Plaksha University
DS4102 - Financial Econometrics, July-Dec 2024

Assignment - 1

Due Date : September 8, 2024

1. Consider the daily exchange rate between

   (a) USD/ZAR

   (b) AUD/USD

   (c) GBP/USD

   for the period August 30, 2022 to August 30, 2024. Carry out a volatility modelling and related analysis using GARCH-type models (symmetric and asymmetric). Which model turned out to be appropriate for each of the data sets?

2. Carry out a similar analysis with the stock returns data (all from NSE and for the same period) associated with the following stocks.

   (a) TCS

   (b) COAL INDIA

   (c) BAJAJ FINANCE.

Hint: The attached article by Charfi and Mselmi, following blog by Jason Brownlee and the python link given in the presentation will help you to complete this assignment.

https://machinelearningmastery.com/develop-arch-and-garch-models-for-time-series-forecasting-in-python/