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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON STATISTICS

Time Series Estimation of the Dynamic Effects of Disaster-Type Shocks

By

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Abstract

This paper provides three results for SVARs under the assumption that the primitive shocks are mutually independent. First, a framework is proposed to accommodate a disaster-type variable with infinite variance into a SVAR. We show that the least squares estimates of the SVAR are consistent but have non-standard asymptotics. Second, the disaster shock is identified as the component with the largest kurtosis. An estimator that is robust to infinite variance is used to recover the mutually independent components. Third, an independence test on the residuals pre-whitened by the Choleski decomposition is proposed to test the restrictions imposed on a SVAR. The test can be applied whether the data have fat or thin tails, and to over as well as exactly identified models. Three applications are considered. In the first, the independence test is used to shed light on the conflicting evidence regarding the role of uncertainty in economic fluctuations. In the second, disaster shocks are shown to have short term economic impact arising mostly from feedback dynamics. The third uses the framework to study the dynamic effects of economic shocks post-covid. (This is joint work with Serena Ng.)

Biography

Professor Richard A. Davis is Howard Levene Professor of Statistics at Columbia University. He is a former president of the Institute of Mathematical Statistics. He is a fellow of the Institute of Mathematical Statistics and the American Statistical Association, and is an elected member of the International Statistical Institute. He is co-author (with Peter Brockwell) of the bestselling books, "Time Series: Theory and Methods", "Introduction to Time Series and Forecasting", and the time series analysis computer software package, "ITSM2000". In 1998, he won (with collaborator W.T.M Dunsmuir) the Koopmans Prize for Econometric Theory.

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Date : 23 April 2024 (Tuesday)
Time : 3:00pm-4:00pm
Venue : Room 2126D (Lift 19)

All are Welcome!