
2020 年 06 月 CFA 一级百题预测

1. ETHICS AND PROFESSIONAL STANDARDS
2. QUANTITATIVE METHODS
3. ECONOMICS
4. FINANCIAL REPORTING AND ANALYSIS
5. CORPORATE FINANCE
6. EQUITY
7. FIXED INCOME
8. DERIVATIVES
9. ALTERNATIVE INVESTMENTS
10. PORTFOLIO MANAGEMENT

近年来，CFA 考试的难度逐步提高。针对 2020 年 06 月 CFA 一级考试，各科目占比没有变动，但学员依旧需要重视占比较高的几门科目，例如“财务报表分析”和“职业伦理”。除了经济学和权益两门科目，其余各科考纲内容发生了重要变更。其中，“数量”删除两个章节并新增相关系数检验，“财务报表分析”删除了有关 IOSCO 和部分会计准则的概念性内容，同时对收入准则、金融工具准则和租赁准则相关章节均做了修改，开始应用最新的相关准则进行对应学习，而“组合管理”加入 ESG 和 Asset management industry 内容。百题预测的题目，紧密贴合最新考纲和真题难度，依据金程多年 CFA 培训经验，由明星师资与资深研究员共同编写并配有对应知识点总结，可帮助考生提高备考效率。另外，为了帮助考生全面应对考试，金程 CFA 团队推出了多种学习平台，例如“金程网校旗舰版”和“金程网校 HD”，请各位充分利用。如果遇学术问题，请登录“金程网校”进行提问。祝大家好运！

金程教育 CFA 百题师资团队，为您呈现最完美的百题预测~

10. Portfolio Management

10.1. Different Types of Investors & Investment Products

10.1.1. 重要知识点

10.1.1.1. Portfolio overview

- Portfolio approach: **From the perspective of risk and returns**, evaluate individual securities in relation to their contribution to the investment characteristics of the whole portfolio.
- Diversification provides an investor with a way to reduce the risk without necessarily decreasing their expected rate of return.
 - During times of severe market turmoil, correlations among assets tend to increase, which makes the diversification less effective.

10.1.1.2. Mutual funds and other forms of pooled investments

- Mutual funds: open-end funds and closed-end funds, money market funds, bond funds, stock funds.
- Exchange-traded funds (ETFs)
- Separately managed account 专款理财账户
- Hedge funds
- Buyout funds (private equity funds) 与管理技能有关
- Venture capital funds 与管理技能有关
- The key to a DC plan is that the employee accepts the investment risk and is responsible for ensuring that there are enough funds in the plan to meet his or her needs upon retirement.

10.1.1.3. Comparison among pooled investments

- An investor investing in an index mutual fund buys the fund shares directly from the fund and all investments are settled at the net asset value. In the case of an ETF, however, investors buy the shares from other investors just as if they were buying or selling shares of stock.
- Expenses are lower for ETFs but, unlike mutual funds, investors do incur brokerage costs.
- All purchases and redemptions in a mutual fund take place at the same price at the close of business. ETFs are constantly traded throughout the business day, and as such each purchase or sale takes place at the prevailing market price at that time.
- For ETFs, dividends are paid out to the shareholders, whereas index mutual funds

usually reinvest the dividends. Hence, there is a direct cash flow from the ETF that is not there with the index mutual fund. Depending on the investor, this cash flow may or may not be desirable.

- The minimum required investment in an ETF is usually smaller. Investors can purchase as little as one share in an ETF, which is usually not the case with an index mutual fund.
- ETFs are often cited as having tax advantages over index mutual funds.
- The main disadvantage of an SMA is that the required minimum investment is usually much higher than is the case with a mutual fund.
- Hedge fund strategies generally involve a significant amount of risk, driven in large measure by the liberal use of leverage and complexity. More recently, it has also involved the extensive use of derivatives.
- A key difference between hedge funds and mutual funds is that the vast majority of hedge funds are exempt from many of the reporting requirements for the typical public investment company.

10.1.1.4. Characteristics of different types of investors:

Investor	Time Horizon	Risk Tolerance	Liquidity Needs	Income Needs
Individuals	Varies by individual	Varies by individual	Varies by individual	Varies by individual
DB plan	Long	High	Quite low	High for mature funds; Low for growing funds
Banks	Short	Quite low	High	Pay interest and operational expenses
Endowments and Foundations	Very long	High	Quite low	Meet spending commitments
Insurance	Long - life Short - P&C	Quite low	High	Low
Mutual funds	Varies by fund	Varies by fund	High	Varies by fund
Sovereign wealth funds	Varies by fund	Varies by fund	Varies by fund	Varies by fund

10.1.1.5. Asset Management Industry

- Asset management firms are referred to as buy-side firms, in contrast with sell-side firms such as broker-dealers and investment banks.
- Active management attempts to outperform a chosen benchmark through

manager skill; Passive managers attempt to replicate the returns of a chosen market index.

- Traditional asset managers focus on equities and fixed-income securities ;
Alternative asset managers focus on asset classes such as private equity, hedge funds, real estate, or commodities.
- Asset Management Industry Trends:
 - The market share for passive management has been growing over time;
 - The amount of data available to asset managers has grown exponentially in recent years;
 - Robo-Advisers are a technology that can offer investors advice and recommendations based on their investment requirements and constraints, using a computer algorithm.

10.1.2. 基础题

Q-1. With respect to the formation of portfolios, which of the following statements is most accurate?

- A. Portfolios affect risk less than returns
- B. Portfolios affect risk more than returns
- C. Portfolios affect risk and returns equally

Q-2. Which of the following types of institutions is most likely to have a long investment time horizon and a high level of risk tolerance?

- A. Banks
- B. Endowments
- C. Insurance companies

Q-3. Which of the following institutional investors are most likely to have a low tolerance for investment risk and relatively high liquidity needs?

- A. Insurance company
- B. Charitable foundation
- C. Defined benefit pension plan

Q-4. In general, which of the following institutions will most likely have a high need for

4-63

liquidity and a short investment time horizon?

- A. Banks
- B. Defined benefit pension plans
- C. Endowments

10.2. Portfolio Management Process

10.2.1. 重要知识点

10.2.1.1. Planning step

- Analysis of the investor's risk tolerance, return objectives, time horizon, tax exposure, liquidity needs, income needs, unique circumstances;
- Develop an IPS: describes the investor's investment objectives and constraints; state an objective benchmark; reviewed and updated regularly.

10.2.1.2. Execution step

- Asset allocation; top-down analysis & bottom-up
- Security analysis;
- Portfolio construction.

10.2.1.3. Feedback step

- Monitor and rebalance the portfolio;
- Measure portfolio performance.

10.2.2. 基础题

Q-5. Which of the following is least likely a part of the execution step of the portfolio management process?

- A. Security analysis
- B. Portfolio construction
- C. Performance measurement

Q-6. Which of the following is most likely a part of the feedback step in the portfolio management process?

- A. Portfolio construction
- B. Performance measurement
- C. Developing the investment policy statement

Q-7. Security analysis is most likely a part of which step in the portfolio management process?

- A. The execution step.
- B. The planning step.
- C. The feedback step.

10.3. Expected Return and Expected Standard Deviation

10.3.1. 重要知识点

常考计算：

10.3.1.1. Time-Weighted Return and Money-Weighted Return

- $1 + \text{TWRR} = (1 + \text{HPR}_1) \times (1 + \text{HPR}_2) \times \dots \times (1 + \text{HPR}_{365})$, HPR_t is daily holding period return; $1 + \text{TWRR} = [(1 + r_1) \times (1 + r_2) \times \dots \times (1 + r_N)]^{1/n}$, r_i is the time-weighted return of year i .
- **MWRR 概念**：The internal rate of return is called the money-weighted rate of return, in investment management applications, because it accounts for the timing and amount of all cash flows into and out of the portfolio.
 - Only appropriate for the investment when manager can control the timing and direction of CF.
- **MWRR 计算步骤及公式**
 - Firstly, determine the timing of each cash flow;
 - Then, using the calculator to compute IRR, or using geometric mean.
- **TWRR and MWRR:**
 - TWRR: Not be influenced by the timing and direction of CF, so it's an objective indicator of investment managers' performance; 注意计算 time-weighted return 时，如果不是年度的 HPR 不用开方。
 - MWRR: However, if can control the timing and direction, MWRR is the best indicator to measure the return.

10.3.1.2. An individual investment:

- Expected Return
$$E(R) = \sum_{i=1}^n P_i R_i = P_1 R_1 + P_2 R_2 + \dots + P_n R_n$$
- Variance of Return
$$\text{Var} = \sigma^2 = \frac{1}{T} \sum_{i=1}^T (R_i - \mu)^2$$
- Standard Deviation of Return

$$\sigma = \sqrt{\frac{1}{T} \sum_{i=1}^T (R_i - \mu)^2} \text{ (population)}$$

$$s = \sqrt{\frac{1}{T-1} \sum_{i=1}^T (R_i - \bar{R})^2} \text{ (sample)}$$

10.3.1.3. A Portfolio:

- Expected Return $E(R) = \sum_{i=1}^n w_i R_i$
- Standard deviation $s_p = \sqrt{s_p^2} = \sqrt{\sum_{i=1}^n w_i^2 s_i^2 + \sum_{i=1}^n \sum_{j=1}^n w_i w_j Cov_{i,j}}$
- Covariance $Cov_{1,2} = \sum_{i=1}^n P_i [R_{i,1} - E(R_1)][R_{i,2} - E(R_2)]$
- Covariance (given equal weights, variance and covariance)

$$s_p^2 = \frac{s^2}{N} + \frac{N-1}{N} \overline{Cov}$$

- Correlation $\rho_{1,2} = \frac{Cov_{1,2}}{\sigma_1 \sigma_2}$
- Variance of returns for a portfolio of two risky assets:

$$\sigma_p^2 = w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \sigma_1 \sigma_2 \rho_{1,2}$$

10.3.2. 基础题

Q-8. Which of the following statements most likely represents a characteristic of the money-weighted rate of return?

- A. It removes the effects of timing and amount of withdrawals and addition to the portfolio.
- B. It reflects the compound rate of growth of one unit of currency invested over a stated measurement period.
- C. It is the internal rate of return on a portfolio, taking account of all cash flows.

Q-9. An analyst gathered the following information about a common stock investment:

	Date	Amount
Stock purchase (1)	1 January 2016	€170.00
Stock purchase (1)	1 January 2017	€190.00
Stock sale (2@212)	1 January 2018	€424.00

The stock does not pay a dividend. The money-weighted and time-weighted rates of return on the investment are *closest* to:

Money-weighted rate of return Time-weighted rate of return

- A. 11.67% 9.53%

B.	11.67%	11.67%
C.	11.64%	11.67%

Q-10. Investor A and Investor B invest in a fund for two years:

	Year 1	Year 2
Fund Return	Positive	Negative
Portfolio	Money-Weighted Rate of Return	
Investor A	9.5%	
Investor B	10.2%	

Given the information in the table, which of the following is least likely to be an explanation for the difference between the two money-weighted rates of return?

- A. Investor A increased the investment in the fund at the end of year 1 whereas investor B did not make any additions or withdrawals.
- B. Investor B decreased the investment in the fund at the end of year 1 whereas investor A did not make any additions or withdrawals.
- C. The investors invested different amounts at inception and afterward did not make any additions or withdrawals.

Q-11. An analyst gathered the following information about a portfolio comprised of two assets:

Asset	Weight %	Expected Return E(R)	Expected Standard Deviation E(σ)
X	75	12%	6%
Y	25	8%	5%

If the correlation of returns for the two assets equals 0.75, then the expected return and expected standard deviation of the portfolio are *closest* to:

	<u>Expected Return</u>	<u>Expected Standard Deviation</u>
A.	5.75%	5.6%
B.	5.75%	5.6%
C.	11%	5.5%

Q-12. The correlation between assets in a two-asset portfolio increases during a market decline. If there is no change in the proportion of each asset held in the portfolio or the expected standard deviation of the individual assets, the volatility of the portfolio is

most likely to:

- A. increase.
- B. decrease.
- C. remain the same.

Q-13. The portfolio of a risk-free asset and a risky asset has a better risk-return trade-off than investing in only one asset type because the correlation between the risk-free asset and the risky asset is equal to:

- A. -1.0.
- B. 0.0.
- C. 1.0.

Q-14. A portfolio includes two assets. The portfolio's standard deviation equals to the weighted average mean of the two assets' standard deviation. The correlation of these two assets is closest to:

- A. -1.
- B. 0.
- C. 1.

Q-15. An asset management firm generated the following annual returns in their U.S. large cap equity portfolio:

Year	Net Return (%)
2014	-35.8
2015	33.2
2016	12.1
2017	-2.4

The 2018 return needed to achieve a trailing five year geometric mean annualized return of 6.0% when calculated at the end of 2018 is closest to:

- A. 18.82%.
- B. 28.63%.
- C. 43.03%.

Q-16. A portfolio contains equal weights of two securities having the same standard deviation. If the correlation between the returns of the two securities was to decrease, the

portfolio risk would most likely:

- A. remain the same.
- B. increase.
- C. decrease.

Q-17. Assuming no short selling, a diversification benefit is most likely to occur when the correlations among the securities contained in the portfolio are:

- A. greater than +1.
- B. equal to +1.
- C. less than +1.

Q-18. A correlation matrix of the returns for securities A, B, and C is reported below:

Security	A	B	C
A	1		
B	0.5	1	
C	0	-0.5	1

Assuming that the expected return and the standard deviation of each security are the same, a portfolio consisting of an equal allocation of which two securities will be most effective for portfolio diversification?

- A. Securities A and B
- B. Securities B and C
- C. Securities A and C

Q-19. The return measure that best allows one to compare asset returns earned over different length time periods is the:

- A. annualized return.
- B. net portfolio return.
- C. holding period return.

Q-20. All else held constant, a lower correlation between the assets in a portfolio most likely results in higher:

- A. volatility.
- B. portfolio return.
- C. diversification.

10.4. Markowitz's Theory

10.4.1. 重要知识点

10.4.1.1. Assumptions

- Returns distribution: Each investment can be measured by a probability distribution of expected returns over a given horizon.
- Utility maximization: Investor intends to maximize their expected utility over time horizon.
- Risk is variability: Risk is measured in terms of variance (standard deviation) of expected returns.
- Risk/return: Investors make their decision based on expected returns and risk.
- Risk aversion: Investors prefer the portfolio with less risk given the same returns.

10.4.1.2. Minimum-variance frontier

- **Minimum-variance portfolio** is the portfolio available that has the lowest standard deviation with a given expected return.
- **Minimum-variance frontier** is the entire collection of minimum-variance portfolios.

10.4.1.3. Global minimum-variance portfolio

- The left-most point on the minimum-variance frontier is the portfolio with the minimum variance among all portfolios of risky assets.

10.4.1.4. Efficient frontier

- The curve that **lies above and to the right** of the global minimum-variance portfolio is referred to as the Markowitz efficient frontier.
- Those portfolios that have the greatest expected return with a given level of risk make up the efficient frontier.
- All portfolios of risky assets that rational, risk-averse investors will choose.
- **Efficient portfolio**: well-diversified or fully-diversified.

10.4.1.5. Utility Theory

- **Assumptions**
 - Investors are risk averse.
 - They always prefer more to less (greater return to lesser return).
 - They are able to rank different portfolios in the order of their preference.
- **Utility function** $U = E(r) - \frac{1}{2} A\sigma^2$
 - U: the utility of an investment
 - E(r): the expected return

- σ^2 : the variance of the investment
- A: a measure of risk aversion, which is measured as the marginal reward that an investor requires to accept additional risk.
 - ◆ A is higher for more risk-averse individuals.
 - ◆ Risk-aversion: $A > 0$
 - ◆ Risk-neutral: $A = 0$
 - ◆ Risk-seeking: $A < 0$

10.4.1.6. 投资者分类

➤ Risk-aversion

- Refers to the fact that individuals prefer less risk to more risk
- Risk-averse investors:
 - ◆ Prefer lower to higher risk for a given level of expected returns
 - ◆ Will only accept a riskier investment if they are compensated in the form of greater expected return

➤ Risk-neutral

- an investor is indifferent about the gamble or the guaranteed outcome
- Risk neutrality investor cares only about return and not about risk, so higher return investments are more desirable even if they come with higher risk.

➤ Risk-seeking

- Refers to the fact that investor is said to be risk loving or risk seeking.
- Risk seeking investors:
 - ◆ Prefer higher risk to lower risk for a given level of expected returns
 - ◆ Will accept less expected return because of the extra utility from the risk
 - ◆ The gamble has an uncertain outcome, but with the same expected value as the guaranteed outcome. Thus, an investor choosing the gamble means that the investor gets extra "utility" from the uncertainty associated with the gamble.

10.4.1.7. Indifference curve

- plots combinations of risk(standard deviation) and expected return among which an investor is indifferent.

10.4.2. 基础题

Q-21. Which of the following is not an assumption of the Markowitz model? Investors:

- A. have homogeneous expectations.
- B. maximize one-period expected utility.

C. base decisions solely on expected return and risk.

Q-22. Relative to an investor with a steeper indifference curve, the optimal portfolio for an investor with a flatter indifference curve will most likely have:

- A. a lower level of risk and return.
- B. a higher level of risk and return.
- C. the same level of risk and return.

Q-23. With respect to risk-averse investors, a risk-free asset will generate a numerical utility that is:

- A. the same for all individuals.
- B. positive for risk-averse investors.
- C. equal to zero for risk seeking investors.

Q-24. As one moves to the right along an investor's efficient frontier, a set increase in risk is most likely to lead to:

- A. sequentially larger increases in expected return.
- B. consistent increases in expected return.
- C. sequentially smaller increases in expected return.

Q-25. When considering a portfolio that is optimal for one investor, a second investor with a higher risk aversion would most likely:

- A. expect a higher variance for the portfolio.
- B. derive a lower utility from the portfolio.
- C. have a lower return expectation for the portfolio.

10.5. Capital Market Theory

10.5.1. 重要知识点

10.5.1.1. CAL

- Given the risk-free rate and the risk and return of a portfolio of risky assets, the line of possible portfolio risk and return combinations is referred as capital allocation line.
- **Two-fund separation theorem**

- All investors will hold a combination of two portfolios or funds: a risk-free asset and an optimal portfolio of risky assets.

10.5.1.2. CML

➤ CAL v.s. CML

- The CML is a special case of the CAL, where the risky portfolio is the market portfolio

➤ Market portfolio

- Is the tangent point where the CML touches the Markowitz efficient frontier
- Consists of every risky assets
- The weights on each asset are equal to the percentage of the market value of the asset to the market value of the entire market portfolio.

➤ CML 公式

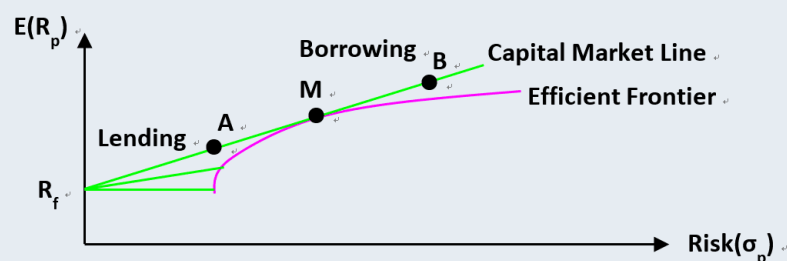
- under the assumption of homogeneous expectations, given the risk-free rate and the risk and return of market portfolio of all risky assets, the risk and return combination is referred as capital market line

$$E(R_p) = R_f + \frac{E(R_M) - R_f}{\sigma_M} \sigma_p$$

➤ CML 的作用

- Investment using CML follow a passive investment strategy (i.e., invest in an index of risky assets that serves as a proxy for the market portfolio and allocate a portion of their investable assets to a risk-free asset.)

- **Lending and borrowing portfolio:** 在 CML 线上，如果投资组合要获得比市场组合更高的收益，必须怎么样？应该是使用杠杆作用，采用无风险借款。



10.5.2. 基础题

Q-26. Compared to the efficient frontier of risky assets, the dominant capital allocation line

14-63

has higher rates of return for levels of risk greater than the optimal risky portfolio because of the investor's ability to:

- A. lend at the risk-free rate.
- B. borrow at the risk-free rate.
- C. purchase the risk-free asset.

Q-27. Two individual investors with different levels of risk aversion will have optimal portfolios that are:

- A. below the capital allocation line.
- B. on the capital allocation line.
- C. above the capital allocation line.

Q-28. Which of the following statements is least accurate? An investor may construct a portfolio located on the capital market line (CML) by:

- A. investing a portion of his capital in the risk-free asset and the balance in a fully diversified portfolio of all equities.
- B. investing a portion of his capital in the risk-free asset and the balance in a fully diversified portfolio of all risky assets.
- C. borrowing capital at the risk-free rate and investing all his capital plus all borrowed capital in a fully diversified portfolio of all risky assets.

Q-29. If investors borrow at a rate that exceeds the risk-free lending rate, the resulting borrowing portfolios will:

- A. plot on a flatter line.
- B. plot on a steeper line.
- C. no longer plot on a straight line.

Q-30. When constructing the optimal portfolios for investors with different risk preferences, the investor with the higher risk aversion is most likely to have a:

- A. steeper capital allocation line.
- B. flatter indifference curve.
- C. lower expected return.

Q-31. The point of tangency between the capital allocation line (CAL) and the efficient

frontier of risky assets most likely identifies the:

- A. optimal risky portfolio.
- B. optimal investor portfolio.
- C. global minimum-variance portfolio.

Q-32. A portfolio with equal parts invested in a risk-free asset and a risky portfolio will most likely lie on:

- A. the efficient frontier.
- B. the security market line.
- C. a capital allocation line.

Q-33. An investor whose portfolio lies to the right of the market portfolio on the capital market line (CML) has most likely:

- A. loaned some funds at the risk-free rate and invested the remaining funds in the market portfolio.
- B. borrowed funds at the risk-free rate and invested all available funds in the market portfolio.
- C. invested all available funds in the risk-free asset.

Q-34. If Investor A has a lower risk aversion coefficient than Investor B, on the capital allocation line, will Investor B's optimal portfolio have a higher expected return?

- A. Yes.
- B. No, since Investor B has a lower risk tolerance.
- C. No, since Investor B has a higher risk tolerance.

10.6. SML

10.6.1. 重要知识点

10.6.1.1. Systematic risk and unsystematic risk

- **Systematic risk:** the risk that cannot be eliminated by diversification, which is measured by beta.
- **Unsystematic risk:** the risk that is eliminated by diversification.
- Since unsystematic risk can be eliminated through diversification, only systematic risk is compensated.

10.6.1.2. Beta

- **Defination:** the sensitivity of an asset's return to the return on the market index in the market model. A standardized measure of systematic risk.

- **Formula:** $\beta_i = \frac{Cov_{i,mkt}}{\sigma_{mkt}^2} = \left(\frac{\sigma_i}{\sigma_{mkt}}\right) \times \rho_{i,mkt}$

10.6.1.3. Return generate model: multifactor models

$$E(R_i) - R_f = \beta_{i1} \times E(\text{factor}_1) + \beta_{i2} \times E(\text{factor}_2) + \beta_{i3} \times E(\text{factor}_3) + \dots + \beta_{ij} \times E(\text{factor}_j)$$

- Macroeconomic factors: GDP growth, interest rate, inflation rate, productivity, employment or consumer confidence.
- Fundamental factors: earnings, earnings growth, firm size, and research expenditures.
- Statistical factors: no obvious economic interpretations with asset returns.
- Market model
 - The single factor model (X=excess return on the market portfolio).

10.6.1.4. Assumptions of the CAPM

- Investors are risk-averse, utility-maximizing, rational individuals.
- Markets are frictionless, including no transaction costs and no taxes.
- Investors plan for the same single holding period.
- Investors have homogeneous expectations or beliefs.
- All investments are infinitely divisible.
- Investors are price takers.

10.6.1.5. CAPM

$$E(R_i) = R_f + \beta_i [E(R_m) - R_f]$$

10.6.1.6. Security market line (SML)

- A graphical representation of the CAPM with beta, reflecting systematic risk, on the x-axis and expected return on the y-axis

10.6.1.7. SML 曲线应用

- **Undervalued**
 - Estimated return > Required return from the SML, price undervalued.
 - Investors should buy.
- **Overvalued**
 - Estimated return < Required return from the SML, price overvalued.
 - Investors should sell.
- **Properly valued**
 - Estimated return = Required return from the SML, price fair valued.

- Investors are indifferent between buying or selling.

10.6.1.8. SML & CML

	SML	CML
Measure of risk	Uses systematic risk (non-diversifiable risk)	Uses standard deviation (total risk)
Application	Tool used to determine the appropriate expected (benchmark) returns for securities	Tool used to determine the appropriate asset allocation (percentages allocated to the risk-free asset and to the market portfolio) for the investor
Definition	Graph of the capital asset pricing model	Graph of the efficient frontier
Slope	Market risk premium	Market portfolio Sharpe ratio

10.6.2. 基础题 最新cfaf/rm/gmat/cpa网课加微信286982279

Q-35. According to the Capital Asset Pricing Model (CAPM), the market portfolio:

- A. includes all risky assets invested in equal amounts.
- B. contains only systematic risk.
- C. is perfectly positively correlated with other portfolios on the CML.

Q-36. Factors such as fluctuations in interest rates and changes in industrial production contribute to:

- A. systematic risk.
- B. unsystematic risk.
- C. both systematic and unsystematic risk.

Q-37. An analyst uses a multifactor model to estimate the expected returns of various securities. The model analyzes historical and cross-sectional return data to identify factors that explain the variance or covariance in the securities' observed returns. This model is most likely a:

- A. statistical factor model.
- B. macroeconomic factor model.
- C. fundamental factor model.

Q-38. An analyst gathers the following information:

Security	Expected Annual	Expected Standard	Correlation between
----------	-----------------	-------------------	---------------------

	Return (%)	Deviation (%)	Security and the Market
Security 1	11	25	0.6
Security 2	11	20	0.7
Security 3	14	20	0.8
Market	10	15	1.0

Which security has the *least* amount of market risk?

- A. Security 1
- B. Security 2
- C. Security 3

Q-39. With respect to capital market theory, the average beta of all assets in the market is:

- A. less than 1.0.
- B. equal to 1.0.
- C. greater than 1.0.

Q-40. Which one is not the assumption of CAPM?

- A. Investors are risk averse
- B. All investors plan using the same time period
- C. Investors have different expectations of security returns

Q-41. An analyst gathered the following information about the stock of UG and the market.

Expected Return of UG's stock $E(R_{UG})$	11%
Expected Return of market R_M	8%
Standard deviation of market return σ_M	13%
Covariance between UG's stock and market $Cov(UG,M)$	0.035

If the risk-free rate is 3.5%, is UG's stock overvalued?

- A. Yes.
- B. No, it is fairly valued.
- C. No, it is undervalued.

Q-42. With respect to capital market theory, correctly priced individual assets can be plotted on the:

- A. capital market line.
- B. security market line.

C. capital allocation line.

Q-43. An asset has an annual return of 18.9%, standard deviation of returns of 19.5%, and correlation with the market of 0.8. If the standard deviation of returns on the market is 16.9% and the risk-free rate is 1.5%, the beta of this asset is closest to:

- A. 1.02.
- B. 0.923.
- C. 0.95.

Q-44. The stock of GBK Corporation has a beta of 0.75. If the risk-free rate of return is 3.5% and the expected market return is 8%, the expected return for GBK is closest to:

- A. 3.9%.
- B. 6.9%.
- C. 10.8%.

Q-45. Based on the capital asset pricing model (CAPM), the expected return on FGL Corp's shares is 13%. Using a model independent of the CAPM, an analyst has estimated the returns on the stock at 11%. Based on this information, the analyst is most likely to consider the stock to be:

- A. undervalued.
- B. correctly valued.
- C. overvalued.

Q-46. Following its decision to divest its non-core assets, analysts expect HCL Corp's standard deviation of returns to rise to 35% and its correlation with the market portfolio to remain unchanged at 0.7. The risk-free rate and the market risk premium are expected to remain unchanged at 5% and 7%, respectively. However, the market portfolio's standard deviation of returns is expected to decrease to 16%. The firm's expected return after the restructure is closest to:

- A. 12.00%.
- B. 15.71%.
- C. 16.5%.

Q-47. Stock X and Stock Y have the same level of total risk. Stock X has twice the systematic risk of Stock Y and half its non-systematic risk. Stock X's expected return will most likely

be:

- A. lower than the expected return of Stock Y.
- B. the same as the expected return of Stock Y.
- C. higher than the expected return of Stock Y.

Q-48. The variance of returns of a security and the market portfolio are 0.36 and 0.10, respectively. If the covariance of security returns and market returns is 0.07, the security's beta is closest to:

- A. 0.60.
- B. 0.70.
- C. 0.19.

Q-49. An investor with \$20,000 decides to borrow an additional \$10,000 at the risk-free rate and invest all the available funds in the market portfolio. This investor's portfolio beta is closest to:

- A. 0.5.
- B. 1.5.
- C. 1.0.

Q-50. Information about three stocks is provided in the following table:

Stock	Expected Return	Beta
Booraem Inc.	14.14%	1.65
Heisen Inc.	12.40%	1.21
Gutmann Inc.	10.46%	0.88

If the expected market return is 10.45% and the average risk-free rate is 1.32%, according to the capital asset pricing model (CAPM) and the security market line (SML), which of the three stocks is most likely overvalued?

- A. Booraem Inc.
- B. Gutmann Inc.
- C. Heisen Inc.

Q-51. Risk that can be attributed to factor(s) that impact a company or industry is best described as:

- A. market risk.

- B. systematic risk.
- C. unsystematic risk.

10.7. Performance Measures

10.7.1. 重要知识点

10.7.1.1. Performance evaluation

- Sharpe ratio = $\frac{R_p - R_f}{\sigma_p}$
- Treynor measure = $\frac{R_p - R_f}{\beta_p}$
- M-squared alpha: $M^2\alpha = (R_p - R_f) \frac{\sigma_m}{\sigma_p} - (R_M - R_f)$
- Jensen's α : $\alpha_p = (R_p - R_f) - \beta_p(R_M - R_f)$

10.7.1.2. Comparison of four measures

- Jensen's alpha 和 M-squared alpha 是可以根据大小来判断投资业绩
 - We are not only able to determine the rank of a portfolio but also which, if any, of our portfolios beat the market on a risk-adjusted basis
- Sharpe ratio 和 Treynor measure 需要再和其他的组合的指标进行比较
 - To rank portfolios, the Sharpe ratio or Treynor ratio of one portfolio must be compared with the Sharpe ratio or Treynor ratio of another portfolio
- For non-diversified portfolio, Sharpe ratio and M-squared alpha are appropriate
- For fully diversified portfolio, Jensen Alpha and Treynor are appropriate

10.7.2. 基础题

Q-52. Which of the following performance measures most likely relies on systematic risk as opposed to total risk when calculating risk-adjusted return?

- A. M-squared alpha
- B. Sharpe ratio
- C. Treynor ratio

Q-53. Which of the following performance measures does not require the measure to be compared to another value?

- A. Sharpe ratio
- B. Treynor ratio

C. Jensen's alpha

Q-54. Which of the following performance measures is most appropriate for an investor who is not fully diversified?

- A. M-squared alpha
- B. Treynor ratio
- C. Jensen's alpha

Q-55. An portfolio manager gathered the following information about a fund.

Fund's rate of return	17%
Market rate of return	10%
Risk-free rate	4%
Beta of the fund	1.2

The Jensen's alpha for the fund is *closest* to:

- A. 12.2%
- B. 5.8%
- C. 3.1%

Q-56. Which of the following portfolio performance measures are the most appropriate for an investor who holds a fully diversified portfolio?

- A. Treynor ratio and Jensen's alpha.
- B. M-squared alpha and Sharpe ratio.
- C. Sharpe ratio and Treynor ratio.

10.8. Portfolio Planning and Construction

10.8.1. 重要知识点

10.8.1.1. Component of IPS

- **Introduction.** This section describes the client.
- **Statement of Purpose.** This section states the purpose of the IPS.
- **Statement of Duties and Responsibilities.** This section details the duties and responsibilities of the client, the custodian of the client's assets, and the investment managers.
- **Procedures.** This section explains the steps to take to keep the IPS current and the procedures followed able to respond to various contingencies.

- **Investment Objectives.** This section explains the client's objectives in investing.
- **Investment Constraints.** This section presents the factors that constrain the client in seeking to achieve the investment objectives.
- **Investment Guidelines.** This section provides information about how policy should be executed (e.g., on the permissible use of leverage and derivatives) and specific types of assets excluded from investment, if any. 最新资料加V : zyz786468331
- **Evaluation and Review.** This section provides guidance on obtaining feedback on investment results. 最新资料加V : zyz786468331
- **Appendices: (A) Strategic Asset Allocation, (B) Rebalancing Policy.** Many investors specify a strategic asset allocation (SAA), also known as the policy portfolio, which is the baseline allocation of portfolio assets to asset classes in view of the investor's investment objectives and the investor's policy with respect to rebalancing asset class weights.

10.8.1.2. Strategic asset allocation

- the set of exposures to IPS-permissible asset classes that is expected to achieve the client's **long-term objectives** given the client's investment constraints.
- Correlations within the class is **higher** than correlations between asset classes.

10.8.1.3. Active portfolio management

- **Tactical asset allocation:** is the decision to **deliberately deviate** from the policy exposures to systematic risk factors with the intent to add value based on forecasts of the **near-term returns** of those asset classes.
 - The manager's ability to identify short-term opportunities in specific asset classes;
 - The existence of such short-term opportunities.
- **Security selection:** is an attempt to generate higher returns than the asset class benchmark by **selecting securities with a higher expected return.**
 - The manager's skill
 - The opportunities within a particular asset class.

10.8.2. 基础题

Q-57. An important reason for constructing an investment policy statement is that it:

- A. Minimizes the costs of portfolio construction.
- B. Ensures that managers outperform the performance benchmark.
- C. Includes a performance benchmark to judge manager performance.

Q-58. Which of the following is least likely to be placed in the appendices to an investment

policy statement (IPS)?

- D. Rebalancing Policy
- E. Strategic Asset Allocation
- F. Statement of Duties and Responsibilities

Q-59. Which of the following is not the major component of an investment policy statement (IPS)?

- A. Investment Constraints
- B. Client's risk tolerance
- C. Strategic asset allocation

Q-60. The strategic asset allocation and portfolio rebalancing policy are most likely addressed in which section of an investment policy statement?

- A. Procedures
- B. Appendices
- C. Investment objectives

Q-61. In defining asset classes as part of the strategic asset allocation decision, pairwise correlations within asset classes should generally be:

- A. equal to correlations among asset classes.
- B. lower than correlations among asset classes.
- C. higher than correlations among asset classes.

Q-62. A portfolio manager decides to temporarily invest more of a portfolio in equities than the investment policy statement prescribes because he expects equities will generate a higher return than other asset classes. This decision is most likely an example of:

- A. rebalancing.
- B. tactical asset allocation.
- C. strategic asset allocation.

Q-63. In a strategic asset allocation, assets within a specific asset class are least likely to have:

- A. low paired correlations.
- B. low correlations with other asset classes.
- C. similar risk and return expectations.

10.9. Investment Objectives and Constraints

10.9.1. 重要知识点

10.9.1.1. Risk objective

- The risk objective limits how high the investor can set the return objective
- **Risk measurement**
 - Absolute: variance or standard deviation
 - Relative: relate risk relative to one or more benchmarks perceived to represent appropriate risk standards (tracking risk)
 - Downside risk: VAR
- Risk tolerance: willingness and ability

10.9.1.2. Return objectives: absolute or relative basis

- Return measurement
 - Absolute basis
 - ◆ percentage rate of return: total return (balance between capital gains and income), inflation-adjusted return (real)
 - Relative
 - ◆ Relative to a benchmark return: Some institutions also set their return objective relative to a peer group or universe of managers
 - ◇ when limited information is known about the investment strategies
 - ◇ or the returns calculation methodology being used by peers,
 - ◇ the impossibility of all institutions being "above average."
 - ◇ Furthermore, a good benchmark should be investable
- Stated return desire vs. required return
- Consistent with risk objective

10.9.1.3. Investment constraints

- **Liquidity** — for cash spending needs (anticipated or unexpected)
- **Time horizon** — the time between making an investment and needing the funds
- **Tax concerns** — the tax treatments of various accounts, and the investor's marginal tax bracket
- **Legal and regulatory factors** — restrictions on investments in retirement, personal, and trust accounts
- **Unique needs and preferences** — constraints because of investor preferences or other factors not already considered

10.9.1.4. ESG considerations

- **Negative screening** — excluding specific companies or industries

- **Positive screening or best-in-class** —invest in companies that have positive ESG practices
- **Thematic investing** —investing in sectors or companies in order to promote specific ESG-related goals
- **Engagement/active ownership investing** —using share ownership as a platform to promote improved ESG practices at a company

10.9.2. 基础题

Q-64. An individual investor's ability to take risk is higher than average level. His willingness to take risk is lower than average level. How about his risk tolerance, comparing with the average level?

- A. Higher than average level
- B. Lower than average level
- C. Same with the average level

Q-65. Which of the following is most likely associated with an investor's ability to take risk rather than the investor's willingness to take risk?

- A. The investor has a long investment time horizon.
- B. Safety of principal is very important to the investor.
- C. The investor believes earning excess returns on stocks is a matter of luck.

Q-66. An investment policy statement's risk objective states that over a 10-month period, with a probability of 96%, the client's portfolio must not lose more than 4% of its value.

This statement is most likely a(n):

- A. relative risk objective.
- B. total risk objective.
- C. absolute risk objective.

Q-67. Which of the following factors is least likely to affect an individual's ability to take risk?

- A. Personality type.
- B. Expected income.
- C. Time horizon.

Q-68. Frank Johnson is investing for retirement and has a 20-year horizon. He has an average

27-63

risk tolerance. Which investment is likely to be the least suitable for a major allocation in Johnson's portfolio?

- A. Listed equities.
- B. Private equity.
- C. US Treasury bills.

Q-69. Which of the following constraints would most likely appear in the unique needs and preferences section of a trusts Investment policy statement? The portfolio is:

- A. subject to the prudent-man standard.
- B. subject to income taxes of 40%.
- C. prohibited from investing in tobacco companies.

10.10. Risk Management

10.10.1.重要知识点

10.10.1.1. Risk terminologies

- **Risk:** Exposure to uncertainty
- **Risk exposure:** The extent to which an entity's value may be affected through sensitivity to underlying risks.
- **Risk management**
 - Risk management is the process by which an organization or individual **defines** the level of risk to be taken, **measures** the level of risk being taken, and **adjusts** the latter toward the former; with the goal of **maximizing** the company's or portfolio's value or the individual's overall satisfaction, or utility.
 - It comprises all the decisions and actions needed to best achieve organizational or personal objectives while **bearing a tolerable level of risk**.
 - **Not about minimizing risk.**

10.10.1.2. Risk management framework

- It is the infrastructure, process, and analytics needed to support effective risk management in an organization.
- Integrate the risk and return aspects of the enterprise into decisions.
- Not a "one size fits all" solution; it is best achieved through a **custom** solution.
- **Key factors:**
 - Risk governance
 - Risk identification and measurement
 - Risk infrastructure
 - Defined policies and processes

- Risk monitoring, mitigation, and management
- Communications
- Strategic analysis or integration

10.10.1.3. Key factors of risk management framework

- Risk governance
 - The **top-down process** foundation for risk management activities, including risk oversight and setting risk tolerance for the organization.
- Risk identification and measurement
 - The quantitative and qualitative assessment of all potential sources of risk and the organization's risk exposures.
- Risk infrastructure
 - Comprises the resources and systems required to track and assess the organization's risk profile.
- Defined policies and processes
 - Management's complement to risk governance at the operating level
- Risk monitoring, mitigation, and management
- Communications
 - Includes risk reporting and active feedback loops so that the process improves decision making.
- Strategic analysis or integration
 - Using these risk tools to rigorously sort out the factors that are and are not adding value as well as incorporating this analysis into the management decision process with the intent of improving outcomes.

10.10.1.4. Risk governance

- The **top-down process** and guidance that direct risk management activities to align with and support the overall enterprise.
- **Risk governance** refers to senior management's determination of the **risk tolerance** of the organization, the elements of its optimal **risk exposure strategy**, and the framework for **oversight** of the risk management function.
- Elements of effective risk governance
 - It determines the organization's goals, direction and priorities
 - Spells out risk appetite or tolerance
 - Provide a sense of the worst losses that could be tolerated in various scenarios
 - Decisions about risk budgeting

10.10.1.5. Risk tolerance

- A key element of good risk governance, delineates which risks are acceptable, which are unacceptable, and how much risk the overall organization can be exposed to.
- Identifies the extent to which the entity is willing to experience losses or opportunity costs and to fail in meeting its objectives.
- Should be chosen and communicated **before** a crisis.
- The ability of a company to respond **dynamically to adverse events** may allow for a higher risk tolerance

10.10.1.6. Risk budgeting

- **Risk budgeting** is any means of allocating investments or assets by their risk characteristics.

10.10.1.7. Financial risks and non-financial risks

- Financial risks refer to the risks that arise from events occurring in the financial markets. 3 main types:
 - Market risk
 - ◆ Arises from movements in stock prices, interest rates, exchange rates and commodity prices
 - Credit risk
 - ◆ The risk that a counterparty will not pay any amount owed
 - Liquidity risk
 - ◆ The risk that, as a result of degradation in market conditions or the lack of market participants, one will be unable to sell an asset without lowering the price less than the fundamental value
 - ◆ Liquidity risk could also be called transaction cost risk and is most associated with **a widening bid-ask spread**.
- Non-financial risks consist of a variety of risks, including settlement risk, operational risk, legal risk, regulatory risk, accounting risk, tax risk, model risk, tail risk, and sovereign or political risk.
 - Operational risk is the risk that arises from the operations of an organization and includes both human and system or process errors.
 - Solvency risk is that an entity does not survive or succeed because it runs out of cash to meet its financial obligations.

10.10.1.8. Other risk issues

- Interaction between risks:
 - Risks are not necessarily independent because many risks arise as a result of other risks; risk interactions can be extremely non-linear and harmful.

- Risk drivers are the fundamental global and domestic, **macroeconomic and industry factors** that create risk.
- Common measures of risk include:
 - Standard deviation or volatility;
 - Asset-specific measures, such as beta or duration;
 - Derivative measures, such as delta, gamma, vega, and rho;
 - And tail measures such as value at risk, cvar and expected loss given default.
- Methods of risk modification:
 - Risk prevention and avoidance
 - Risk acceptance: self-insurance and diversification
 - Risk transfer (insurance)
 - Risk shifting (derivatives)
- The determinants of which method is best for modifying risk are the benefits weighed against the costs, with consideration for his overall final risk profile and adherence to risk governance objectives.

10.10.2.基础题

Q-70. Risk management in the case of individuals is best described as concerned with:

- A. hedging risk exposures.
- B. maximizing utility while bearing a tolerable level of risk.
- C. maximizing utility while avoiding exposure to undesirable risks.

Q-71. An example of risk transfer combined with self-insurance is most likely:

- A. a bond portfolio hedged with an interest rate option.
- B. an insurance policy with a deductible.
- C. a bank that establishes a loan loss reserve fund.

Q-72. A major benefit of employing a risk budgeting process is that it most likely:

- A. allows the organization to determine its enterprise risk tolerance.
- B. forces risk tradeoffs across the organization.
- C. eliminates the need for hedging within the organization.

Q-73. Liquidity risk is most associated with:

- A. the probability of default.
- B. a widening bid–ask spread.
- C. a poorly functioning market.

Q-74. An example of a non-financial risk is:

- A. market risk.
- B. liquidity risk.
- C. settlement risk.

Q-75. If a company has a one-day 10% Value at Risk of \$10 million, this means:

- A. 10% of the time the firm is expected to lose at least \$10 million in one day.
- B. 90% of the time the firm is expected to lose at least \$10 million in one day.
- C. 10% of the time the firm is expected to lose no more than \$10 million in one day.

Q-76. Which of the following statements about risk assessment is incorrect?

- A. Normally, the VaR loss exceeds conditional VaR.
- B. The VaR measure indicates the probability of a loss of at least a certain level in a time period.
- C. Stress testing examines the effects of a specific change in a key variable while scenario analysis incorporates changes in multiple inputs.

Q-77. A successful portfolio risk budget will most likely:

- A. produce superior performance compared to passive investing.
- B. be based on multiple sources of risk.
- C. lead to investment in assets with the highest return per unit of risk.

Q-78. Among other things, an organization's risk tolerance should most likely reflect its:

- A. perception of market stability.
- B. competitive position.
- C. size.

10.11. The fundamentals of technical analysis

10.11.1.重要知识点

10.11.1.1. Principles

- Trades determine volume and price.
- Prices are the result of the interaction of supply and demand in the real time.
- The greater the volume of trades, the more impact that market participants will

have on price.

10.11.1.2. Assumptions

- Market prices reflect both rational and irrational investor behavior.
 - Market trends and patterns reflect the irrational human behavior.
- Efficient markets hypothesis does not hold.
- Market trends and patterns repeat themselves and are somewhat predictable.

10.11.1.3. Advantages and disadvantages of technical analysis

- **Advantages of technical analysis**
 - Actual price and volume data is easy to access
 - Technical analysis is objective (although require subjective judgment), while much of the data used in fundamental analysis is subject to assumptions or restatements.
 - It can be applied to the prices of assets that do not produce future cash flows, such as commodities.
 - Fundamental analysis may have the risk of financial statement fraud, while technical analysis doesn't have.
- **Disadvantage of technical analysis**
 - In markets that are subject to large outside manipulation, the application of technical analysis is limited.
 - Technical analysis is also limited in illiquid markets, where even modestly sized trades can have an inordinate impact on prices.

10.11.2.基础题

Q-79. Why is technical analysis especially useful in the analysis of commodities and currencies?

- A. Valuation models cannot be used to determine fundamental intrinsic value for these securities
- B. Government regulators are more likely to intervene in these markets
- C. These types of securities display clearer trends than equities and bonds do

Q-80. The belief that trends and patterns tend to repeat themselves and are, therefore, somewhat predictable best describes:

- A. arbitrage pricing theory.
- B. weak-form efficiency.
- C. technical analysis.

Q-81. For the following, which one is not the assumption of technical analysis?

- A. The historical information can affect the current analysis
- B. Supply and demand does not determine the prices
- C. Prices can be projected with charts and other technical tools

Q-82. Technical analysts most likely study trends and patterns in security prices to forecast a company's:

- A. intrinsic value.
- B. future price trends.
- C. earnings potential.

10.12. Types of Charts

10.12.1.重要知识点

10.12.1.1. 掌握理解各类 technical analysis charts :

- **Line Charts** are a simple graphic display of price trends over time. Line charts are typically drawn with closing prices as the data points.
- **Bar charts** have four bits of data in each entry—the high and low price encountered during the time interval plus the opening and closing prices.
- **Candlestick charts** provides four prices per data point entry: the opening and closing prices and the high and low prices during the period. Box clear 表示股票涨了。Box filled 表示股票跌了。
- **Distinction among line charts, bar charts, and candlestick charts :** line chart 只包含收盘价与连接收盘价的直线，bar chart 包含收盘价、开盘价、最高价、最低价，candlestick chart 不仅包括 4 个价格，本身的形状颜色还代表了一段时间的涨跌大局。
- **Point and figure charts :** 方向相同时，每变化一个 box size 做一个记号，方向相反变化超过 reversal point 就换一列做相反记号，注意横轴不代表时间，反

映价格变化了多少次，剔除了 Noise。

- 注意 chart 的时间区间，可以是日、周，也可以是月、年。
- **Relative strength analysis:** compare the performance of a stock with a benchmark, usually an index.

10.12.2.基础题

Q-83. Which chart can best reflect the daily price trend of a stock?

- A. Line Chart
- B. Bar Chart
- C. Point and figure chart

10.13. Common Chart Patterns

10.13.1.重要知识点

10.13.1.1. 学会分析使用 trend, support and resistance lines, and change in polarity

- **Uptrend:** An uptrend for a security is when the price goes to higher highs and higher lows. (Demand>Supply)
- **Downtrend** is when a security makes lower lows and lower highs. (Demand<Supply)
- **Trend line:** Can help to identify whether a trend is continuing or reversing.
- **Support level:** a low price range in which buying activity is sufficient to stop the decline in price.
- **Resistance level:** a price range in which selling is sufficient to stop the rise in price.
- **Change in polarity:** 突破 resistance level 后，resistance level 极性变化为 support level。也就是我们平时说的阻力位一旦突破后就会成为支撑位。

10.13.1.2. Reversal patterns (反转图形，改变原趋势)

- **For uptrend:** head-and-shoulder, double top, triple top. For HAS, Left shoulder: 上升斜率大，量大，形成倒 V 型；Head：上升到更高位，但量下降，又下降到肩的开始上升位(Neckline)，且最低位突破了趋势线；Right shoulder: 与

左肩对称，但是量更低。

- **Head and shoulders pattern** is the most widely recognized reversal pattern
- Volume is an important indicator. A clear trend should exist before the formation of the pattern. Shoulders should be symmetrical.
- Head and shoulders pattern: Price target= neckline-(head-neckline).
- **For downtrend:** Inverse head-and shoulders pattern, Double bottom, and triple bottom
- Inverse head-and shoulders pattern: Price target = neckline+(neckline-head)
- **Triple tops and bottoms:** three peaks or troughs at roughly the same price level.

10.13.1.3. Continuation patterns (盘整图形，突破后保持原趋势)

- **Triangle:**
 - Ascending triangle (上面为水平线，下降得越来越小，最后突破向上);
 - Descending triangle (下面是水平线，上升得越来越小，最后突破向下);
 - symmetrical triangle (bullish 和 bearish 寻找 consensus，突破后方向与突破前一致)
- **Rectangle:** 上下水平线，分别为支撑线和阻力线
- **Flags and Pennants** are similar to rectangles and triangles in shape, but they are not horizontal. (旗形和楔形一般出现在短期，突破后趋势不变)

10.13.2.基础题

Q-84. A price range in which selling is sufficient to stop the rise in price is best described as:

- A. change in polarity.
- B. resistance.
- C. support.

10.14. Indicators

10.14.1.重要知识点

10.14.1.1. Price-based indicators

- **Moving average lines (移动平均线)** : 20, 60, 120 trading days
- **Golden cross**: a short-term MA line crosses from underneath a long-term MA;
Dead cross: a short-term MA line crosses from above a long-term MA.
- **Bollinger bands** : 移动平均线加减几个标准差 , 短期突破无意义 ; 长期突破 , 在上面则为超买指标。

10.14.1.2. Momentum oscillators:

- **To detect out of ordinary:**
 - 可以用技术分析的方法 , 如趋势、支撑线和阻力线 ;
 - 分析与价格的 Convergence and divergence。如果价格到高位 , 但是趋势振荡指标相反 , early sign of weakness.
 - 有三个应用 :
 - ◆ 确定 strength of trend;
 - ◆ 如果达到历史的高低点 , 表明要反转 ;
 - ◆ for non-trending, 可用于短期交易决策。
- **Rate of change**: $M=(V-V_x) \times 100$, 如果与趋势同向且穿过 0 , 则为买卖信号 ;
- **Relative strength index**: $RSI= 100-100/(1+RS)$, $RS=$ 价格上升总和除以下降总和。一般为在 30-70 之间 , 过多则为 overbought , 过小则为 oversell.
- **Stochastic oscillator, KD 线** : $\%K = 100(C-L14)/(H14-L14)$, $\%D$ 为 $\%K$ 的最近三天移动平均。When $\%K$ moves from below the $\%D$ line to above it, this move is considered a bullish short-term trading signal.
- **MACD**: MACD 为 12 and 26 差异的指数移动平均 , Signal line 为 MACD 的移动平均 (9 days)

应用 : 1) 交叉说明趋势结束 ; 2) 做 MACD 的趋势线。

10.14.1.3. Sentiment indicators

- **Put/call ratio:** The put /call ratio is the volume of put options traded divided by the volume of call option traded.
 - A **high** put/ call ratio usually indicates **bearish market**
 - ◆ Investors who buy put options on a security are presumably bearish, and investors who buy call options are presumably bullish.
 - At **extreme highs** in the put/call ratio, market sentiment is said to be so extremely **negative** that an increase in price is likely.
- **Volatility index:** The VIX is a measure of near-term market volatility calculated by the Chicago Board Options Exchange.
 - The VIX rises when market participants become fearful of an impending market decline. These participants then bid up the price of puts, and the result is an **increase** in the VIX level.
 - When other indicators suggest that the market is oversold and the VIX is at an extreme high, this combination is considered **bullish**.
- **Margin debt**
 - When stock margin debt is increasing, investors are aggressively buying and stock prices will move higher because of increased demand, indicating a bullish market. Eventually, the margin traders use all of their available credit, so their buying power (and, therefore, demand) decreases, which fuels a price decline
 - Falling prices may trigger margin calls and forced selling, thereby driving prices even lower. If margin debt reaches its bottom and turns up, it is a sign of bullish.
- **Short interest ratio:** The number of shares of a particular security that are currently sold short is called “short interest”.
 - Short interest ratio = Short interest / Average daily trading volume
 - If a large number of shares are sold short and the short interest ratio is high, the market should expect a falling price for the shares because of so much negative sentiment about them.
 - Therefore, the short interest ratio constitutes future demand for the shares.

10.14.1.4. Flow-of-funds indicators

- **Arms index** or **short-term trading index** (TRIN) = 平均下降量(下降总量除以下降家数) /平均上升量
 - When Arms Index < 1 means that most trading activity is in rising stocks.

- When Arms Index >1, means that there is more volume in declining stocks, suggesting that the market continued to be in a selling mood.
- When the index value close to 1, the market is in balance.
- **Margin debt:** 如果下降，则说明在卖股票，继续下跌。
- **Mutual fund cash position:** a contrarian indicator.
- **New equity issuance & secondary offerings:** uptrend may be to turn down.

10.14.2.基础题

Q-85. Which of the following descriptions about ROC oscillator is incorrect?

- A. When the ROC oscillator crosses zero in the same direction as the direction of the trend, this movement is considered a buy or sell signal.
- B. If the ROC oscillator crosses into positive territory during an uptrend, it is a buy signal.
- C. If the ROC oscillator enters into negative territory during a downtrend, it is considered a buy signal.

Q-86. Which of the following sentiment indicators is most likely to increase when investors forecast a bullish market?

- A. Put/Call ratio
- B. Debt Margin
- C. Volatility Index

10.15. Fintech in Investment Management

10.15.1.重要知识点

10.15.1.1. Fintech in Investment Management

- The term “fintech” refers to technological innovation in the design and delivery of financial services and products.
- Advancements include the use of Big Data, artificial intelligence, and machine learning to evaluate investment opportunities, optimize portfolios, and mitigate risks.

10.15.1.2. Big Data

- Big Data is characterized by the three Vs—volume, velocity, and variety—and includes both traditional and non-traditional (or alternative) datasets.
- Among the main sources of alternative data are data generated by individuals,

business processes, and sensors.

10.15.1.3. **Advanced analytical tools**

- **Artificial intelligence** computer systems are capable of performing tasks that traditionally required human intelligence at levels comparable (or superior) to those of human beings; **Machine learning** seeks to extract knowledge from large amounts of data by “learning” from known examples and then generating structure or predictions.
- Types of machine learning:
 - **Supervised learning**: Computers learn to model relationships based on labeled training data.
 - **Unsupervised learning**: Computers are not given labeled data but instead are given only data from which the algorithm seeks to describe the data and their structure.
- Challenges of machine learning
 - **Overfitting**: make too much use of the data
 - **Underfitted**: make too little use of the data
 - ML techniques can appear to be opaque or **“black box”** approaches, which arrive at outcomes that may not be entirely understood or explainable.

10.15.1.4. **Distribute Ledger Technology**

- In a **distributed ledger**, entries are recorded, stored, and distributed across a network of participants so that each participant has a matching copy of the digital database.
- The **consensus mechanism** is the process by which the computer entities (or nodes) in a network agree on a common state of the ledger.
- **Cryptography**: an algorithmic process to encrypt data, making the data unusable if received by unauthorized parties, which enables a high level of network security and database integrity.
- DLT can take the form of permissionless and permissioned networks.
 - **Permissionless networks** are open to any user who wishes to make a transaction.
 - In **permissioned network**, network members may be restricted from participating in certain network activities.
- **Blockchain**: a type of digital ledger in which information, such as changes in ownership, is recorded sequentially within blocks that are then linked or “chained” together and secured using cryptographic methods.
- **Tokenization**: through tokenization, the process of representing ownership

rights to physical assets on a blockchain or distributed ledger, DLT has the potential to streamline this process by creating a single, digital record of ownership with which to verify ownership title and authenticity, including all historical activity.

10.15.2.基础题

Q-87. A correct description of fintech is that it:

- A. is driven by rapid growth in data and related technological advances.
- B. increases the need for intermediaries.
- C. is at its most advanced state using systems that follow specified rules and instructions.

Q-88. A characteristic of Big Data is that:

- A. one of its traditional sources is business processes.
- B. it involves formats with diverse types of structures.
- C. real-time communication of it is uncommon due to vast content.

Q-89. In the use of machine learning (ML):

- A. some techniques are termed “black box” due to data biases.
- B. human judgment is not needed because algorithms continuously learn from data.
- C. training data can be learned too precisely, resulting in inaccurate predictions when used with different datasets.

Q-90. Text Analytics is appropriate for application to:

- A. economic trend analysis.
- B. large, structured datasets.
- C. public but not private information.

Q-91. In providing investment services, robo-advisers are most likely to:

- A. rely on their cost effectiveness to pursue active strategies.
- B. offer fairly conservative advice as easily accessible guidance.
- C. be free from regulation when acting as fully-automated wealth managers.

Q-92. Which of the following statements on fintech’s use of data as part of risk analysis is correct?

- A. Stress testing requires precise inputs and excludes qualitative data.
- B. Machine learning ensures that traditional and alternative data are fully segregated.

-
- C. For real-time risk monitoring, data may be aggregated for reporting and used as model inputs.

Q-93. A factor associated with the widespread adoption of algorithmic trading is increased:

- A. market efficiency.
- B. average trade sizes.
- C. trading destinations.

Q-94. A benefit of distributed ledger technology (DLT) favoring its use by the investment industry is its:

- A. scalability of underlying systems.
- B. ease of integration with existing systems.
- C. streamlining of current post-trade processes.

Q-95. What is a distributed ledger technology (DLT) application suited for physical assets?

- A. Tokenization
- B. Cryptocurrencies
- C. Permissioned networks

10.16. 进阶题

Q-1. The timing of payouts for property and casualty insurers is unpredictable ("lumpy") in comparison with the timing of payouts for life insurance companies. Therefore, in general, property and casualty insurers have:

最新资料加V: zyz786468331

- A. lower liquidity needs than life insurance companies.
- B. greater liquidity needs than life insurance companies.
- C. a higher return objective than life insurance companies.

Q-2. An investor whose portfolio is located on the capital market line to the left of the market portfolio most likely has:

- A. Lower unsystematic risk than the market portfolio.
- B. Higher unsystematic risk than the market portfolio.
- C. Less than 100 percent of his wealth invested in the market portfolio.

Q-3. With respect to the security market line, if two risky assets have the same covariance with the market portfolio but have different estimated rates of return, the most accurate conclusion is that the two risky assets have:

- A. The same amount of systematic risk, and both assets are properly valued.
- B. Different amounts of systematic risk, and both assets are properly valued.
- C. The same amount of systematic risk, and at least one of the assets is either overvalued or undervalued.

Q-4. The slope of the security characteristic line is an asset's:

- A. beta.
- B. excess return.
- C. risk premium.

Q-5. Portfolio managers who are maximizing risk-adjusted returns will seek to invest less in securities with:

- A. lower values for nonsystematic variance.
- B. values of nonsystematic variance equal to 0.
- C. higher values for nonsystematic variance.

Q-6. After interviewing a client in order to prepare a written investment policy statement (IPS), you have established the following:

- The client has earnings that vary dramatically between £30,000 and £70,000 (pre-tax) depending on weather patterns in Britain.
- In three of the previous five years, the after-tax income of the client has been less than £20,000.
- The client's mother is dependent on her son (the client) for approximately £9,000 per year support.
- The client's own subsistence needs are approximately £12,000 per year.
- The client has more than 10 years' experience trading investments including commodity futures, stock options, and selling stock short.
- The client's responses to a standard risk assessment questionnaire suggest he has above average risk tolerance.

The client is best described as having a:

- A. low ability to take risk, but a high willingness to take risk.
- B. high ability to take risk, but a low willingness to take risk.
- C. high ability to take risk and a high willingness to take risk.

Q-7. A key difference between a wrap account and a mutual fund is that wrap accounts:

- A. have assets that are owned directly by the individual.
- B. cannot be tailored to the tax needs of a client.
- C. have a lower required minimum investment.

Q-8. An investor's transactions in a mutual fund and the fund's returns over a four-year period are provided in the following table:

	Year			
	1	2	3	4
New investment at the beginning of the year (US\$)	2,600	1,600	1,100	0
Investment return for the year	-21%	66%	-26%	10%
Withdrawal by investor at the end of the year (US\$)	0	-600	-600	0

Based on this data, the money-weighted return (or internal rate of return) for the investor is closest to:

- A. 7.50%.
- B. 2.15%.

C. 3.57%.

Q-9. A return-generating model that provides an estimate of the expected return of a security based on factors such as earnings growth and cash flow generation is best described as a:

- A. market factor model.
- B. fundamental factor model.
- C. macroeconomic factor model.

Q-10. In the context of strategic asset allocation, adding asset classes with low correlation will most likely improve a portfolio's risk-return trade-off as long as the stand-alone risk of the added asset class:

- A. does not exceed its diversification effect.
- B. equals its diversification effect.
- C. exceeds its diversification effect.

Solutions

**Never stop smiling, not even when you're sad, someone might
fall in love with your smile.**

永远都不要停止微笑，即使是在你难过的时候，说不定有人会因为你
的笑容而爱上你。

10. Portfolio Management

10.1. 基础题

Q-1. Solution: B.

As illustrated in the reading, portfolios reduce risk more than they increase returns.

Q-2. Solution: B.

Endowments have a long investment time horizon and a high level of risk tolerance. Banks have a short investment time horizon and a low level of risk tolerance. Insurance companies have a low level of risk tolerance and their investment time horizon depends on the types of insurance.

Q-3. Solution: A.

Describe types of investors and distinctive characteristics and needs of each.

A is correct because insurance companies need to be relatively conservative and liquid given the necessity of paying claims when due.

Q-4. Solution: A.

Banks have a short time horizon and high liquidity needs.

Q-5. Solution: C.

C is correct. Performance measurement is a part of the feedback step of the portfolio management process. The execution step includes asset allocation, security analysis, and portfolio construction.

Q-6. Solution: B.

B is correct. Performance measurement along with portfolio monitoring and rebalancing is part of the feedback loop.

Q-7. Solution: A.

The execution step of the portfolio management process has three parts: asset allocation, security analysis, and portfolio construction.

Q-8. Solution: C.

The money-weighted rate of return is the IRR of an investment's net cash flows.

Q-9. Solution: C.

Cash outflow of €170 occurs at $t = 0$, another outflow of €190 occurs at $t = 1$, and an inflow of

47-63

€424 occurs at $t = 2$. Using a financial calculator, the IRR of these cash flows is 11.64%.

The time-weighted rate of return is the geometric mean of the annual rates of return in the stock irrespective of the amounts invested in the various time periods.

The rate of return for the first period is $(190 - 170)/170 = 11.7647\%$ and for the second period is $(212 - 190)/190 = 11.5789\%$. The geometric mean is $[(1+11.7647\%) \times (1+11.5789\%)]^{0.5} - 1 = 11.6718\%$.

Q-10. Solution: C.

The money-weighted rate of return (MWRR) is sensitive to the additions and withdrawals of funds in a portfolio over the course of an investment. If, at inception, investors A and B invest amounts of different size in the same fund but then neither add nor withdraw any cash for two years, they will obtain exactly the same MWRR. In contrast, if investor A increases the investment in the fund at the end of year 1 and investor B does not make any additions or withdrawals, then Investor A will have a lower MWRR than investor B because in year 2 the fund underperformed with respect to year 1. By the same token, if investor B decreases the investment at the end of year 1 and investor A does not make any additions or withdrawals, then investor B will have a higher MWRR than investor A because she decreased the investment before an underperforming year.

最新资料加V : zyz786468331

A is incorrect. If investor A increases the investment in the fund at the end of year 1 and investor B does not make any additions or withdrawals, then the former will have a lower MWRR than the latter because in year 2 the fund underperformed with respect to year 1.

B is incorrect. If investor B decreases the investment at the end of year 1 and investor A does not make any additions or withdrawals, then the former will have a higher MWRR than the latter because she decreased the investment before an underperforming year.

Q-11. Solution: C.

The expected return of the portfolio is the weighted average return of the two assets $= 0.75 \times 12\% + 0.25 \times 8\% = 11\%$.

The expected standard deviation of the portfolio is calculated as:

$$\begin{aligned} &= \sqrt{w_1^2 s_1^2 + w_2^2 s_2^2 + 2w_1 w_2 \rho_{1,2} s_1 s_2} \\ &= [(0.75^2 \times 0.06^2) + (0.25^2 \times 0.05^2) + (2 \times 0.75 \times 0.25 \times 0.755 \times 0.06 \times 0.05)]^{0.5} \\ &= 5.5\% \end{aligned}$$

Q-12. Solution: A.

Higher correlations will produce less diversification benefits provided that the other components of the portfolio standard deviation do not change (i.e., the weights and standard deviations of

48-63

the individual assets).

Q-13. Solution: B.

Portfolio of the risk-free asset and a risky asset or a portfolio of risky assets can result in a better risk-return trade-off than an investment in only one type of an asset, because the risk-free asset has no correlation with the risky asset.

Q-14. Solution: C.

$$\sigma_p = \sqrt{w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \sigma_1 \sigma_2 \rho_{1,2}}$$

When the correlation = 1,

$$\sigma_p = \sqrt{w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \sigma_1 \sigma_2} = \sqrt{(w_1 \sigma_1 + w_2 \sigma_2)^2} = w_1 \sigma_1 + w_2 \sigma_2$$

Q-15. Solution: C.

Calculate and interpret major return measures and describe their appropriate uses.

$$\overline{R_G} = 0.06 = \sqrt[5]{(1 - 0.358)(1 + 0.332)(1 + 0.121)(1 - 0.024)(1 + R_{2018})} - 1$$

Holding period total return (cumulative) factor calculation through 2017:

$$(1 - 0.358) \times (1 + 0.332) \times (1 + 0.121) \times (1 - 0.024) = 0.93561$$

Compound total return (cumulative) factor at 6% per year of five percent for five years:

$$1.06^5 = 1.3382$$

Return needed in 2018 to achieve a compound annualized return of 6%

$$1.3382 / 0.93561 - 1 = 0.4303 = 43.03 \text{ percent}$$

Q-16. Solution: C.

The formula for the return standard deviation (risk) of a two asset portfolio is:

$$\sigma_p = \sqrt{w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 \sigma_1 w_2 \sigma_2 \text{Cov}(R_1, R_2)}$$

The formula for portfolio risk shows that portfolio risk decreases as the correlation decreases.

Q-17. Solution: C.

As long as security returns are not perfectly positively correlated, diversification benefits are possible.

Q-18. Solution: B.

The negative correlation of -0.5 between investment securities B and C is the lowest and thus is the most effective for portfolio diversification.

Q-19. Solution: A.

The annualized return is an average return measure that can be calculated using return data for a period that is shorter (or longer) than one year. In many cases, it is most convenient to annualize all available returns in order to compare returns when the time periods during which a return is earned or computed vary. It reflects the return that would be earned over a one-year period, assuming that money can be reinvested repeatedly while earning a similar return.

Q-20. Solution: C.

An investor may achieve diversification by combining two assets that are not perfectly correlated. This diversification increases as the correlation decreases.

Q-21. Solution: A

List the assumptions about investor behavior underlying the Markowitz model.

A is correct. This is not an assumption of the Markowitz model, it is an assumption of the Capital Asset Pricing Model (CAPM).

Q-22. Solution: B.

B is correct because a less risk-averse investor's highest utility, given the low slope of his indifference curve, is likely to touch the capital allocation line at a point which would represent a portfolio with higher risk and more expected return.

Q-23. Solution: A.

A risk-free asset has a variance of zero and is not dependent on whether the investor is risk neutral, risk seeking or risk averse. That is, given that the utility function of an investment is expressed as $U = E(r) - \frac{1}{2}A\sigma^2$, where A is the measure of risk aversion, then the sign of A is irrelevant if the variance is zero (like that of a risk-free asset).

Q-24. Solution: C.

The increase in return with every unit increase in risk keeps decreasing as one moves from left to right because the slope of the efficient frontier continues to decrease. Thus, investors obtain decreasing increases in returns as they assume more risk.

Q-25. Solution: B.

Utility has two terms: the expected return and a negative term based on the portfolio risk weighted by risk aversion. For an identical portfolio, the investor with a higher risk aversion (A)

50-63

would calculate a lower utility (U).

Q-26. Solution: B.

The CAL dominates the efficient frontier at all points except for the optimal risky portfolio. The ability of the investor to purchase additional amounts of the optimal risky portfolio by borrowing (i.e., buying on margin) at the risk-free rate makes higher rates of return for levels of risk greater than the optimal risky asset possible.

Q-27. Solution: B

The CAL represents the set of all feasible investments. Each investor's indifference curve determines the optimal combination of the risk-free asset and the portfolio of all risky assets, which must lie on the CAL.

Q-28. Solution: A.

A is correct. This statement is incorrect. Portfolios located on the CML may be constructed by: 1) investing a portion of an investor's capital in the risk-free asset and the balance in the market portfolio which consists of all risky assets, or 2) borrowing capital at the risk-free rate and investing all of an investor's capital plus all borrowed capital in the market portfolio.

Q-29. Solution: A.

A is correct. If investors borrow at a rate that exceeds the lending rate, the resulting borrowing portfolios will not be as profitable as the case where borrowing and lending is carried out at the same risk-free rate. The result is that borrowing portfolios will plot on a line with a flatter slope compared to borrowing portfolios constructed from borrowing at the risk-free lending rate.

Q-30. Solution: C.

The optimal portfolio is identified as the point at which the capital allocation line (CAL) is tangential to the investor's indifference curve. As investor risk aversion increases, the optimal portfolio slides down the CAL to a point of lower expected risk and lower expected return.

Q-31. Solution: A.

Discuss the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line.

A is correct. The optimal risky portfolio lies at the point of tangency between the capital allocation line and the efficient frontier of risk assets.

Q-32. Solution: C.

A capital allocation line shows possible combinations of a risky portfolio and the risk-free asset.

Q-33. Solution: B.

A portfolio lying to the right of the market portfolio on the CML is formed by borrowing funds at the risk-free rate and investing all available funds in the market portfolio.

Q-34. Solution: B

B is correct. Investor B has a higher risk aversion coefficient, therefore a lower risk tolerance and a lower expected return on the capital allocation line.

Q-35. Solution: B.

B is correct. According to the CAPM the market portfolio is perfectly positively correlated with all other portfolio on the CML. All risky assets are included in the market portfolio in proportion to their market value, not in equal amounts. The market portfolio contains only systematic risk since it is completely diversified.

Q-36. Solution: A.

Define systematic and unsystematic risk and explain why an investor should not expect to receive additional return for assuming unsystematic risk.

A is correct. Systematic (market-related) risk is caused by macroeconomic variables such as interest rate volatility and variability in industrial production. Unsystematic risk is caused by company-specific attributes.

Q-37. Solution: A. 最新cfaf/rm/gmat/cpa网课加微信286982279

A is correct. Statistical factor models use historical and cross-sectional return data to identify factors that explain the variance or covariance in the observed returns of securities.

B is incorrect because macroeconomic factor models use economic factors that are correlated with security returns, such as economic growth, the interest rate, the inflation rate, productivity, etc.

C is incorrect because fundamental factor models use the relationships between security returns and firms' underlying fundamentals, such as earnings, earnings growth, cash flow generation, investment in research, etc.

Q-38. Solution: B.

Security 2 has the lowest beta value: $0.93 = \frac{\rho_{2,m} \times \sigma_2}{\sigma_m} = \frac{0.7 \times 20\%}{15\%}$

Compared to security 1 and 3 with beta values of 1.00 and 1.07, respectively.

Q-39. Solution: B.

The average beta of all assets in the market, by definition, is equal to 1.0.

Q-40. Solution: C.

The capital asset pricing model (CAPM) requires several assumptions:

- Investors are risk averse, utility maximizing, and rational.
- Markets are free of frictions like costs and taxes.
- All investors plan to use the same time period.
- All investors have the same expectations of security returns.
- Investments are infinitely divisible.
- Prices are unaffected by an investor's trades.

Q-41. Solution: A.

First: Calculate the beta of UG's stock

$$\beta = \frac{Cov(UG, M)}{\sigma_M^2} = \frac{0.035}{0.13^2} \approx 2.07$$

Then: Calculate the required rate of return of UG's stock

$$E(R) = R_f + \beta(R_m - R_f) = 3.5\% + 2.07 \times (8\% - 3.5\%) = 12.82\%$$

The expected return of UG is 11%, which is less than the required return of 12.82%, so the UG's stock is overvalued.

Q-42. Solution: B.

The security market line applies to any security, efficient or not. The CAL and the CML use the total risk of the asset (or portfolio of assets) rather than its systematic risk, which is the only risk that is priced.

Q-43. Solution: B.

Calculate and interpret beta

B is correct.

$$\beta = (\rho_{i,m}, \sigma_i) / \sigma_m$$

$$\beta = (0.80 \times 0.195) / 0.169$$

$$\beta = 0.923$$

Q-44. Solution: B.

Calculate and interpret the expected return of an asset using the CAPM.

$$E(R_i) = R_f + \beta_i[E(R_m) - R_f]$$

B is correct.

$$0.035 + 0.75 \times (0.08 - 0.035) = 0.069.$$

Q-45. Solution: C.

Because the estimated return on the stock is lower than the expected return using the CAPM, the stock does not compensate the investor for the level of risk and so it is most likely overvalued.

Q-46. Solution: B.

We first compute the firm's beta: $\beta = \frac{\rho_{im}\sigma_i\sigma_m}{\sigma_m^2} = \frac{0.7 \times 0.35}{0.16} = 1.53$. The expected return is computed using: $E(R_i) = R_f + \beta[E(R_m) - R_f] = 0.05 + 1.53 \times 0.07 = 15.71\%$.

Q-47. Solution: C.

Because Stock X has a higher systematic risk level compared with Stock Y, its expected return will be higher than that of Stock Y.

Q-48. Solution: B.

$$\text{The security's beta is: } \beta_i = \frac{\text{Cov}(R_i, R_m)}{\sigma_m^2} = \frac{0.07}{0.10} = 0.70.$$

Q-49. Solution: B.

The weight in the market portfolio is $30,000/20,000 = 1.5$ and the weight in the risk-free asset is $-10,000/20,000 = -0.5$. Because the beta of the risk-free asset is 0 and the market portfolio's beta is 1, the portfolio's beta is: $\beta_p = 0(-0.5) + 1(1.5) = 1.5$.

Q-50. Solution: A.

Booraem Inc. is overvalued because it lies below the SML. The expected return, 14.14%, is less than the required return. According to the CAPM, the required return for Booraem Inc. is 0.1638, or 16.38%: $0.1638 = 1.32\% + 1.65(10.45\% - 1.32\%)$.

Q-51. Solution: C.

C is correct. Risk that is due to company-specific or industry-specific factors is referred to as unsystematic risk.

Q-52. Solution: C.

C is correct because the Treynor ratio measures the return premium of a portfolio versus the free asset relative to the portfolio's beta which is a measure of systematic risk.

Q-53. Solution: C.

The sign of Jensen's alpha indicates whether or not the portfolio has outperformed the market. If alpha is positive, the portfolio has outperformed the market; if alpha is negative, the portfolio has underperformed the market.

Q-54. Solution: A.

M-squared alpha adjusts for risk using standard deviation (i.e., total risk).

Q-55. Solution: B

Using the Jensen's alpha formula,

$$\text{Jensen's } \alpha = R_p - [R_f + \beta_p(R_m - R_f)] = 17\% - [4\% + 1.2 \times (10\% - 4\%)] = 5.8\%$$

Q-56. Solution: A.

For an investor who holds a fully diversified portfolio, the Treynor ratio and Jensen's alpha are the appropriate portfolio performance measures. They are appropriate because in a fully diversified portfolio, only systematic risk matters; both these metrics measure performance relative to beta or systematic risk.

Q-57. Solution: C.

An investment policy statement identifies a benchmark portfolio that will be used to judge the performance of the portfolio manager.

Q-58. Solution: C.

The major components of an IPS are listed in Section 2.2 of the reading. Strategic Asset Allocation (also known as the policy portfolio) and Rebalancing Policy are often included as appendices to the IPS. The Statement of Duties and Responsibilities, however, is an integral part of the IPS and is unlikely to be placed in an appendix.

Q-59. Solution: C.

Many IPS include the following sections:

- Introduction – Describes the client

-
- Statement of purpose – The intentions of the IPS
 - Statement of duties and responsibilities – of the client, the asset custodian, and the investment managers
 - Procedures – Related to keeping the IPS updated and responding to unforeseen events
 - Investment objectives – The client's investment needs, specified in terms of required return and risk tolerance
 - Investment constraints – Factors that may hinder the ability to meet investment objectives; typically categorized as time horizon, taxes, liquidity, legal and regulatory, and unique needs
 - Investment guidelines – For example, whether leverage, derivatives, or specific kinds of asset are allowed
 - Evaluation and review – Related to feedback on investment results
 - Appendices

Q-60. Solution: B.

Information related to strategic asset allocation and portfolio rebalancing policy would be placed in the appendices of an investment policy statement.

Q-61. Solution: C.

As the reading states, "an asset class should contain homogeneous assets . . . paired correlations of securities would be high within an asset class, but should be lower versus securities in other asset classes."

Q-62. Solution: B.

Tactical asset allocation is the decision to deliberately deviate from the policy exposures to systematic risk factors with the intent to add value based on forecasts of the near-term returns of those asset classes.

Q-63. Solution: A.

In a strategic asset allocation, assets within a specific asset class have high paired correlations and low correlations with other asset classes.

Q-64. Solution: B.

When assigning an overall risk tolerance, the prudent approach is to use the lower of ability to take risk and willingness to take risk.

Q-65. Solution: A.

Investment time horizon is an objective factor that measures the investor's ability to take risk.

Q-66. Solution: C.

The statement is an absolute risk objective because it expresses a maximum loss in value with an associated probability of loss.

Q-67. Solution: A.

An individual's ability to take risk is affected by such factors as time horizon and expected income.

Personality type is most likely to affect an individual's willingness to take risk.

Q-68. Solution: C

With a 20-year horizon and average risk tolerance, Johnson can accept the additional risk of listed equities and private equity compared with US Treasury bills.

Q-69. Solution: C.

Unique needs and preferences include the prohibition of certain investments. The investment constraints of liquidity, tax concerns, and legal and regulatory factors adequately address the portfolio's other constraints.

Q-70. Solution: B.

For individuals, risk management concerns maximizing utility while taking risk consistent with individual's level of risk tolerance.

Q-71. Solution: B

B is correct. Risk transfer is accomplished through an insurance policy. A deductible in an insurance policy means the insured is bearing some of the risk of loss and thereby (partially) self-insuring. Hedging with derivatives accomplishes risk shifting, not risk transfer. A bank loan loss reserve is a form of self-insurance combined with diversification, but it does not include risk transfer.

A is incorrect because hedging with derivatives accomplishes risk shifting, not risk transfer.

C is incorrect because a bank loan loss reserve is a form of self-insurance combined with diversification, but it does not include risk transfer.

Q-72. Solution: B

B is correct. Adding a risk budgeting process causes the organization to consider how its total risk

tolerance will be allocated across its subsidiaries. Either the total current risks the subsidiaries are engaging in will exceed the risk tolerance and subsidiaries will have to compete for risk by demonstrating highest returns per unit of risk or the total current risks will be less than the risk tolerance and a search will be underway for the subsidiaries that can best utilize the remaining risk budget. The risk tolerance is determined and then sets the risk budget, rather than being determined by it. Hedging can be a part of risk budgeting if hedging produces the superior risk adjusted returns.

A is incorrect because the risk tolerance of the organization defines its risk budget, not the other way around.

C is incorrect because hedging can be a part of risk budgeting if it produces the best returns per unit of the risk budget.

Q-73. Solution: B.

Liquidity risk is also called transaction cost risk. When the bid–ask spread widens, purchase and sale transactions become increasingly costly. The risk arises from the uncertainty of the spread.

Q-74. Solution: C.

Settlement risk is related to default risk, but deals with the timing of payments rather than the risk of default.

Q-75. Solution: A.

The VaR measure indicates the probability of a loss of at least a certain level in a time period.

Q-76. Solution: A.

Conditional VaR (CVaR) is the weighted average of all loss outcomes in the statistical distribution that exceeds the VaR loss. CvaR can represent extreme losses in much more severe events and thus has higher value than VaR.

Q-77. Solution: C.

Whether the risk budgeting process focuses explicitly on it or not, it should result in choosing assets based on their ability to add the best return for each unit of the risk budget they use.

Although some risk budgeting processes consider multiple risk sources, even a process based on a single risk can provide substantial benefits to an organization. While risk budgeting focuses on allocating the portfolio's risk tolerance to its best uses, this does not necessary define a portfolio that will beat passive benchmarks. Risk might be best budgeted to passive investments.

Q-78. Solution: B.

An organization with a strong competitive position can recover from losses more easily than one with a weaker competitive position. Therefore an organization's risk tolerance should reflect its competitive position. An organization's size does not define the risks sources it faces or the relative losses it can absorb; therefore it should not be reflected in its risk tolerance. Neither the risk sources affecting an organization nor the size of the losses an organization can absorb are a function of its perception of market stability.

Q-79. Solution: A.

Commodities and currencies do not have underlying financial statements or an income stream; thus, fundamental analysis is useless in determining theoretical values for them or whether they are over or undervalued.

Q-80. Solution: C.

Technical analysts believe that trends and patterns tend to repeat themselves and are, therefore, somewhat predictable.

A is incorrect; predictable trends are not an underlying principle of arbitrage pricing theory.

B is incorrect; weak-form efficiency argues against the existence of predictable trends.

Q-81. Solution: B.

For the assumption of technical analysis, supply and demand determine the price.

Q-82. Solution: B.

Technical analysts believe that market trends and patterns tend to repeat, so they rely on recognizing past patterns in an attempt to project future security price patterns.

Q-83. Solution: B.

Bar Chart: A price chart with four bits of data for each time interval—the high, low, opening, and closing prices. A vertical line connects the high and low. A cross-hatch left indicates the opening price and a cross-hatch right indicates the close.

Q-84. Solution: B.

Resistance is defined as a price range in which selling activity is sufficient to stop the rise in price.

A is incorrect. Change in polarity refers to support, when breached, becomes resistance; resistance, when breached, becomes support.

C is incorrect. Support is defined as a low price range in which buying activity is sufficient to stop

the decline in price.

Q-85. Solution: C.

C has an incorrect description. When the ROC oscillator crosses zero in the same direction as the direction of the trend, this movement is considered a buy or sell signal. For example, if the ROC oscillator crosses into positive territory during an uptrend, it is a buy signal. If it enters into negative territory during a downtrend, it is considered a sell signal.

Q-86. Solution: B.

The put /call ratio is put option volume divided by call option volume. Increases in the put/call ratio indicate a more negative outlook for the price of the asset.

VIX measures the volatility of options on the S&P 500 stock index. High levels of the VIX suggest investors fear declines in the stock market, suggesting a bearish market.

When stock margin debt is increasing, investors are aggressively buying and stock prices will move higher because of increased demand, indicating a bullish market.

Q-87. Solution: A.

Drivers of fintech include extremely rapid growth in data (including their quantity, types, sources, and quality) and technological advances enabling the capture and extraction of information from it.

Q-88. Solution: B.

Big Data is collected from many different sources and is in a variety of formats, including structured data (e.g., SQL tables or CSV files), semi-structured data (e.g., HTML code), and unstructured data (e.g., video messages).

Q-89. Solution: C.

Overfitting occurs when the ML model learns the input and target dataset too precisely. In this case, the model has been “over trained” on the data and is treating noise in the data as true parameters. An ML model that has been overfitted is not able to accurately predict outcomes using a different dataset and may be too complex.

Q-90. Solution: A. 最新cfaf/rm/gmat/cpa网课加微信286982279

Through the Text Analytics application of natural language processing (NLP), models using NLP analysis may incorporate non-traditional information to evaluate what people are saying—via their preferences, opinions, likes, or dislikes—in the attempt to identify trends and short-term indicators about a company, a stock, or an economic event that might have a bearing on future

performance.

Q-91. Solution: B.

Research suggests that robo-advisers tend to offer fairly conservative advice, providing a cost-effective and easily accessible form of financial guidance to underserved populations, such as the mass affluent and mass market segments.

Q-92. Solution: C.

There is increasing interest in monitoring risk in real-time. To do so, relevant data must be taken by a firm, mapped to known risks, and identified while moving within the firm. Data may be aggregated for reporting purposes or used as inputs to risk models.

Q-93. Solution: C.

Global financial markets have undergone substantial change as markets have fragmented into multiple trading destinations consisting of electronic exchanges, alternative trading systems, and so-called dark pools. In such an environment, when markets are continuously reflecting real-time information and continuously changing conditions, algorithmic trading has been viewed as an important tool.

Q-94. Solution: C.

DLT has the potential to streamline the existing, often complex and labor intensive post-trade processes in securities markets by providing close to real-time trade verification, reconciliation, and settlement, thereby reducing related complexity, time, and costs.

Q-95. Solution: A.

Through tokenization—the process of representing ownership rights to physical assets on a blockchain or distributed ledger—DLT has the potential to streamline this rights process by creating a single, digital record of ownership with which to verify ownership title and authenticity, including all historical activity.

10.2. 进阶题

Q-1. Solution: B.

The unpredictable nature of property and casualty (P&C) claims forces P&C insurers to allocate a substantial proportion of their investments into liquid, short maturity assets. This need for liquidity also forces P&C companies to accept investments with relatively low expected returns. Liquidity is of less concern to life insurance companies given the greater predictability of life insurance payouts.

Q-2. Solution: C.

A portfolio that is on the CML to the left of the market portfolio is a lending portfolio with part of the investor's wealth invested in the risk-free asset (loaned at the risk-free rate).

Q-3. Solution: C.

Beta is the covariance of an asset with the market portfolio divided by the variance of the market portfolio. The variance of the market portfolio is the same for all assets. So if the covariance with the market portfolio is the same, the assets must have the same beta (amount of systematic risk), should plot at the same place on the SML, and have the same required rate of return. If the estimated rates of return for the two assets are different, at least one of them is not properly valued and will not plot on the SML.

Q-4. Solution: A.

The security characteristic line is a plot of the excess return of the security on the return of the market. In such a graph, Jensen's alpha is the intercept and the beta is the slope.

Q-5. Solution: C.

Since managers are concerned with maximizing risk-adjusted returns, securities with greater nonsystematic risk should be given less weight in the portfolio.

Q-6. Solutions: A.

The volatility of the client's income and the significant support needs for his mother and himself suggest that the client has a low ability to take risk. The client's trading experience and his responses to the risk assessment questionnaire indicate that the client has an above average willingness to take risk.

Q-7. Solution: A.

The key difference between a wrap account and a mutual fund is that in a wrap account, the

assets are owned directly by the individual.

Q-8. Solution: C.

Year	1	2	3	4
Starting balance(US\$)	0.00	2,054.00	5,465.64	4,258.57
New investment at the beginning of the year(US\$)	2,600.00	1,600.00	1,100.00	0.00
Net balance at the beginning of year(US\$)	2,600.00	3,654.00	6,565.64	4,258.57
Investment return for the year	-21%	66%	-26%	10%
Investment gain(loss)(US\$)	-546.00	2,411.64	-1,707.07	425.86
Withdrawal by investor at the end of the year(US\$)	0.00	-600.00	-600.00	0.00
Balance at the end of year(US\$)	2,054.00	5,465.64	4,258.57	4,684.43

The money weighted return is calculated by:

CF0 = 2,600

C01 = 1,600 (new investment beginning of Year 2)

C02 = 500 (withdrawal of -600, end of Year 2; 1,100 new investment beginning Year 3)

C03 = -600 (withdrawal of -600, end of Year 3)

C04 = -4,684.43 (balance at end of Year 4),

IRR (CPT) = 3.57%.

Q-9. Solution: B.

Explain return generating models (including the market model) and their uses.

B is correct. A return-generating model based on such factors as earnings growth and cash flow generation is a fundamental factor model.

Q-10. Solution: A.

In general, adding assets classes with low correlation improves the risk–return trade-off as long as the stand-alone risk of the added asset class does not exceed its diversification effect.