

University of California, Los Angeles
Department of Statistics

Statistics C183/C283

Instructor: Nicolas Christou

Project 6

Please answer the following questions:

- a. Use only the stocks with positive betas in your data. Rank the stocks based on the excess return to beta ratio and complete the entire table based on handout #28:
- b. Find the composition of the point of tangency with and without short sales allowed. Place the two portfolios on the plot with the 30 stocks, *S&P500*, and the efficient frontier that you constructed in the previous projects. Your answer for the short sales case should be the same as in project 4, part (a).
- c. We want now to draw the efficient frontier when short sale are not allowed. One way to this is to use a **for** loop where you vary R_f . For each R_f you find the composition of the optimal portfolio (tangency point) and its expected return and standard deviation. Finally connect the points to draw the efficient frontier. Note: See handout #14 under “Labs”.
- d. Assume the constant correlation model holds. Rank the stocks based on the excess return to standard deviation ratio and complete the entire table based on handout #33:
Note: Please use the same R_f as the one in (a) if possible.
- e. Find the composition of the point of tangency with and without short sales allowed. Place the two portfolios on the plot with the 30 stocks, *S&P500*, and the efficient frontier that you constructed in the previous projects.