**OPIM 5641: Homework IV solution**

1. Solve the base case model with the above constraints added. How many stocks were selected?

Answer: 4 stocks were selected.

1. Vary the maximum number of stocks from 1 to 6 and make a chart of the objective function. Also write out the pattern, e.g., if up to three stocks are allowed, which ones would be chosen, etc.?

Answer: The chart shows a significant jump (11.37% to 16.37%) in 5year growth when we put the constraint to select at least 3 stocks. 3 stocks which got selected are IBM (with maximum investment percentage), XOM and MSFT (with minimum investment of 5%). As we increase the number of stocks selected constraint 5 year growth remains constant at 16.65%. So, selecting number of stocks=3 would be a wise decision to get maximum 5-year growth rate.

1. How big should the 5-year growth rate be for ORCL before it is selected?

Answer: 5-year growth rate has to be above 20% for Oracle stock to be selected.

1. What is the maximum value for the 1-year growth rate under all the above constraints?

Answer: Maximum 1-year growth rate is 13.36%