

Exam : 8010

**Title : Operational Risk Manager
(ORM) Exam**

Version : DEMO

1. Which of the following statements are correct?

- I. A reliance upon conditional probabilities and a-priori views of probabilities is called the 'frequentist' view
 - II. Knightian uncertainty refers to things that might happen but for which probabilities cannot be evaluated
 - III. Risk mitigation and risk elimination are approaches to reacting to identified risks
 - IV. Confidence accounting is a reference to the accounting frauds that were seen in the past decades as a reflection of failed governance processes
- A. II, III and IV
 - B. II and III
 - C. I and IV
 - D. All of the above

Answer: B

Explanation:

In statistics, which is relevant to risk management, a distinction is often drawn between 'frequentists' and 'Bayesians'. Frequentists rely upon data to draw conclusions as to probabilities. Bayesians consider conditional probabilities, ie, take into account what things are already known, and inject sometimes subjective a-priori probabilities into the calculations. Statement I describes Bayesians, and not frequentists. In reality however, the difference is merely academic. Risk managers use whichever technique best applies to the given situation without making it about ideology.

The difference between 'Knightian uncertainty' and 'Risk' is similarly academic. Knightian uncertainty refers to risk that cannot be measured or calculated. 'Risk' on the other hand refers to things for which past data exists and calculations of exposure can be made. To give an example in the context of the financial world, the risk from a pandemic creating systemic failures from a failure of payment and settlement systems and the like is 'Knightian uncertainty', but the market risk from equity price movements can be modeled (albeit with limitations) and is calculable. Statement II is therefore correct. Once a risk is identified, it can be mitigated, accepted, avoided or eliminated, or transferred by way of insurance. Therefore statement III is correct.

Confidence accounting is a conceptual idea that suggests that accounting statements make reference to ranges as opposed to point estimates in financial statements. For example, instead of saying that the pension obligation is \$xx million, the company should say the pension obligation is in a range of \$xxm - \$yy m with a certain confidence level. Statement IV is therefore inaccurate.

2. Under the standardized approach to calculating operational risk capital under Basel II, negative regulatory capital charges for any of the business units:

- A. Should be ignored completely
- B. Should be offset against positive capital charges from other business units
- C. Should be included after ignoring the negative sign
- D. Should be excluded from capital calculations

Answer: B

Explanation:

According to Basel II, in any given year, negative capital charges (resulting from negative gross income) in any business line may offset positive capital charges in other business lines without limit. Therefore Choice 'b' is the correct answer.

3. Credit exposure for derivatives is measured using

- A. Current replacement value
- B. Notional value of the derivative
- C. Forward looking exposure profile of the derivative
- D. Standard normal distribution

Answer: C

Explanation:

Current replacement values are a very poor measure of the credit exposure from a derivative contract, because the future value of these instruments is unpredictable, ie is stochastic, and the range of values it can take increases the further ahead in the future we look. Therefore it is common for credit exposures for derivatives to be measured using forward looking exposure profiles, which are distributions of the expected value of the derivative at the time horizon for which credit risk is being measured. To be conservative, a high enough quintile of this distribution is taken as the 'loan equivalent value' of the derivative as the exposure. Choice 'c' is the correct answer.

The notional value of derivative contracts generally tends to be quite high and unrelated to their economic value or the counterparty exposure. Therefore notional value is irrelevant.

4. Which of the following are valid approaches for extreme value analysis given a dataset:

- I. The Block Maxima approach
 - II. Least squares approach
 - III. Maximum likelihood approach
 - IV. Peak-over-thresholds approach
- A. II and III
 - B. I, III and IV
 - C. I and IV
 - D. All of the above

Answer: C

Explanation:

For EVT, we use the block maxima or the peaks-over-threshold methods.

These provide us the data points that can be fitted to a GEV distribution.

Least squares and maximum likelihood are methods that are used for curve fitting, and they have a variety of applications across risk management.

5. Which of the following formulae describes Marginal VaR for a portfolio p, where V_i is the value of the i-th asset in the portfolio? (All other notation and symbols have their usual meaning.)

A)

$$\frac{\delta VaR_p}{\delta V_i}$$

B)

$$\frac{VaR_i}{V_i} \rho_{ip}$$

C)

$$\frac{VaR_p}{V_p} \beta_{ip}$$

D)

All of the above

A. Option A

B. Option B

C. Option C

D. Option D

Answer: D

Explanation:

Marginal VaR of a component of a portfolio is the change in the portfolio VaR from a \$1 change in the value of the component. It helps a risk analyst who may be trying to identify the best way to influence VaR by changing the components of the portfolio. Marginal VaR is also important for calculating component VaR (for VaR disaggregation), as component VaR is equal to the marginal VaR multiplied by the value of the component in the portfolio. Marginal VaR is by definition the derivative of the portfolio value with respect to the component i. This is reflected in Choice 'a' above. Using the definitions and relationships between correlation, covariance, beta and volatility of the portfolio and/or the component, we can show that the other two choices are also equivalent to Choice 'a'. Therefore all the choices present are correct.