ECON 4632
Financial Econometrics
Homework Assignment 4
Due Thursday, November 30, 2000

Write up this assignment as a report. You will be graded on your ability to communicate as well as the content of your work when the question asks for more than a list or number.

1. Conduct a web search on value at risk. List five web addresses for value at risk.

2. After reading the information, write a one page memo intended your boss who is considering implementing Value at Risk calculations for the first time. Do not limit yourself to what I have covered in class. If the boss agrees to implement the VaR technique, you will be in charge. Your boss knows nothing except that this technique measures risk, so explain in simple terms how VaR is used in other settings, in general how it measures risk, and what resources you will need to calculate VaR.

3. As a test case, the boss wants you to evaluate VaR for his $100,000 investment in Intel. Use your data from Homework 3 for all calculations.
   a. Calculate the one day Value at Risk assuming the delta normal method using 99% confidence (1 in 100 day worst loss).
   b. Calculate the one day Value at Risk using a GARCH(1,1) model using 99% confidence (1 in 100 day worst loss).
   c. Calculate the 30 VaR using both methods.
   d. Write a short one or two paragraph memo summarizing the results of your calculations.

Bonus: Replaces up to 25 points on a single homework.

Download the data set “Homework 4” from my webpage. This data set contains data on 5 year treasury yields. Your company maintains a portfolio of $1.5 billion for the Louisiana Teachers Retirement fund. The average duration is 3 years and the portfolio is not leveraged. Compute the 1 year Value at Risk using using 99% confidence (1 in 100 day worst loss) interval and the delta-normal method (No ARCH).