DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Public Seminar of PhD Candidate

Mr. WONG Kwok Chuen

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will give a talk

entitled

TOPICS IN PORTFOLIO MANAGEMENT

Abstract

In this talk, I will study two advanced topics in portfolio management: (i) utility-risk portfolio selection and (ii) a paradox in time consistency in Mean-Variance Problem.

In the first half of this talk, I will discuss utility-risk portfolio selection. By considering the first-order optimality conditions, *Nonlinear Moment Problem*, which is a static problem including a variational inequality and some constraints on nonlinear moments, is obtained to characterize the optimal terminal payoff. Under a mild assumption on utility function, I will establish the existence of the optimal solutions for both utility-downside-risk and utility-strictly-convex-risk problems; these existence results have long been absent in the literature. In particular, the existence of an optimal solution for utility-downside-risk problem, including utility-semivariance problem, is in substantial contrast to the nonexistence of an optimal solution for the mean-downside-risk problem considered in the literature. In addition, this existence result allows us to use semivariance as a risk measure in portfolio optimization.

In the second half of this talk, I shall establish that, if investors with mean-variance preference adopt the time-consistent equilibrium solutions, an investor facing short-selling prohibition can acquire a greater objective value than his counterpart without the prohibition in a buoyant market. It can be shown that the pure strategy of solely investing on bond can sometimes simultaneously dominate the equilibrium strategy. With numerical experiments, the constrained investor can dominate the unconstrained one for more than 90% of the time horizon. The source of paradox is rooted from the nature of game-theoretic approach on time consistency, which purposely seeks for an equilibrium solution but not the ultimate maximizer. Our obtained results actually advocate that, to properly implement the concept of time consistency in various financial problems, all economic aspects should be critically taken into account at a time.

Keywords: Nonlinear Moment Problem; Semivariance; Time consistency; Mean-variance; Equilibrium strategy.

on

Monday, August 22, 2016

4:00 p.m. – 5:00 p.m.

at

Room 301, Run Run Shaw Building

All interested are welcome