THE UNIVERSITY OF CHICAGO
Graduate School of Business
Business 41202, Spring Quarter 2006, Mr. Ruey S. Tsay

Homework Assignment #5

Due Date: Campus – May 19; Evening – May 18, 2006.

1. The file "d-geohlc.txt" has 9 columns. It consists of year, month, day, open, high, low, close, volume, and adjusted close price for GE stock from January 2, 1996 to May 8, 2006. The data are downloaded from Yahoo Finance. Use the data to construct the variance estimates $\sigma_{i,t}^2$ of Section 3.15.2 of the textbook for i = 1,2,5,and 6. Take the square root transformation to obtain volatility series. Obtain mean, median, maximum, and minimum of each of the four volatility series.

2. Again, consider the data in "d-geohlc.txt". Use the data and $n = 63$ to compute the Yang and Zhang (2000) variance estimate $\hat{\sigma}_{yz}^2$ of Section 3.15.2 of the textbook. Obtain a time plot of the estimated volatility series (square-root of variance). Also, obtain the mean, median, maximum, and minimum of the volatility series. Comment on the estimated volatility series as compared with those of Problem 1.

3. Part (a) of Problem 4.1 of the textbook. Data can be obtained from the web page of the textbook.

4. Problem 4.5 of the textbook.

5. Problem 5.5 of the textbook.

Reading assignments: Chapters 3 and 4 of the textbook.