Extra Project

Due date: 30/11/2017

Using eikon, download daily data of the exchange rates –SGD/USD, MYR/USD, THB/USD from January 2017 to October 2017. (using code from Excel files – `Historical Averages and Percent Changes.xlsx` and `code.xlsx`)
Set y_1 = SGD/USD, y_2 = MYR/USD, y_3 = THB/USD
From the download data:

Part I

1. Test whether all exchange rate series (y_1, y_2, and y_3) are stationary series.
2. Estimate Autoregressive Integrated Moving Average (ARIMA(p,d,q)) model for y_3 – determine the most appropriated order for p, d, and q using SBIC given the maximum lag equals 4.
3. Make dynamic forecast for ten period ahead forecast.

Part II

4. Estimate the model using OLS by employing y_{3t} as dependent variable and y_{3t-1} as explanatory variable, and determine whether ARCH-effect significantly occurs.
5. Estimate GARCH(p,q) for y_{3t} as dependent variable and y_{3t-1} as explanatory variable for mean equation – determine the most appropriated order p and q for variance equation using SBIC given the maximum lag equals to 2.
6. From (4), predict the variance of y_{3t}.

Part II

7. Estimate VARs models using the three exchange rates (y_1, y_2, and y_3) as endogenous variables and determine the most appropriated lags models using SBIC.
8. Perform stability test and Granger exogeneity test.
9. Perform Impulse response function analysis (irf), Orthogonal impulse response function analysis (oirf), Cumulative impulse response function analysis (coirf), and determine which variable has more impact (using Cholesky order – y_1 y_2 y_3).
10. Perform Forecast error variance decomposition (fevd) and determine variable that has more impact on each endogenous variable.
11. Determine whether changing Cholesky order from – "y_1 y_2 y_3" to "y_3 y_2 y_1" will change the results of irf, oirf, coirf, and fevd. Why? or why not?