

05-Risk Management and Investment Management

单项选择题

1. Peter the aspiring FRM candidate is estimating the alpha for his firm's (Martingale's) new low-volatility fund. His naive benchmark is the Russel 1000 large-cap index. He has collected the following (ex ante) statistics over the historical sample where the period returns are monthly: ● The regression slope coefficient, β , is 0.40 ● The portfolio's average excess return is 3.15% per month ● The Russel index's average excess return is 0.65% per month Excess returns refer to returns above the risk-free rate. Which of the following is TRUE?

- A. The portfolio's alpha is about +289 basis points
- B. He should assume a beta (aka, slope) coefficient, β , of 1.0 such that the portfolio's alpha is about +250 basis points; this is a lower alpha due to the implicit risk-adjustment
- C. The Russel is NOT an appropriate benchmark because the low beta, β , implies that the Russel 1000 cannot be combined with another asset in order to generate a market adjusted portfolio
- D. The Russel is NOT an appropriate benchmark because it represents a tradeable, low cost alternative but the firm's low-volatility fund is active and charges high fees; an ideal benchmark charges comparable fees

参考答案: A

【莽学解析】The portfolio's alpha is about +289 basis points. Because the regression line must pass through the averages, $\alpha = 0.0315 - 0.40 \times 0.0065 = 0.0289$ or 2.890%. Specifically, because $P(\text{avg}) = \alpha + \beta * B(\text{avg}) \rightarrow \alpha = P(\text{avg}) - \beta * B(\text{avg})$. $\alpha = 0.0315 - 0.40 \times 0.0065 = 0.0289$ or 2.890%

2. Which of the following statements about tracking error and value at risk (VaR) is least accurate?

- A. Tracking error and VaR are complementary measures of risk.
- B. Both tracking error and VaR may assume a normal distribution of returns.
- C. Tracking error is the standard deviation of the excess of portfolio returns over the return of the peer group.
- D. VaR can be defined as the maximum loss over a given time period.

参考答案: C

【莽学解析】All of the statements are accurate with the exception of the one relating to the peer group. Tracking error is the standard deviation of the excess of portfolio returns over the return of an appropriate benchmark, not peer group. Tracking error 是和benchmark进行比较的, 不是和peer group比较的

3. Andrew Ang introduces factors and divides them primarily into two types: macro, fundamental-based factors versus investment-style factors. He writes, "Factors drive risk premiums. One set of factors describes fundamental, economy wide variables like growth, inflation, volatility, productivity, and demographic risk. Another set consists of tradeable investment styles like the market portfolio, value-growth investing, and momentum investing." Ang also claims that the three most important macro factors are growth, inflation, and volatility. His evaluation of these macro factors is based on a long-term historical sample (specifically, 1952:Q1 to 2011:Q4). It is important to qualify the sample window because we cannot be sure that past is prologue; e.g., interest rates experienced two long-term secular trends during this window. In regard to his historical analysis, each of the following statements is true EXCEPT which is false?

- A. Government and investment-grade bonds performed BETTER during economic recessions than during expansions
- B. Both large and small (cap) stocks perform significantly BETTER during economic expansions than during recessions
- C. During periods of high inflation, all five asset classes perform significantly BETTER than during periods of low inflation
- D. All five assets classes are much MORE VOLATILE during recessions (or periods of low GDP growth) than during expansions

参考答案: C

【莽学解析】To be true, this should instead read: During periods of high inflation, all five asset classes perform significantly WORSE than during periods of low inflation. 实际上, 这应该是这样表述的: 在高通胀时期, 所有五种资产类别的表现都明显逊于低通胀时期。

4. During the last fifteen years, Norma, a portfolio manager, earned excess returns (over risk-free rate) of 16% with a standard deviation of 12%. During the same time period, excess returns (over risk-free rate) and standard deviation of a benchmark portfolio were 11% and 14% respectively. Norma claims to have beaten the benchmark portfolio at 95% confidence level. Based on our estimation: I. We reject her claim. II. We fail to reject her claim. Which of the above statements is (are) correct given that the t-statistic for the Sharpe ratio is 1.5?
- A. II only.
- B. I only.
- C. Both I and II.
- D. Neither I nor II.

参考答案: B

【莽学解析】 $t = 1.5 < 2$ (critical t at 95%), so we fail to reject the null hypothesis: H_0 : difference in Sharpe ratios is zero. Thus, we can reject her claim to have beaten the benchmark portfolio at 95% confidence level. $t = 1.5 < 2$, 所以不能拒绝原假设

5. Jamie Chen, FRM, is considering investing a client into distressed hedge funds. Which of the following investments would serve as the best proxy for the types of returns to expect?
- A. Convertible bonds.
- B. Small-cap equities.
- C. Managed futures.
- D. High-yield bonds.

参考答案: D

【莽学解析】Distressed hedge funds have long exposure to credit risk of corporations with low credit ratings. Publicly traded high-yield bonds are a good proxy for the returns to expect. 专注困境证券投资的对冲基金长期暴露在信用评级较低的公司信用风险敞口下。D选项最符合题意

6. Samantha Moore manages a hedge fund for a mid-sized money management firm. The fund frequently changes styles according to identified profit opportunities. At the beginning of the year, the fund took a long position in 10-year subordinated 8% coupon debt issued by a firm expected to undergo reorganization under Chapter 11. Moore felt that analysts had been paying too little attention to the issuer. Six months later, the fund completed a second transaction involving a long position in Swiss Francs and a short position in Japanese Yen based on forecasted movements in interest rates in the two countries. What two hedge fund strategies are

most likely being employed by Moore's hedge funds?

- A. Distressed securities strategy and equity long/short strategy.
- B. Fixed-income arbitrage and global macro strategy.
- C. Distressed securities strategy and global macro strategy.
- D. Fixed-income arbitrage and equity long/short strategy.

参考答案: C

【莽学解析】In a distressed securities strategy, the manager takes a long position in the financial securities of a financially troubled company, holding the securities through the restructuring or bankruptcy process to capture value that is unrecognized by the market. The manager may also utilize short positions, but this is not a necessary element of the strategy. Global macro strategies take long and short positions in financial instruments (such as currencies, interest rates, debt, equities, and commodities) based on expected changes in global capital markets. 困境证券会投资目前股价比较低的股票, 全球宏观则是在多个国家之间进行交易

7. The AT&T pension fund invested in equities. Assume a normal distribution and volatility of 15% per annum. The fund measures absolute risk with a 95%, one-year VaR, which gives \$3.2 billion. The pension plan wants to allocate this risk to two equity managers, each with the same VaR budget. Given that the correlation between managers is 0.5, the VaR budget for each should be

- A. \$3.2 billion
- B. \$2.4 billion
- C. \$1.9 billion
- D. \$1.6 billion

参考答案: C

【莽学解析】如下: $X_2^2 + X_2^2 + 2\rho XX = 3.22$, $x = \$1.85 \approx 1.9$

8. In a portfolio consisting of three currency positions, the relationship between the component VAR of each position and the individual VAR of each position is likely to be which of the following?

- A. The component VAR is likely to be less than the individual VAR.
- B. The component VAR is likely to be greater than the individual VAR.
- C. The component and individual VAR are the same for currency positions.
- D. There is no predictable relationship between the component VAR and the individual VAR.

参考答案: A

【莽学解析】The component VAR is likely to be less than the individual VAR because of the effects of diversification. 成分VAR是有可能小于边际VAR值的, 成分VAR值考虑了分散化效果

9. Simply adding the VaRs for each security in a portfolio to compute the portfolio value at risk (VaR) implies the assumption of:

- A. Perfect and positive correlation.
- B. Perfect and negative correlation.
- C. Imperfect and positive correlation.
- D. Imperfect and negative correlation

参考答案: A

【莽学解析】Simply adding the VaRs of individual securities to compute the portfolio VaR assumes that there is a correlation of "1" between all the securities. A correlation value of

“1”, is perfect and positive. This is called the undiversified VaR. 单个资产VAR值线性加总得到组合VAR值的算法背后默认资产之间的相关系数为1

10. Joan Berkeley is an investment analyst for a U.S.-based pension fund that considers adding a large capitalization equity mutual fund to its asset mix. To assess these funds better, Joan conducts detailed quantitative analysis on four mutual funds that claim to be large-capitalization funds. The quantitative results are shown in Exhibits 1 and 2.

Exhibit 1: Style Analysis Results for the Four Funds				
	Andromeda	Borealis	Crux	Draco
Russell 1000 Value Index (large-cap)	98%	10%	34%	6%
Russell 1000 Growth Index (large-cap)	0%	78%	5%	2%
Russell 2000 Value Index (small-cap)	2%	1%	28%	9%
Russell 2000 Growth Index (small-cap)	0%	11%	33%	0%
Total	100%	100%	100%	100%

Based on the above results, Joan made several comments. Which of the following statements is least likely to be correct?

- A. Andromeda is a passively managed fund.
- B. The pension fund should invest in the Borealis fund because it has the highest Sharpe ratio.
- C. Crux's investment style has drifted to small-capitalization
- D. Draco has the highest Information Ratio.

参考答案: B

【莽学解析】Choice A: The high R² indicate low residuals, and the fund is probably being passively managed. Choice B: The Sharpe Ratio is not the right metric in this context because a fund is added to an existing portfolio and the fund has to be a large cap fund. Choice C: Although Crux claims to be large-capitalization fund, its weight in Russell 2000 Value Index and Russell 2000 Growth Index sum up to over 60%. So style drifting occurs. Choice D: Information ratio = (fund return - S&P return)/tracking error. Draco has the highest IR. A: R²高表示残差低, 基金可能是被动管理的。B:在这种情况下, 夏普比率不是正确的衡量标准。C: Crux虽然自称是大盘股基金, 但其在Russell 2000 Value Index和Russell 2000 Growth Index中的权重合计超过60%。所以风格漂移发生了。D:信息比率=(基金回报-标准普尔回报)/追踪误差。Draco有最高的IR。

11. Matt James is assessing the performance of his portfolio over the last four years. In computing the average return, he decides to use the geometric average return since it provides a more conservative return than the arithmetic mean. The annual returns on his portfolio over each of the last four years were 50%, 30%, -25%, and -15%. The geometric average return is then

closest to:

- A. 5.44%.
- B. 5.59%.
- C. 8.56%.
- D. 10.00%.

参考答案: B

【莽学解析】如下: $gp = [(1.50) \times (1.30) \times (0.75) \times (0.85)]^{1/4} - 1 = 5.59\%$

12. With respect to marginal VaR (MVaR), which of the following is false?

- A. MVaR is an approximation based upon a small change in a fund's portfolio weight.
- B. MVaR can be positive or negative.
- C. MVaR is the amount of risk a fund contributes to a portfolio.
- D. MVaR is a rate of change measure.

参考答案: C

【莽学解析】MVaR is defined as the change in the portfolio VaR per unit change in the weight in a fund. The amount of risk a fund contributes to a portfolio is the definition of component VaR (CVaR). 成分VAR衡量的是风险贡献度, 因此C选项不对

13. Which of the following best describes marginal risk for a portfolio? It is the:

- A. Dollar change in portfolio VaR from an additional investment.
- B. Dollar change in portfolio beta from an additional investment.
- C. Risk level at which no additional investment will be made in an asset of insufficient expected utility.
- D. per unit change in portfolio risk from an additional investment.

参考答案: D

【莽学解析】Marginal risk is the per unit change in portfolio risk from an additional investment. Component VaR is the dollar change in portfolio VaR from an additional investment. 边际风险衡量的是额外1单位的投资对投资组合风险的单位变化。

14. Identify the risks in a fixed-income arbitrage strategy that takes long positions in interest rate swaps hedged with short positions in Treasuries.

- A. The strategy could lose from decreases in the swap-Treasury spread.
- B. The strategy could lose from increases in the Treasury rate, all else fixed.
- C. The payoff in the strategy has negative skewness.
- D. The payoff in the strategy has positive skewness.

参考答案: A

【莽学解析】The strategy has no exposure to the level of rates but is exposed to a widening of the swap-Treasury spread. Assume, for instance, that the swap and Treasury rates are initially 5.5% and 5%. If these rates change to 5.3% and 4.5%, for example, values for the swap and the Treasury bond would increase. Because the drop in the Treasury rate is larger, however, the price of the Treasury bond would fall more than the swap, leading to a net loss on the position. The strategy should gain from decreases in the swap-Treasury spread, so a) is wrong. The strategy should gain from increases in the Treasury rate, all else equal, so B) is wrong. Finally, the distribution of the payoff depends on the distribution of the swap-Treasury spread. Because this cannot go below zero, there is a limit on the upside. The position has negative skewness, so C) is correct.

15. Which of the following statements most correctly describes a consideration that complicates the incorporation of transaction costs into the portfolio construction process?

- A. The transaction costs and the benefits always occur in two distinct time periods.
- B. The transaction costs are uncertain while the benefits are relatively certain.
- C. There are no complicating factors from the introduction of transaction costs.
- D. The transaction costs must be amortized over the horizon of the benefit from the trade.

参考答案: D

【莽学解析】A challenge is to correctly assign the transaction costs to projected future benefits. The transaction costs must be amortized over the horizon of the benefit from the trade. The benefits (e.g., the increase in alpha) occur over time while the transaction costs generally occur at a specific time when the portfolio is adjusted.

16. Which of the following investment strategies stabilizes asset prices?

- A. A value investment strategy.
- B. A momentum investment strategy.
- C. A size investment strategy.
- D. Value, momentum, and size strategies all stabilize asset prices

参考答案: A

【莽学解析】Value and momentum are opposite each other in that value investing is inherently stabilizing. It is a negative feedback strategy where stocks that have fallen in value eventually are priced low enough to become value investments, pushing prices back up. Momentum is inherently destabilizing. It is a positive feedback strategy where stocks that have been increasing in value are attractive to investors, so investors buy them, and prices increase even more.

17. The low-risk anomaly is a combination of each of the following three true effects EXCEPT which is false (and not technically included in the low-risk anomaly)?

- A. Both contemporaneous and lagged volatility are inversely (aka, negatively) related to returns
- B. Contemporaneous beta is inversely (aka, negatively) related to raw returns
- C. Lagged beta is inversely (aka, negatively) related to risk-adjusted returns
- D. Minimum variance portfolios do better than the market

参考答案: B

【莽学解析】The true statement is that contemporaneous beta is positively related to raw returns, consistent with CAPM. 此题中考察的均为实证结论。其中正确的说法是：同期的beta与当前收益率呈正相关。

18. The difference between marginal value at risk (MVar) and incremental value at risk (IVaR) is that:

- A. Incremental VaR only captures changes over small increments.
- B. Marginal VaR captures non-linear changes in the portfolio.
- C. Incremental VaR computes actual changes in VaR for any additions of securities.
- D. Marginal VaR only captures changes over large increments.

参考答案: C

【莽学解析】Marginal VAR is an approximation of the changes in the VaR of the portfolio, in response to the addition of one unit (dollar) of a security, and is based on a linear

relationship. Like duration, this linear relationship is only accurate for small additions. Incremental VaR computes the actual changes in portfolio VaR for any size additions to the portfolio. Incremental VaR involves the calculation of an entirely new VaR for the portfolio and is used when the changes in VaR cannot be described by a linear function. 边际VAR衡量的是1美元的投入，增量VAR衡量的是单个资产的投入

19. In performing due diligence on a potential investment manager, which of the following factors is the least important for the investor to consider?

- A. Risk controls.
- B. Business model.
- C. Past performance.
- D. Investment process.

参考答案: C

【莽学解析】Investors should assess potential managers and their investment strategies with an objective and unbiased mind. They should not be unduly concerned with a manager's past successes given that past performance is not always indicative of future performance. Risk controls, the business model, and the investment process are all fundamental parts of the due diligence process. 投资者应以客观和公正的心态评估潜在的管理者及其投资策略。鉴于过去的表现并不总是表明未来的表现，他们不应过分关注基金经理过去的成功。风险控制、业务模式和投资流程都是尽职调查流程的基本组成部分。

20. Given the following information, what is the percent of contribution to VaR from Asset A?

There are two assets in a portfolio: A and B.

Asset A marginal VaR	0.05687
Asset A value	\$7,000,000
Asset B marginal VaR	0.17741
Asset B value	\$4,000,000

- A. 64.04%
- B. 24.27%
- C. 35.94%
- D. 63.64%

参考答案: C

【莽学解析】The component VaR factors in both the marginal VaR and the asset value. For Asset A: $0.05687 \times \$7,000,000 = \$398,090$ For Asset B: $0.17741 \times \$4,000,000 = \$709,640$ Asset A's percent of contribution to VaR is A's component VaR as a percent of total VaR: $\$398,090 / (\$398,090 + \$709,640) = 35.94\%$ A资产的CVar: $0.05687 \times \$7,000,000 = \$398,090$ B资产的CVar: $0.17741 \times \$4,000,000 = \$709,640$ A资产的贡献度: $\$398,090 / (\$398,090 + \$709,640) = 35.94\%$

21. Marginal VaR is best described as the change in VaR that results from:

- A. Subtracting idiosyncratic VaR from total VaR.
- B. Changing the weight on an existing position by one unit.
- C. Removing an existing asset from a fund.
- D. Adding a new asset to a fund.

参考答案: B

【莽学解析】Marginal VaR is the change in the portfolio VaR per unit change in the weight in Fund i. 边际VAR值指的是额外1美元的投入，引起整体投资组合VAR值的改变量

22. Assume you purchase a share of stock for \$50 at time $t = 0$ and another share at \$65 at time $t = 1$, and at the end of year 1 and year 2, the stock paid a \$2.00 dividend. Also at the end of year 2, you sold both shares for \$70 each. The time-weighted rate of return on the investment is:

- A. 18.04%
- B. 18.27%
- C. 20.13%
- D. 21.83%

参考答案: D

【莽学解析】如下: $HPR_1 = (65+2)/50 - 1 = 34\%$ $HPR_2 = (70+2)/65 - 1 = 10.77\%$ $TWR = [(1.34)(1.1077)]^{0.5} - 1 = 21.83\%$

23. Which of the following characteristics is a potential explanation for the risk anomaly?

- A. Investor preferences.
- B. The presence of highly leveraged retail investors.
- C. Lack of short selling constraints for institutional investors.
- D. Lack of tracking error constraints for institutional investors.

参考答案: A

【莽学解析】Potential explanations for the risk anomaly include: the preferences of investors, leverage constraints on retail investors that drive them to buy pre-leveraged investments in the form of high-beta stocks, and institutional investor constraints like prohibitions against short selling and tracking error tolerance bands. 风险异象指的是低风险对应高收益，对应的解释有数据挖掘，杠杆限制，代理人问题，以及投资者偏好。

24. An investment manager is given the task of beating a benchmark. Hence the risk should be measured

- A. In terms of loss relative to the initial investment
- B. In terms of loss relative to the expected portfolio value
- C. In terms of loss relative to the benchmark
- D. In terms of loss attributed to the benchmark

参考答案: C

【莽学解析】This is an example of risk measured in terms of deviations of the active portfolio relative to the benchmark. Answers A and B are incorrect because they refer to absolute risk. Answer D is incorrect because it refers to the absolute risk of the benchmark. 是否打败 benchmark，要和 benchmark 进行比较才合理

25. Assume you purchase a share of stock for \$50 at time $t = 0$ and another share at \$65 at time $t = 1$, and at the end of year 1 and year 2, the stock paid a \$2.00 dividend. Also at the end of year 2, you sold both shares for \$70 each. The dollar-weighted rate of return on the investment is:

- A. 10.77%
- B. 15.45%
- C. 15.79%
- D. 18.02%

参考答案: D

【莽学解析】

$$50 + \frac{65}{1+IRR} = \frac{2}{1+IRR} + \frac{144}{(1+IRR)^2}$$

$$IRR = 18.02\%$$

$$50 + \frac{65}{1+IRR} = \frac{2}{1+IRR} + \frac{144}{(1+IRR)^2}$$

$$IRR = 18.02\%$$

26. A risk management unit (RMU) is most likely to be active in which of the following contexts?

- A. Risk monitoring.
- B. Risk measurement.
- C. Risk budgeting.
- D. Risk planning.

参考答案: A

【莽学解析】A RMU monitors an investment management firm's portfolio risk exposure and ascertains that the exposures are authorized and consistent with the risk budgets previously set. RMU监控投资管理公司的投资组合风险敞口，并确定这些敞口是经过授权的，并且与之前设定的风险预算相一致。

27. Which of the following types of VaR is best described as the amount of risk that a particular fund contributes to a portfolio of funds?

- A. Incremental VaR.
- B. Component VaR.
- C. Individual VaR.
- D. Marginal VaR.

参考答案: B

莽学教育官网 www.mangxuejy.com 版权所有

【莽学解析】Component VaR will generally be less than individual VaR because of the diversification benefits at the portfolio level. In a large portfolio with many positions, the approximation is simply the marginal VaR multiplied by the dollar weight in the position. Incremental VaR is the change in VaR from the addition of a new position in a portfolio. Individual VaR is the VaR of an individual position in isolation. Marginal VaR applies to a particular position in a portfolio and it is the per unit change in a portfolio VaR that occurs from an additional investment in that position. 成分VAR衡量的是单个资产的风险贡献度

28. In regard to the capital asset pricing model (CAPM), which of the following assumptions (or implications) of the CAPM is a genuine success such that it is both true in practice and useful to us?

- A. Information is costless and available to all investors: technology has reduced information friction to roughly zero
- B. Risk is factor exposure: The risk of an individual asset is measured in terms of the factor exposure of that asset
- C. Investors have mean-variance utility: asset owners care only about means (which they like) and variances (which they dislike)
- D. Investors have homogeneous expectations: investors have identical expectations with respect to the necessary inputs into the portfolio decision

参考答案: B

【莽学解析】Risk is factor exposure: The risk of an individual asset is measured in terms of the factor exposure of that asset. CAPM其实也是因子理论，在CAPM模型里，我们承担的风险就是系统性风险

29. A risk manager runs a performance attribution analysis on an actively managed portfolio using a selected benchmark. The weights and performance of the different market sectors within the portfolio and the benchmark are given below:

	Benchmark		Portfolio	
Market Sector	Weight	Annual Return	Weight	Annual Return
Equity	20%	8%	40%	6%
Fixed Income	50%	4%	55%	5%
Cash	30%	2%	5%	3%

What conclusion can be drawn from the data above by using common performance attribution analysis?

- A. The portfolio outperforms the benchmark primarily because of the contribution of asset allocation.
- B. The portfolio outperforms the benchmark primarily because of the contribution of security selection within market sectors.
- C. The portfolio underperforms the benchmark primarily because of the contribution of asset allocation.

D. The portfolio underperforms the benchmark primarily because of the contribution of security selection within market sectors.

参考答案: A

【莽学解析】

	Portfolio Weight	Benchmark Weight	Active/Excess Weight	Benchmark Performance
Equity	40%	20%	20%	8.00%
Fixed Income	55%	50%	5%	4.00%
Cash	5%	30%	-25%	2.00%
Total				

Contribution of Selection to Performance

	Portfolio Performance	Benchmark	Portfolio Weight	Excess Performance
Equity	6%	8%	40%	-2%
Fixed Income	5%	4%	55%	1%
Cash	3%	2%	5%	1%
Total				

30. Consider the following two asset portfolios:

Calculate the component VaR of asset A and marginal VaR of asset B, respectively, at the 95% confidence level.

- A. USD 21,773 and 0.1306
- B. USD 21,773 and 0.1169
- C. USD 27,268 and 0.1169
- D. USD 27,268 and 0.1306

Asset	Position Value (in thousands of USD)	Return Standard Deviation (%)	
A	400	3.60	
B	600	8.63	
Portfolio	1,000	5.92	

参考答案: C

【莽学解析】

$$MVaR_A = z_\alpha \times \beta_{A,P} \times \sigma_P = 1.645 \times 0.7 \times 5.92\% = 0.0681688$$

$$CVaR_A = MVaR_A \times V_A = 0.0681688 \times 400,000 = 27,268$$

$$MVaR_B = z_\alpha \times \beta_{B,P} \times \sigma_P = 1.645 \times 1.2 \times 5.92\% = 0.1169$$

31. In contrast to absolute risk, relative risk is measured by:

- A. Tracking error, and VaR techniques can apply to tracking error if it is normally distributed.
- B. Total variance, and VaR techniques cannot apply under any circumstances.
- C. Total variance, and VaR techniques can apply to tracking error if it is normally distributed.
- D. Tracking error, and VaR techniques cannot apply under any circumstances.

参考答案: A

【莽学解析】Absolute risk refers to the total possible losses over a horizon. Relative risk is measured by tracking error, which is the dollar loss relative to a benchmark return. VaR techniques can apply to tracking error if it is normally distributed. 绝对风险是指在一段时间内可能发生的全部损失。相对风险是通过跟踪误差来衡量的。如果跟踪误差是正态分布的, VaR技术可以应用于跟踪误差。

32. Every year Business Week reports the performance of a group of existing equity mutual funds, selected for their popularity. Taking the average performance of this group of funds will create

- A. Survivorship bias only
- B. Selection bias only
- C. Both survivorship and selection bias
- D. Instant-history bias only

参考答案: C

【莽学解析】The publication lists existing funds, so it must be subject to survivorship bias, because dead funds are not considered. In addition, there is selection bias because the publication focuses on just the popular funds, which are large and likely to have done well.

Answers a) and b) are incomplete. Answer d) is also incomplete. 只考虑存活的基金，这是幸存者偏差只播报好的业绩，这是选择偏差

33. Hedge fund managers following a convertible arbitrage strategy are said to be:

- A. long gamma and short vega
- B. short gamma and short vega
- C. long gamma and long vega
- D. short gamma and long vega

参考答案: C

【莽学解析】Convertible arbitrage managers hedge their equity exposure by shorting stocks using the delta hedge ratio. Because they are exposed to changes in the hedge ratio, they are said to be long gamma. They are also exposed to changes in the price volatility of the stock underlying the option embedded in the convertible security, so they are said to be long Vega. 买入可转债相当于long gamma, vega, 因此D选项正确

34. A due diligence specialist is evaluating the risk management process of a hedge fund in which his company is considering making an investment. Which of the following statements best describes criteria used for such an evaluation?

- A. Because of the overwhelming importance of tail risk, the company should not invest in the fund unless it fully accounts for fat tails using extreme value theory at the 99.99% level when estimating VaR.
- B. Today's best practices in risk management require that a fund employ independent risk service providers and that these service providers play important roles in risk-related decisions.
- C. When considering a leveraged fund, the specialist should assess how the fund estimates risks related to leverage, including funding liquidity risks during periods of market stress.
- D. It is crucial to assess the fund's valuation policy, and in general if more than 10% of asset prices are based on model prices or broker quotes, the specialist should recommend against investment in the fund regardless of other information available about the fund.

参考答案: C

【莽学解析】Generally speaking, with a leveraged fund, an investor will need to evaluate historical and current changes in leverage, as well as the level of liquidity of the portfolio, particularly during times of market stress. Certain strategies may in fact expose an investor to tail risk, so while an investor should inquire whether the manager believes that tail risk exists, and whether or not it is hedged, it is then up to the investor to decide whether to accept the risk unhedged or hedge it on their own. Many funds employ independent risk service providers to report risks to investors, but these firms do not get involved in risk related decision making. And finally, while it is important to know what percentage of the assets is exchange-traded and marked to market, what might be acceptable may differ depending on the strategy of the fund. 只有C选项的表述是正确的，当考虑杠杆基金的时候，我们应该考虑压力时期该基金的流动性风险状况是什么样的

35. Risk budgeting is a:

- A. Bottom-up process and is forward looking.
- B. Top-down process and is backward looking.
- C. Top-down process and is forward looking.
- D. Bottom-up process and is backward looking.

参考答案: C

【莽学解析】 Risk budgeting is a top-down process that involves choosing and managing exposures to risk. It builds upon the VaR measure, is forward-looking, and can apply to asset managers, classes of assets, and individual securities. 风险预算是一个自上而下的过程, 并且具有前瞻性

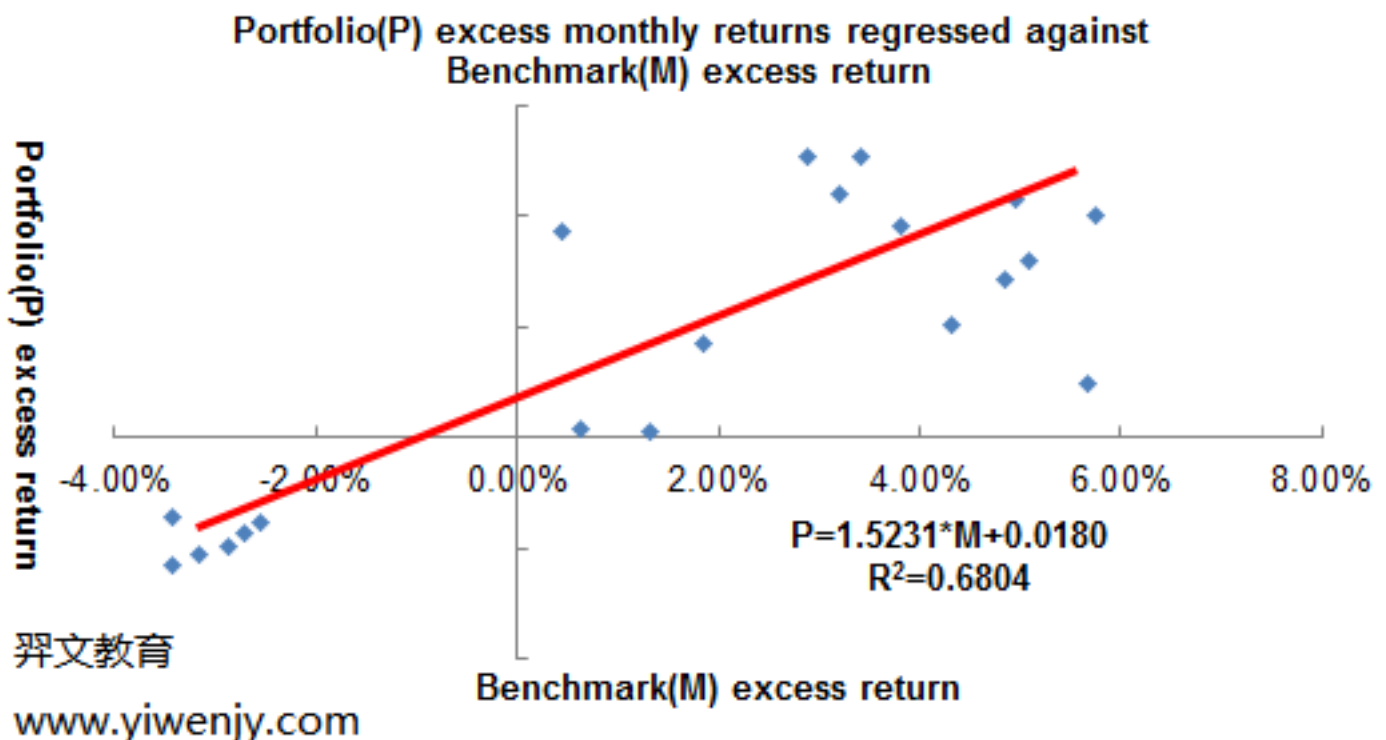
36. Which of the following is not a primary factor affecting the risk of a portfolio?

- A. The degree to which assets within the portfolio move together.
- B. A high degree of concentration in one asset within the portfolio.
- C. Total risk for a large portfolio of diversified assets.
- D. The volatility of individual assets held within the portfolio.

参考答案: C

【莽学解析】 In a diversified portfolio with a large number of assets, the most relevant risk is systematic risk since the unsystematic (i.e., firm-specific risk) gets diversified away. In other words, the unsystematic risks of the individual assets offset each other. 在一个拥有大量资产的多元化投资组合中, 最相关的风险是系统性风险。单个资产的非系统性风险会相互抵消。

37. Below is the regression output of a portfolio's excess returns against its benchmark's excess return over the last three months (n = 60 trading days). Excess return is defined as return above the risk-free rate.



Key output from the regression includes: The sample size is 60 trading days With respect to the portfolio, its average excess return is 3.29% (in excess of the risk free rate) with volatility of 3.67% With respect to the benchmark, its average excess return is 0.98% (in excess of the risk free rate) with volatility of 1.99% The average difference in return between the portfolio and the benchmark, avg (P-M), is 2.31%; this is also called the active return The regression intercept is 0.0180 and the regression slope is 1.5231 (as displayed on plot) The tracking error

(standard error of the regression) is 2.10% Which of the following is nearest to the information ratio (IR) if we measure the IR as residual return per unit of residual risk?

- A. 0.357
- B. 0.630
- C. 0.857
- D. 1.102

参考答案: C

【莽学解析】Residual IR = 0.857 = alpha/SER = 0.0180/0.0210 = 0.85714. Alpha is the regression intercept; this is a very high beta portfolio! (Note: the portfolio's Sharpe ratio is 0.0329/0.0367 = 0.8949). IR = 0.857 = alpha/SER = 0.0180/0.0210 = 0.85714 Alpha是回归方程的截距

38. What critical shift occurred in the hedge fund industry following the collapse of Long-Term Capital Management (LTCM) in 1998 and the dot-com bubble burst in 2001?

- A. There was a significant drop in assets under management in the hedge fund industry.
- B. There was a large influx of institutional investors investing in hedge funds.
- C. Reporting within the hedge fund industry became more regulated than mutual funds.
- D. There was a significant increase in hedge fund failures.

参考答案: B

【莽学解析】During the time period following the dot-com collapse, hedge funds outperformed the S&P 500 with a lower standard deviation, which attracted institutional investment. 这是一个客观事实

39. The Fama-French three-factor model is given by the following formula

$$E(r_i) = r_f + \beta_{i,MKT} E(r_m - r_f) + \beta_{i,SMB} E(SMB) + \beta_{i,HML} E(HML)$$

Which of the following statements about this Fama-French model is TRUE?

- A. Unlike the size factor, the value premium is robust and outperforms over the long-run
- B. Since 1965 to roughly the present, the size factor (size effect) in Fama-French has been significant and robust
- C. Although the size effect continues to be robust and significant, small stocks do NOT have higher returns, on average, than large stocks
- D. The salient feature of value stocks is their tendency, both in theory and in the data, to outperform growth stocks especially during bad times for the economy

参考答案: A

【莽学解析】Unlike the size factor, the value premium is robust and outperforms over the long-run 与规模因素不同, 价值因素是稳健的, 并在长期表现良好

40. Grinold's fundamental law of active management suggests that:

- A. Investors should focus on increasing only their predictive ability relative to stock price movements.
- B. Sector allocation is the most important factor in active management.
- C. A small number of investment bets decreases the chances of making a mistake and, therefore, increases the expected investment performance.

D.To maximize the information ratio, active investors need to either have high-quality predictions or place a large number of investment bets in a given year.

参考答案: D

【莽学解析】Grinold's fundamental law of active management focuses on the tradeoff of high quality predictions relative to placing a large number of investment bets. Investors can focus on either action to maximize their information ratio, which is a measure of risk-adjusted performance. While sector allocation is a very important component of the asset allocation decision, Grinold focused only on the quality of predictions and the number of investment bets made. 格林罗德的主动管理基本定律关注于高质量预测与大量投资之间的权衡。投资者可以专注于其中一个行动,以最大化他们的信息比率,这是一个衡量风险调整后业绩的指标。

41.The following data has been collected to appraise funds A, B, C, and D

	Fund A	Fund B	Fund C	Fund D	Market Index
Return	8.25%	7.21%	9.44%	10.12%	8.6%
Beta	0.91	0.84	1.02	1.34	1.00
Standard Deviation	3.24%	3.88%	3.66%	3.28%	3.55%

The risk-free rate of return for the relevant period was 4% Calculate and rank the funds from best to worst using Jensen's alpha.

A. B, D, A, C

B. A, C, D, B

C. C, A, D, B

D. C, D, A, B

参考答案: C

【莽学解析】如下: $RA = 4\%$ $(8.6\% - 4\%) \times 0.91 = 8.19\%$ $RB = 4\%$ $(8.6\% - 4\%) \times 0.84 = 7.86\%$ $RC = 4\%$ $(8.6\% - 4\%) \times 1.02 = 8.69\%$ $RD = 4\%$ $(8.6\% - 4\%) \times 1.34 = 10.16\%$ $\text{Alpha}A = 8.25\% - 8.19\% = 0.06\%$ $\text{Alpha}B = 7.21\% - 7.86\% = -0.65\%$ $\text{Alpha}C = 9.44\% - 8.69\% = 0.75\%$ $\text{Alpha}D = 10.12\% - 10.16\% = -0.04\%$

42.Which of the following statements about the risk anomaly is TRUE?

A.The primary argument against the risk anomaly, with respect to either low volatility or low beta, is that economists have generally demonstrated that markets are efficient; i.e., efficient market hypothesis (EMH) is true

B.Due to time-varying reality, it is theoretically intractable (ie, not possible) to create a reproducible benchmark for either the low beta or low volatility risk anomalies such that empirical tests of the risk anomalies are not robust and the discussion remains "largely theoretical"

C.The risk anomaly might be explained by investors who are leveraged constrained (i.e., who cannot borrow so instead bid up high beta stocks) and/or have an "agency problem" created by a need to minimize tracking error with the benchmark (e.g., they cannot short low volatility or

short low beta)

D. The presence of the low-risk anomaly (aka, low-risk effect) in several different contexts—including U.S. equities, international stock markets, Treasury bonds, corporate bonds (across credit rating classes), commodity, option and foreign exchange markets—is compelling evidence that “data mining” almost surely creates an illusion of a relationship between idiosyncratic return volatility (IVOL) and future returns because diversification generally eliminates the impact of IVOL.

参考答案: C

【莽学解析】The low-risk anomaly violates the CAPM and suggests that low beta stocks will outperform high-beta stocks. This has been empirically proven with several studies. The CAPM points to a positive relationship) between risk and reward, but the low-risk anomaly suggests an inverse relationship. 风险异常指的是低风险对应高收益，对应的解释有数据挖掘，杠杆限制，代理人问题，以及投资者偏好。

43. Market efficiency can be described with the efficient market hypothesis (EMH). Regarding the definition of EMH and the rational and behavioral explanations for this approach, the EMH suggests that:

A. Speculative trading is costless.

B. Active managers cannot generally beat the market.

C. Under the behavioral explanation, losses during bad times are compensated for by high returns.

D. Under the rational explanation, it is agents, under- or overreactions to news that generates high returns.

参考答案: B

【莽学解析】The EMH implies that speculative trading is costly, and active managers cannot generally beat the market. Under the rational explanation of behavioral biases, losses during bad times are compensated for by high returns. Under the behavioral explanation, it is agents, under- or overreactions to news that generates high returns. Market barriers may make it difficult to take advantage of mispricings. 有效市场假设所有信息都是被充分反应的，任何人都不能打败市场，因此投机交易所付出的成本都是费用

44. Which of the following statements about risk management in the pension fund industry is correct?

A. A pension plan's total VaR is equal to the sum of its policy-mix VaR and active-management VaR.

B. Pension fund risk analysis does not consider performance relative to a benchmark.

C. In most defined-benefit pension plans, if liabilities exceed assets, the shortfall does not create a risk for the plan sponsor.

D. From the plan sponsor's perspective, nominal pension obligations are similar to a short position in a long term bond.

参考答案: D

【莽学解析】Nominal pension obligations are similar to a short position in a bond. 养老金负债相当于养老金公司在长期债券上的空头头寸

45. Compared to policy risk, which of the following is not a reason that management risk is not much of a problem?

- A. There will be diversification effects across the deviations.
- B. Managers tend to make the same style shifts at the same time.
- C. For well-managed funds, it is usually fairly small for each of the individual funds.
- D. There can be diversification with the policy mix VaR to actually lower the total portfolio VaR.

参考答案: B

【莽学解析】If managers make the same style shifts, then that would actually increase management risk. All the other reasons are valid. 如果管理者做出同样的风格转变, 那么实际上会增加管理风险。其他的理由都是合理的。

46. A portfolio management firm manages the fixed-rate corporate bond portfolio owned by a defined-benefit pension fund. The duration of the bond portfolio is 5 years; the duration of the pension fund's liabilities is 7 years. Assume that the fund sponsor strongly believes that rates will decline over the next six months and is concerned about the duration mismatch between portfolio assets and pension liabilities. Which of the following strategies would be the best way to eliminate the duration mismatch?

- A. Enter into a swap transaction in which the firm pays fixed and receives floating.
- B. Enter into a swap transaction in which the firm receives fixed and pays floating.
- C. Purchase an interest rate cap expiring in six months.
- D. Sell Eurodollar futures contracts.

参考答案: B

【莽学解析】A is incorrect. Entering into a pay fixed swap will further reduce the duration of the assets. This will exacerbate the interest rate risk arising from the duration mismatch. B is correct. Because the duration of the pension liabilities exceeds the duration of the bond portfolio (assets), the pension plan is at risk if interest rates fall. Specifically, in a falling rate environment, the value of the liabilities will increase by more than will the value of the assets, thereby eroding the pension surplus. The duration of a swap equals the difference between the duration of the fixed leg and the duration of the floating leg. By entering into a receive-fixed swap, the pension plan can increase the portfolio duration to equal that of the pension liabilities and consequently reduce interest rate risk. C is incorrect. The duration of the option is only six months and would therefore not offset the duration mismatch. D is incorrect. Selling futures will reduce the portfolio duration and augment the duration mismatch. 进行互换交易, 公司接收固定收益, 支付浮动收益。可以在利率下降时获得好处。

47. At the end of 2007, Chad & Co.'s pension had USD 350 million worth of assets that were fully invested in equities and USD 180 million in fixed-income liabilities with a modified duration of 14. In 2008, the wide spread effects of the subprime crisis hit the pension fund, causing its investment in equities to loss 50% of their market value. In addition, the immediate response from the government - cutting interest rates - to salvage the situation, caused bond yields to decline by 2%. What was the change in the pension fund's surplus in 2008?

- A. USD -55.4 million
- B. USD -124.6 million
- C. USD -225.4 million
- D. USD -230.4 million

参考答案: C

【莽学解析】The change in the pension fund's surplus for the year 2008 is equal to the initial surplus S_0 at the end of 2007 less the ending surplus S_1 at the end of 2008. The initial surplus is calculated as $S_0 = 350 - 180 = 170$. Next we have to calculate the surplus at the end of 2008. Given the 50% decline in the equity market, the new level of assets A_1 at the end of 2008 is equal to: $(1 - 0.5) \times 350 = 175$. The new level of liabilities L_1 can be calculated as: $L_1 = (1 - 14 \times (-0.02)) \times 180 = 230.4$. Therefore the 2008 surplus S_1 is equal to $A_1 - L_1 = 175 - 230.4 = -55.4$ (which implies the pension fund is actually in a deficit situation at the end of 2008). The change in surplus for 2008 is hence $S_1 - S_0 = -55.4 - 170 = -225.4$ million. 盈余的改变量为期末盈余与期初盈余之差

48. Which of the following statements least likely represents a limitation of the capital asset pricing model (CAPM)?

- A. All investors are price takers.
- B. Information is costless to obtain.
- C. All investors have the same expectations.
- D. There are uniform taxes and transaction costs.

参考答案: D

【莽学解析】The CAPM does not assume uniform taxes and transaction costs; it assumes there are no taxes or transaction costs (i.e., frictionless markets). The other limiting assumptions of the CAPM include: 1. Investors only have financial wealth. 2. Investors have mean-variance utility. 3. Investors have a single period investment horizon. 4. Investors have homogeneous (identical) expectations. 5. All investors are price takers. CAPM模型假设有税收，没有交易成本

49. A portfolio has an equal amount invested in two positions, X and Y. The expected excess return of X is 9% and that of Y is 12%. Their marginal VaRs are 0.06 and 0.075, respectively. To move toward the optimal portfolio, the manager will probably:

- A. Increase the allocation in Y and/or lower that in X.
- B. Increase the allocation in X and/or lower that in Y.
- C. Do nothing because the information is insufficient.
- D. Not change the portfolio because it is already optimal.

参考答案: A

【莽学解析】The expected excess-return-to-MVaR ratios for X and Y are 1.5 and 1.6, respectively. Therefore, the portfolio weight in Y should increase to move the portfolio toward the optimal portfolio. X和Y的预期超额回报率与mvar之比分别为1.5和1.6。因此，应该增加Y中的投资组合权重，使投资组合向最优投资组合移动。

50. A portfolio has USD 2 million invested in Stock A and USD 1 million invested in Stock B. The 95% 1-day VaR for each individual position is USD 40,000. The correlation between the returns of Stock A and Stock B is 0.5. While rebalancing, the portfolio manager decides to sell USD 1 million of Stock A to buy USD 1 million of Stock B. Assuming that returns are normally distributed and that the rebalancing does not affect the volatility of the individual stocks, what effect will this have on the 95% 1-day portfolio VaR?

- A. There will be no effect.
- B. It will increase by USD 20,370
- C. It will increase by USD 21,370

D. It will increase by USD 22,370

参考答案: D

【莽学解析】

$$\sqrt{(40,000)^2 + (40,000)^2 + 2 \times 0.5 \times 40,000 \times 40,000} = 69,282$$

The VaR of the new portfolio:

$$\sqrt{(20,000)^2 + (80,000)^2 + 2 \times 0.5 \times 20,000 \times 80,000} = 91,652$$

So the VaR will increase by USD 22,370

51. Which of the following concepts would least likely meet the definition of a factor?

A. Market.

B. Volatility.

C. Hedge funds.

D. Momentum investing style.

参考答案: C

【莽学解析】Assets, including corporate bonds, private equity, and hedge funds, are not considered factors themselves, but contain many factors, such as equity risk, interest rate risk, volatility risk, and default risk. Some assets, like equities and government bonds, can be thought of as factors themselves. Factors may also include the market (a tradable investment factor), interest rates, or investing styles (including value/ growth, low volatility, or momentum). 对冲基金可继续往下分解, 它不是因子

52. Lisa Tahara, FRM, is considering an institutional investment in a hedge fund that has experienced volatile and generally positive returns in the past. Which of the following considerations about the fund's track record is least relevant for consideration in her investment decision?

A. Size of investment assets.

B. Absolute level of past returns.

C. Verification of returns by a third party.

D. Employment continuity of the investment team.

参考答案: B

【莽学解析】The absolute level of past returns is least relevant here given the volatile returns in the past. Also, past returns are not an assurance of similar returns in the future. The relative level of returns is more important than the absolute level. Verification of returns by a third party provides assurance that the return calculations were computed fairly and accurately by the fund. It is relevant to ascertain whether most or all of the staff on the investment team that generated the past results are still currently employed by the fund. It provides some (but not absolute) assurance that similar returns may be generated in the future. 过去的业绩不重要, 过去并不能代表未来

53. Sharpe's style analysis, used to evaluate an active portfolio manager's performance,

莽学教育官网 www.mangxuejy.com 版权所有

measures performance relative to:

- A. A passive benchmark of the same style.
- B. Broad-based market indices.
- C. The performance of an equity index fund.
- D. An average of similar actively managed investment funds.

参考答案: A

【莽学解析】Sharpe's style analysis measures performance relative to a passive benchmark of the same style. 夏普的风格分析比较的是同一风格的被动基准。

54. Which of the following is correct with respect to adjusting the optimal portfolio for portfolio constraints?

- A. No reliable method exists.
- B. By refining the alphas and then optimizing, it is possible to include constraints of both the investor and the manager.
- C. By refining the alphas and then optimizing, it is possible to include constraints of the investor, but not the manager.
- D. By optimizing and then refining the alphas, it is possible to include constraints of both the investor and the manager.

参考答案: B

【莽学解析】The approach of first refining alphas and then optimizing can replace even the most sophisticated portfolio construction process. With this technique both the investor and manager constraints are considered. 达到最优组合前要先修正，修正完了再优化

55. A portfolio manager produced an alpha of 3% based on monthly returns over a 6 year period. Under the assumption of a normal distribution, the portfolio manager claims that the probability of observing such a large alpha by chance is only 2%. To test her claim, one would use a t-test using which level of confidence?

- A. 90%.
- B. 95%.
- C. 98%.
- D. 99%.

参考答案: C

【莽学解析】Confidence level = 1 - significance level = 1 - 0.02 = 98% This means that we are 98% confident that superior performance was not due to chance. 凭运气产生大的alpha概率是2%，所以用98%的置信水平检验就可以了

56. Suppose a portfolio consists of a USD 3 million investment in Euros and a USD 2 million investment in Mexican Pesos. Additional information is given below: ☆ Portfolio beta of Euro = 0.90 ☆ Portfolio beta of Peso = 1.15 ☆ Diversified Portfolio VaR = USD 324,700 Based on the given information, the marginal VaR and the component VaR of the Euro position are closest to:

- A. USD 0.058 \t USD 175,338
- B. USD 0.292 \t USD 292,230
- C. USD 0.084 \t USD 337,688
- D. USD 0.106 \t USD 422,110

参考答案: A

【莽学解析】Marginal VaR of Euro = (USD 324,700 / USD 5,000,000) × 0.90 = USD 0.058 Component VaR

of Euro = USD 324,700 \times 0.90 \times (3,000,000 / 5,000,000) = USD 175,338
Euro的边际VaR = (USD 324,700 / USD 5,000,000) \times 0.90 = USD 0.058
Euro的成分VaR = USD 324,700 \times 0.90 \times (3,000,000 / 5,000,000) = USD 175,338

57. What would be an ideal approach for a hedge fund investor who is concerned about the problem of risk sharing asymmetry between principals and agents within the hedge fund industry?

- A. Focus on investing in funds for which the fund managers have a good portion of their own wealth invested.
- B. Focus on diversifying among the various niche hedge fund strategies.
- C. Focus on funds with improved operational efficiency and transparent corporate governance.
- D. Focus on large funds from the "foresight-assisted" group.

参考答案: A

【莽学解析】The incentive fee structure within the hedge fund industry has not really changed over the years, and there is incentive for managers to take undue risks in order to earn fees. Thus, there should be a focus on investing in funds for which the fund managers have a good portion of their own wealth invested. 多年来,对冲基金行业内部的奖励费结构并没有真正改变,基金经理有动机为了赚取费用而承担不必要的风险。因此,可以让基金经理将自己一部分的财富投入到基金里面,来防止基金经理承担不必要的风险。

58. In performing due diligence on a potential investment manager, which of the following factors is the least important for the investor to consider?

- A. Risk controls.
- B. Business model.
- C. Past performance.
- D. Investment process.

参考答案: C

【莽学解析】Investors should assess potential managers and their investment strategies with an objective and unbiased mind. They should not be unduly concerned with a manager's past successes given that past performance is not always indicative of future performance. Risk controls, the business model, and the investment process are all fundamental parts of the due diligence process. 投资者应以客观和公正的心态评估潜在的管理者及其投资策略。鉴于过去的表现并不总是表明未来的表现,他们不应过分关注基金经理过去的成功。风险控制、业务模式和投资流程都是尽职调查流程的基本组成部分。

59. Identify the risks in a convertible arbitrage strategy that takes long positions in convertible bonds hedged with short positions in Treasuries and the underlying stock.

- A. Short implied volatility
- B. Long duration
- C. Long stock delta
- D. Positive gamma

参考答案: D

【莽学解析】This position is hedged against interest rate risk, so B) is wrong. It is also hedged against directional movements in the stock, so C) is wrong. The position is long an option (the option to convert the bond into the stock) and so is long implied volatility, so A) is wrong. Long options positions have positive gamma. 买入可转债相当于long gamma, vega, delta通过股票对冲,所以delta为0,因此D选项正确

60. Which of the following is true with respect to computing incremental VaR? Compared to using marginal VaRs, computing with full revaluation is:

- A. More costly, but less accurate.
- B. Less costly, but more accurate.
- C. Less costly, but also less accurate.
- D. More costly, but also more accurate.

参考答案: D

【莽学解析】Full revaluation means recalculating the VaR of the entire portfolio. The marginal VaRs are probably already known, so using them is probably less costly, but will not be as accurate. 完全估计法比较精准, 但是耗费的成本也会比较大

61. A portfolio manager creates alpha relative to a benchmark by making bets that deviate from that benchmark. The more successful these bets, the higher the manager's alpha. Grinold's Fundamental Law of Active Management formalizes this intuition by asserting that the maximum attainable information ratio is given by $IR \approx IC * BR^{0.5}$, where IR is the information ratio, IC is the information coefficient (the correlation of the manager's forecast with the actual returns) and BR is the breadth of the strategy. Breadth is the number of securities that can be traded and how frequently they can be traded. Each of the following statements about the Fundamental Law is true EXCEPT which is false?

- A. The empirical evidence suggests that, on average, IC tends to fall as BR increases
- B. A compelling advantage of the fundamental law is that it successfully incorporates downside risk and higher moment risk; specifically, it adjusts for skew and excess kurtosis
- C. If we require an IR of 0.50, this can be achieved either by a highly skilled stock timer with an IC of 0.25 making only four bets a year; or the same IR can be achieved by a manager with only a slight edge, IC of 0.025, who makes fully 400 bets a year
- D. A crucial assumption is that the forecasts are independent of each other. But due to realistically correlated factor bets, it is difficult to make truly independent forecasts in BR; e.g., an equity manager with overweight positions on 1,000 value stocks offset by underweight positions in 1,000 growth stocks has not placed 1,000 different bets

参考答案: B

【莽学解析】Grinold's fundamental law is derived under mean-variance utility, and so all the shortcomings of mean-variance utility apply. In particular, by using mean-variance utility, the Grinold-Kahn framework ignores downside risk and other higher moment risk while assuming that all information is used optimally. 格林罗德基本定律是在均值-方差效用下导出的, 因此均值-方差效用的所有缺点都适用。特别地, 通过使用均值-方差效用, 该框架忽略了下行风险和其他更高阶矩的风险, 同时假设所有信息都得到了最优利用。

62. The following information is available for funds ABC, RST, JKL, and XYZ:

The average risk-free rate was 5%. Rank the funds from best to worst according to their Treynor measure.

- A. JKL, RST, ABC, XYZ
- B. JKL, RST, XYZ, ABC
- C. RST, JKL, ABC, XYZ

Fund	Annual Rate of Return	Beta	Volatility
ABC	15%	1.25	20%
RST	18%	1.00	25%
JKL	25%	1.20	15%
XYZ	11%	1.36	9%

D. XYZ, ABC, RST, JKL

参考答案: A

【莽学解析】

$$T_{ABC} = \frac{0.15 - 0.05}{1.25} = 0.08$$

$$T_{RST} = \frac{0.18 - 0.05}{1.00} = 0.13$$

$$T_{JKL} = \frac{0.25 - 0.05}{1.20} = 0.1667$$

$$T_{XYZ} = \frac{0.11 - 0.05}{1.36} = 0.0441$$

63. Which of the following statements is correct concerning the relationship between the low-risk anomaly and the capital asset pricing model (CAPM)?

- A. The low-risk anomaly provides support for the CAPM.
- B. The notion that the low-risk anomaly violates the CAPM has not been proven empirically.
- C. The low-risk anomaly violates the CAPM and suggests that low-beta stocks will outperform high-beta stocks.
- D. Both CAPM and the low-risk anomaly point to a positive relationship between risk and reward.

参考答案: C

【莽学解析】An appropriate benchmark should be well-defined, replicable, tradeable, and risk-adjusted. If the benchmark is not on the same risk scale as the assets under review, then there is an unfair comparison. 低风险异常违背了CAPM，表明低贝塔股票的表现将优于高贝塔股票

64. You are given the following information about a portfolio and are asked to make a recommendation about how to reallocate the portfolio to improve the risk/return tradeoff.

Asset	Expected return	Standard Deviation	Current Weight	Covariance of Portfolio and Asset i Returns	Marginal Return	Marginal Risk	Marginal Return/Marginal risk	Risk Contribution
Asset 1	7.10%	17.00%	38.70%	1.43%	3.10%	13.99%	22.17%	5.41
Asset 2	8.00%	40.60%	6.20%	2.44%	4.00%	23.93%	16.71%	1.48
Asset 3	6.70%	44.80%	5.50%	2.39%	2.70%	23.39%	11.55%	1.29
Asset 4	6.90%	21.40%	14.60%	1.41%	2.90%	13.86%	20.92%	2.02
Risk free	4.00%	0.00%	35.00%	0.00%				

Which of the following the recommendations will improve the risk/return tradeoff of the portfolio?

- A. Increase the allocations to assets 1 and 3 and decrease the allocations to assets 2 and 4.
- B. Increase the allocations to assets 1 and 2 and decrease the allocations to assets 3 and 4.
- C. Increase the allocations to assets 2 and 3 and decrease the allocations to assets 1 and 4.
- D. Increase the allocations to assets 1 and 4 and decrease the allocations to assets 2 and 3.

参考答案: D

【莽学解析】A. Incorrect. Asset 3 should be decreased since it has the lowest marginal return-to-marginal risk ratio. B. Incorrect. Asset 4 should be increased since it has the highest marginal return-to-marginal risk ratio. C. Incorrect. Asset 4 should be increased since it has the highest marginal return-to-marginal risk ratio. D. Correct. A portfolio optimizing the risk-reward tradeoff has the property that the ratio of the marginal return to marginal risk of each asset is equal. Therefore, this option is the only recommendation that will move the ratios in the right direction. A: 不正确的。资产3应该减少，因为它的边际收益率与边际风险比最低。 B不正确的。资产4应该增加，因为它的边际收益率与边际风险比最高。 C不正确的。资产4应该增加，因为它的边际收益率与边际风险比最高。 D. 正确。优化风险收益权衡的投资组合具有各资产的边际收益与边际风险之比相等的性质。因此，这个选项正确

65. A company's pension fund is established as a defined benefit plan, and therefore the board must consider funding risk. Which of the following statements about the pension fund's funding risk is correct?

- A. The longer the horizon for expected payouts, the lower the funding risk.
- B. Decreases in interest rates will reduce funding risk.

- C. The funding risk has been effectively transferred to the employees.
D. Funding risk represents the true long-term risk to the plan sponsor.

参考答案: D

【莽学解析】In regard to A. Longer maturities do not reduce funding risk In regard to B. In a low interest rate environment, the value of liabilities is likely to increase, increasing funding risk. In regard to C. Funding risk will not be transferred to employees. In regard to D. Retirees receive their pension on a regular basis, which is equivalent to buying a long-term bond, which is a long-term liability for pension plan sponsors, and funding risk is crucial. A选项, 到期时间不会使得融资风险减少。B选项, 在低利率环境下, 负债价值可能会增加, 从而加剧融资风险。C选项, 融资风险会转移给具有固定缴款计划的员工。D选项, 退休员工定期会拿到养老金, 就相当购买了一张长期债券, 这对养老金计划的发起人来说是长期负债, 融资风险至关重要。D选项正确。

66. Why would an investor include multiple factors in a regression study? I. To attempt to improve the adjusted R² measure. II. To reduce the f-stat value on the respective regression coefficients.

- A. I only.
B. II only.
C. Both I and II.
D. Neither I nor II.

参考答案: A

【莽学解析】An investor should consider adding multiple factors to the regression analysis to potentially improve the adjusted R² measurement, potentially increase the tests of statistical significance, and to search for a benchmark that is more representative of a portfolio's investment style. 投资者应该考虑在回归分析中添加多个因素, 以潜在地改进调整后的R²度量, 潜在地增加统计显著性检验, 并寻找更能代表投资组合投资风格的基准。

67. With respect to the buy side and sell side of the investment industry: I. the buy side uses more leverage. II. the sell side has relied more on VaR measures.

- A. I only.
B. II only.
C. Both I and II.
D. Neither I nor II.

参考答案: B

【莽学解析】Compared to banks on the "sell side," investors on the "buy side" have a longer horizon, slower turnover, and lower leverage. Banks use forward-looking VaR risk measures and VaR limits. 与“出售方”的银行相比, “购买方”的投资者拥有更长的投资期限、更低的周转率和更低的杠杆率。银行使用前瞻性的VaR风险度量和VaR限制。

68. An incremental VaR is the measurement of the change in portfolio VaR as the result of:

- A. The removal of one position.
B. A percentage reduction in all assets.
C. The addition of one position or security.
D. An increase in the number of positions equal to N\10 or more.

参考答案: C

【莽学解析】An incremental VAR is the actual measurement of the change in portfolio VaR following the addition of a position or security. C选项是正确的定义

69. When computing individual VaR, it is proper to:

- A. Use the absolute value of the portfolio weight.
- B. Use only positive weights.
- C. Use only negative weights.
- D. Compute VaR for each asset within the portfolio.

参考答案: A

【莽学解析】The expression for individual VaR is

$$VaR_i = z_c \sigma_i |P_i| = z_c \sigma_i |\omega_i| P$$

The absolute value signs indicate that we need to measure the risk of both positive and negative positions, and risk cannot be negative.

70. Volatility is one of the three most important macro factors. Each of the following statements about volatility, as a macroeconomic factor, is true EXCEPT which is false?

- A. There is a negative correlation between stock returns and the VIX index
- B. Volatility has a negative "price of risk" in aggregate markets including equities, fixed income, currency, and commodity markets
- C. Due to volatility's negative "price of risk," an increase in volatility implies higher subsequent stock returns because there is a natural upper limit on volatility somewhere around 100%
- D. The "leverage effect" refers an increase in stock volatility (riskier equities) due to a general increase in firm's financial leverage (i.e., assets divided by equity) caused by a drop in stock returns

参考答案: C

【莽学解析】There is an inverse relationship volatility and stock returns per true choice (A). This statement would be true if it were written, instead, as follows: The time-varying risk premium narrative refers to a decline in stock prices due to the increase in required return demanded by investors when volatility increases. 相反, 如果这样写的话, 这种说法是正确的: 时变风险溢价的说法是指当波动率增加时, 投资者所要求的回报增加, 导致股价下跌。

71. Based upon 60 monthly returns, you estimate an actively managed portfolio alpha of 1.28% and a standard error of alpha of 0.1365%. The portfolio manager wants to get due credit for producing positive alpha and believes that the probability of observing such a large alpha by chance is only 1%. Calculate the t-statistic, and state whether you would accept or reject the claim made by the portfolio manager based on the estimated t-value.

- A. t-statistic: 9.377; Conclusion: Accept
- B. t-statistic: 9.377; Conclusion: Reject
- C. t-statistic: 10.66; Conclusion: Reject
- D. t-statistic: 10.66; Conclusion: Accept

参考答案: A

【莽学解析】如下: T统计量 = 阿尔法/阿尔法的标准误 = 1.28%/0.1365% = 9.377, 我们可以拒绝原假设, 并得出结论, 认为这个基金经理应该产生显著的阿尔法值。

72. The Peyton Formika Fund is a global macro asset allocation hedge fund designed to provide

low correlations with U.S. assets. Dominic James is a fund of hedge funds manager that is analyzing the Peyton Formika Fund for signs of style drift. James makes note of the following findings about the fund: I. The R² of the fund versus the global macro peer group has changed from 0.72 to 0.78 over the past 12 months. II. Due to outstanding returns, assets in the fund have increased from \$70 million to \$430 million over the past 12 months. III. The fund made a major shift in allocation by moving 40 percent of its holdings from Eastern European equities to Asian equities. IV. After a recent trip to India, the fund manager gained confidence in his existing Indian equity holdings and levered his existing 5% weighting in India only by a 10 to 1 ratio. Which of James' findings are indicators that the Peyton Formika Fund is at risk for style drift?

- A. II and IV only
- B. I and II only
- C. II and III only
- D. I, III and IV only

参考答案: A

【莽学解析】Hedge fund style drift occurs when there are changes in the risk factor exposures of the fund or changes in the overall risk of the fund, notably through leverage. Using leverage only for his Indian equity position would definitely be an indicator of style drift. Even though the initial position is small, a 10 to 1 leverage ratio would significantly change the risk of the fund. Excessive cash inflows which may be more money than the manager can sustain is also a potential indicator of style drift. The change in allocation from Eastern European equities to Asian equities is within the objectives of a global allocation fund, so that would not indicate style drift. Also, style drift would be a concern with a decrease, not an increase in the R-squared measure against the peer group. 风格的转变主要包含两个部分，一个是承担风险的量，另一个是承担风险的类型

73. Based on historical evidence, which of the following factors is least likely to result in the eventual failure of a hedge fund?

- A. Excessive controls in place.
- B. Taking on more systematic risk.
- C. Making decisions in a committee setting.
- D. Materially misstated financial statements.

参考答案: B

【莽学解析】● If a fund takes on more systematic risk (i.e., regular market risk), it is less likely to result in a failure unless there is a significant market downturn. Taking on more unsystematic risk, however, is more likely to result in a failure. Excessive controls to reduce operational risk may be a good idea but may also result in excessive expenses and insufficient returns, thereby leading to a possible failure of the fund. ● In a committee-style decision-making process, there may be a dominant member who sways the decision and/or members who are afraid to voice any valid concerns. Materially misstated financial statements are a form of accounting fraud, which significantly increases the risk of the eventual failure of a fund. 如果基金承担更大的系统性风险，那么它不太可能导致失败，除非有一个重大的市场下行

74. Which statement about risk control in portfolio construction is correct?

- A. Quadratic programming allows for risk control through parameter estimation but generally requires many more inputs estimated from market data than other methods require.

- B. The screening technique provides superior risk control by concentrating stocks in selected sectors based on expected alpha.
- C. When using the stratification technique, risk control is implemented by overweighting the categories with lower risks and underweighting the categories with higher risks.
- D. When using the linear programming technique, risk is controlled by selecting the portfolio with the lowest level of active risk.

参考答案: A

【莽学解析】Quadratic programming requires many more inputs than other portfolio construction techniques because it entails estimating volatilities and pair-wise correlations between all assets in a portfolio. Quadratic programming is a powerful process, but given the large number of inputs it introduces the potential for noise and poor calibration given the less than perfect nature of most data. 此题的正确答案为A选项，二次规划法是所有方式中需要输入变量最多的方式。B选项，筛选法是根据 α 的大小来筛选资产的，但是这种方式有很多缺陷，不是一个完美的风险控制。C选项，使用分层筛选法时，不论风险较高还是风险较低都是等权重的。D选项，线性规划法侧重于通过设置额条件，在已经构建完成的投资组合中剔除不符合要求的资产，条件是主观条件，是基金经理根据投资者的风险偏好等因素而设定的，是定制化的条件。

75. In making allocations across active managers, which of the following represents the formula that gives the optimal weight to allocate to a manager denoted i , where IR_i and IR_p are the information ratios of the manager and the total portfolio respectively?

A.



B.



C.



D.



参考答案: C

【莽学解析】

$$\frac{IR_i \times (\text{portfolio's tracking error})}{IR_p \times (\text{manager's tracking error})}$$

76. In order to evaluate the performance of its funds, the Risk Committee at your investment firm currently uses the three-factor Fama-French benchmark as a basis for static factor

莽学教育官网 www.mangxuejy.com 版权所有

regressions. There has been a proposal to consider conducting "style analysis." In a presentation to the Committee, the following style-based benchmark is given as an illustration

$$r_{t+1} = \alpha_t + \beta_{SPY,t} SPY_{t+1} + \beta_{SPW,t} SPW_{t+1} + \beta_{SPYG,t} SPYG_{t+1} + \varepsilon_{t+1}$$

The Committee members discuss the various advantages and disadvantages of shifting from a static benchmark to a style-based benchmark. Each of the following drawbacks/advantages mentioned is true EXCEPT which is false?

- A. A drawback of style analysis (relative to static benchmarks) is that we cannot introduce short positions into the benchmark
- B. A drawback of style analysis (relative to static benchmarks) is that it is harder to detect statistical significance due to larger standard errors
- C. An advantage of style analysis is that factor loadings can vary over time, as reflected in factor loadings denoted by $\beta(SPY, t)$ rather than $\beta(SPY)$
- D. An advantage of style analysis is the ability to use actual tradeable funds in the factor benchmark, such as for example SPDR ("spider") exchange-traded funds (ETFs)

参考答案: A

【莽学解析】Style analysis with shorting is allowed, as long as the factor loading sum to one. 风格分析卖空是允许的，只要权重总和为1。

77. An analyst reports the following fund information to the advisor of a pension fund that currently invests in government and corporate bonds and carries a surplus of USD 10 million:

Pension Assets	Pension	Liabilities
Amount (In USD Million)	100	90
Expected Annual Growth	6%	7%
Modified Duration	12	10
Annual Volatility of Growth	10%	5%

To evaluate the sufficiency of the fund's surplus, the advisor estimates the possible surplus values at the end of one year. The advisor assumes that annual returns on assets and the annual growth of liabilities are jointly normally distributed and their correlation coefficient is 0.8. The advisor can report that, with a confidence level of 95%, the surplus value will be greater than or equal to:

- A. USD -11.4 million
- B. USD -8.3 million
- C. USD -1.73 million
- D. USD 0 million

参考答案: C

【莽学解析】The lower bound of the 95% confidence interval is equal to: Expected Surplus - (95% confidence factor \times volatility of surplus). The required variables can be calculated as follows: Variance of the surplus = $100^2 \times 10\%^2 + 90^2 \times 5\%^2 - 2 \times 100 \times 90 \times 10\% \times 5\% \times 0.8 = 48.25$ Volatility of the surplus = $\sqrt{48.25} = 6.94$ The expected surplus = $100 \times 1.06 - 90 \times 1.07 = 9.7$ Therefore, the lower bound of the 95% confidence interval = $9.7 - 1.645 \times 6.94 = -1.725$ 盈余的方差 = $100^2 \times 10\%^2 + 90^2 \times 5\%^2 - 2 \times 100 \times 90 \times 10\% \times 5\% \times 0.8 = 48.25$ 盈余的波动率 = $\sqrt{48.25} = 6.94$ 预期的盈余 = $100 \times 1.06 - 90 \times 1.07 = 9.7$ 因此, 95%置信水平下的盈余 = $9.7 - 1.645 \times 6.94 = -1.725$

78. VaR can be used to compose better guidelines for investment companies by: I. relying less on notionals. II. focusing more on overall risk.

- A. I only.
- B. II only.
- C. Both I and II.
- D. Neither I nor II.

参考答案: C

【莽学解析】Investment companies have been focusing on limits on notionals, which is cumbersome and has proved to be ineffective. 投资公司一直把重点放在投资金额的限制上, 这种做法既繁琐, 也被证明是无效的。

79. A risk manager is evaluating a pairs trading strategy recently initiated by one of the firm's traders. The strategy involves establishing a long position in Stock A and a short position in Stock B. The following information is also provided: ☆ 1-day 99% VaR of Stock A is USD 100 million ☆ 1-day 99% VaR of Stock B is USD 125 million ☆ The estimated correlation between long positions in Stock A and Stock B is 0.8 Assuming that the returns of Stock A and Stock B are jointly normally distributed, the 1-day 99% VaR of the combined positions is closest to?

- A. USD 0 million
- B. USD 75 million
- C. USD 160 million
- D. USD 214 million

参考答案: B

【莽学解析】

$$\sqrt{\text{VaR}_A^2 + \text{VaR}_B^2 + 2\rho\text{VaR}_A\text{VaR}_B} = \sqrt{100^2 + 125^2 + 2 \times (-0.8) \times 100 \times 125}$$

80. Which of the following hedge fund strategies would be characterized as an "asset allocation" strategy that performs best during extreme moves in the currency markets?

- A. Global macro.
- B. Risk arbitrage.

C. Dedicated short bias.

D. Long\short equity.

参考答案: A

【莽学解析】A global macro fund does better if there are extreme moves in the currency markets. Along with managed fixtures, global macro is an asset allocation strategy. Managers take opportunistic bets in different markets. The strategy has a low correlation to equities. 题干描述的是全球宏观的投资策略

81. "Factors are to assets what nutrients are to food." The theory of factor risk premiums includes each of the following three ideas EXCEPT which is not in the theory?

A. Assets are bundles of factors (just as most foods are combinations of nutrients)

B. Factors do matter but asset classes do not (just as healthy eating is about the nutrients not the labels)

C. Different investors prefer and/or need different factors (just as different people have different nutritional needs)

D. Because factors represent different good times, most investors should seek exposure to most investable factors (just as most people should seek a balanced diet of most nutrients)

参考答案: D

【莽学解析】It is thematic in Ang that factors compensate investors for exposure to the effects of "bad times." This book is wonderfully about risk! The preface begins "The two most important words in investing are bad times." Further, just as choice (C) is true, unlike descriptive CAPM (wherein all informed investors hold the same market portfolio), his theory does not advocate (normatively) that all investors should hold the market's entire (or predominant) set of factors. 因子理论有3种展述: 1. 资产是由一系列的因子组成 2. 因子是重要的, 而不是资产本身 3. 不同投资者对因子有不同的需求

82. Using VaR to monitor risk is important for a large firm with many types of managers because:

A. It can help catch rogue traders and it can detect changes in risk from changes in benchmark characteristics.

B. Although it cannot help catch rogue traders, it can detect changes in risk from changes in benchmark characteristics.

C. Although it cannot detect changes in risk from changes in benchmark characteristics, it can help detect rogue traders.

D. Of no reason. VaR is not useful for monitoring risk in large firms.

参考答案: A

【莽学解析】Both of these are reasons large firms find VaR and risk monitoring useful. 这些都是大公司发现风险价值和风险监控有用的原因。

83. The process of defining risk and allocating that risk across a portfolio is known as:

A. Tactical allocation.

B. Asset allocation.

C. Risk budgeting.

D. Market timing.

参考答案: C

【莽学解析】The process of defining risk and allocating that risk across a portfolio is known as risk budgeting. The risk budgeting process allows a manager to set target risk levels across

her portfolio. 定义风险并在投资组合中分配风险的过程称为风险预算。

84. Melvin Brown manages a long portfolio of debt and equity investments for an insurance company and has been trying to implement a new risk management program based on estimating and reporting the daily value at risk (VAR) for each manager's portfolio. Brown is writing a report to gain support for his proposal. If Brown determines that daily VAR (10%) for his portfolio is equal to \$20,000, which of the following statements should he include in his report? I. Computationally, delta-normal VAR is more complex than standard deviation but easier to interpret from a risk management perspective. II. VAR was developed specifically for the purpose of measuring the economic capital required to protect bank portfolios against losses. III. The risk of losing more than \$20,000 in Brown's portfolio value in any given week is 10%. IV. Portfolio diversification is fully accounted for using the VAR methodology.

A. I, III, and IV.

B. I and III only.

C. III and IV only.

D. II and IV.

参考答案: D

【莽学解析】VAR was developed as a way for banks to track the economic capital requirements while taking into account the effects of diversification on the risk of the portfolio. Delta-normal VAR is computationally simpler than portfolio standard deviation. In addition, VAR (unlike beta) does not rely on a theoretical relationship with the overall market. The correct interpretation of Brown's daily VAR (10%) is that there is a 10% chance that on any given day, the portfolio will bit more than \$20,000 in value. 在险价值是银行追踪经济资本需求的一种方式, 同时考虑到多样化对投资组合风险的影响。delta-normal VAR在计算上比投资组合标准差简单。