encompasses weak-form efficiency), the role of a portfolio manager is not necessarily to beat the market, but rather to establish and manage a portfolio consistent with the portfolio's objectives, with appropriate diversification and asset allocation, while taking into consideration the risk preferences and tax situation of the investor.

Q-36. Solution: B.

In an efficient market, market participants will process available information and those with opposite views will trade among each other until securities market prices fully reflect their fundamental values. An efficient market is thus a market in which asset prices reflect all past and present information.

Q-37. Solution: A.

The observation that stocks with high above average price-to-earnings ratios have consistently underperformed those with below average price-to-earnings ratios is a cross-sectional anomaly. It is a contradiction to the semi-strong form of market efficiency and strong form market efficiency because all the information used to categorize stocks by their price-to-earnings ratios is publicly available. It is not a contradiction to weak form market efficiency.

Q-38. Solution: B.

If risk is underestimated, the discount rate being applied to find the present value of the expected cash flows (estimated intrinsic value) will be too low and the intrinsic value estimate will be too high.

Q-39. Solution: B.

The announcement removed any uncertainty about default. In the period leading up to the

announcement, the bond's market price incorporated a probability of default, but the price would not have fully reflected the bond's value after default. The possibility that a bank loan might permit the company to avoid default was not eliminated until the announcement.

Q-40. Solution: B.

Market efficiency refers to how accurately prices reflect all available information about assets in the market. Improving market efficiency can lead to more accurate asset pricing, lower volatility, and improved risk allocation.

One way to improve market efficiency is to reduce transaction costs, such as brokerage commissions, exchange fees, and taxes. Lower transaction costs make it easier and cheaper for investors to buy and sell assets, resulting in increased market participation, higher liquidity, and ultimately more efficient price discovery.

In contrast, imposing limits on short selling and restricting participation of international investors could actually decrease market efficiency by reducing market depth, limiting liquidity, and preventing the incorporation of diverse perspectives into asset pricing.

Therefore, the factor that would most likely increase market efficiency is option B, reducing transaction costs.

Q-41. Solution: A.

Finding significant abnormal returns does not necessarily indicate that markets are inefficient or that abnormal returns can be realized by applying the strategy to future time periods. Abnormal returns are considered market anomalies because they may be the result of the model used to estimate the expected returns or may be the result of underestimating transaction costs or other expenses associated with implementing the strategy, rather than because of market inefficiency.

Q-42. Solution: A.

Higher than average dividend yield is a characteristic of a value stock, along with low price-to-earnings and low market-to-book ratios. Growth stocks are characterized by low dividend yields and high price-to-earnings and high market-to-book ratios.

Q-43. Solution: C.

The majority of evidence is that anomalies are not violations of market efficiency but are due to the research methodologies used. Portfolio management based on anomalies will likely be unprofitable after transactions costs are considered.

Q-44. Solution: C.

Behavioral biases in which investors tend to avoid realizing losses but rather seek to realize gains is the disposition effect.

The disposition effect is a behavioral bias in which investors tend to avoid realizing losses but rather seek to realize gains.

The gambler's fallacy is a behavioral bias in which recent outcomes affect investors' estimates of future probabilities.

Q-45. Solution: A.

Conservatism is a behavioral bias in which investors tend to be slow to react to new information

and continue to maintain their prior views or forecasts.

If investors focus on issues in isolation and respond to the issues based on how the issues are posed, then they show a behavioral bias called narrow framing.

If investors assess new information and probabilities of outcomes based on similarity to the current state or to a familiar classification, then they show a behavioral bias called representativeness.

Q-46. Solution: B.

because behavioral finance allows for the possibility that the dislike for risk is not symmetrical, in contrast to the more general models where researchers assume that investors do not like risk (risk aversion), whether the risk is that returns are higher than expected or lower than expected.

Q-47. Solution: C.

Some equity securities do not pay dividends, and therefore the standard deviation of dividends cannot be used to measure the risk of all equity securities.

Q-48. Solution: B.

The management of a public firm is under pressures to meet shorter-term demands, such as meeting quarterly sales and earnings projections from analysts. Private owners are thus better able to focus on longer-term value creation opportunities.

Q-49. Solution: C.

The put option feature facilitates raising capital because the shares are more appealing to investors. As such, it provides a benefit to the issuing company. It also helps investors limit their potential losses because they can sell the shares back to the issuing company if the market price falls below the pre-specified put price. Therefore, puttable common shares are beneficial to both the issuing company and the investors.

Q-50. Solution: C.

A contingency refers to some future event or circumstance that is possible but not certain.

Q-51. Solution: C.

Convertible preference shares give the holder the right to convert them into a fixed number of common shares at a predetermined conversion ratio. If the company's common shares appreciate in value, convertible preference shareholders can exercise their conversion rights and potentially profit from the increased value of the converted shares.

While convertible preference shares may carry higher risk than non-convertible preferred shares, they may still be less risky than common shares. Also, while smaller companies may issue convertible preference shares, larger and more established firms can use them as a way to raise capital without diluting their ownership too much.

Q-52. Solution: C.

The price of each DR will be affected by factors that affect the price of the underlying shares, such as company fundamentals, market conditions, analysts' recommendations, and exchange rate movements.

In anticipation of the appreciation of the US dollar in the future, current non-US investors can

directly hold US stocks, wait until the US dollar appreciates in the future, then sell the US stocks and convert the US dollars into other currencies to profit from the appreciation of the US dollar.

Q-53. Solution: 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.

Q-54. Solution: A.

Investors of unsponsored DRs would not have the same voting rights as the direct owners of common shares because the depository bank retains the voting rights.

Q-55. Solution: C.

GDRs are negotiable certificates issued by international banks representing ownership of shares in a foreign company, denominated in either one or more currencies. They allow investors to buy shares in a foreign company without having to deal with foreign exchange risks. When a company lists its shares on multiple stock exchanges in different countries, the common shares become global depository receipts or GDRs, making them tradable across various currency markets.

Q-56. Solution: A.

External factors affecting an industry's growth include macroeconomic, technological, demographic, governmental, and social influences. A change in interest rates, or the cost of debt, is an example of a macroeconomic influence on industry growth, profitability, and risk.

Changes in population size is an example of a demographic influence on industry growth, profitability, and risk.

Changes in personal spending habits is an example of a social influence on industry growth, profitability, and risk.

Q-57. Solution: B.

Business-cycle sensitivity falls on a continuum and is not a discrete "either-or" phenomenon.

Q-58. Solution: A.

High pricing power means lower levels of price competition.

- Barriers to entry
 - ✓ low barriers to entry->little pricing power
 - ✓ high barriers to entry do not necessarily mean high pricing power (Overcapacity)
 - ✓ Low barriers to exit may have higher pricing power
- Industry concentration
 - ✓ High Industry concentration does not guarantee pricing power
- Industry capacity
 - ✓ Undercapacity->higher pricing power and higher return on capital
 - ✓ Overcapacity->lower pricing power and lower return on capital
- Market share stability
 - ✓ More stable market shares likely indicate less intense competition.

Q-59. Solution: A.

Companies pursuing cost leadership must be able to invest in productivity-improving capital equipment in order to be low-cost producers and maintain efficient operating systems.

Q-60. Solution: C.

The economic profit (the spread between the return on invested capital and the cost of capital) tends to be larger in industries with differentiated products, greater pricing power, and high switching costs to customers. Industry 1 has these features. In contrast, firms in Industry 2 have little pricing power (undifferentiated products and rapid shifts in market shares, indicating intense rivalry), which is indicative of potentially smaller economic profits.

The characteristics of Industry 1 do not indicate a potential for over-capacity problems. If anything, Industry 2 is prone to such a problem because of high capital costs and investment in physical capital, cyclical demand for products, and rapid shifts in market shares.

Industry 1 is less prone to the bargaining power of customers because of differentiated products and high switching costs for customers.

Q-61. Solution: C.

C is Correct because industry-level forces driving industry competition include: threat of new entrants, substitution threats, customer and supplier bargaining forces, the competitive forces in the industry (rivalry), life-cycle issues, and business-cycle considerations.

Q-62. Solution: A.

Commercial industry classification systems are typically updated more frequently than government classification systems because they need to be more responsive to changes in the business environment and the needs of businesses. Government classification systems, on the other hand, are typically updated less frequently because they are subject to more bureaucratic and political considerations.

Q-63. Solution: A.

The Global Industry Classification Standard (GICS) is a widely used industry classification system developed by MSCI and S&P Dow Jones Indices. It classifies companies into sectors, industries, and sub-industries based on their primary business activities, products and services, rather than statistical similarities or business cycle sensitivities. The GICS aims to provide a consistent and reliable framework for analyzing and comparing companies across different industries.

Q-64. Solution: A.

A is Correct because the smaller the number of buyers, the more likely buyer power will increase. Bargaining Power of Customers. Affected by: size and concentration of customers, costs of switching to other suppliers, customers' ability to produce the product or service themselves. Are customers able to force price reductions or better payment terms? This can affect the intensity of competition by exerting influence on suppliers regarding prices (and possibly other factors such as product quality). For example, auto parts companies generally sell to a small number of auto manufacturers, which allows those customers, the auto manufacturers, to be tough negotiators when it comes to setting prices.

Q-65. Solution: C.

External factors refer to influences originating outside the organization or industry. Cost structures and economies of scale are internal business considerations, while technological advancements represent external forces that can significantly shape the direction and pace of an industry's development. For instance, new technologies can disrupt existing markets, create opportunities for innovation, and change consumer behavior, all of which have implications for an industry's growth trajectory

Q-66. Solution: B.

A top-down approach in forecasting involves starting with an overall view of the economy or industry and then narrowing down to specific details. In this context, expanding into new markets can be seen as a top-down driver because it takes into account broader economic trends and growth opportunities. On the other hand, net profit margin and increase in customer base are more bottom-up drivers that focus on specific aspects of the insurance company's operations.

Q-67. Solution: C.

Historical base rates and convergence approach may be appropriate for:

- 1) Companies in well-established industries with many publicly traded peers, such as banks, airlines, restaurants, automakers, and retailers;
- 2) smaller companies that are “maturing into” a financial profile similar to that of larger peers with scale.

Q-68. Solution: B.

In many cases, selling and distribution expenses, which are part of SG&A costs, can be modeled as a percentage of sales because they tend to vary directly with sales volume. This means that as sales increase, so do these expenses. However, this may not always be true for all types of companies or industries, so it is important to consider each company's specific circumstances when making such predictions. General corporate costs, on the other hand, can include both fixed and variable components, while overall SG&A expenses generally show an indirect relationship with revenues compared to cost of goods sold

Q-69. Solution: C.

$$V_0 = \sum_{t=1}^3 5/(1+6\%)^t + \frac{100}{(1+6\%)^{10}} = 97.33$$

Q-70. Solution: C.

First is the declaration date; Next comes the ex-dividend date; this is followed closely (one or two business days later) by the holder-of-record date; the final milestone is the payment date (or payable date)

Q-71. Solution: B.

Current year's dividend per share = \$2.50 × 0.6 = \$1.50

$$V = 1.50(1.25)/1.12 + 1.50(1.25)^2/1.12^2 + 1.50(1.25)^2(1.05)/(0.12-0.05)\}/1.12^2 = \$1.67 + \$1.87 + 28.03 = \$31.57$$

Q-72. Solution: C.

Net profit margin = Net income/Sales

Net income = Net profit margin \times Sales;

Dividends per share (D_n) = (Net income \times Payout ratio)/Number of outstanding shares;

Therefore, $D_1 = (\$200\text{million} \times 0.2 \times 0.45) / 18 \text{ million} = \1.00

$D_2 = \$1.00 (1 + 0.18) = \1.18

$D_3 = \$1.00 (1 + 0.18)^2 = \1.39

$D_4 = \$1.00 (1 + 0.18)^2 (1 + 0.05) = \1.46

$V_3 = \$1.46 / (0.15 - 0.05) = 14.6$

$V_0 = \$1 / (1 + 0.15) + \$1.18 / (1 + 0.15)^2 + \$1.39 / (1 + 0.15)^3 + \$14.6 / (1 + 0.15)^3 = \$12.28$

Q-73. Solution: C.

FCFE is a measure of the firm's dividend-paying capacity.

The statement that FCFE models provide more accurate valuations than the dividend discount models is not necessarily true. The appropriateness and the effectiveness of a model depend on the firm characteristics and the analyst's ability in making predictions.

A firm's borrowing activities do impact FCFE, as in the expression:

$FCFE = CFO - FCInv + \text{Net borrowing.}$

Q-74. Solution: B.

The constant growth DDM assumes that the dividend growth rate is constant. The most likely choice is the bread and snack producer. Auto manufacturers are most likely to be cyclical than to experience constant growth. A biotechnology firm in existence for two years is unlikely to pay a dividend, and if it does, dividend growth is unlikely to be constant.

Q-75. Solution: C.

The Gordon Growth Model formula is $P = D_1 / (R - g)$, where P is the intrinsic value per share, D_1 is next year's expected dividend per share, k is the required rate of return, and g is the constant growth rate of dividends. We can estimate the constant growth rate of dividends as ROE \times (1-Dividend Payout Ratio), which gives us $g = 10\% \times (1 - 50\%) = 5\%$. Substituting the values into the formula, we get $P = \$2.00 \times (1 + 5\%) / (0.08 - 0.05) = \70

Q-76. Solution: C.

Earnings growth rate over the period 2006-2009 $= 2.50 \times (1 + g)^3 = 3.2$; $g = 8.6\%$

Average payout ratio $= (0.60 + 0.50 + 0.70 + 0.64) / 4 = 0.61$

Required rate of return on share $i = \text{Current expected risk-free rate of return} + \text{Beta} \times [\text{Market (equity) risk premium}] = 3\% + 1.3 \times (6.5\%) = 11.45\%$

$P/E_1 = \text{payout rate} / (r - g) = 0.61 / (0.1145 - 0.086) = 21.4$

Q-77. Solution: A.

$EV = 10.2 \times 22,000,000 = \$224,400,000$

Equity value $= EV - \text{Debt} + \text{Cash} = 224,400,000 - 56,000,000 + 1,500,000 = \$169,900,000$

Q-78. Solution: A.

The EV/EBITDA approach is most useful when comparing companies with significant differences in capital structure. EBITDA is computed prior to payment to any of the company's financial stakeholders and is not impacted by the amount of debt leverage.

Q-79. Solution: A.

The current market value, or price, of a security is calculated as follows:

$$P = P/E \times E = 15 \times \$5 = \$75$$

The security is undervalued by \$10. Therefore, the estimated intrinsic value is $\$75 + \$10 = \$85$.

Q-80. Solution: A.

Negative earnings in the last year result in a negative ratio of trailing price to earnings and are not meaningful. Practitioners may use the ratio of (1) current price to cash flow or (2) leading price to earnings by replacing last year's loss with forecasted earnings.

Alternative to negative trailing price-to-earnings ratio, practitioners may use price-to-cash-flow ratio because it is possible cash flow would be positive in spite of a small loss.

Alternative to negative trailing price-to-earnings ratio, practitioners may use leading price-to-earnings ratio by replacing last year's loss with forecasted earnings which may be positive.

Q-81. Solution: B.

Enterprise value is most frequently determined as market capitalization plus market value of preferred stock plus market value of debt minus cash and investments (cash equivalents and short-term investments).

Q-82. Solution: C.

To calculate the justified forward P/E ratio, we first need to find the earnings growth rate (g) using the retained earnings approach:

$$g = b * ROE$$

where b is the earnings retention ratio, and ROE is the return on equity.

$$g = 0.60 * 0.15 = 0.09 \text{ or } 9\%$$

Next, we use the Gordon Growth Model to find the fair value P/E ratio:

$$P/E = D / (r - g)$$

where D is the dividend per share, r is the required rate of return on equity, and g is the earnings growth rate.

$$\text{Dividend payout ratio} = 1 - \text{Earnings retention ratio} = 1 - 0.60 = 0.40 \text{ or } 40\%$$

Now we can express the dividend per share as a percentage of earnings per share (EPS):

$$D/EPS = \text{Dividend payout ratio} = 0.40$$

Since the cost of equity is given as the required rate of return on equity, we can plug in the values:

$$P/E = 0.40 / (0.10 - 0.09) = 40$$

Q-83. Solution: C.

Asset-based valuations work well for companies that do not have a high proportion of intangible or "off the books" assets and that do have a high proportion of current assets and current liabilities.

When a company has significant intangibles, the analyst should prefer a forward-looking cash flow valuation to an asset-based valuation model.

Companies with assets that do not have easily determinable market (fair) values—such as those with significant property, plant, and equipment—are very difficult to analyze using asset-based valuation methods.

Q-84. Solution: A.

The justified forward P/E approach offers the advantage of incorporating fundamentals and presenting intrinsic value estimations.

Q-85. Solution: A.

The energy exploration firm would be most appropriately valued using an asset-based model. Its near-term cash flows are likely negative, so a forward-looking model is of limited use. Furthermore, it has valuable assets in the form of drilling rights that likely have a readily determined market value. The paper firm would likely not be appropriately valued using an asset-based model because high inflation makes the values of a firm's assets more difficult to estimate. An asset-based model would not be appropriate to value the software firm because the firm's value largely consists of internally developed intangible assets.

Q-86. Solution: A.

The multiplier model is a relative valuation model that requires comparison with a benchmark to determine whether a security is relatively overvalued or undervalued.