DSC5211C QUANTITATIVE RISK MANAGEMENT

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Workshop 10: Worst-Case Analysis

Task 1
You were asked to re-analyse the portfolio management problem by using worst-case analysis.

Download the file "portfolioCVaR.gms" and change it with a name "portfolioWCA.gms". Then change the file by adapting the constraints and objective function to perform worst-case analysis.

What is the optimal policy? How does it compare with optimal policy derived for CV@R optimization? What is the respective expected profit and CV@aR?

Task 2
In workshop 6 we have analysed the feed mix problem. Download the file "feed_mix.gms" and adapt it to performance risk analysis over the feeding cost. The price variances and correlation matrix are in the gams file.

A) Include the code to generate correlated feed prices. Assume Barley as the "index feed".

B) Modify the constraints to compute the CVAR and compute the optimal policy.

C) Modify the constraints to compute the Worst-Case analysis and compute the optimal policy.

D) Compare the results obtained from your analysis in B), C) and the risk-neutral policy (obtained from the original program).