<u>FF6120 – Data Science for Decision Making II</u>

ASSIGNMENT

Due Date: 08/October/2018

In September 2013, China launched the Shanghai Pilot Free Trade Zone (SPFTZ) that has been designated as the "testing ground" for China's major financial, trade and investment liberalization policies. The free trade zone is part of the Chinese government's effort to push ahead with economic reforms with the aim to roll out the successful policies nationwide eventually. Foreign companies are allowed to invest in the banking, healthcare insurance, logistics, human resources and tourism sectors through subsidiaries or joint ventures within the free-trade zone. The company you work for intends to invest in the SPFTZ and plans to create a portfolio exactly resembling Shanghai Stock Exchange (SSE) Composite Index. The SSE Composite Index is an index of all stocks (A shares and B shares) that are traded at the Shanghai Stock Exchange. The Excel file SSE07-18 contains daily SSE index series from 04/Jan/2007 to 03/Aug/2018, a total of 2823 observations. Your company is interested in the behavior of the SSE Index return series, defined as R_t = 100×log[PRICE(t)/PRICE(t-1)]. Base on the given data, you (as the company's top quantitative researcher) are expected to thoroughly analyze the data, build an adequate model for the return series and its volatility. In your report, among other important things, you need to justify the model proposed, interpret the modeling results so that your boss/company would be able to appreciate your work, and also point out the limitations of your analysis.