



RUTGERS
UNIVERSITY

Department of Statistics & Biostatistics
Hill Center, Room 501
School of Arts & Sciences
Rutgers, The State University of New Jersey
110 Frelinghuysen Road.
Piscataway, New Jersey 08854-8019

www.stat.rutgers.edu
office@stat.rutgers.edu
848-445-2690
Fax: 732-445-3428

RUTGERS UNIVERSITY
DEPARTMENT OF STATISTICS AND BIOSTATISTICS
www.stat.rutgers.edu

Seminar

Speaker: **Professor Takeaki Kariya**
Graduate School of Global Business, Meiji University

Title: **Empirically Effective Bond Pricing Model for USGBs and Analysis on Term Structures of Implied Interest Rates in Financial Crisis**

Time: **2:00 – 3:00pm, Thursday, April 25, 2013**

Place: **552 Hill Center**

Abstract

Using Kariya's bond pricing (1993) model, this paper makes a comprehensive empirical analysis on US Government bond (USGB) prices for a period including the Financial Crisis in 2008. The model is a cross-sectional model that simultaneously values individual fixed-coupon (non-defaultable) bonds of different coupon rates and maturities via a stochastic discount function approach. First we briefly clarify the theoretical relation between our stochastic discount function approach and the interest rate (spot rate or forward rate) approach in mathematical finance. Then we make a comprehensive empirical study on its pricing capability for individual USGBs with different attributes and on its capacity of describing the movements of term structures of interest rates that USGBs imply as yield curves. Based on various tests of validity in GLS (Generalized Least Squares) framework we propose a specific formulation with a polynomial of order 6 for the mean discount function that depends on maturity and coupon as attributes and a specific covariance structure. It is shown that even in the middle of the Financial Crisis, the cross-sectional model we propose is shown to be very effective for simultaneously pricing all the existing USGBs and deriving and describing zero yields.

Takeaki KARIYA (GSB, Meiji University), kariya@kisc.meiji.ac.jp
Yoshiro YAMAMURA (GSB, Meiji University), yyama@kisc.meiji.ac.jp
Zhu WANG (ZW System),

**** Refreshments will be served at @1:40pm in Room 502 Hill Center ****

