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PRESIDENCY UNIVERSITY BENGALURU

**SET-A**

SCHOOL OF COMMERCE

**END TERM EXAMINATION – MAY/JUNE 2024**

**Semester :** Semester IV - 2022

**Course Code :** BSE2007

**Course Name:** Advanced Econometrics

**Program :** B.Sc. Economics

**Date :** June 12, 2024

**Time :** 9.30AM – 12:30PM

**Max Marks:** 100

**Weightage :** 50%

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and non-programmable calculator are permitted.*
4. *Do not write any information on the question paper other than Roll Number.*

# PART - A

**ANSWER ANY 5 QUESTIONS 5Q X 2M = 10M**

* 1. Define high frequency data.
  2. Write the full form of the VAR model.
  3. State the full form of the TARCH model.
  4. Outline the full form of the GARCH model.
  5. Mention the different methods of panel cointegration.
  6. Describe the full form of ARIMA model
  7. Mention the full form of SEM

(CO2) [Knowledge] (CO3) [Knowledge]

(CO3) [Knowledge]

(CO4) [Knowledge] (CO3) [Knowledge] (CO4) [Knowledge]

(CO3) [Knowledge]

# PART - B

**ANSWER ANY 5 QUESTIONS 5Q X 10M = 50M**

* 1. Describe in detail the advantages of high frequency data.
  2. Explain all the diagnostic tests used to check the validity of ARCH model.
  3. Explain the advantages and disadvantages of vector error correction model.

(CO3) [Comprehension] (CO4) [Comprehension] (CO4) [Comprehension]

* 1. Interpret the results of Johansen Cointegration approach and the Bounds Test:

# Table 1: Johansen Cointegration Result

**Trace Statistics**

**Eigen Value**

|  |  |  |  |
| --- | --- | --- | --- |
| **Hypothesized No. of CE(s)** | **Eigen Value** | **Trace Statistics** | **Prob** |
| None\* | 0.993 | 396.724 | 0.000 |
| At most 1 | 0.247 | 7.107 | 0.314 |
| At most 2 | 0.121 | 0.015 | 0.919 |
| At most 3 | 0.010 | 0.001 | 0.981 |
| **Maximum Eigenvalue Statistics**  **Hypothesized No. Maximum** | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **of CE(s)** |  | **Statistics** |  |
| None | 0.993 | 8.745 | 0.112 |
| At most 1 | 0.247 | 7.092 | 0.214 |
| At most 2 | 0.121 | 0.183 | 0.918 |
| At most 3 | 0.010 | 0.015 | 0.988 |

**Eigenvalue**

**Prob**

# Table 2: Bounds Test Results

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Stats | Value | Sig(%) | I(0) | I(1) |
| F-stats | 10.98 | 5 | 2.56 | 3.49 |
| K | 4 | 10 | 2.20 | 3.09 |

* 1. Describe the sequential steps to execute the unit-root test using the e-views.
  2. Using appropriate equations, explain the error correction model in detail
  3. Explain in detail the functioning of TARCH model.

(CO3) [Comprehension] (CO2) [Comprehension] (CO2) [Comprehension] (CO4) [Comprehension]

# PART - C

**ANSWER ANY 2 QUESTIONS 2Q X 20M = 40M**

* 1. Identify the powerful statistical tool used to capture the linear interdependencies among multiple time series. Explain in detail the mechanism of the model.
  2. Explain in detail the Box Jenkins Methodology

(CO3) [Application]

(CO4) [Application]

* 1. Elucidate all the panel cointegration tests which are used to determine if a long-term equilibrium relationship exists between variables in a panel data context.

(CO4) [Application]