Math 420, Spring 2013
Third Group Homework

due Monday, 4 March, 2013

Exercise 1. Consider the risky assets in group (A), group (B), and groups (A) and (B) combined using one-year histories of daily data with uniform weights for each of the years ending July 1 of 2007-2012. Consider the frontiers that you commuted last week for the assets in group (A), group (B), and groups (A) and (B) combined for each of the years ending July 1 of 2007-2012. In each case determine the values of μ (if any) for which the frontier portfolios are long.

Exercise 2. Compute the long frontiers for the assets in group (A), group (B), and groups (A) and (B) combined for each of the years ending July 1 of 2007-2012. Graph each of these long frontiers along with the volatility and return rate means of each asset that was used to compute it. There should be 6 graphs — one for each year. Use different symbols to distinguish points associated with group (A) from those associated with group (B). Comment on any relationships you see between the objects plotted on each graph. (This will be easier to do if you use the same scales for each of the graphs. Each σ-axis should begin at $\sigma = 0$.)

You can use the MatLab command "quadprog" to solve the constrained minimization problem for any given $\mu \in [\mu_{\text{mn}}, \mu_{\text{mx}}]$. Documentation for this command is easily found on the web.