Sheet - 4

Asset and Liability Management


- Estimate the expected return for the index (let be $\mu_{S&P500}$).
- Estimate stocks parameters, assuming that stock returns have a multivariate normal distribution.
- Construct your portfolio by solving the following optimization problem

$$\min_w \text{AVaR}_\epsilon(Hw)$$

subject to

$$w'e = 1$$

$$w'\mu \geq \mu_{S&P500}$$

$$w \geq 0$$

where $H$ is the matrix with 10000 scenarios and $\epsilon = 5\%$.

- By looking at the time window from January, 2 2007 to January 1, 2008, compare the performance of your portfolio with the performance of the S&P500 index.


For any problem or remark, do not hesitate to contact me,

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