Topic 52 to 53

Test ID: 8451116

Question #1 of 23

Question ID: 439601

Which of the following is **NOT** a use of stress testing?

✗ **A)** **Stress testing complements value at risk (VAR).**

✗ **B)** It can highlight weaknesses in contingency planning and assumptions.

✗ **C)** It can be used for capital allocation across business units.

✓ **D)** It enables the risk manager to eliminate all risk from a portfolio.

Explanation

Stress testing cannot be used to eliminate all risk from a position. It only highlights the extent of losses in different states and enables contingency planning, which is one of its benefits.

Question #2 of 23

Question ID: 439598

Stress testing is considered an intuitive risk management tool because:

✓ **A)** **scenarios are drawn from factors that would likely impact portfolio value.**

✗ **B)** recent historical data greatly aids in the scenario selection.

✗ **C)** major structural shifts can be anticipated by business line managers.

✗ **D)** correlation between underlying exposures is ignored.

Explanation

Stress testing has a strong intuitive appeal by identifying key scenarios without assigning specific probabilistic statements about anticipated losses. Multidimensional stress testing includes correlation effects. Recent historical data does not provide a complete enough history to identify extreme movements in key variables. Similarly, anticipating structural shifts is very challenging.

Question #3 of 23

Question ID: 439594

Which of the following statements *best* describes the uses of stress analysis?

✗ **A)** **Scenario analysis, which is a special case of stress analysis, suffers from limitations on implementing a consistent and manageable approach.**

✓ **B)** Stress analysis can be used to enhance VAR analysis by focusing on the extent of loss in an extreme event.

✗ **C)** Stress analysis has several advantages over a value at risk (VAR) only approach that includes: highlighting inappropriate assumptions, hidden vulnerabilities, and the ability to be able to forecast probability of rare but damaging events.

✗ **D)** Scenario analysis can be used to model one-off hypothetical events but not actual events since their probability of occurrence is very miniscule and, as they have already occurred, they are not likely to recur.

Explanation

This is the only valid use of stress analysis among the statements listed. Other statements either do not pertain to uses, even if true in some other context, or are not true.

Question #4 of 23

Question ID: 439606

Greg Beck is using the conditional scenario method while conducting multidimensional scenario analysis. Which of the following statements are NOT characteristics of his correlation estimates?

I. The correlations are calculated from stressed time periods only.
II. All risk factor correlations are weighted equally.
III. Stressed correlations are estimated as three times the value as those in a normal market.

✗ **A) II and III.**

✗ **B)** I and III.

✓ **C)** I, II and III.

✗ **D)** I and II.

Explanation

Correlations are calculated from the entire sample period (includes normal and stressed markets). The model focuses on a subset of risk factors and the remaining factors are "zeroed out."

Question #5 of 23

Question ID: 439613

Which of the following statements is (are) CORRECT regarding stress testing methodologies?

I. Prior to the recent crisis, stress testing methodology was based on an underlying assumption that risk is generated by unknown and non-stochastic processes.
II. The process of reverse testing involves a scenario of known outcome, identification of likely events producing the outcome and evaluation of effectiveness of risk mitigating strategies to deal with the risk outcome.
III. Basis risk is the difference in the prices (or interest rates) between the cash market and the futures market.
IV. Contingent risk arises due to contractual agreements only.

✗ **A) I, II and III.**

✗ **B)** III only.

✓ **C)** II only.

✗ **D)** I only.

Explanation

Prior to crisis, stress testing methodologies were based on the underlying assumption that risk is generated by known and non-random processes (which would mean that historical statistical relationships can be useful in predicting future stress events, an assumption which was certainly disapproved by the recent turmoil).

Basis is the difference in the prices (or interest rates) between the cash and the futures markets and basis risk is the change in basis between the opening and closing of a futures position.

Question #6 of 23

Question ID: 439605

Unidimensional scenario analysis:

✓ **A) creates an array of portfolio gains/losses for all possible scenarios.**

✗ **B)** can easily handle multiple factors.

✗ **C)** none of these answer choices are correct.

✗ **D)** incorporates the correlation across multiple risk factors.

Explanation

Unidimensional scenario analysis evaluates the portfolio value for each scenario. The distinction between unidimensional and multidimensional is that the latter incorporates correlation across risk factors for each scenario. Unidimensional analysis quickly increases in computational burden as risk factors are added.

Question #7 of 23

Question ID: 439597

Which of the following would **NOT** be considered stress testing?

✗ **A) Exchange rate depreciation of 10% between $US relative to Japanese Yen.**

✗ **B)** Yield curve twist of 50 basis points.

✓ **C)** S&P 500 index drop of 1%.

✗ **D)** Treasury yield curve shift of 100 basis points.

Explanation

Equity index falling 1% in one day is not unusual based upon historical data.

Question #8 of 23

Question ID: 439608

Which of the following would *least likely* be associated with conducting a stress test?

✗ **A) Market values and relationships observed during the Crash of 1987.**

✗ **B)** Using one-percentile values of factors in an estimated factor analysis equation.

✓ **C)** Modified VaR where kurtosis and skewness are zero.

✗ **D)** Monte Carlo simulations that generate extreme values.

Explanation

Stress tests use observed extreme values from historical data or generated extreme values from Monte Carlo simulations. It would be counter productive to assume kurtosis and skewness are zero because such assumptions would limit the ability to account for potential losses.

Question #9 of 23

Question ID: 439607

Which of the following stress testing approaches have the *disadvantage* of historical data limitations?

I. Use of historical events approach.
II. Historical simulation approach.
III. Stress scenarios approach.

✓ **A) I and II.**

✗ **B)** I, II, and III.

✗ **C)** I only.

✗ **D)** II only.

Explanation

The biggest disadvantage of using historical events or historical simulations for stress testing is that it is limited to only evaluating events that have actually occurred. The stress scenario approach has the advantage of not being limited to analyzing only events that actually have occurred.

Question #10 of 23

Question ID: 439610

Factor push testing on interest rates is **NOT** appropriate for which of the following circumstances?

✗ **A) Fixed income and equities in bull market conditions.**

✗ **B)** Fixed income and equities in inflationary market conditions.

✗ **C)** Fixed income and equities in normal conditions.

✓ **D)** Fixed income and equities in bear market conditions.

Explanation

During bear market conditions, equities and bonds move in opposite directions while in all other cases, the asset classes tend to move together. Hence, pushing each factor in its "worst case" direction does not capture the negative correlation in bear markets.

Question #11 of 23

Question ID: 439604

Timothy Stratton is performing a scenario analysis for 3 interest rate scenarios and 2 equity scenarios for 4 assets. He has constructed the following partial table below.

Interest Rate	Equity	Asset A	Asset B	Asset C	Asset D	Portfolio value
High	Bull	6%	3%	12%	7%	??
Normal	Bull	10%	2%	2%	5%	??
Low	Bull	-5%	8%	-4%	4%	??
High	Bear	4%	4%	8%	2%	??
Normal	Bear	6%	0%	-4%	1%	??
Low	Bear	-12%	-3%	-20%	0%	??

Suppose Timothy is considering a third risk factor based on economic growth (high, moderate, below average, low). How many more rows must he add to his previously constructed table if he wants to include the additional risk factor?

✓ **A) 18.**

✗ **B)** 24.

✗ **C)** 12.

✗ **D)** 6.

Explanation

In total, there will be 3×2×4 = 24 scenarios (i.e., rows in the table). Therefore, 18 additional rows will have to be added.

Question #12 of 23

Question ID: 439612

Which of the following is not a step in the reverse stress testing methodology?

✗ **A) hedging.**

✗ **B)** outcome.

✓ **C)** cause.

✗ **D)** events.

Explanation

The three phases of reverse stress testing are: outcome, events and hedging.

Question #13 of 23

Question ID: 439592

Which of the following statements highlights an issue with conducting stress tests?

I. Identifying key input variables.
II. Predicting regime shifts or structural changes.
III. Predicting how a change in one variable will impact others during a financial crisis.

✗ **A) I, II and III.**

✗ **B)** I and III.

✓ **C)** II and III.

✗ **D)** I and II.

Explanation

Stress testing is able to identify key input variables that impact the portfolio. However, predicting regime shifts and structural changes is more difficult with stress tests. Also, the effect that one variable has on others is difficult to gauge with stress testing.

Question #14 of 23

Question ID: 439611

In response to an extremely large computed stress test, managers can:

I. sell insurance.
II. restructure business lines.
III. secure a line of credit.

✗ **A) I and II only.**

✓ **B)** II and III only.

✗ **C)** III only.

✗ **D)** I, II, and III.

Explanation

Large exposure would trigger insurance purchases, not sales. Restructuring business lines and establishing contingent sources of capital are viable responses to unacceptably large potential losses.

Question #15 of 23

Question ID: 439595

Assume that the value at risk (VAR) over a 1-day time horizon for an $80 million equity portfolio at the 95 percent confidence level is calculated to be $792,000. Which of the following is a *drawback* to this VAR calculation?

✗ **A) The measure is backward looking.**

✗ **B)** The interpretation of the VAR measure would be different for a fixed-income portfolio.

✓ **C)** The actual loss in a time of extreme market stress could be much greater than $792,000.

✗ **D)** Increasing the time period used in the calculation will increase the VAR.

Explanation

One of the main drawbacks to VAR is that it fails to incorporate the loss that may occur beyond the 95% confidence level, such as the loss that may occur with an extreme market event. *This drawback of VAR is the reason stress testing is necessary.* Note that increasing the time period resulting in an increase in VAR would not be considered a drawback; the fact that VAR is expressed in dollars means the interpretation would the same for a fixed-income portfolio and that VAR is a forward-looking measure, not a backward-looking measure.

Question #16 of 23

Question ID: 439602

Which of the following is **NOT** a disadvantage of using stress testing? Stress testing:

✗ **A) fails to include the simultaneous adverse movements of risk factors.**

✓ **B)** reflects only normal circumstances.

✗ **C)** reflects the analyst's intentional and unintentional misspecification of the model.

✗ **D)** fails to measure the by-products of major factor movements.

Explanation

The primary purpose of stress testing is to model the effect of non-normal events that may not be reflected in the typical VAR calculation. Thus it is unlikely that stress testing would only reflect normal events. Stress testing is susceptible, however, to the analyst's intentional and unintentional misspecification of the model, the failure to examine the by-products of major factor movements (how does a change in one factor affect the value of another), and the failure to include the simultaneous adverse movements of risk factors.

Question #17 of 23

Question ID: 439609

Which of the following describes the form of stress testing referred to as factor push analysis?

✗ **A) The effect on the portfolio from simultaneous changes in several factors is examined.**

✗ **B)** The risk factors that have the greatest potential impact on the portfolio are examined.

✓ **C)** The impact on the portfolio is measured by examining an input at an extreme level.

✗ **D)** All factors are examined at levels that inflict the most damage on the portfolio.

Explanation

In factor push analysis, a factor or factors are pushed to an extreme to examine the impact on the portfolio. In scenario analysis, the effect on the portfolio from simultaneous changes in several factors is examined, which provides several different scenarios. In maximum loss optimization, the risk factors that have the greatest potential impact on the portfolio are identified. Once the factors are identified, procedures are put in place to limit their impact. In worst-case scenario analysis, all factors are pushed to their most damaging impact on the portfolio. Factor push analysis, maximum loss optimization, and worst-case scenario analysis are all forms of stressing models.

Question #18 of 23

Question ID: 439599

Stress testing is a non-statistical risk management tool because:

✗ **A) non-parametric analysis is used.**

✓ **B)** losses are computed based on anticipated movements in key variables without specific probabilistic statements.

✗ **C)** it is objective in its determination of scenarios to evaluate.

✗ **D)** it specifies the minimum loss that will occur for a given significance level.

Explanation

Stress testing does not assign a probability to an expected loss but rather evaluates losses based on alternative scenarios relevant to the firm's operations.

Question #19 of 23

Question ID: 439596

Which of the following is **NOT** an objective of stress testing? Simulate:

✗ **A) permanent structural shifts.**

✗ **B)** temporary changes in key variables.

✗ **C)** shocks that do not appear in historical data.

✓ **D)** shocks that are less likely to appear than historical evidence indicates.

Explanation

Stress testing analyzes events that are more likely to appear than suggested by historical data.

Question #20 of 23

Question ID: 439614

Which of the following statement is (are) CORRECT? Stress testing plans should take into consideration inter-correlations

between:

I. reputational and liquidity risks.
II. funding and market risks.
III. market and pipeline risks.
IV. basis and liquidity risks.

✗ **A) I only.**

✗ **B)** I, II and III.

✗ **C)** I and II.

✓ **D)** I, II, III and IV.

Explanation

All statements are correct. Due to reputational concerns, in the context of overall stress conditions, a bank may stand ready to inject credit or liquidity to an SPE or may take the structured assets on its balance sheet from the SPE, which in turn may significantly increase liquidity pressures for a bank itself.

Deteriorating market stress conditions may inhibit a bank's ability to liquidate assets, without loss, to fulfill its liquidity needs.

During the recent turmoil, banks were forced to park assets on their balance sheets, which they could not securitize due to deteriorating securitization markets conditions.

Ineffective hedge, due to change in basis, can result in significant loss as a result of unprotected decline in underlying asset value giving rise to liquidity concerns.

Question #21 of 23

Question ID: 439600

Which of the following would *least likely* be a part of a stress test?

✗ **A) Choosing the time period over which the stress will take place.**

✓ **B)** Computing market value at risk.

✗ **C)** Adjusting the correlations of risk factors.

✗ **D)** Choosing the market factors.

Explanation

Computing market value at risk is not explicitly part of a stress test. The other possible answers are part of a stress test along with choosing the amount of stress for each factor.

Question #22 of 23

Question ID: 439593

Which of the following *most accurately* describes the relationship between computing internal capital requirements using a stress testing approach versus a value at risk (VAR) capital strength approach? Stress testing approaches:

✗ **A) should never be used since they are based entirely on subjective inputs.**

✓ **B)** complement VAR approaches since they account for scenarios that may not be properly considered in VAR approaches.

✗ **C)** are substitutes for VAR approaches since they better measure the entire spectrum of potential outcomes.

✗ **D)** can never be combined with VAR approaches because they are based on different probability distributions.

Explanation

Since VAR often relies on common probability distributions, it may not properly capture extreme, but possible, events. Stress testing involves evaluating the effects that these events would have on the institution and then establishing capital requirement based on the findings. The two approaches are natural complements.

Question #23 of 23

Question ID: 439603

Which of the following is **NOT** a drawback to stress testing?

✗ **A) Historical correlations mix normal and hectic periods.**

✗ **B)** Calculated losses may be extremely high relative to the 99% VAR significance level.

✓ **C)** It identifies important factors not observed in historical data.

✗ **D)** The number of scenarios increases greatly with additional risk factors.

Explanation

Stress testing necessitates scenarios that have not appeared previously or do so very infrequently.