

Question 1:

'Which one of the following is the most appropriate definition of a 99% confidence interval?', A. '99% of the time in repeated samples, the interval would contain the true value of the parameter', B. '99% of the time in repeated samples, the interval would contain the estimated value of the parameter', C. '99% of the time in repeated samples, the null hypothesis will be rejected', D. '99% of the time in repeated samples, the null hypothesis will not be rejected when it was false'

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Answer Option 1:

A. '99% of the time in repeated samples, the interval would contain the true value of the parameter'

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Answer Option 2:

A. '99% of the time in repeated samples, the interval would contain the true value of the parameter'

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Answer Option 3:

A 99% confidence interval is most appropriately defined as: A. '99% of the time in repeated samples, the interval would contain the true value of the parameter'.

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Answer Option 4:

A 99% confidence interval is defined as: A. '99% of the time in repeated samples, the interval would contain the true value of the parameter'. Final Answer: A

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Answer Option 5:

A. '99% of the time in repeated samples, the interval would contain the true value of the parameter'

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Answer Option 6:

A 99% confidence interval refers to the range within which we can be 99% certain that a population parameter lies, based on sample data. Therefore, the most appropriate definition is A. '99% of the time in repeated samples, the interval would contain the true value of the parameter'.

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Answer Option 7:

A 99% confidence interval is best defined as: A. '99% of the time in repeated samples, the interval would contain the true value of the parameter'.

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Answer Option 8:

A 99% confidence interval can be defined as: A. '99% of the time in repeated samples, the interval would contain the true value of the parameter'. Final Answer: A

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Answer Option 9:

A 99% confidence interval is defined as an interval estimate of a population parameter. The interpretation is that if we were to take many samples and build an interval estimate from each sample, we would expect about 99% of those intervals to contain the actual parameter value. So, the most appropriate definition is A. '99% of the time in repeated samples, the interval would contain the true value of the parameter'. Final Answer: A

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Question 2:

'What is the main difference between the Dickey Fuller (DF) and Phillips-Perron (PP) approaches to unit root testing?', A. 'ADF is a single equation approach to unit root testing while PP is a systems approach', B. 'PP tests reverse the DF null and alternative hypotheses so that there is stationarity under the null hypothesis of the PP test', C. 'The PP test incorporates an automatic correction for autocorrelated residuals in the test regression', D. 'PP tests have good power in small samples whereas DF tests do not.'

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Answer Option 1:

C. 'The PP test incorporates an automatic correction for autocorrelated residuals in the test regression'

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Answer Option 2:

C. 'The PP test incorporates an automatic correction for autocorrelated residuals in the test regression'

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Answer Option 3:

C. 'The PP test incorporates an automatic correction for autocorrelated residuals in the test regression'

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Answer Option 4:

C. 'The PP test incorporates an automatic correction for autocorrelated residuals in the test regression'

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Answer Option 5:

C. 'The PP test incorporates an automatic correction for autocorrelated residuals in the test regression'

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Answer Option 6:

C. 'The PP test incorporates an automatic correction for autocorrelated residuals in the test regression'

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Answer Option 7:

C. 'The PP test incorporates an automatic correction for autocorrelated residuals in the test regression'

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Answer Option 8:

C. 'The PP test incorporates an automatic correction for autocorrelated residuals in the test regression'

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Answer Option 9:

C. 'The PP test incorporates an automatic correction for autocorrelated residuals in the test regression'

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Question 3:

'If there were a leverage effect in practice, what would be the shape of the news impact curve for a model that accounted for that leverage?', A. 'It would rise more quickly for negative disturbances than for positive ones of the same magnitude', B. 'It would be symmetrical about zero', C. 'It would rise less quickly for negative disturbances than for positive ones of the same magnitude', D. 'It would be zero for all positive disturbances'

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Answer Option 1:

A. 'It would rise more quickly for negative disturbances than for positive ones of the same magnitude'

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Answer Option 2:

A. 'It would rise more quickly for negative disturbances than for positive ones of the same magnitude'

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Answer Option 3:

A. 'It would rise more quickly for negative disturbances than for positive ones of the same magnitude'

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Answer Option 4:

A. 'It would rise more quickly for negative disturbances than for positive ones of the same magnitude'

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Answer Option 5:

A. 'It would rise more quickly for negative disturbances than for positive ones of the same magnitude'

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Answer Option 6:

A. 'It would rise more quickly for negative disturbances than for positive ones of the same magnitude'

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Answer Option 7:

A. 'It would rise more quickly for negative disturbances than for positive ones of the same magnitude'

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Answer Option 8:

A. 'It would rise more quickly for negative disturbances than for positive ones of the same magnitude'

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Answer Option 9:

A. 'It would rise more quickly for negative disturbances than for positive ones of the same magnitude'

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Question 4:

'Which of the following statements is false concerning the linear probability model?', A. 'There is nothing in the model to ensure that the estimated probabilities lie between zero and one', B. 'Even if the probabilities are truncated at zero and one, there will probably be many observations for which the probability is either exactly zero or exactly one', C. 'The error terms will be heteroscedastic and not normally distributed', D. 'The model is much harder to estimate than a standard regression model with a continuous dependent variable'

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Answer Option 1:

D. 'The model is much harder to estimate than a standard regression model with a continuous dependent variable'

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Answer Option 2:

D. 'The model is much harder to estimate than a standard regression model with a continuous dependent variable'

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Answer Option 3:

D. 'The model is much harder to estimate than a standard regression model with a continuous dependent variable'

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Answer Option 4:

D. 'The model is much harder to estimate than a standard regression model with a continuous dependent variable'

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Answer Option 5:

D. 'The model is much harder to estimate than a standard regression model with a continuous dependent variable'

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Answer Option 6:

D. 'The model is much harder to estimate than a standard regression model with a continuous dependent variable'

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Answer Option 7:

D. 'The model is much harder to estimate than a standard regression model with a continuous dependent variable'

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Answer Option 8:

D. 'The model is much harder to estimate than a standard regression model with a continuous dependent variable'

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Answer Option 9:

D. 'The model is much harder to estimate than a standard regression model with a continuous dependent variable'

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Question 5:

'Which of the following statements concerning the regression population and sample is FALSE?', A. 'The population is the total collection of all items of interest', B. 'The population can be infinite', C. 'In theory, the sample could be larger than the population', D. 'A random sample is one where each individual item from the population is equally likely to be drawn.'

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Answer Option 1:

C. 'In theory, the sample could be larger than the population'

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Answer Option 2:

C. 'In theory, the sample could be larger than the population'

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Answer Option 3:

C. 'In theory, the sample could be larger than the population'

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Answer Option 4:

C. 'In theory, the sample could be larger than the population'

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Answer Option 5:

C. 'In theory, the sample could be larger than the population'

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Answer Option 6:

C. 'In theory, the sample could be larger than the population'

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Answer Option 7:

C. 'In theory, the sample could be larger than the population'

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Answer Option 8:

C. 'In theory, the sample could be larger than the population'

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Answer Option 9:

The false statement is C. 'In theory, the sample could be larger than the population'. By definition, a sample is a subset of a population. It cannot be larger than the population it is drawn from. Final Answer: C

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Question 6:

'Which of the following statements is INCORRECT concerning a comparison of the Box-Pierce Q and the Ljung-Box Q\* statistics for linear dependence in time series?', A. 'Asymptotically, the values of the two test statistics will be equal', B. 'The Q test has better small-sample properties than the Q\*', C. 'The Q test is sometimes over-sized for small samples', D. 'As the sample size tends towards infinity, both tests will show a tendency to always reject the null hypothesis of zero autocorrelation coefficients.'

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Answer Option 1:

B. 'The Q test has better small-sample properties than the Q\*'

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Answer Option 2:

B. 'The Q test has better small-sample properties than the Q\*'

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Answer Option 3:

B. 'The Q test has better small-sample properties than the Q\*'

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Answer Option 4:

D. 'As the sample size tends towards infinity, both tests will show a tendency to always reject the null hypothesis of zero autocorrelation coefficients.'

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Answer Option 5:

D. 'As the sample size tends towards infinity, both tests will show a tendency to always reject the null hypothesis of zero autocorrelation coefficients.'

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Answer Option 6:

D. 'As the sample size tends towards infinity, both tests will show a tendency to always reject the null hypothesis of zero autocorrelation coefficients.'

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Answer Option 7:

D. 'As the sample size tends towards infinity, both tests will show a tendency to always reject the null hypothesis of zero autocorrelation coefficients.'

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Answer Option 8:

D. 'As the sample size tends towards infinity, both tests will show a tendency to always reject the null hypothesis of zero autocorrelation coefficients.'

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Answer Option 9:

The incorrect statement is D. 'As the sample size tends towards infinity, both tests will show a tendency to always reject the null hypothesis of zero autocorrelation coefficients.' The truth is, as the sample size increases, both tests will become more accurate in their assessments. They will not show a tendency to always reject the null hypothesis of zero autocorrelation coefficients.

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Question 7:

'A parsimonious model is one that', A. 'Includes too many variables', B. 'Includes as few variables as possible to explain the data', C. 'Is a well-specified model', D. 'Is a mis-specified model'

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Answer Option 1:

B. 'Includes as few variables as possible to explain the data'

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Answer Option 2:

B. 'Includes as few variables as possible to explain the data'

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Answer Option 3:

B. 'Includes as few variables as possible to explain the data'

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Answer Option 4:

B. 'Includes as few variables as possible to explain the data'

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Answer Option 5:

B. 'Includes as few variables as possible to explain the data'

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Answer Option 6:

B. 'Includes as few variables as possible to explain the data'

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Answer Option 7:

B. 'Includes as few variables as possible to explain the data'

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Answer Option 8:

B. 'Includes as few variables as possible to explain the data'

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Answer Option 9:

B. 'Includes as few variables as possible to explain the data'

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Question 8:

'Which of the following is NOT a feature of continuously compounded returns (i.e. log-returns)?', A. 'They can be interpreted as continuously compounded changes in the prices', B. 'They can be added over time to give returns for longer time periods', C. 'They can be added across a portfolio of assets to give portfolio returns', D. 'They are usually fat-tailed'

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Answer Option 1:

C. 'They can be added across a portfolio of assets to give portfolio returns'

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Answer Option 2:

C. 'They can be added across a portfolio of assets to give portfolio returns'

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Answer Option 3:

C. 'They can be added across a portfolio of assets to give portfolio returns'

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Answer Option 4:

C. 'They can be added across a portfolio of assets to give portfolio returns'

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Answer Option 5:

C. 'They can be added across a portfolio of assets to give portfolio returns'

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Answer Option 6:

C. 'They can be added across a portfolio of assets to give portfolio returns'

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Answer Option 7:

C. 'They can be added across a portfolio of assets to give portfolio returns'

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Answer Option 8:

C. 'They can be added across a portfolio of assets to give portfolio returns'

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Answer Option 9:

C. 'They can be added across a portfolio of assets to give portfolio returns'

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Question 9:

'Which of the following features of financial asset return time-series could be captured using a standard GARCH(1,1) model?

- i) Fat tails in the return distribution
- ii) Leverage effects
- iii) Volatility clustering
- iv) Volatility affecting returns', A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

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Answer Option 1:

The standard GARCH(1,1) model is a tool for capturing volatility clustering and fat tails in the return distribution. It does not inherently capture leverage effects or the influence of volatility on returns. However, extensions to the model exist that can capture these features. Thus, the correct answer is B. '(i) and (iii) only'.

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Answer Option 2:

A standard GARCH(1,1) model can capture fat tails in the return distribution and volatility clustering, so options (i) and (iii) are correct. However, a standard GARCH model does not account for leverage effects or volatility affecting returns, making options (ii) and (iv) incorrect. Therefore, the correct answer is B. '(i) and (iii) only'

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Answer Option 3:

A standard GARCH(1,1) model can capture:

- i) Fat tails in the return distribution. GARCH models can produce return series with heavier tails than a normal distribution, which is a common feature of financial returns.
- iii) Volatility clustering. GARCH models are specifically designed to model and predict changing variance over time, which is what volatility clustering is about.

So, the correct answer is B. '(i) and (iii) only'

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Answer Option 4:

GARCH(1,1) model, or Generalized Autoregressive Conditional Heteroskedasticity model, is often used in financial time series analysis to model volatility clustering and fat tails in the return distribution. However, the standard GARCH(1,1) model does not account for leverage effects, nor does it model how volatility affects returns. Therefore, it captures:

- i) Fat tails in the return distribution
- iii) Volatility clustering

So, the final answer is B. '(i) and (iii) only'.

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Answer Option 5:

A standard GARCH(1,1) model is able to capture the following features of financial asset return time-series:

- i) Fat tails in the return distribution
- iii) Volatility clustering

However, standard GARCH models do not capture the leverage effect, which refers to the negative correlation between asset returns and changes in their volatility. Also, in a standard GARCH model, volatility does not affect returns - volatility and returns are treated as separate processes.

So, the correct answer is B. '(i) and (iii) only'.

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Answer Option 6:

Standard GARCH(1,1) model can capture:

- i) Fat tails in the return distribution
- iii) Volatility clustering

However, standard GARCH model does not capture:

- ii) Leverage effects
- iv) Volatility affecting returns

Leverage effect is typically modeled with variants of GARCH model like EGARCH or GJR-GARCH which allows for asymmetric response of volatility to positive and negative shocks. Volatility affecting returns is typically modeled with models like GARCH-M (GARCH in Mean) which includes conditional volatility as an explanatory variable in the mean equation of the model.

So, final answer is B. '(i) and (iii) only'

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Answer Option 7:

A standard GARCH(1,1) model can capture:

- i) Fat tails in the return distribution: GARCH models assume the errors follow a normal distribution, but can capture fat tails in the return distribution due to the time-varying nature of volatility.
- iii) Volatility clustering: This is a key feature of GARCH models, where periods of high volatility tend to be clustered together.

However, a standard GARCH model does not capture:

- ii) Leverage effects: This refers to the negative correlation between asset returns and volatility changes. For this, variations of GARCH like the EGARCH model can be used.

iv) Volatility affecting returns: In a standard GARCH model, volatility is modeled as being influenced by past errors and volatilities, not the other way around.

So, a standard GARCH(1,1) model can capture '(i) and (iii) only'. Final answer: B

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Answer Option 8:

A standard GARCH(1,1) model can capture -

i) Fat tails in the return distribution

iii) Volatility clustering

In a GARCH model, large changes in returns will be followed by high volatility, which leads to 'volatility clustering'. Additionally, GARCH models can exhibit 'fat tails' which refers to the fact that extreme outcomes are more likely than would be predicted by a normal distribution.

However, it cannot capture -

ii) Leverage effects

iv) Volatility affecting returns

The standard GARCH model assumes that positive and negative shocks have the same effect on volatility, which is not the case when there are leverage effects. Moreover, the GARCH model does not include volatility as an explanatory variable for returns, thus it cannot capture the impact of volatility on returns.

So, the correct final answer is B. '(i) and (iii) only'

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Answer Option 9:

GARCH(1,1), or Generalized Autoregressive Conditional Heteroskedasticity model, is a tool that financial industry professionals use to estimate the volatility of returns for stocks, bonds and market indices.

(i) Fat tails in the return distribution: GARCH models can capture fat tails. The standard GARCH model assumes a normal distribution; however, when the model is modified to incorporate heavy-tailed distributions like Student's t-distribution, it can account for the excess kurtosis often observed in financial time series.

(ii) Leverage effects: A basic GARCH model does not capture leverage effects. This requires an extension of the model, such as the GJR-GARCH or EGARCH models which can capture an asymmetric response to positive and negative shocks.

(iii) Volatility clustering: This refers to periods of high volatility followed by periods of high volatility and periods of low volatility followed by periods of low volatility. GARCH models are specifically designed to capture this feature in the data.

(iv) Volatility affecting returns: In a standard GARCH model, volatility is a function of past errors and past variances but does not directly affect returns. This is a feature that is typically not captured by a standard GARCH model.

So, a standard GARCH(1,1) model can capture features (i) and (iii) only.

Final Answer: B

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Question 10:

Consider the estimation of a GARCH-M model. If the data employed were a time-series of daily corporate bond percentage returns, which of the following would you expect the value of the GARCH-in-mean parameter estimate to be?; A. 'Less than -1', B. 'Between -1 and 0', C. 'Between 0 and 1', D. 'Bigger than 1'

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Answer Option 1:

C. 'Between 0 and 1'

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Answer Option 2:

C. 'Between 0 and 1'

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Answer Option 3:

B. 'Between -1 and 0'

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Answer Option 4:

C. 'Between 0 and 1'

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Answer Option 5:

B. 'Between -1 and 0'

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Answer Option 6:

B. 'Between -1 and 0'

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Answer Option 7:

C. 'Between 0 and 1'

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Answer Option 8:

C. 'Between 0 and 1'

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Answer Option 9:

The GARCH-in-Mean model includes a term that represents the conditional variance of the explanatory variable (in this case, daily corporate bond percentage returns) in the mean equation. This allows the mean of the process to be a function of its conditional variance or standard deviation.

In the context of financial markets, there is typically a positive risk-return tradeoff, meaning that when risk (variance) increases, expected returns also increase to compensate for the additional risk. Therefore, we would expect the GARCH-in-mean parameter, which measures this risk-return tradeoff, to be positive. This indicates that an increase in the conditional variance of the returns (a measure of risk) would result in an increase in the expected return.

Therefore, the most likely answer is C. 'Between 0 and 1'.

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Question 11:

'Under which of the following situations would bootstrapping be preferred to pure simulation?

- i) If it is desired that the distributional properties of the data in the experiment are the same as those of some actual data
- ii) If it is desired that the distributional properties of the data in the experiment are known exactly
- iii) If the distributional properties of the actual data are unknown
- iv) If the sample of actual data available is very small', A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iv) only', D. '(i), (iii), and (iv) only'

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Answer Option 1:

B. '(i) and (iii) only'

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Answer Option 2:

B. '(i) and (iii) only'

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Answer Option 3:

B. '(i) and (iii) only'

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Answer Option 4:

B. '(i) and (iii) only'

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Answer Option 5:

Bootstrapping is a statistical method where we sample from an existing data set with replacement. It is commonly used when the distributional properties of the actual data are unknown or when a sample of actual data available is very small. Therefore, the correct answer is B. '(i) and (iii) only'.

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Answer Option 6:

Bootstrapping is a statistical method that resamples the data at hand. It is especially useful in scenarios where the underlying distribution is unknown or the sample size is small. Therefore, options (i), (iii), and (iv) are favorable conditions for bootstrapping. However, bootstrapping doesn't provide exact distributional properties, making option (ii) unfavorable.

So, the correct answer is B. '(i), (iii), and (iv) only'.

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Answer Option 7:

Bootstrapping is a method to estimate the sampling distribution of an estimator by resampling with replacement from the original sample. It is particularly useful in situations where the distributional properties of the actual data are unknown and when the sample of actual data available is small.

So, the situations where bootstrapping would be preferred to pure simulation are: (i) if it is desired that the distributional properties of the data in the experiment are the same as those of some actual data, (iii) if the distributional properties of the actual data are unknown, and (iv) if the sample of actual data available is very small.

Final Answer: B. '(i) and (iii) only'

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Answer Option 8:

Bootstrapping is a resampling technique used to estimate statistics on a population by sampling a dataset with replacement. It is generally used when the distributional properties of the actual data are unknown and when it is desired that the distributional properties of the data in the experiment are the same as those of some actual data. It can also be beneficial when the sample of actual data available is very small.

Thus, the situations where bootstrapping would be preferred to pure simulation are:

- i) If it is desired that the distributional properties of the data in the experiment are the same as those of some actual data
- iii) If the distributional properties of the actual data are unknown
- iv) If the sample of actual data available is very small

Hence, the correct answer is B. '(i) and (iii) only', which refers to these three situations.

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Answer Option 9:

Bootstrapping is a resampling technique that involves using the actual data to generate new samples. It's typically used when the distributional properties of the data are unknown, and it's particularly useful when the sample size is small. It is also used when the desired distributional properties of the experiment are the same as those of some actual data. However, bootstrapping doesn't allow us to know the distributional properties exactly. So the correct answer is B. '(i) and (iii) only'.

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Question 12:

'Which of the following may be consequences of one or more of the CLRM assumptions being violated?

- i) The coefficient estimates are not optimal
  - ii) The standard error estimates are not optimal
  - iii) The distributions assumed for the test statistics are inappropriate
  - iv) Conclusions regarding the strength of relationships between the dependent and independent variables may be invalid.'
- A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

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Answer Option 1:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 2:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 3:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 4:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 5:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 6:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 7:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 8:

The Classical Linear Regression Model (CLRM) assumptions are necessary to ensure that the Ordinary Least Squares (OLS) estimators have desirable properties. Violation of these assumptions can lead to problems such as inefficiency of the OLS estimators, incorrect standard errors leading to incorrect hypothesis tests and confidence intervals, and inappropriate test statistics. Also, the interpretation of the regression coefficients and the strength of relationships between variables can be misleading. Therefore, all the options (i), (ii), (iii), and (iv) may be consequences of one or more of the CLRM assumptions being violated. The correct answer is D. '(i), (ii), (iii), and (iv)'.

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Answer Option 9:

The Classical Linear Regression Model (CLRM) assumptions ensure that the Ordinary Least Squares (OLS) estimators are BLUE (Best Linear Unbiased Estimators). This implies that if any of the assumptions are violated, the OLS estimators may no longer be optimal, leading to biased estimates of the coefficients (i) and standard errors (ii).

Furthermore, many of the statistical tests (like t-tests and F-tests) that are used to make inferences in the context of linear regression rely on the assumption that the errors are normally distributed. If this assumption is violated, these tests may no longer be valid because the distribution assumed for the test statistics may not be appropriate (iii).

Finally, if the assumptions are violated, the conclusions regarding the strength of relationships between the dependent and independent variables may be invalid (iv) because the coefficient estimates may be biased.

So, the correct answer is D. '(i), (ii), (iii), and (iv)'.

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Question 13:

'Which of the following statements is true concerning forecasting in econometrics?', A. 'Forecasts can only be made for time-series data', B. 'Mis-specified models are certain to produce inaccurate forecasts', C. 'Structural forecasts are simpler to produce than those from time series models', D. 'In-sample forecasting ability is a poor test of model adequacy'

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Answer Option 1:

D. 'In-sample forecasting ability is a poor test of model adequacy'

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Answer Option 2:

D. 'In-sample forecasting ability is a poor test of model adequacy'

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Answer Option 3:

D. 'In-sample forecasting ability is a poor test of model adequacy'

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Answer Option 4:

D. 'In-sample forecasting ability is a poor test of model adequacy'

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Answer Option 5:

D. 'In-sample forecasting ability is a poor test of model adequacy'

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Answer Option 6:

D. 'In-sample forecasting ability is a poor test of model adequacy'

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Answer Option 7:

D. 'In-sample forecasting ability is a poor test of model adequacy'

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Answer Option 8:

D. 'In-sample forecasting ability is a poor test of model adequacy'

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Answer Option 9:

D. 'In-sample forecasting ability is a poor test of model adequacy'

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Question 14:

'The pacf is necessary for distinguishing between', A. 'An AR and an MA model', B. 'An AR and an ARMA model', C. 'An MA and an ARMA model', D. 'Different models from within the ARMA family'

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Answer Option 1:

A. 'An AR and an MA model'

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Answer Option 2:

A. 'An AR and an MA model'

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Answer Option 3:

A. 'An AR and an MA model'

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Answer Option 4:

A. 'An AR and an MA model'

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Answer Option 5:

A. 'An AR and an MA model'

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Answer Option 6:

A. 'An AR and an MA model'

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Answer Option 7:

A. 'An AR and an MA model'

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Answer Option 8:

A. 'An AR and an MA model'

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Answer Option 9:

A. 'An AR and an MA model'

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Question 15:

'Negative residual autocorrelation is indicated by which one of the following?', A. 'A cyclical pattern in the residuals', B. 'An alternating pattern in the residuals', C. 'A complete randomness in the residuals', D.

'Residuals that are all close to zero'

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Answer Option 1:

B. 'An alternating pattern in the residuals'

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Answer Option 2:

B. 'An alternating pattern in the residuals'

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Answer Option 3:

B. 'An alternating pattern in the residuals'

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Answer Option 4:

B. 'An alternating pattern in the residuals'

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Answer Option 5:

B. 'An alternating pattern in the residuals'

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Answer Option 6:

B. 'An alternating pattern in the residuals'

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Answer Option 7:

B. 'An alternating pattern in the residuals'

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Answer Option 8:

B. 'An alternating pattern in the residuals'

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Answer Option 9:

B. 'An alternating pattern in the residuals'

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Question 16:

'Which of the following statements are true concerning a comparison between ARCH(q) and GARCH(1,1) models?

- i) The ARCH(q) model is likely to be the more parsimonious
- ii) The ARCH(q) model is the more likely to violate non-negativity constraints
- iii) The ARCH(q) model can allow for an infinite number of previous lags of squared returns to affect the current conditional variance
- iv) The GARCH(1,1) model will usually be sufficient to capture all of the dependence in the conditional variance', A. '(i) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

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Answer Option 1:

B. '(i) and (iii) only'

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Answer Option 2:

A. '(i) and (iii) only'

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Answer Option 3:

B. '(i) and (iii) only'

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Answer Option 4:

B. '(i) and (iii) only'

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Answer Option 5:

B. '(i) and (iii) only'

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Answer Option 6:

B. '(i) and (iii) only'

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Answer Option 7:

B. '(i) and (iii) only'

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Answer Option 8:

B. '(i) and (iii) only'

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Answer Option 9:

B. '(i) and (iii) only'

=====

Question 17:

'Which of the following statements are true concerning a triangular or recursive system?

i) The parameters can be validly estimated using separate applications of OLS to each equation

ii) The independent variables may be correlated with the error terms in other equations

iii) An application of 2SLS would lead to unbiased but inefficient parameter estimates

iv) The independent variables may be correlated with the error terms in the equations

in which they appear as independent variables', A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 1:

B. '(i) and (iii) only'

=====

Answer Option 2:

B. '(i) and (iii) only'

=====

Answer Option 3:

B. '(i) and (iii) only'

=====

Answer Option 4:

B. '(i) and (iii) only'

=====

Answer Option 5:

B. '(i) and (iii) only'

=====

Answer Option 6:

The correct answer is B. '(i) and (iii) only'.

In a triangular or recursive system, it is possible to estimate the parameters using separate applications of Ordinary Least Squares (OLS) to each equation. So, statement (i) is true.

The independent variables may be correlated with the error terms in other equations, but not in the equations in which they appear as independent variables. Therefore, statement (ii) is true and statement (iv) is false.

The application of Two-Stage Least Squares (2SLS) would indeed lead to unbiased but inefficient parameter estimates. In the context of system of equations, 2SLS is typically less efficient than Three-Stage Least Squares (3SLS). Therefore, statement (iii) is true.

In conclusion, the statements (i), (ii), and (iii) are true, but statement (iv) is false.

=====

Answer Option 7:

In a triangular or recursive system:

i) The parameters can be validly estimated using separate applications of OLS to each equation. This is because in a recursive system, the equations can be ordered such that each dependent variable is a function of the variables in preceding equations and not those in subsequent equations.

ii) The independent variables may be correlated with the error terms in other equations. This is true because the errors in one equation can be correlated with the independent variables in another equation in a recursive system.

iii) An application of 2SLS would lead to unbiased but inefficient parameter estimates. This is because 2SLS is a method used to address endogeneity, a problem that does not exist in a recursive system.

iv) The independent variables may be correlated with the error terms in the equations in which they appear as independent variables. This statement is false because in a recursive system, the variables are not correlated with the error terms in their own equations. If they were, it would violate one of the assumptions of the ordinary least squares (OLS) method, which is used in the estimation of recursive systems.

So, the correct answer is B. '(i) and (iii) only'.

=====

Answer Option 8:

A triangular or recursive system is a system in which the dependent variable in any equation is not a determinant of the independent variables in any other equation.

i) The parameters can be validly estimated using separate applications of OLS to each equation: True, because in a triangular system, OLS can be applied to each equation separately without biasing the estimators.

ii) The independent variables may be correlated with the error terms in other equations: True, the independent variables in one equation might be correlated with the error term in another equation in the system.

iii) An application of 2SLS would lead to unbiased but inefficient parameter estimates: True, 2SLS is generally less efficient than maximum likelihood estimation for estimating the parameters of simultaneous equation models, but it gives unbiased estimates.

iv) The independent variables may be correlated with the error terms in the equations in which they appear as independent variables: False, this would violate one of the key assumptions of the classical regression model, which is that the error term is uncorrelated with the independent variables.

So, the correct answer is C. '(i), (ii), and (iii) only'.

\*\*\*\*\*

Answer Option 9:

The correct answer is B. '(i) and (iii) only'.

(i) In a triangular or recursive system, the parameters can indeed be validly estimated using separate applications of ordinary least squares (OLS) to each equation. This is because in such systems, the error terms in different equations are uncorrelated, which is a key assumption of the OLS method.

(ii) While the independent variables may be correlated with the error terms in other equations, this does not generally cause problems for the estimation of parameters in a triangular or recursive system.

(iii) An application of 2SLS (Two-Stage Least Squares) would lead to unbiased but inefficient parameter estimates. Because 2SLS is designed to handle simultaneous equation models where endogeneity is a problem, using it in a triangular or recursive system where endogeneity does not exist will lead to inefficiency.

(iv) The independent variables should not be correlated with the error terms in the equations in which they appear as independent variables. This would violate the key assumption of no endogeneity in the regression models, leading to biased and inconsistent estimators. Therefore, this statement is not true for a triangular or recursive system.

\*\*\*\*\*

Question 18:

'Which one of the following statements best describes the algebraic representation of the fitted regression line?', A.  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t + \hat{u}_t$ , B.  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$ , C.  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t + u_t$ , D.  $y_t = \hat{\alpha} + \hat{\beta}x_t + \hat{u}_t$

=====

Answer Option 1:

B.  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$

=====

Answer Option 2:

B.  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$

=====

Answer Option 3:

B.  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$

=====

Answer Option 4:

B.  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$

=====

Answer Option 5:

The best algebraic representation of the fitted regression line is  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$ . Final Answer: B.

=====

Answer Option 6:

The correct algebraic representation of the fitted regression line is given by  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$ . This line is also known as the line of best fit. It is an estimation of the true regression line.

The hats on the  $y$ ,  $\alpha$ , and  $\beta$  denote estimated values. Therefore, the correct answer is B.

=====

Answer Option 7:

The best description of the algebraic representation of the fitted regression line is B.  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$ . The fitted regression line is a prediction line where  $\hat{y}$  is the predicted value of the dependent variable,  $\hat{\alpha}$  is the estimated intercept, and  $\hat{\beta}$  is the estimated slope. The residuals ( $u_t$  or  $\hat{u}_t$ ) are not part of the fitted line, they represent the difference between the observed and predicted values.

=====

Answer Option 8:

The correct statement is B.  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$ . This equation represents the estimated (or "fitted") regression line, where  $\hat{y}_t$  is the predicted value of the dependent variable,  $\hat{\alpha}$  is the estimated y-intercept,  $\hat{\beta}$  is the estimated slope, and  $x_t$  is the independent variable. The other options include a term for the error, which is not included in the equation of the fitted line.

=====

Answer Option 9:

The correct answer is B.  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$ . The fitted regression line is an estimate of the relationship between the dependent variable ( $y$ ) and one or more independent variables ( $x$ ). It is represented by the equation  $\hat{y}_t = \hat{\alpha} + \hat{\beta}x_t$ , where  $\hat{y}_t$  is the predicted value of the dependent variable,  $\hat{\alpha}$  is the estimated y-intercept,  $\hat{\beta}$  is the estimated slope, and  $x_t$  is the independent variable. There is no error term in the fitted regression line because it represents the best fit to the data.

=====

Question 19:

What are the dimensions of  $\hat{u}^t \hat{u}$ ? A.  $T \times k$ , B.  $T \times 1$ , C.  $k \times 1$ , D.  $1 \times 1$

=====

Answer Option 1:

The dimension of the resulting matrix from the matrix multiplication operation  $\hat{u}^t \hat{u}$  would be a scalar, i.e.,  $1 \times 1$ . So, the correct answer is D.  $1 \times 1$ .

\*\*\*\*\*

Answer Option 2:

$\hat{u}^t \hat{u}$  is a multiplication of a transposed vector with the original vector. The result of a vector transposed by a vector multiplication is a scalar or a single number, so the result has a dimension of  $1 \times 1$ . Final Answer: D

\*\*\*\*\*

Answer Option 3:

Here,  $\hat{u}^t$  represents the transpose of the vector  $\hat{u}$  and  $\hat{u}$  is the vector itself. The product of a transposed vector and the original vector results in a scalar, so the dimensions are  $\boxed{1 \times 1}$ . Final answer: D

\*\*\*\*\*

Answer Option 4:

The expression  $\hat{u}^t \hat{u}$  represents the multiplication of the transpose of a vector  $\hat{u}^t$  by the vector itself  $\hat{u}$ . Since the operation involves a single vector and its transpose, the result is a scalar, which in matrix terms is a  $1 \times 1$  matrix. Final Answer: D

\*\*\*\*\*

Answer Option 5:

$\hat{u}^t$  is a  $1 \times k$  vector and  $\hat{u}$  is a  $k \times 1$  vector. When we multiply these two vectors, we get a  $1 \times 1$  matrix (or scalar). Therefore, the dimensions of  $\hat{u}^t \hat{u}$  are  $1 \times 1$ . Final Answer: D

\*\*\*\*\*

Answer Option 6:

$\hat{u}^t \hat{u}$  is a multiplication operation of a transposed vector and the original vector. In this case the resulting operation will yield a scalar quantity, so the dimensions will be  $1 \times 1$ . Final Answer: D

\*\*\*\*\*

Answer Option 7:

$\hat{u}^t \hat{u}$  is a multiplication of a transposed vector by the vector itself. Given that  $\hat{u}$  is a column vector of dimensions  $k \times 1$ , after transposing, it becomes  $1 \times k$ . Therefore, the multiplication  $\hat{u}^t \hat{u}$  results in a scalar, implying it is a  $1 \times 1$  dimension. Final answer: D

\*\*\*\*\*

Answer Option 8:

$\hat{u}^t \hat{u}$  represents the dot product of a vector  $\hat{u}$  with itself. The dot product of two vectors always results in a scalar, which can be considered as a matrix of dimensions  $1 \times 1$ . So, the correct answer is D.  $1 \times 1$ .

\*\*\*\*\*

Answer Option 9:

The dimensions of  $\hat{u}^t \hat{u}$  depend on the dimensions of  $\hat{u}$ . Let's say  $\hat{u}$  has dimensions  $k \times 1$  which is a column vector. Then,  $\hat{u}^t$  would have dimensions  $1 \times k$  and the product  $\hat{u}^t \hat{u}$  would result in a  $1 \times 1$  matrix or scalar. Hence, the final answer is D.  $1 \times 1$ .

\*\*\*\*\*

Question 20:

The characteristic roots of the MA process

$$y_t = -3u_{t-1} + u_{t-2} + u_t$$

are', A. '1 and 2', B. '1 and 0.5', C. '2 and -0.5', D. '1 and -3'

=====

Answer Option 1:

The characteristic equation of the given MA process is given by  $r^2 + 3r + 1 = 0$ . The roots of this equation are  $r = \frac{-3 \pm \sqrt{9 - 4}}{2}$ , which simplifies to  $r = -1 \pm \sqrt{2}$ . Thus, the characteristic roots of the MA process are  $\boxed{1}$  and  $\boxed{-3}$ . Final answer: D.

\*\*\*\*\*

Answer Option 2:

The MA process can be rewritten in the form of a characteristic equation:

$$y_t - 3y_{t-1} + y_{t-2} = 0$$

The characteristic equation is  $r^2 - 3r + 1 = 0$ . Solving this equation for  $r$  gives the characteristic roots.

Using the quadratic formula, we find that the roots are

$$r = \frac{3 \pm \sqrt{9 - 4}}{2} = \frac{3 \pm \sqrt{5}}{2}$$

So, the roots are not integers or simple fractions, which means none of the offered answers A, B, C, or D can be correct. Please check the problem formulation or the answer choices.

\*\*\*\*\*

Answer Option 3:

The characteristic roots of the Moving Average (MA) process are found by setting up and solving the characteristic equation. The characteristic equation is obtained by replacing each  $u_{t-i}$  with  $r^i$  in the original equation and setting equal to zero. For this process, the characteristic equation would be  $r^2 + 3r + 1 = 0$ . Solving this quadratic equation, we obtain  $r = -1/2$  and  $r = -2$ . However, in MA processes we take the absolute value of the roots, so the roots are 0.5 and 2. Therefore, the correct answer is B. '1 and 0.5'.

\*\*\*\*\*

Answer Option 4:

The characteristic equation of the given MA process is  $r^2 + 3r - 1 = 0$ . By applying the quadratic formula, the roots of this equation are  $r = \frac{-3 \pm \sqrt{9 - 4(-1)}}{2} = \frac{-3 \pm \sqrt{13}}{2}$ . Therefore, the roots are  $r = -3/2 \pm \sqrt{13}/2$ . Since the options are given as simple fractions or integers, we convert these roots to decimals, yielding approximately  $r = 0.302, -3.302$ .

Therefore, the correct answer is the one closest to these values, which is  $\boxed{1 \text{ and } -3}$ . Final Answer: D.

\*\*\*\*\*

Answer Option 5:

We first rewrite the process into a characteristic equation:

$$y_t - (-3)y_{t-1} + y_{t-2} = u_t$$

which is:

$$y_{t-2} - 3y_{t-1} + y_t = 0$$

Now we can form a characteristic equation by replacing  $y_{t-k}$  with  $r^k$ :

$$r^2 - 3r + 1 = 0$$

By using the quadratic formula, the roots are:

$$r = \frac{3 \pm \sqrt{9 - 4}}{2} = \frac{3 \pm \sqrt{5}}{2}$$

So, the characteristic roots are not given in the options. There seems to be a mistake in the provided options.

\*\*\*\*\*

Answer Option 6:

The MA process can be rewritten as  $y_t - 3u_{t-1} + u_{t-2} = u_t$ .

That is reminiscent of a second order homogeneous difference equation and to identify the characteristic roots, we can write the characteristic equation as follows:

$$r^2 - 3r + 1 = 0$$

Solving this quadratic equation for  $r$  gives us the roots:

$$r = \frac{3 \pm \sqrt{9 - 4}}{2} = \frac{3 \pm \sqrt{5}}{2}$$

Therefore, the characteristic roots of the MA process are not provided in the answer choices.

\*\*\*\*\*

Answer Option 7:

The characteristic equation of the given moving average (MA) process is obtained by replacing  $u_t$  with  $\lambda^2$ ,  $u_{t-1}$  with  $\lambda$ , and  $u_{t-2}$  with 1. This yields:

$$\lambda^2 - 3\lambda + 1 = 0$$

Solving this quadratic equation for  $\lambda$  (the roots of the equation), we find the characteristic roots to be:

$$\lambda = \frac{3 \pm \sqrt{9 - 4}}{2} = \frac{3 \pm \sqrt{5}}{2}$$

So the characteristic roots are not exactly integer or simple fractional values. Thus, none of the given options A, B, C, or D are correct.

\*\*\*\*\*

Answer Option 8:

The roots of the characteristic equation of the MA process can be found by setting the equation equal to zero and solving for the roots.

The equation is

$1 - \rho_1 B - \rho_2 B^2 = 0$ , where  $B$  is the backshift operator,  $\rho_1 = -3$ , and  $\rho_2 = 1$ .

Rewriting gives:

$$B^2 + 3B - 1 = 0$$

The roots of this quadratic equation are given by the formula  $B = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Here,  $a=1$ ,  $b=3$ , and  $c=-1$ .

Substituting these values in gives:

$$B = \frac{-3 \pm \sqrt{3^2 - 4 \cdot 1 \cdot (-1)}}{2 \cdot 1}$$

$$= \frac{-3 \pm \sqrt{13}}{2}$$

Therefore, the roots are  $B = 1$  and  $B = -0.5$ .

So the final answer is B: '1 and -0.5'

\*\*\*\*\*

Answer Option 9:

The characteristic roots of the Moving Average (MA) process are found by solving the characteristic equation. In this case, the characteristic equation for the given MA process  $y_t = -3u_{t-1} + u_{t-2} + u_t$  is

$$\theta^2 + 3\theta + 1 = 0,$$

where  $\theta$  is the characteristic root.

By using the quadratic formula  $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ , where  $a=1$ ,  $b=3$ , and  $c=1$  in this case, we get

$$\theta = \frac{-3 \pm \sqrt{3^2 - 4 \cdot 1 \cdot 1}}{2 \cdot 1} = \frac{-3 \pm \sqrt{5}}{2}.$$

So, the roots are  $\frac{-3 \pm \sqrt{5}}{2}$ .

None of the options matches these values, so there seems to be an error in the question or choices.

\*\*\*\*\*

Question 21:

'Which of the following is an equivalent expression for saying that the explanatory variable is "non-stochastic"?', A. 'The explanatory variable is partly random', B. 'The explanatory variable is fixed in repeated samples', C. 'The explanatory variable is correlated with the errors', D. 'The explanatory variable always has a value of one'

=====

Answer Option 1:

B. 'The explanatory variable is fixed in repeated samples'

=====

Answer Option 2:

B. 'The explanatory variable is fixed in repeated samples'

=====

Answer Option 3:

B. 'The explanatory variable is fixed in repeated samples'

=====

Answer Option 4:

B. 'The explanatory variable is fixed in repeated samples'

=====

Answer Option 5:

B. 'The explanatory variable is fixed in repeated samples'

=====

Answer Option 6:

B. 'The explanatory variable is fixed in repeated samples'

=====

Answer Option 7:

B. 'The explanatory variable is fixed in repeated samples'

=====

Answer Option 8:

The explanatory variable being "non-stochastic" means that it is not random and does not change. So, the equivalent statement is: B. 'The explanatory variable is fixed in repeated samples'.

=====

Answer Option 9:

The correct answer is B. 'The explanatory variable is fixed in repeated samples'. A non-stochastic variable means that it is not random and remains the same across different samples. This is the definition of a fixed variable in statistics. Therefore, the correct option is B.

=====



Question 22:

'Suppose that the Durbin Watson test is applied to a regression containing two explanatory variables plus a constant with 50 data points. The test statistic takes a value of 1.53. What is the appropriate conclusion?', A. 'Residuals appear to be positively autocorrelated', B. 'Residuals appear to be negatively autocorrelated', C. 'Residuals appear not to be autocorrelated', D. 'The test result is inconclusive'

=====

Answer Option 1:

A. 'Residuals appear to be positively autocorrelated'

=====

Answer Option 2:

A. 'Residuals appear to be positively autocorrelated'

=====

Answer Option 3:

A. 'Residuals appear to be positively autocorrelated'

=====

Answer Option 4:

A. 'Residuals appear to be positively autocorrelated'

=====

Answer Option 5:

A. 'Residuals appear to be positively autocorrelated'

=====

Answer Option 6:

A. 'Residuals appear to be positively autocorrelated'

=====

Answer Option 7:

A. 'Residuals appear to be positively autocorrelated'

=====

Answer Option 8:

The Durbin-Watson statistic ranges from 0 to 4. A value of 2 suggests that there is no autocorrelation in the data. Values from 0 to less than 2 suggest positive autocorrelation and values from more than 2 to 4 suggest negative autocorrelation. Therefore, a value of 1.53 suggests that the residuals are positively autocorrelated. Final Answer: A. 'Residuals appear to be positively autocorrelated'

=====

Answer Option 9:

The Durbin Watson test's null hypothesis is that there is no serial correlation in the residuals. The test statistic typically ranges from 0 to 4. A value of 2 suggests no autocorrelation. Values less than 2 suggest positive autocorrelation, and values greater than 2 suggest negative autocorrelation. A value of 1.53 would suggest positive autocorrelation, which means there may be a pattern in the residuals. So, the appropriate conclusion is: A. 'Residuals appear to be positively autocorrelated'

=====

Question 23:

'If OLS is used in the presence of autocorrelation, which of the following will be likely consequences?

- i) Coefficient estimates may be misleading
- ii) Hypothesis tests could reach the wrong conclusions
- iii) Forecasts made from the model could be biased
- iv) Standard errors may inappropriate', A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 1:

D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 2:

D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 3:

Autocorrelation, the correlation of a variable with itself over successive time intervals, can lead to misleading coefficient estimates, inappropriate standard errors, incorrect conclusions from hypothesis tests, and biased forecasts. Therefore, all of the options (i), (ii), (iii), and (iv) are likely consequences of using OLS in the presence of autocorrelation. Final answer: D

=====

Answer Option 4:

When ordinary least squares (OLS) regression is used, and autocorrelation (a relationship between values of the same variable from different time periods) is present, it can affect the properties of the estimates and tests.

- i) Coefficient estimates may be biased or inefficient, which can be misleading.
- ii) Hypothesis tests could be invalid because the standard errors are incorrect, leading to wrong conclusions.
- iii) Autocorrelation can bias the forecasts made from the model.
- iv) Autocorrelation can cause the standard errors of the coefficients to be underestimated or overestimated, which can lead to incorrect inferences.

Hence all four options are consequences of autocorrelation when using OLS. Final answer: D.

=====

Answer Option 5:

Ordinary Least Squares (OLS) assumes that errors are independently and identically distributed. If there is autocorrelation (also known as serial correlation), this assumption is violated, which can lead to several consequences:

- i) Coefficient estimates may be misleading - TRUE. Autocorrelation can bias the OLS estimates, making them inefficient and leading to misleading conclusions about the relationship between variables.
- ii) Hypothesis tests could reach the wrong conclusions - TRUE. If autocorrelation is present, standard errors could be underestimated, increasing the chance of rejecting the null hypothesis when it's true (Type I error).
- iii) Forecasts made from the model could be biased - TRUE. Due to the inefficient estimates of the coefficients, forecasts will also be inefficient and potentially biased.
- iv) Standard errors may be inappropriate - TRUE. When autocorrelation is present, the standard errors are likely to be underestimated, which can lead to confidence intervals that are too narrow and hypothesis tests that are overly optimistic.

Therefore, all the given options are correct. The correct answer is D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 6:

D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 7:

The presence of autocorrelation in a dataset violates one of the key assumptions of OLS (Ordinary Least Squares), which is that the error terms are uncorrelated. This can lead to several issues:

- i) Coefficient estimates may be misleading - TRUE. The OLS coefficient estimates are still unbiased in the presence of autocorrelation, but they are no longer the Best Linear Unbiased Estimates (BLUE).
- ii) Hypothesis tests could reach the wrong conclusions - TRUE. The presence of autocorrelation affects the standard errors of the coefficient estimates, leading to unreliable hypothesis tests.
- iii) Forecasts made from the model could be biased - FALSE. Autocorrelation does not lead to biased forecasts, though it may affect the efficiency of these forecasts.
- iv) Standard errors may be inappropriate - TRUE. In the presence of autocorrelation, the standard errors of the coefficient estimates are no longer reliable, leading to incorrect inferences about the significance of the predictors.

So, the correct answer is A. '(ii) and (iv) only'.

=====

Answer Option 8:

Autocorrelation in the residuals of a regression model can have a number of negative effects, including unreliable coefficient estimates, inappropriate standard errors that could lead to wrong conclusions in hypothesis tests, and biased forecasts from the model. Thus, all of the stated consequences can occur. So, the correct answer is D. '(i), (ii), (iii), and (iv)'.

=====

Answer Option 9:

Autocorrelation refers to a situation where the errors (residuals) from your model are correlated. In other words, the error for one observation depends on the errors for other observations. When this happens, it violates an assumption of the Ordinary Least Squares (OLS) method that the observations are independent of each other. This can lead to:

- i) Coefficient estimates being biased, inconsistent or inefficient, making them misleading.
- ii) Standard errors of the coefficient estimates being too small or too large, leading to wrong conclusions in hypothesis tests.
- iii) Predictions made from the model can be less precise or biased due to the underestimated or overestimated regression coefficients.
- iv) Standard errors may be underestimated or overestimated, making them inappropriate for constructing confidence intervals or conducting hypothesis tests.

So all four consequences are likely, so the correct answer is D. '(i), (ii), (iii), and (iv)'

\*\*\*\*\*

Question 24:

'What will be the properties of the OLS estimator in the presence of multicollinearity?', A. 'It will be consistent, unbiased and efficient', B. 'It will be consistent and unbiased but not efficient', C. 'It will be consistent but not unbiased', D. 'It will not be consistent'

=====

Answer Option 1:

B. 'It will be consistent and unbiased but not efficient'

\*\*\*\*\*

Answer Option 2:

B. 'It will be consistent and unbiased but not efficient'

\*\*\*\*\*

Answer Option 3:

B. 'It will be consistent and unbiased but not efficient'

\*\*\*\*\*

Answer Option 4:

B. 'It will be consistent and unbiased but not efficient'

\*\*\*\*\*

Answer Option 5:

B. 'It will be consistent and unbiased but not efficient'

\*\*\*\*\*

Answer Option 6:

B. 'It will be consistent and unbiased but not efficient'

\*\*\*\*\*

Answer Option 7:

B. 'It will be consistent and unbiased but not efficient'

\*\*\*\*\*

Answer Option 8:

B. 'It will be consistent and unbiased but not efficient'

\*\*\*\*\*

Answer Option 9:

B. 'It will be consistent and unbiased but not efficient'

\*\*\*\*\*

Question 25:

'Which one of the following would NOT be a consequence of using non-stationary data in levels form?', A. 'The regression  $R^2$  may be spuriously high', B. 'Test statistics may not follow standard distributions', C. 'Statistical inferences may be invalid', D. 'Parameter estimates may be biased'

=====

Answer Option 1:

D. 'Parameter estimates may be biased'

\*\*\*\*\*

Answer Option 2:

D. 'Parameter estimates may be biased'

\*\*\*\*\*

Answer Option 3:

D. 'Parameter estimates may be biased'

\*\*\*\*\*

Answer Option 4:

D. 'Parameter estimates may be biased'

\*\*\*\*\*

Answer Option 5:

D. 'Parameter estimates may be biased'

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Answer Option 6:

D. 'Parameter estimates may be biased'

\*\*\*\*\*

Answer Option 7:

D. 'Parameter estimates may be biased'

\*\*\*\*\*

Answer Option 8:

D. 'Parameter estimates may be biased'

\*\*\*\*\*

Answer Option 9:

D. 'Parameter estimates may be biased'

\*\*\*\*\*

Question 26:

'If a series,  $y$ , follows a random walk, what is the optimal one-step ahead forecast of  $y$ ?' A. 'The current value of  $y$ ', B. 'Zero', C. 'One', D. 'The average value of  $y$  over the in-sample period'

=====

Answer Option 1:

A. 'The current value of  $y$ '

=====

Answer Option 2:

A. 'The current value of  $y$ '

=====

Answer Option 3:

A. 'The current value of  $y$ '

=====

Answer Option 4:

A. 'The current value of  $y$ '

=====

Answer Option 5:

A. 'The current value of  $y$ '

=====

Answer Option 6:

A. 'The current value of  $y$ '

=====

Answer Option 7:

A. 'The current value of  $y$ '

=====

Answer Option 8:

A. 'The current value of  $y$ '

=====

Answer Option 9:

A. 'The current value of  $y$ '

=====

Question 27:

'The order condition is', A. 'A necessary and sufficient condition for identification', B. 'A necessary but not sufficient condition for identification', C. 'A sufficient but not necessary condition for identification', D.

'A condition that is neither necessary nor sufficient for identification'

=====

Answer Option 1:

B. 'A necessary but not sufficient condition for identification'

\*\*\*\*\*

Answer Option 2:

A. 'A necessary and sufficient condition for identification'

\*\*\*\*\*

Answer Option 3:

B. 'A necessary but not sufficient condition for identification'

\*\*\*\*\*

Answer Option 4:

B. 'A necessary but not sufficient condition for identification'

\*\*\*\*\*

Answer Option 5:

B. 'A necessary but not sufficient condition for identification'

\*\*\*\*\*

Answer Option 6:

A. 'A necessary and sufficient condition for identification'

\*\*\*\*\*

Answer Option 7:

B. 'A necessary but not sufficient condition for identification'

\*\*\*\*\*

Answer Option 8:

B. 'A necessary but not sufficient condition for identification'

\*\*\*\*\*

Answer Option 9:

B. 'A necessary but not sufficient condition for identification'

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Question 28:

'If an estimator is said to have minimum variance, which of the following statements is NOT implied?'. A. 'The probability that the estimate is a long way away from its true value is minimised', B. 'The estimator is efficient', C. 'Such an estimator would be termed "best"', D. 'Such an estimator will always be unbiased'

=====

Answer Option 1:

D. 'Such an estimator will always be unbiased'

=====

Answer Option 2:

D. 'Such an estimator will always be unbiased'

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Answer Option 3:

D. 'Such an estimator will always be unbiased'

=====

Answer Option 4:

D. 'Such an estimator will always be unbiased'

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Answer Option 5:

D. 'Such an estimator will always be unbiased'

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Answer Option 6:

D. 'Such an estimator will always be unbiased'

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Answer Option 7:

D. 'Such an estimator will always be unbiased'

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Answer Option 8:

D. 'Such an estimator will always be unbiased'

=====

Answer Option 9:

The statement D. 'Such an estimator will always be unbiased' is NOT necessarily implied by an estimator having minimum variance. An estimator can have minimum variance and yet be biased. The concept of bias refers to whether the expected value of the estimator equals the true parameter value in the population, while variance refers to the variability of the estimator around its expected value. An estimator can have low variability (i.e., minimum variance), but if it systematically overestimates or underestimates the true parameter value, it is biased.

=====



Question 29:

'Which of the following are disadvantages of the Dickey-Fuller / Engle-Granger approach to testing for cointegration and modelling cointegrating relationships?

- i) Only one cointegrating relationship can be estimated
  - ii) Particularly for small samples. There is a high chance of the tests suggesting that variables are not cointegrated when they are
  - iii) It is not possible to make inferences on the cointegrating regression
  - iv) The procedure forces the researcher to specify which is the dependent variable and which are the independent variables.;
- A. '(i) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 1:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 2:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 3:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 4:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 5:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 6:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 7:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 8:

D. '(i), (ii), (iii), and (iv)'

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Answer Option 9:

D. '(i), (ii), (iii), and (iv)'

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Question 30:

'Which of the following statements is true concerning the population regression function (PRF) and sample regression function (SRF)?', A. 'The PRF is the estimated model', B. 'The PRF is used to infer likely values of the SRF', C. 'Whether the model is good can be determined by comparing the SRF and the PRF', D. 'The PRF is a description of the process thought to be generating the data.'

=====

Answer Option 1:

D. 'The PRF is a description of the process thought to be generating the data.'

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Answer Option 2:

D. 'The PRF is a description of the process thought to be generating the data.'

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Answer Option 3:

D. 'The PRF is a description of the process thought to be generating the data.'

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Answer Option 4:

D. 'The PRF is a description of the process thought to be generating the data.'

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Answer Option 5:

D. 'The PRF is a description of the process thought to be generating the data.'

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Answer Option 6:

D. 'The PRF is a description of the process thought to be generating the data.'

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Answer Option 7:

D. 'The PRF is a description of the process thought to be generating the data.'

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Answer Option 8:

D. 'The PRF is a description of the process thought to be generating the data.'

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Answer Option 9:

D. 'The PRF is a description of the process thought to be generating the data.'

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Question 31:

'Which one of the following is a disadvantage of the general to specific or "LSE" ("Hendry") approach to building econometric models, relative to the specific to general approach?', A. 'Some variables may be excluded at the first stage leading to coefficient biases', B. 'The final model may lack theoretical interpretation', C. 'The final model may be statistically inadequate', D. 'If the initial model is mis-specified, all subsequent steps will be invalid.'

=====

Answer Option 1:

A. 'Some variables may be excluded at the first stage leading to coefficient biases'

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Answer Option 2:

A. 'Some variables may be excluded at the first stage leading to coefficient biases'

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Answer Option 3:

A. 'Some variables may be excluded at the first stage leading to coefficient biases'

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Answer Option 4:

A. 'Some variables may be excluded at the first stage leading to coefficient biases'

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Answer Option 5:

A. 'Some variables may be excluded at the first stage leading to coefficient biases'

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Answer Option 6:

A. 'Some variables may be excluded at the first stage leading to coefficient biases'

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Answer Option 7:

A. 'Some variables may be excluded at the first stage leading to coefficient biases'

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Answer Option 8:

A. 'Some variables may be excluded at the first stage leading to coefficient biases'

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Answer Option 9:

A. 'Some variables may be excluded at the first stage leading to coefficient biases'

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Question 32:

'Which of the following statements are true concerning maximum likelihood (ML) estimation in the context of GARCH models?

- i) Maximum likelihood estimation selects the parameter values that maximise the probability that we would have actually observed the values of the series  $y$  that we actually did.
- ii) GARCH models can only be estimated by ML and not by OLS
- iii) For estimation of a standard linear model (with no GARCH), the OLS and ML estimates for the slope and intercept parameters will be identical but the estimator for the variance of the disturbances is slightly different
- iv) Most computer packages use numerical procedures to estimate GARCH models rather than a set of analytical formulae', A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

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Answer Option 1:

B. '(i) and (iii) only'

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Answer Option 2:

B. '(i) and (iii) only'

=====

Answer Option 3:

B. '(i) and (iii) only'

=====

Answer Option 4:

B. '(i) and (iii) only'

=====

Answer Option 5:

B. '(i) and (iii) only'

=====

Answer Option 6:

The correct answer is B. '(i) and (iii) only'. Statement i) is a description of maximum likelihood estimation, which is not specific to GARCH models. The statement iii) is also true - in a standard linear model without GARCH, the OLS and ML estimates for the slope and intercept will be identical, but the estimator for the variance of the disturbances will be different. However, statement ii) is false - GARCH models can be estimated by methods other than ML, such as quasi-maximum likelihood estimation (QMLE). Statement iv) is also false - while many computer packages use numerical procedures to estimate GARCH models, analytical formulae may also be used in some cases.

=====

Answer Option 7:

The correct answer is B. '(i) and (iii) only'.

Statement (i) is true. The maximum likelihood method indeed chooses the parameters that maximize the probability (likelihood) of observing the actual data.

Statement (ii) is false. GARCH models can be estimated by methods other than ML, including Quasi-Maximum Likelihood and Generalized Method of Moments.

Statement (iii) is true. For a standard linear regression model (without GARCH), both OLS and ML will produce identical estimates for the slope and intercept. However, the estimator for the variance of the disturbances would be slightly different.

Statement (iv) is also true. Most software packages do use numerical procedures to estimate GARCH models, as analytical solutions are often not available. However, the question asks for the false statements, so this is not included in the final answer.

=====

Answer Option 8:

(i) is true. Maximum likelihood estimation (MLE) selects parameters that maximize the likelihood that we would observe the data that we actually did.

(ii) is false. While MLE is commonly used to estimate GARCH models, other methods such as Quasi-Maximum Likelihood Estimation (QMLE) can also be used. It is not limited to ML and OLS is not generally used, but it doesn't mean it can only be estimated by ML.

(iii) is true. For a standard linear model, both OLS and MLE will produce the same estimates for the slope and intercept parameters under certain assumptions (like normally distributed errors).

(iv) is true. Most computer packages use numerical methods to estimate GARCH models because there are no closed-form solutions for the parameters of these models.

So, the correct options are (i), (iii), and (iv). Final Answer: B. '(i) and (iii) only'

=====

Answer Option 9:

The correct answer is B. '(i) and (iii) only'.

Statement i) is true. Maximum likelihood estimation indeed selects the parameter values that maximize the probability of observing the given data.

Statement ii) is false. GARCH models can be estimated using methods other than ML, such as Quasi-Maximum Likelihood Estimation (QMLE).

Statement iii) is true. For a standard linear model without GARCH, the OLS and ML estimates for the slope and intercept parameters are indeed identical. The estimator for the variance of the disturbances, however, is slightly different.

Statement iv) is generally true but not always. While many computer packages do use numerical procedures to estimate GARCH models, some do have the capacity to use analytical formulae as well.

However, this statement is not related to the maximum likelihood estimation in the context of GARCH models.

Hence, Option B is correct.

\*\*\*\*\*

Question 33:

'Including relevant lagged values of the dependent variable on the right hand side of a regression equation could lead to which one of the following?', A. 'Biased but consistent coefficient estimates', B. 'Biased and inconsistent coefficient estimates', C. 'Unbiased but inconsistent coefficient estimates', D. 'Unbiased and consistent but inefficient coefficient estimates.'

=====

Answer Option 1:

B. 'Biased and inconsistent coefficient estimates'

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Answer Option 2:

B. 'Biased and inconsistent coefficient estimates'

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Answer Option 3:

B. 'Biased and inconsistent coefficient estimates'

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Answer Option 4:

B. 'Biased and inconsistent coefficient estimates'

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Answer Option 5:

B. 'Biased and inconsistent coefficient estimates'

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Answer Option 6:

B. 'Biased and inconsistent coefficient estimates'

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Answer Option 7:

B. 'Biased and inconsistent coefficient estimates'

\*\*\*\*\*

Answer Option 8:

B. 'Biased and inconsistent coefficient estimates'

\*\*\*\*\*

Answer Option 9:

Including relevant lagged values of the dependent variable on the right hand side of a regression equation could lead to B. 'Biased and inconsistent coefficient estimates'. Final answer: B

\*\*\*\*\*

Question 34:

'Which one of the following factors is likely to lead to a relatively high degree of out-of-sample forecast accuracy?', A. 'A model that is based on financial theory', B. 'A model that contains many variables', C. 'A model whose dependent variable has recently exhibited a structural change', D. 'A model that is entirely statistical in nature with no room for judgmental modification of forecasts'

=====

Answer Option 1:

A. 'A model that is based on financial theory'

=====

Answer Option 2:

A. 'A model that is based on financial theory'

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Answer Option 3:

A. 'A model that is based on financial theory'

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Answer Option 4:

A. 'A model that is based on financial theory'

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Answer Option 5:

A. 'A model that is based on financial theory'

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Answer Option 6:

A. 'A model that is based on financial theory'

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Answer Option 7:

A. 'A model that is based on financial theory'

=====

Answer Option 8:

A. 'A model that is based on financial theory'

=====

Answer Option 9:

A. 'A model that is based on financial theory'

=====

Question 35:

'Which of the following are plausible approaches to dealing with residual autocorrelation?

- i) Take logarithms of each of the variables
  - ii) Add lagged values of the variables to the regression equation
  - iii) Use dummy variables to remove outlying observations
  - iv) Try a model in first differenced form rather than in levels.'
- A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 1:

A. '(ii) and (iv) only'  
=====

Answer Option 2:

A. '(ii) and (iv) only'  
=====

Answer Option 3:

A. '(ii) and (iv) only'  
=====

Answer Option 4:

A. '(ii) and (iv) only'  
=====

Answer Option 5:

A. '(ii) and (iv) only'  
=====

Answer Option 6:

A. '(ii) and (iv) only'  
=====

Answer Option 7:

A. '(ii) and (iv) only'  
=====

Answer Option 8:

A. '(ii) and (iv) only'  
=====

Answer Option 9:

A. '(ii) and (iv) only'  
=====



Question 36:

'For an autoregressive process to be considered stationary', A. 'The roots of the characteristic equation must all lie inside the unit circle', B. 'The roots of the characteristic equation must all lie on the unit circle', C. 'The roots of the characteristic equation must all lie outside the unit circle', D. 'The roots of the characteristic equation must all be less than one in absolute value'

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Answer Option 1:

A. 'The roots of the characteristic equation must all lie inside the unit circle'

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Answer Option 2:

A. 'The roots of the characteristic equation must all lie inside the unit circle'

\*\*\*\*\*

Answer Option 3:

A. 'The roots of the characteristic equation must all lie inside the unit circle'

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Answer Option 4:

A. 'The roots of the characteristic equation must all lie inside the unit circle'

\*\*\*\*\*

Answer Option 5:

A. 'The roots of the characteristic equation must all lie inside the unit circle'

\*\*\*\*\*

Answer Option 6:

A. 'The roots of the characteristic equation must all lie inside the unit circle'

\*\*\*\*\*

Answer Option 7:

A. 'The roots of the characteristic equation must all lie inside the unit circle'

\*\*\*\*\*

Answer Option 8:

A. 'The roots of the characteristic equation must all lie inside the unit circle'

\*\*\*\*\*

Answer Option 9:

A. 'The roots of the characteristic equation must all lie inside the unit circle'

\*\*\*\*\*

Question 37:

'Which of the following statements are true concerning information criteria?

(i) Adjusted R-squared is an information criterion

(ii) If the residual sum of squares falls when an additional term is added, the value of the information criterion will fall

(iii) Akaike's information criterion always leads to model orders that are at least as large as those of Schwarz's information criterion

(iv) Akaike's information criterion is consistent', A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 1:

B. '(i) and (iii) only'

=====

Answer Option 2:

B. '(i) and (iii) only'

=====

Answer Option 3:

B. '(i) and (iii) only'

=====

Answer Option 4:

B. '(i) and (iii) only'

=====

Answer Option 5:

B. '(i) and (iii) only'

=====

Answer Option 6:

B. '(i) and (iii) only'

=====

Answer Option 7:

B. '(i) and (iii) only'

=====

Answer Option 8:

B. '(i) and (iii) only'

=====

Answer Option 9:

Answer: B. '(i) and (iii) only'.

Explanation:

(i) Adjusted R-squared is an information criterion - True. The Adjusted R-squared takes into account the number of predictors in the model and adjusts the R-squared accordingly. Therefore, it is a type of information criterion.

(ii) If the residual sum of squares falls when an additional term is added, the value of the information criterion will fall - False. When an additional term is added, the complexity of the model increases. While the fit might improve (decrease in residual sum of squares), the information criteria, which penalize model complexity, might increase.

(iii) Akaike's information criterion always leads to model orders that are at least as large as those of Schwarz's information criterion - True. Akaike's information criterion (AIC) tends to select larger models than the Bayesian information criterion (BIC, also known as Schwarz's information criterion), because the penalty term for complexity is smaller in AIC than in BIC.

(iv) Akaike's information criterion is consistent - False. The Akaike's information criterion is not consistent, meaning that it doesn't always choose the correct model as the number of observations goes to infinity. It tends to overfit because it's biased towards selecting more complex models. This is in contrast to the BIC, which is consistent.

=====

Question 38:

The "within transform" involves', A. 'Taking the average values of the variables', B. 'Subtracting the mean of each entity away from each observation on that entity', C. 'Estimating a panel data model using least squares dummy variables', D. 'Using both time dummies and cross-sectional dummies in a fixed effects panel model'

=====

Answer Option 1:

B. 'Subtracting the mean of each entity away from each observation on that entity'

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Answer Option 2:

B. 'Subtracting the mean of each entity away from each observation on that entity'

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Answer Option 3:

B. 'Subtracting the mean of each entity away from each observation on that entity'

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Answer Option 4:

B. 'Subtracting the mean of each entity away from each observation on that entity'

\*\*\*\*\*

Answer Option 5:

B. 'Subtracting the mean of each entity away from each observation on that entity'

\*\*\*\*\*

Answer Option 6:

B. 'Subtracting the mean of each entity away from each observation on that entity'

\*\*\*\*\*

Answer Option 7:

B. 'Subtracting the mean of each entity away from each observation on that entity'

\*\*\*\*\*

Answer Option 8:

B. 'Subtracting the mean of each entity away from each observation on that entity'

\*\*\*\*\*

Answer Option 9:

B. 'Subtracting the mean of each entity away from each observation on that entity'

\*\*\*\*\*

Question 39:

The purpose of "augmenting" the Dickey-Fuller test regression is to, A. 'Ensure that there is no heteroscedasticity in the test regression residuals.', B. 'Ensure that the test regression residuals are normally distributed', C. 'Ensure that there is no autocorrelation in the test regression residuals', D. 'Ensure that all of the non-stationarity is taken into account.'

=====

Answer Option 1:

C. 'Ensure that there is no autocorrelation in the test regression residuals'

\*\*\*\*\*

Answer Option 2:

C. 'Ensure that there is no autocorrelation in the test regression residuals'

\*\*\*\*\*

Answer Option 3:

C. 'Ensure that there is no autocorrelation in the test regression residuals'

\*\*\*\*\*

Answer Option 4:

C. 'Ensure that there is no autocorrelation in the test regression residuals'

\*\*\*\*\*

Answer Option 5:

C. 'Ensure that there is no autocorrelation in the test regression residuals'

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Answer Option 6:

C. 'Ensure that there is no autocorrelation in the test regression residuals'

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Answer Option 7:

C. 'Ensure that there is no autocorrelation in the test regression residuals'

\*\*\*\*\*

Answer Option 8:

C. 'Ensure that there is no autocorrelation in the test regression residuals'

\*\*\*\*\*

Answer Option 9:

The purpose of "augmenting" the Dickey-Fuller test regression is to C. 'Ensure that there is no autocorrelation in the test regression residuals'

\*\*\*\*\*

Question 40:

'If a series,  $y$ , follows a random walk with drift  $b$ , what is the optimal one-step ahead forecast of the change in  $y$ ?', A. 'The current value of  $y$ ', B. 'Zero', C. 'One', D. 'The average value of the change in  $y$  over the in-sample period'

=====

Answer Option 1:

B. 'Zero'

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Answer Option 2:

B. 'Zero'

\*\*\*\*\*

Answer Option 3:

D. 'The average value of the change in  $y$  over the in-sample period'

\*\*\*\*\*

Answer Option 4:

D. 'The average value of the change in  $y$  over the in-sample period'

\*\*\*\*\*

Answer Option 5:

D. 'The average value of the change in  $y$  over the in-sample period'

\*\*\*\*\*

Answer Option 6:

D. 'The average value of the change in  $y$  over the in-sample period'

\*\*\*\*\*

Answer Option 7:

In a random walk with drift, the optimal one-step ahead forecast of the change in the series is the drift term,  $b$ . Thus, the answer is B. 'Zero'.

\*\*\*\*\*

Answer Option 8:

The optimal one-step ahead forecast for the change in a series that follows a random walk with drift  $b$  is B. 'The drift parameter  $b$ '. The drift term represents the expected change in  $y$  at each step. Therefore, the best guess for the next change in  $y$  is the drift term,  $b$ .

\*\*\*\*\*

Answer Option 9:

D. 'The average value of the change in  $y$  over the in-sample period'

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Question 41:

'Which of the following are plausible approaches to dealing with a model that exhibits heteroscedasticity?

- i) Take logarithms of each of the variables
  - ii) Use suitably modified standard errors
  - iii) Use a generalised least squares procedure
  - iv) Add lagged values of the variables to the regression equation.'
- A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 1:

C. '(i), (ii), and (iii) only'

=====

Answer Option 2:

C. '(i), (ii), and (iii) only'

=====

Answer Option 3:

D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 4:

D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 5:

C. '(i), (ii), and (iii) only'

=====

Answer Option 6:

C. '(i), (ii), and (iii) only'

=====

Answer Option 7:

Heteroscedasticity is the presence of non-constant variance in the error terms of regression analysis. The common approaches to deal with heteroscedasticity are:

- i) Taking logarithms of each of the variables: This can stabilize the variance if the heteroscedasticity arises because of exponential growth in the dependent variable.
- ii) Using suitably modified standard errors: Robust standard errors can be used to correct for heteroscedasticity.
- iii) Using a generalized least squares procedure: Generalized least squares adjusts the model to account for the non-constant variance.
- iv) Adding lagged values of the variables to the regression equation: This is generally used to correct for autocorrelation (correlation of residuals in time series data), not heteroscedasticity.

So, the plausible approaches are (i), (ii) and (iii). Therefore, the right answer is C. '(i), (ii), and (iii) only'.

=====

Answer Option 8:

Heteroscedasticity, the phenomenon where the variability of a variable is unequal across the range of values of a second variable that predicts it, can be dealt with in several ways:

- i) Taking the logarithm of variables can help if the heteroscedasticity is associated with exponential growth. This can stabilize the variance by compressing the scale.
- ii) Modified standard errors, such as robust standard errors, can be used to produce more reliable estimates when there is heteroscedasticity.
- iii) Generalized least squares (GLS) is a technique that can handle heteroscedasticity by transforming the data in a way that removes the heteroscedasticity.
- iv) Adding lagged values of variables to the regression equation is often used to deal with autocorrelation rather than heteroscedasticity.

So the plausible approaches to dealing with a model that exhibits heteroscedasticity are (i), (ii), and (iii). Final Answer: C.

=====

Answer Option 9:

Heteroscedasticity refers to the circumstance in which the variability of a variable is unequal across the range of values of another variable that predicts it. In a regression analysis, heteroscedasticity can produce inefficient estimates of the parameters and can lead to incorrect conclusions about the significance of predictor variables.

- (i) Taking logarithms of each of the variables is a common transformation that can stabilize the variance when there is heteroscedasticity.
- (ii) Using suitably modified standard errors, such as robust standard errors, can correct for heteroscedasticity and provide valid hypothesis tests and confidence intervals.
- (iii) The generalised least squares (GLS) procedure is another method that can be used to deal with heteroscedasticity. GLS allows for the relaxation of the assumption of constant variance in the errors.
- (iv) Adding lagged values of the variables to the regression equation is a technique often used in time series analysis, but it is not typically used to correct for heteroscedasticity.

Therefore, the correct answer is C. '(i), (ii), and (iii) only'

=====

Question 42:

'Which of the following statements are true concerning the standardised residuals (residuals divided by their respective conditional standard deviations) from an estimated GARCH model?

- i) They are assumed to be normally distributed
- ii) Their squares will be related to their lagged squared values if the GARCH model is appropriate
- iii) In practice, they are likely to have fat tails
- iv) If the GARCH model is adequate, the standardised residuals and the raw residuals will be identical', A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

=====

Answer Option 1:

B. '(i) and (iii) only'

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Answer Option 2:

B. '(i) and (iii) only'

\*\*\*\*\*

Answer Option 3:

B. '(i) and (iii) only'

\*\*\*\*\*

Answer Option 4:

B. '(i) and (iii) only'

\*\*\*\*\*

Answer Option 5:

B. '(i) and (iii) only'

\*\*\*\*\*

Answer Option 6:

C. '(i), (ii), and (iii) only'

\*\*\*\*\*

Answer Option 7:

The correct answer is B. '(i) and (iii) only'.

Statement i) is true. The assumption of normally distributed residuals is common in GARCH models, although in practice this assumption may not always hold.

Statement ii) is not necessarily true. The squared standardized residuals will be related to their lagged squared values if the GARCH model is appropriate, but this relationship may not always be observed.

Statement iii) is true. In practice, standardized residuals from a GARCH model are likely to exhibit excess kurtosis, leading to 'fat tails'.

Statement iv) is not true. The raw residuals and the standardized residuals will not be identical if the GARCH model is appropriate. The standardization process scales the residuals by their estimated standard deviation, changing their values.

\*\*\*\*\*

Answer Option 8:

The correct answer is B. '(i) and (iii) only'.

Statement i) is true because the GARCH model assumes that the standardised residuals are normally distributed.

Statement ii) is not true. The squares of the standardised residuals will not be related to their lagged squared values if the GARCH model is appropriate. This is because the GARCH model assumes that the volatility (or variance) of the residuals changes over time, rather than their actual values.

Statement iii) is true. In practice, the standardised residuals of a GARCH model often have fat tails, meaning that extreme values are more frequent than would be expected under a normal distribution.

Statement iv) is not true. The standardised residuals and the raw residuals will not be identical if the GARCH model is adequate. This is because the standardised residuals are the raw residuals divided by their respective predicted standard deviations.

\*\*\*\*\*

Answer Option 9:

The correct answer is B. '(i) and (iii) only'. Here's why:

i) They are assumed to be normally distributed: True. The GARCH model assumes that the standardized residuals are normally distributed. This is a basic assumption that underlies the model.

ii) Their squares will be related to their lagged squared values if the GARCH model is appropriate: False. The GARCH model predicts volatility (the square of the standardized residuals), not the standardized residuals themselves. The standardized residuals should be white noise if the model is adequate, meaning they are not correlated with their lagged values.

iii) In practice, they are likely to have fat tails: True. Even though the GARCH model assumes that the standardized residuals are normally distributed, in practice, they often have fat tails. This is because financial returns, which are often modeled with GARCH, are known to have fat-tailed distributions.

iv) If the GARCH model is adequate, the standardized residuals and the raw residuals will be identical: False. The standardized residuals are the raw residuals divided by their respective conditional standard deviations. If the GARCH model is adequate, the standardized residuals should be a series of white noise, not identical to the raw residuals.

Therefore, statements (i) and (iii) are correct.

\*\*\*\*\*



Question 43:

'Which one of the following statements is true concerning VARs?', A. 'The coefficient estimates have intuitive theoretical interpretations', B. 'The coefficient estimates usually have the same sign for all of the lags of a given variable in a given equation', C. 'VARs often produce better forecasts than simultaneous equation structural models', D. 'All of the components of a VAR must be stationary before it can be used for forecasting'

=====

Answer Option 1:

C. 'VARs often produce better forecasts than simultaneous equation structural models'

\*\*\*\*\*

Answer Option 2:

C. 'VARs often produce better forecasts than simultaneous equation structural models'

\*\*\*\*\*

Answer Option 3:

C. 'VARs often produce better forecasts than simultaneous equation structural models'

\*\*\*\*\*

Answer Option 4:

C. 'VARs often produce better forecasts than simultaneous equation structural models'

\*\*\*\*\*

Answer Option 5:

C. 'VARs often produce better forecasts than simultaneous equation structural models'

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Answer Option 6:

C. 'VARs often produce better forecasts than simultaneous equation structural models'

\*\*\*\*\*

Answer Option 7:

C. 'VARs often produce better forecasts than simultaneous equation structural models'

\*\*\*\*\*

Answer Option 8:

C. 'VARs often produce better forecasts than simultaneous equation structural models'

\*\*\*\*\*

Answer Option 9:

C. 'VARs often produce better forecasts than simultaneous equation structural models'

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Question 44:

'Which of the following statements is INCORRECT concerning the classical hypothesis testing framework?', A. 'If the null hypothesis is rejected, the alternative is accepted', B. 'The null hypothesis is the statement being tested while the alternative encompasses the remaining outcomes of interest', C. 'The test of significance and confidence interval approaches will always give the same conclusions', D. 'Hypothesis tests are used to make inferences about the population parameters.'

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Answer Option 1:

C. 'The test of significance and confidence interval approaches will always give the same conclusions'

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Answer Option 2:

C. 'The test of significance and confidence interval approaches will always give the same conclusions'

\*\*\*\*\*

Answer Option 3:

The incorrect statement is C. 'The test of significance and confidence interval approaches will always give the same conclusions'. These two approaches may often give similar conclusions, but they are not guaranteed to always do so due to different assumptions and approaches used in each method. Final Answer: C

\*\*\*\*\*

Answer Option 4:

The statement that is incorrect is C. 'The test of significance and confidence interval approaches will always give the same conclusions'. This is not necessarily true, as different methods may lead to different conclusions based on the data and the assumptions made. Final Answer: C

\*\*\*\*\*

Answer Option 5:

The incorrect statement is C. 'The test of significance and confidence interval approaches will always give the same conclusions'. While these two approaches are related, they do not always yield the same conclusions. There can be instances where a hypothesis test fails to reject a null hypothesis, yet the confidence interval does not contain the hypothesized parameter value. Thus, these two methods can sometimes lead to different conclusions. Final Answer: C

\*\*\*\*\*

Answer Option 6:

The correct answer is C. 'The test of significance and confidence interval approaches will always give the same conclusions'. This statement is incorrect because there are instances when a confidence interval and a hypothesis test may lead to different conclusions. This typically occurs when the point estimate is close to the threshold for statistical significance. Final answer: C

\*\*\*\*\*

Answer Option 7:

The statement C: 'The test of significance and confidence interval approaches will always give the same conclusions' is incorrect. These two approaches do not always give the same conclusions due to the difference in their interpretations and the fact that confidence intervals deal with a range of values while a hypothesis test deals with a single value hypothesis. Final answer: C

\*\*\*\*\*

Answer Option 8:

The statement C. 'The test of significance and confidence interval approaches will always give the same conclusions' is incorrect. While both tests can provide valuable statistical information, they do not necessarily always align in their results due to the differences in their approaches and interpretations. For example, a confidence interval may fail to reject a null hypothesis at a certain level of confidence while a hypothesis test rejects the null hypothesis at the same level of significance. Final Answer: C

\*\*\*\*\*

Answer Option 9:

The correct answer is C. 'The test of significance and confidence interval approaches will always give the same conclusions'. This statement is incorrect because although both approaches are based on the same basic principles and use the same computations, they can sometimes lead to different conclusions, especially in cases where the p-value is very close to the significance level. Final Answer: C

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Question 45:

'An ARMA(p,q) (p, q are integers bigger than zero) model will have', A. 'An acf and pacf that both decline geometrically', B. 'An acf that declines geometrically and a pacf that is zero after p lags', C. 'An acf that declines geometrically and a pacf that is zero after q lags', D. 'An acf that is zero after p lags and a pacf that is zero after q lags'

=====

Answer Option 1:

B. 'An acf that declines geometrically and a pacf that is zero after p lags'

=====

Answer Option 2:

B. 'An acf that declines geometrically and a pacf that is zero after p lags'

=====

Answer Option 3:

D. 'An acf that is zero after p lags and a pacf that is zero after q lags'

=====

Answer Option 4:

B. 'An acf that declines geometrically and a pacf that is zero after p lags'

=====

Answer Option 5:

B. 'An acf that declines geometrically and a pacf that is zero after p lags'

=====

Answer Option 6:

B. 'An acf that declines geometrically and a pacf that is zero after p lags'

=====

Answer Option 7:

B. 'An acf that declines geometrically and a pacf that is zero after p lags'

=====

Answer Option 8:

D. 'An acf that is zero after p lags and a pacf that is zero after q lags'

=====

Answer Option 9:

The correct answer is B. 'An acf that declines geometrically and a pacf that is zero after p lags'. ARMA stands for Autoregressive Moving Average, and an ARMA(p,q) model is a combination of an Autoregressive model of order p and a Moving Average model of order q. In an ARMA model, the autocorrelation function (acf) generally decreases geometrically and the partial autocorrelation function (pacf) cuts off after p lags because the Autoregressive part of the model has a finite order p.

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Question 46:

'Suppose that the following regression is estimated using 27 quarterly observations:

$$y_t = \beta_1 + \beta_2 x_{t2} + \beta_3 x_{t3} + u_t$$

What is the appropriate critical value for a 2-sided 5% size of test of  $H_0: \beta_3 = 1$ ?', A. '1.64', B. '1.71', C. '2.06', D. '1.96'

=====

Answer Option 1:

The appropriate critical value for a 2-sided 5% size test, in general, is 1.96 (from the standard normal distribution table). So, final answer: D.

\*\*\*\*\*

Answer Option 2:

When performing a two-sided hypothesis test at the 5% level, the appropriate critical value corresponds to the z-score that cuts off the uppermost 2.5% and the lowermost 2.5% of the standard normal distribution (since two-sided implies we are considering both sides of the distribution). The z-score associated with these points is approximately  $\pm 1.96$ .

So, the correct choice is D. '1.96'.

\*\*\*\*\*

Answer Option 3:

The appropriate critical value for a two-sided 5% size test is approximately 1.96 in terms of z-score (standard deviations from the mean under a standard normal distribution). This value corresponds to the 97.5th percentile of the standard normal distribution, which leaves 2.5% in each tail (5% total for a two-sided test). Final answer: D

\*\*\*\*\*

Answer Option 4:

For a 2-sided 5% test, the critical value corresponds to the z-score that cuts off the top 2.5% and bottom 2.5% of a standard normal distribution. This value is approximately 1.96. Therefore, the appropriate critical value is  $\boxed{1.96}$ . Final Answer: D.

\*\*\*\*\*

Answer Option 5:

The appropriate critical value for a two-sided 5% size of test is 1.96. This critical value corresponds to the z-value that encloses the central 95% of the standard normal distribution. It is used in hypothesis testing when the level of significance (alpha) is set to 0.05 for a two-sided test. Final answer: D

\*\*\*\*\*

Answer Option 6:

The critical value for a 2-sided 5% size test from a t-distribution with degrees of freedom  $n-k-1$  (where  $n$  is the number of observations and  $k$  is the number of variables) is approximately 2.06 for 24 degrees of freedom. However, because the t-distribution approaches the standard normal distribution as the degrees of freedom increase, the critical value is often approximated as 1.96. So, the appropriate critical value for a 2-sided 5% size of test of  $H_0: \beta_3 = 1$  is  $\boxed{1.96}$ . Final Answer: D.

\*\*\*\*\*

Answer Option 7:

A 2-sided 5% size test corresponds to a 95% confidence interval. For such a test, the critical value under the t-distribution is approximately 2.06 for 24 degrees of freedom (27 observations - 3 parameters estimated including intercept). However, it is closer to 1.96, the critical value under the Normal distribution, which is typically used when the number of observations is large. Given the provided options, the most appropriate critical value is  $\boxed{1.96}$ . Final answer: D.

\*\*\*\*\*

Answer Option 8:

The appropriate critical value for a 2-sided 5% size of test is 1.96. This is because for a 5% two-tailed test, we use the critical value associated with a 97.5% confidence level (splitting the 5% between two tails), which for a standard normal distribution is approximately 1.96. Final Answer: D. '1.96'

\*\*\*\*\*

Answer Option 9:

The test mentioned in this problem is a t-test. The critical value for a t-test with a significance level of 5% and degrees of freedom equal to (Number of observations - number of parameters estimated) is approximately 2.06, 1.96, or 1.71, depending on the specific t-distribution table used. However, for this problem with 27 observations and 3 parameters being estimated ( $\beta_1$ ,  $\beta_2$  and  $\beta_3$ ), the degrees of freedom would be  $27-3 = 24$ . The most commonly used critical t-value for a two-sided test at the 5% level with degrees of freedom more than 20 is approximately 1.96 or 2. Therefore, the appropriate critical value for this test is  $\boxed{1.96}$ . Final answer: D.

\*\*\*\*\*

Question 47:

'Suppose that two researchers, using the same 3 variables and the same 250 observations on each variable, estimate a VAR. One estimates a VAR(6), while the other estimates a VAR(4). The determinants of the variance-covariance matrices of the residuals for each VAR are 0.0036 and 0.0049 respectively. What is the values of the test statistic for performing a test of whether the VAR(6) can be restricted to a VAR(4)?', A. '77.07', B. '0.31', C. '0.33', D. '4.87'

=====

Answer Option 1:

The likelihood ratio (LR) test statistic is calculated as follows:

$$LR = -2 * [\ln(\det(\text{VAR}(4))) - \ln(\det(\text{VAR}(6)))] * \text{number of observations} = -2 * [\ln(0.0049) - \ln(0.0036)] * 250.$$

With the given data, the test statistic is:

$$LR = -2 * [(-5.318 - -5.626)] * 250 = 154.0.$$

However, this option is not in the given choices. It seems like there might be a mistake in the problem or in the answer choices. So none of A, B, C or D is correct.

=====

Answer Option 2:

The likelihood ratio test statistic for a test of whether a VAR(6) can be restricted to a VAR(4) is given by the formula: -2 times the natural logarithm of the ratio of the determinants of the variance-covariance matrices of the residuals for the VAR(6) and the VAR(4), times the number of observations. In this case, the test statistic is:

$$-2 * \ln(0.0036/0.0049) * 250 = \boxed{4.87}. \text{ Final answer: D}$$

=====

Answer Option 3:

The test statistic for the likelihood ratio test is given by -2 times the natural logarithm of the ratio of the determinants of the variance-covariance matrices of the residuals for each VAR. In this case, the test statistic is  $-2 * [\ln(0.0036) - \ln(0.0049)] * 250 = 2 * [\ln(0.0049) - \ln(0.0036)] * 250 = 2 * \ln(0.0049/0.0036) * 250$ . Evaluating this expression gives a test statistic of approximately 0.33. Final Answer: C

=====

Answer Option 4:

The test statistic for this test is given by the formula:

$$T * (\ln|\Sigma_r| - \ln|\Sigma_u|)$$

where T is the number of observations (250),  $\Sigma_r$  is the restricted variance-covariance matrix (from the VAR(4), so 0.0049) and  $\Sigma_u$  is the unrestricted variance-covariance matrix (from the VAR(6), so 0.0036).

So the test statistic is:

$$T * (\ln|\Sigma_r| - \ln|\Sigma_u|) = 250 * (\ln(0.0049) - \ln(0.0036)) = \boxed{77.07}. \text{ Final Answer: A}$$

=====

Answer Option 5:

The test statistic for performing a test of whether the VAR(6) can be restricted to a VAR(4) is calculated using the formula  $-2\log(\Lambda)$ , where  $\Lambda$  is the likelihood ratio. The likelihood ratio is calculated as follows:  $\Lambda = \det(\Omega_r) / \det(\Omega_{ur})$ , where  $\Omega_r$  is the restricted variance-covariance matrix and  $\Omega_{ur}$  is the unrestricted variance-covariance matrix. In this case,  $\det(\Omega_r)$  is 0.0049 and  $\det(\Omega_{ur})$  is 0.0036. So  $\Lambda = 0.0049 / 0.0036 = 1.36111$ . Thus, the test statistic is  $-2\log(1.36111) = -0.631$ . Since this value is not an option above, it appears there may be a mistake in the problem or in the calculation. However, using a sign correction, we obtain 0.631 which is closest to B. '0.31'. Final answer: B.

=====

Answer Option 6:

The test statistic for comparing two nested VAR models is given by the formula:

$$-2 * [\ln(\det(\text{Small Model})) - \ln(\det(\text{Large Model}))] * T$$

where

- ln refers to the natural logarithm,

- det refers to the determinant,

- T is the number of observations.

In this case,  $\det(\text{Small Model}) = 0.0049$ ,  $\det(\text{Large Model}) = 0.0036$ , and  $T = 250$ .

Substituting these values into the formula gives:

$$-2 * [\ln(0.0049) - \ln(0.0036)] * 250 = 77.07.$$

So the value of the test statistic is 77.07. Final Answer: A

=====

Answer Option 7:

The test statistic for performing a test of whether the VAR(6) can be restricted to a VAR(4), given the determinants of the variance-covariance matrices of the residuals for each VAR and the number of observations, is calculated as follows:

$$-2 * ((\text{Number of Observations}) * (\log(\text{Determinant of the Unrestricted Model}) - \log(\text{Determinant of the Restricted Model})))$$

In this case, the unrestricted model is the VAR(6), with a determinant of 0.0036, and the restricted model is the VAR(4), with a determinant of 0.0049. The number of observations is 250.

Therefore, the test statistic is:

$$-2 * [250 * (\log(0.0036) - \log(0.0049))] = 77.07$$

So the final answer is: A. '77.07'

\*\*\*\*\*

Answer Option 8:

To perform a test of whether the VAR(6) can be restricted to a VAR(4), we use the likelihood ratio test statistic. The formula for the test statistic is given by:

$$-2 * [( \text{Number of Observations} - \text{Number of Variables in VAR}(4) - 1 ) * \ln(\text{Determinant of Residual Variance-Covariance Matrix of VAR}(4)) - ( \text{Number of Observations} - \text{Number of Variables in VAR}(6) - 1 ) * \ln(\text{Determinant of Residual Variance-Covariance Matrix of VAR}(6))]$$

Plugging in the given values, we get:

$$-2 * [(250 - 3 * 4 - 1) * \ln(0.0049) - (250 - 3 * 6 - 1) * \ln(0.0036)]$$

This simplifies to approximately 0.33, so the answer is C.

\*\*\*\*\*

Answer Option 9:

The test statistic is calculated using the equation  $T * (\ln|\Sigma_u| - \ln|\Sigma_r|)$ , where  $\ln|\Sigma_u|$  is the natural log of the determinant of the unrestricted model's covariance matrix and  $\ln|\Sigma_r|$  is the natural log of the determinant of the restricted model's covariance matrix. In this case, T is 250 (the number of observations),  $\Sigma_u$  is 0.0036 (the determinant of the covariance matrix of the unrestricted model), and  $\Sigma_r$  is 0.0049 (the determinant of the covariance matrix of the restricted model).

So we have:

$$\text{Test Statistic} = T * (\ln|\Sigma_u| - \ln|\Sigma_r|)$$

$$= 250 * (\ln(0.0036) - \ln(0.0049))$$

$$= 250 * (-5.3245 - (-5.3181))$$

$$= 250 * (-0.0064)$$

$$= -1.6$$

However, the test statistic is usually reported in absolute terms, so the final value would be  $|-1.6| = 1.6$ .

But this value is not among the options given, therefore, there must be a mistake in the question or the provided options. This kind of problem usually requires the computation of Cholesky factorization and thus not suitable for multiple-choice format. The options provided may not be correct.

\*\*\*\*\*

Question 48:

'Which of the following is a DISADVANTAGE of using pure time-series models (relative to structural models)?', A. 'They are not theoretically motivated', B. 'They cannot produce forecasts easily', C. 'They cannot be used for very high frequency data', D. 'It is difficult to determine the appropriate explanatory variables for use in pure time-series models'

=====

Answer Option 1:

A. 'They are not theoretically motivated'

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Answer Option 2:

A. 'They are not theoretically motivated'

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Answer Option 3:

A. 'They are not theoretically motivated'

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Answer Option 4:

A. 'They are not theoretically motivated'

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Answer Option 5:

A. 'They are not theoretically motivated'

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Answer Option 6:

A. 'They are not theoretically motivated'

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Answer Option 7:

A. 'They are not theoretically motivated'

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Answer Option 8:

A. 'They are not theoretically motivated'

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Answer Option 9:

A. 'They are not theoretically motivated'

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Question 49:

'Which of the following are alternative names for the dependent variable (usually denoted by y) in linear regression analysis?

(i) The regressand

(ii) The regressor

(iii) The explained variable

(iv) The explanatory variable', A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

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Answer Option 1:

The dependent variable in linear regression analysis is also known as the regressand and the explained variable. Therefore, the correct answer is B. '(i) and (iii) only'.

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Answer Option 2:

The dependent variable, usually denoted by y, in a linear regression analysis is alternatively referred to as the regressand and the explained variable. So, the correct answer is B. '(i) and (iii) only'.

\*\*\*\*\*

Answer Option 3:

The dependent variable in linear regression analysis is also known as the regressand or the explained variable. Therefore, the correct answer is B. '(i) and (iii) only'. Final Answer: B.

\*\*\*\*\*

Answer Option 4:

The dependent variable (usually denoted by y) in linear regression analysis is also known as:

(i) The regressand

(iii) The explained variable

So, the correct answer is B. '(i) and (iii) only'.

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Answer Option 5:

The dependent variable (usually represented by y) in a linear regression analysis is also known as the regressand and the explained variable. Therefore, the correct response is B. '(i) and (iii) only'.

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Answer Option 6:

The correct answer is B. '(i) and (iii) only'. The dependent variable in linear regression analysis is also referred to as the regressand or the explained variable. The independent variable (usually denoted by x) is often referred to as the regressor or the explanatory variable.

\*\*\*\*\*

Answer Option 7:

The dependent variable, or y-variable, in a regression analysis is also known as the regressand and the explained variable. The independent variable, or x-variable, is known as the regressor and the explanatory variable. Therefore, the answer is B. '(i) and (iii) only'.

\*\*\*\*\*

Answer Option 8:

The dependent variable, which is the variable we are trying to predict or estimate, is also known as the regressand or the explained variable. The independent variable, which is the variable we are using to predict the dependent variable, is known as the regressor or the explanatory variable. So the correct answer is B. '(i) and (iii) only'.

\*\*\*\*\*

Answer Option 9:

The dependent variable, usually denoted by y, in linear regression analysis is also sometimes known as the regressand or the explained variable. The independent variable, usually denoted by x, is known as the regressor or the explanatory variable. Hence, the correct answer is B. '(i) and (iii) only'.

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Question 50:

'Which of the following are advantages of the VAR approach to modelling the relationship between variables relative to the estimation of full structural models?

i) VARs receive strong motivation from financial and economic theory

ii) VARs in their reduced forms can be used easily to produce time-series forecasts

iii) VAR models are typically highly parsimonious

iv) OLS can be applied separately to each equation in a reduced form VAR', A. '(ii) and (iv) only', B. '(i) and (iii) only', C. '(i), (ii), and (iii) only', D. '(i), (ii), (iii), and (iv)'

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Answer Option 1:

A. '(ii) and (iv) only'

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Answer Option 2:

A. '(ii) and (iv) only'

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Answer Option 3:

A. '(ii) and (iv) only'

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Answer Option 4:

A. '(ii) and (iv) only'

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Answer Option 5:

A. '(ii) and (iv) only'

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Answer Option 6:

A. '(ii) and (iv) only'

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Answer Option 7:

A. '(ii) and (iv) only'

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Answer Option 8:

A. '(ii) and (iv) only'

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Answer Option 9:

A. '(ii) and (iv) only'

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