Understanding Robust Portfolios

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Abstract
Robust portfolio optimization has been developed to resolve the high sensitivity to inputs of the Markowitz mean-variance model. The main idea is to introduce an uncertainty set for the model parameters, and to obtain the portfolio with worst-case optimization approach. Although much effort has been put into forming robust portfolios, there have not been many attempts to analyze the characteristics of portfolios formed from robust optimization. In this presentation, we discuss the recent finding on the qualitative characteristics of the robust portfolios. More specifically, there are three main questions to be addressed:

1) Is robust portfolio really robust?

2) Robust portfolio is different from traditional mean-variance portfolio. Is there any consistent pattern in regard to this qualitative difference in two portfolios?

3) If robust portfolio is consistently different from traditional mean-variance portfolio, is it possible to reduce the difference without losing the robustness?

References


