

Finance 7870
Problem set 3

Your task is to perform tests of the CAPM and of the Fama and French (1993) three factor model. From Ken French's website:

<http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/>,

download the monthly returns for the 25 portfolios formed on size (market value of equity) and book-to-market. Also download the returns on the three Fama and French factors. Use the data on risk-free returns included in the factor data from Ken French's website. Also download the data on industry portfolios (either 17 or 30 industries).

- 1) Using the test statistics J_1 , J_3 , and J_7 from Chapter 5 in CLM, test the Sharpe Lintner version of the CAPM using the 25 size and book-to-market portfolio returns as the dependent variables. Do tests for the full sample, and for two equal-length subperiods. Also report the average returns, and the values of the regression coefficients and corresponding t-statistics of the intercepts and factor loadings for each of the portfolios. How does the CAPM perform? How large are the deviations economically? Describe and interpret your results.
- 2) Now repeat your tests using J_1 and J_7 for the three-factor model. How do your findings compare to those based on the CAPM? What do you conclude from these findings?
- 3) Finally, repeat your tests based on the industry portfolios. How do the CAPM and the three-factor model perform on the industry portfolios. Why might the results differ from those based on the size-BM sorted portfolios?