ECON 653 - HOMEWORK 3

(Due: September 29, 2009)

1. Solve Exercise 7.6 on p. 359 of Danthine and Donaldson.

2. Solve Exercise 2 on p. 193 of Luenberger.

3. Solve Exercise 8 on p. 195 of Luenberger.

4. Solve Exercise 1 on p. 224 of Luenberger.

5. Solve Exercise 3 on p. 225 of Luenberger.

6. Solve Problem 5.3 on p. 218 of Campbell, Lo, and MacKinlay, but changing the estimation period to July 1999-June 2009. Please use historical data for the monthly nominal 3-month treasury constant maturity U.S. government securities for your risk-free return, the Fama-French index of excess return on the market, and for Toyota Motor Corp. (NYSE), Microsoft Corp. (NasdaqGS), and Wal-Mart Stores Inc. (NYSE) for your stocks. Data for the monthly nominal 3-month treasury constant maturity U.S. government securities can be obtained from the Federal Reserve Statistical database at *http://www.federalreserve.gov/releases/h15/data.htm*, whereas data for the Fama-French index can be downloaded from Prof. French's website (look for "Rm-Rf" benchmark in his data library at *http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html*). The stock price data can be downloaded from the website *http://finance.yahoo.com/*. To download the stock data, you need to enter the company name or stock symbol in the **Get Quote** box, click on the **Get Quote** link, then click on the desired stock, and finally click on **Historical Prices**. Type the desired historical period and frequency ("monthly"), and download the data. Calculate stock returns as $Return_t = (Price_t + Dividend_t)/Price_{t1}$, where $Price_t$ is the closing price at the end of the month (note that what seems to be the beginning-of-month price is actually the end-of-month price). For simplicity, disregard the fact that dividends are often paid before the end of month *t*. Please be careful to account for stock splits. You should verify that the calculated $Return_t$ series is very similar to the series $AppRet_t = AdjustedPrice_t/AdjustedPrice_{t1}$.
   Note: To solve this problem you can use any standard appropriate software (e.g., MATLAB, R, STATA, etc.). You must **submit your computer program and your calculated monthly returns together with the results from your econometric estimation**.

References:

Campbell, J. Y., A. W. Lo, and A. C. MacKinlay. *The Econometrics of Financial Markets*. Princeton, NJ: Princeton University Press, 1997.

Danthine, J.-P. and J. Donaldson. *Intermediate Financial Theory, 2nd Edition*. New York: Academic Press, 2005.

Luenberger, D. G. *Investment Science*. New York: Oxford University Press, 1998.