EC3304 Econometrics II
AY2020/2021 Semester 2
Group Assignment

Updated: March 21, 2021

- This group assignment requires that you forecast a time series
- You must form a group of 3-4 members. Individual work will not be accepted
- Solutions should be typed in Word or LaTeX, accompanied by a do-file and any additional data used for replication
- Solutions are to be kept within **5 pages**, with font size ≥ 11, and line spacing ≥ 1.5, including title, figures, tables, and the reference list. Contents from Page 6 onwards will not be marked.
- Your completed assignment is to be submitted by **5pm, Apr 16, 2021** on LumiNUS
- One submission per group
- A separate form will be sent at a later stage for a confidential peer review
- Your assignment will be assessed based on the following criteria
  - Justification of steps leading to your results
  - Clarity in presentation and interpretation of results
  - Replicability of quantitative results from the do-file and data file
  - Peer review

Problem set

In the assignment folder, you are given the time series listed below through the end of year 2020. Construct two models (other than the random walk model) to forecast **ONE** time series of your choice from the list. There must be at least one autoregressive [AR(p)] model and one autoregressive distributed lag [ADL(p, q)] model. Evaluate their performance in forecasting the value in January 2021. You are free to choose a sub-sample period for estimation. In case of an ADL(p, q) model, you may use any additional data to help with the forecast. A good database would be the CEIC Database, accessible via NUS Library.

- Monthly Singapore industrial production (seasonally adjusted) – `IPI`
- Monthly inflation in Singapore (seasonally adjusted) – `CPI`
- Monthly SGD/USD exchange rate – `SGDUSD`
- Monthly Straits Times index – `STI`
- Monthly Bitcoin price in USD – `BTCUSD`

It is recommended that your report contains the following descriptions (whichever applicable)

- Data plot with brief overview, sample period used
- Tests for unit roots and structural breaks
- Rationale for any additional data used, sources of data
- Data transformation
- Lag selection
- Point and interval forecasts