SEMINAR

Robust Inference in Threshold Regression Under Misspecification

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Venue: WYL314, 3/F, Dorothy Y. L. Wong Building,
**   Lingnan University**

ABSTRACT:

In this paper, we develop the asymptotic theory for threshold regression under misspecification, which is especially useful in the regression tree analysis of machine learning. First, we provide a thorough characterization of the asymptotic distribution of the least square estimator, which integrates some fragmented asymptotic results of threshold regression in the literature into one unified framework of misspecification. The asymptotic distribution depends on the fitted threshold regression model being discontinuous or continuous and also on the rate of the limit objective function shrinking to zero in the direction of threshold parameter. Second, we provide a LR-based inference method for the threshold point, which can be treated as a misspecification-robust extension of the method in Hansen (2000, Econometrica, 68, 575-603). Two empirical applications illustrate the usefulness of our new inference method.

BIOGRAPHY:

Dr. Ping YU graduated from Peking University in 2000 with a B.S. in Mathematics and Economics, and in 2002 with an M.S. in Finance. He obtained his M.S. in Economics in 2005, and Ph.D. in Economics in 2009, both from the University of Wisconsin-Madison. Before joining the Faculty of Business of Economics at The University of Hong Kong as Assistant Professor in 2014, he was a lecturer at the University of Auckland, New Zealand for five years.

Ping's research interests are in theoretical and applied microeconometrics, especially in threshold regression and treatment effects evaluation. He has published several papers in academic journals including Journal of Econometrics, Econometric Theory, and Journal of Business & Economic Statistics among others.

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