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Specialty: International Commerce & Finance
Module: Time Series Analysis
Academic year 2024/2025

Exercises series N°2

1. What is the primary difference between serial correlation and correlation?
a) Serial correlation measures relationships across different variables, while correlation measures relationships over time.
b) Serial correlation measures relationships within the same variable over time, while correlation measures relationships between two different variables.
c) Serial correlation and correlation are the same.
d) Serial correlation measures relationships within two different time periods for two different variables.

2. Which of the following indicates a stationary time series?
a) A time series with constant mean, variance, and autocovariance over time.
b) A time series with an upward trend.
c) A time series with seasonal variation.
d) A time series that exhibits random shocks at different intervals.

3. In time series analysis, which type of variables are influenced by external factors?
a) Endogenous variables
b) Exogenous variables
c) Trend variables
d) Seasonal variables

4. What does a trend component in a time series represent?
a) Random variations in the data
b) Regular fluctuations that repeat over a specific period
c) A long-term upward or downward movement in the data
d) Sudden, unpredictable changes in the data

5. Seasonality in a time series refers to:
a) Long-term movements of the data
b) Regular patterns or fluctuations that repeat over a known, fixed period (e.g., monthly or quarterly)
c) Unpredictable fluctuations in the data
d) Short-term, random variations caused by irregular events

6. Cyclical variation differs from seasonal variation because:
a) Cyclical variation follows a fixed time period, whereas seasonal variation does not.
b) Cyclical variation occurs irregularly and spans longer time periods, while seasonal variation repeats at regular intervals.
c) Cyclical variation only affects economic time series, while seasonal variation affects all time series.
d) Cyclical variation does not exist in time series data.

7. Which of the following is an example of irregular variation in time series?
a) A seasonal fluctuation in sales during holidays
b) A trend showing a steady increase in population
c) A sudden drop in stock prices due to a natural disaster
d) A repeating pattern of high temperatures every summer

8. In time series analysis, endogenous variables are:
a) Variables that are explained by the model itself based on other variables in the system
b) Variables that are not influenced by any other variables in the model
c) Variables that are influenced by external factors only
d) Random variables with no identifiable cause

9. If a time series has serial correlation, what does this imply?
a) Observations in the series are not related to each other over time.
b) Past values in the series are correlated with future values.
c) The time series is stationary.
d) The series cannot be used for forecasting.

10. Which of the following describes a non-stationary time series?
a) A time series with constant mean and variance.
b) A time series with a changing mean or variance over time.
c) A time series without any patterns or trends.
d) A time series that has been deseasonalized.