

For favour of posting

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Seminar

Professor Zhidong BAI

KLASMOE and School of Mathematics and Statistics
Northeast Normal University
China

will give a talk

entitled

**EFFICIENT ESTIMATION FOR MARKOWITZ'S PORTFOLIO
OPTIMIZATION BY USING RANDOM MATRIX THEORY**

Abstract

The Markowitz mean-variance optimization procedure is highly appreciated as a theoretical result in literature. Given a set of assets, it enables investors to find the best allocation of wealth incorporating their preferences as well as their expectation of return and risk. It is expected to be a powerful tool for investors to allocate their wealth efficiently. However, it has been demonstrated to be less applicable in practice. The portfolio formed by using the classical Mean-Variance approach always results in extreme portfolio weights that fluctuate substantially over time and perform poorly in the out-of-sample forecasting. The reason for this problem is due to the substantial estimation error of the inputs of the optimization procedure. The classical mean-variance approach which uses the sample mean and sample covariance matrix as inputs always results in serious its theoretical counterpart.

In this talk we provide a new method to estimate the population covariance in which the eigenvalues of the sample covariance are replaced by consistent estimates of the population eigenvalues. And we deduce the limiting behavior of the eigenvector for the sample covariance. According to these results, we construct the spectral-corrected estimation I and II for the Markowitz mean-variance model which perform very well in the optimal allocation, return and risk. Some unsolved problems are also raised.

on

Wednesday, January 14, 2015

(Refreshments will be served from 10:30 a.m. outside Room 303 Run Run Shaw Building)

11:00 a.m. – 12:00 noon

at

Room 301, Run Run Shaw Building

Visitors Please Note that the University has limited parking space. If you are driving please call the Department at 3917 2466 for parking arrangement.

All interested are welcome