

University of California, Los Angeles
Department of Statistics

Statistics C183/C283

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Project 6

Please answer the following questions:

- a. Assume the multigroup model holds with short sales allowed. Find the composition of the optimal portfolio and place it on the plot of part (b). Note: Please see the numerical example of handout #45 here for more details: http://www.stat.ucla.edu/~nchristo/statistics_c183_c283/statc183c283_multigroup_model.pdf .
- b. Evaluate your portfolios that you constructed in the previous projects. In your analysis you should include the following:
 1. Time plots of the performance of all portfolios compared to the *S&P500* (see the graph constructed using handout #47).
 2. Calculate the Sharpe ratio, differential excess return, Treynor measure, and Jensen differential performance index.
 3. Decompose the overall evaluation using Fama's decomposition (net selectivity and diversification) for the single index model when short sales are not allowed. Please show this decomposition on the plot expected return against beta.