Portfolio Optimization

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CSE 357 Project

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Introduction

One of the problems that most of the investors are struggling with is to use the best combination of risk and return to yield the best diversification of the portfolio. Diversification by itself is not able to solve the problem. A few investors have a specific amount of capital to invest. Some of them need their portfolios to contain specific assets. There is always a need for optimized diversification. This optimization can come true using different methods which can find the best combination of assets to meet the investor's goals.

Portfolio optimization is the process of selecting the best portfolio (asset distribution), out of the set of all portfolios being considered, according to some objective. The objective typically maximizes factors such as expected return, and minimizes costs like financial risk.

Goals

1. To study the utility of Markowitz model for portfolio optimization.
2. To examine and analyse the relation between risk and return.
3. To select optimal portfolio.
4. To study and implement interior point method to solve quadratic programming problem in portfolio optimization.

References

- https://www.researchgate.net/publication/312523236_Portfolio_Optimization_using_ant_colony_method_a_case_study_on_Tehran_stock_exchange
- http://www.ipedr.com/vol29/53-CEBMM2012-R00010.pdf
- https://pdfs.semanticscholar.org/dc2f/0dc93170a5562b23e423006191c8355564d4.pdf
- https://en.wikipedia.org/wiki/Interior-point_method
- https://link.springer.com/content/pdf/10.1007%2F978-3-642-17563-3_29.pdf