Question 1

L2PMR49-TB002-1610

LOS: LOS-9883

Lesson Reference: Lesson 1: Value at Risk

Difficulty: medium

Which of the following methods of estimating value at risk (VaR) *most likely* assumes a normal distribution of returns in its calculations?

- (●) Parametric method
- ( ) Monte Carlo simulation
- ( ) Historical simulation method

Rationale

This Answer is Correct

The parametric method generates a VaR estimate based on return and standard deviation, typically from a normal distribution.

Question 2

L2R49PQ-BP005-1608

LOS: LOS-9886

Lesson Reference: Lesson 1: Value at Risk

Difficulty: hard

Which of the following VaR extensions could *best* be described as *ex ante* tracking error?

- (●) Relative VaR
- ( ) Conditional VaR
- ( ) Incremental VaR

Rationale

This Answer is Correct

Relative VaR describes potential losses that result in the portfolio as a result of its differences from a benchmark. Therefore, it is similar to *ex ante* tracking risk against the benchmark. For calculation of relative VaR, benchmark holdings are entered into the model as short positions.

Question 3

L2PMR49-TB003-1610

LOS: LOS-9884

Lesson Reference: Lesson 1: Value at Risk

Difficulty: medium

If a portfolio's expected annual return and standard deviation are 8% and 10%, respectively, the portfolio's value at risk (VaR) estimate using the parametric method and a confidence interval of 16% is *closest* to:

- (●) –2.0%.
- ( ) –8.5%.
- ( ) –12.0%.

Rationale

This Answer is Correct

The equation for the parametric method to calculate VaR is $z = R - \mu/\sigma$. Therefore, the correct answer is $-1 = R - 8/10$ or $-10 = R - 8$ or $R = -2$.

Question 4
L2R49PQ-BP013-1608
LOS: LOS-9893
Lesson Reference: Lesson 4: Using Constraints to Manage Market Risk
Difficulty: easy
Risk budgeting applied only at the individual portfolio or business unit level *most likely* fails to consider:

- VaR.
- Firm-level diversification benefits.
- Economic capital or surplus at risk.

Rationale

This Answer is Correct
Aggregate risk exposure calculated by rolling up individual business unit exposures fails to consider diversification benefits of uncorrelated risks.

Question 5
L2R49PQ-BP015-1608
LOS: LOS-9894
Lesson Reference: Lesson 4: Using Constraints to Manage Market Risk
Difficulty: hard
Which of the following is correct with regard to capital allocation?

- ○ It avoids asset concentration risks.
- ◉ It helps attain maximum returns consistent with risk.
- ○ All projects that exceed the hurdle rate are accepted.

Rationale

This Answer is Correct

Investors will be most likely to invest in firms that make investments consistent with their risk parameters. In order to even be in the running, firms must invest in projects that provide return commensurate with the level of risk assumed. Capital allocation can help ensure that total firm assets are invested consistent with a sound return for a given level of risk and that unsound projects are avoided. Not all projects that exceed a hurdle rate are accepted, however, especially when capital must be rationed to maintain economic capital. Additionally, capital allocation alone cannot help avoid concentration risk.

Question 6
L2R49PQ-BP007-1608
LOS: LOS-9888
Lesson Reference: Lesson 2: Other Risk Measures
Difficulty: easy
Vega could *best* be described as:

- A third-order effect of underlying price on option price.
- Sensitivity of option price to volatility of the underlying.
- Large for a deeply in-the-money option near expiration.

Rationale

This Answer is Correct

Vega represents the change in option price related to change in volatility of the underlying. It is a first-order effect of this change, and is large near expiration *unless* the option is deeply in or out of the money.

Question 7
L2R49PQ-BP003-1608
LOS: LOS-9884
Lesson Reference: Lesson 1: Value at Risk
Difficulty: easy
Which of the following methods of establishing a distribution of returns for calculating value at risk (VaR) is *most likely* to use current portfolio asset weights and all available portfolio returns?

- Parametric method
- Monte Carlo simulation
- Historical simulation method

Rationale

This Answer is Correct
The historical simulation method uses current portfolio weights for each asset multiplied by its percentage return for each period (e.g., daily). All available returns representing expected reality would be used.

Question 8
L2R49PQ-BP011-1608
LOS: LOS-9892
Lesson Reference: Lesson 3: Risk Measurement Applications
Difficulty: medium
A risk measure used by hedge fund managers but not by traditional asset managers would *most likely* be:

- (●) Leverage.
- ( ) Sensitivities.
- ( ) Position limits.

Rationale

This Answer is Correct
Hedge fund managers are likely to use various leverage ratios to manage risk, whereas constraints against using leverage are common among traditional asset managers.

Question 9
L2R49PQ-BP012-1608
LOS: LOS-9892
Lesson Reference: Lesson 3: Risk Measurement Applications
Difficulty: hard
Which entity will be *least likely* to use economic capital as a risk measure?

- Banks
- Insurers
- Hedge funds

Rationale

This Answer is Correct

Economic capital describes the capital that must remain available to ensure solvency against risk of loss up to some confidence level. Hedge funds are more likely to use a measure known as maximum drawdown (i.e., largest acceptable loss from peak to bottom). Banks and insurers use economic capital as a risk measure.

Question 10
L2R49PQ-BP001-1608
LOS: LOS-9882
Lesson Reference: Lesson 1: Value at Risk
Difficulty: easy
Capsicum Fund manages client assets of $435 million. Fund management wishes to establish value at risk (VaR) for the portfolio over any one-day period. If mean return and standard deviation of returns are known and the distribution of returns can be assumed normal, fund management will *most likely* need to determine:

- (●) Confidence level.
- ( ) Minimum expected loss.
- ( ) Maximum acceptable loss.

Rationale

This Answer is Correct

Fund management must determine confidence level to establish minimum periodic loss expected during some period of time. Generally, confidence will be established at the 84% (one standard deviation), 95%, or 99% level.

Question 11
L2R49PQ-BP014-1608
LOS: LOS-9893
Lesson Reference: Lesson 4: Using Constraints to Manage Market Risk
Difficulty: easy
Which of the following risk measures is *most likely* to protect against overconcentration in an asset class?

- VaR
- Position limits
- *Ex ante* tracking error

Rationale

This Answer is Correct

Position limits are percentage or currency limits on how much of a position an asset manager can hold in a particular security or asset class. They prevent concentration. VaR, in contrast, performs poorly as a measure for concentrated positions. *Ex ante* tracking error, which describes variance from a benchmark, shows the difference from the benchmark but does not protect against overconcentration.

Question 12
L2R49PQ-BP009-1608
LOS: LOS-9891
Lesson Reference: Lesson 2: Other Risk Measures
Difficulty: hard
A bond portfolio manager establishes sensitivity to risk factors for each asset in the portfolio. Applying a non-parallel yield curve increase to individual asset valuation will *most likely* provide information on:

- (●) Correlation risk.
- ( ) Widening credit spreads.
- ( ) Effects of key rate duration differences.

Rationale

This Answer is Correct

Correlation risk (i.e., changes in asset correlations) would most likely apply to non-parallel interest rate changes. Credit spread widening is most likely to occur during a slowing economy, while credit spread tightening indicates an economy heating up. Key rate duration is sensitivity for a security of a given maturity to a 1% change in yield. Each of the securities has its own duration based on its maturity, so the effects will be based on interest rate differences at different maturities rather than on the key rate duration itself.

Question 13
L2PMR49-TB001-1610
LOS: LOS-9882
Lesson Reference: Lesson 1: Value at Risk
Difficulty: medium
If a manager calculates his portfolio's value at risk (VaR) to be 20%, this *most likely* means the portfolio could lose how much?

- ○ Exactly 20%
- ○ Less than 20%
- ◉ More than 20%

Rationale

This Answer is Correct
A VaR identifies a potential loss of at least some minimum amount or percentage.

Question 14

L2R49PQ-BP008-1608

LOS: LOS-9887

Lesson Reference: Lesson 2: Other Risk Measures

Difficulty: easy

A risk manager measuring factor sensitivities for a portfolio and applying changes in these factors that occurred during a previous bull market would *most likely* be using:

- Stress testing.
- Historical scenario analysis.
- Hypothetical scenario analysis.

Rationale

This Answer is Correct

Applying changes in factors that occurred during a historical period would fall under historical scenario analysis whether it is a bull market or a market collapse. Hypothetical scenario analysis uses a hypothetical scenario, and stress testing uses extreme movements—usually hypothetical—in factors to which the portfolio is sensitive.

Question 15
L2R49PQ-BP004-1608
LOS: LOS-9885
Lesson Reference: Lesson 1: Value at Risk
Difficulty: medium
VaR is *least likely* to be valuable in communicating with:

- Regulators.
- Potential investors.
- Portfolio managers.

Rationale

This Answer is Correct

While regulators and potential investors are more concerned with the magnitude of potential loss, portfolio managers gain little information from VaR about factors important in managing the risk, especially during left tail events.

Question 16

L2R49PQ-BP006-1608

LOS: LOS-9889

Lesson Reference: Lesson 2: Other Risk Measures

Difficulty: easy

Which of the following would *most likely* be used to estimate changes in portfolio value based on changes to a particular risk factor?

- Scenario analysis
- Value at risk (VaR)
- Sensitivity analysis

Rationale

This Answer is Correct

Sensitivity analysis allows risk managers to assess how underlying risk factors affect portfolio returns. Scenario analysis uses scenarios that may involve changes in more than one risk factor. VaR simply describes the minimum loss over a particular period at a given confidence level.

Question 17
L2PMR49-TB004-1610
LOS: LOS-9886
Lesson Reference: Lesson 1: Value at Risk
Difficulty: medium
Conditional VaR is *best* described as:

- The median loss to the left of the confidence interval.
- The average loss to the left of the confidence interval.
- The average loss to the right of the confidence interval.

Rationale

This Answer is Correct
Conditional VaR describes the average loss expected outside confidence limits, or to the left of the confidence interval.

Question 18

L2PMR49-TB005-1610

LOS: LOS-9886

Lesson Reference: Lesson 1: Value at Risk

Difficulty: medium

Which of the following is *least likely* to be a risk measure used by both traditional long-only and hedge fund managers?

- VaR
- Illiquidity
- Scenario analysis

Rationale

This Answer is Correct

Traditional long-only investment managers hold only fully liquid publicly traded positions, so illiquidity risk measures are not a concern.

Question 19
L2R49PQ-BP010-1608
LOS: LOS-9892
Lesson Reference: Lesson 3: Risk Measurement Applications
Difficulty: medium
Firms that use book value accounting will be *most likely* to use:

- ○ VaR.
- ○ Economic capital.
- ◉ Asset-liability gap modeling.

Rationale

This Answer is Correct

Asset-liability gap modeling describes models for the difference between assets and liabilities. VaR and economic capital measures, by contrast, are designed to be used when fair value for an asset is exposed to risk factors.

Question 20

L2R49PQ-BP002-1608

LOS: LOS-9884

Lesson Reference: Lesson 1: Value at Risk

Difficulty: medium

Capsicum Fund runs a historical simulation using two full years of unadjusted daily return data and ranks the returns from most negative to most positive. However, the VaR calculated for the historical simulation is less than that for the parametric method at the same confidence level and using the mean for the two-year period. Which of the following is the *most likely* reason for the VaR difference between the historical simulation and the parametric method?

- Sampling using the historical method
- Differences in input parameters for sensitivity factors
- Assumption of a normal distribution for the parametric method

Rationale

This Answer is Correct

VaR calculations using the historical simulation method are not constrained by an assumption of normality as under the parametric method. Under the parametric method, only mean and standard deviation during an observation period are required while the historical period calculates return for each period (i.e., daily in this case). Therefore, they are likely to be close but hardly ever identical. Time frame and data periods were identical for parametric and historical simulation; historical simulation did not sample the data used in the parametric method. Differences in input parameters for sensitivity factors apply to Monte Carlo simulations rather than parametric or historical simulation.