

Lab Assignment 2, ORFE 569

Due Mar. 13, 2007

Objective: The objective of this assignment is to simulate a data set for a chosen model (a separate sheet). A simulated data set will be used to test the (Fortran or C) program that you will construct (in Lab Assignment 3) on the Bayes estimation via filtering for the chosen model.

Three sample S-programs are provided on the course website for your reference.

First, describe in detail the algorithm that you will use for the simulation.

After simulating a data set (at least 30,000 data), describe the data set with tables and graphs in order to show that the simulated data set is correct. The following is minimal and write short comments for each table or graph you produce.

1. A table to present basic descriptive statistics: number of data, min, max, Q1, Median, Q3, mean, standard deviation, skewness, and kurtosis for the simulated price, or bid and offer quotes.
2. Plots of price (or quotes) with time for the whole time frame and for a small time frame to show discreteness.
3. Histograms for price (quote) change and for the fractional part of price (quote).
4. Histograms for duration (between trades) (or intertrade-occurrence time)

Please email me your S-program as well as the lab assignment.