Making the Markowitz mean-variance portfolio principle practically useable

白志東教授
國立新加坡大學統計暨應用機率系

Abstract

Markowitz mean-variance portfolio principle is an important theory in modern Finance theory and is a major part of contributions of his Noble prize. However, when we plug in the real sample estimates of mean and Covariance matrix into his optimal principle, there will be a large error from the theoretical values. In the literature, it is called Markowitz' enigma. In this work, applying the theory of random matrix and bootstrap method, we proposed an bootstrap corrected estimates of the Markowitz mean-variance optimization rule. Both theoretical proofs and simulation results show that the corrected estimates performs significantly better than the plug in estimates.