

Waseda Seminar on Time Series and Statistical Finance

October 31, 2008

At Waseda University International Conference Center

Program

(1) 13:30 - 15:00

Inferential aspects of flexible models generated by perturbation of symmetric distributions

Anna Clara Monti (University of Sannio)

Abstract

Flexible models generated by perturbation of symmetric distributions are very appealing and suitable for a wide variety of statistical applications in a number of different fields because of their nice distributional properties and various stochastic representations. However, inference about these models can be problematic for the following reasons: (i) when the perturbed symmetric distribution is normal, the information matrix can be singular; (ii) the maximum likelihood estimates of the model parameters that accommodate skewness and kurtosis can be infinite, even though the true values of the parameters are finite, and (iii) important sub-models, such as the normal distribution, can correspond to values of the model parameter that are on the boundary of the parameter space.

This talk begins with an overview of flexible models and the problems for inference are discussed. Attention then focuses on one popular flexible model that has recently emerged, the skew-t model. The standardized indexes of skewness and kurtosis are both unbounded in this model, so it offers considerable flexibility for fitting data in which substantial deviations from normality occur. Consequently, the skew-t model offers an alternative to robust procedures based on y -functions. Model reparametrizations are available that remedy the problems associated with the singularity of the information matrix and inference on the boundary of the parameter space. These reparametrizations and robustness issues are addressed in the talk.

(2) 15:30 - 17:00

From Distribution-Freeness to Semiparametric Efficiency

– Sixty years of rank-based inference –

Marc Hallin (Universite Libre de Bruxelles)

Abstract

The modern history of ranks in statistics started in 1945 with Frank Wilcoxon's pathbreaking three pages on rank tests for location. Emphasis in 1945 was on distribution-freeness and ease of application. Since then, under the impulse of such names as Chernoff, Savage, Hodges, Lehmann, Hajek, and Le Cam, rank-based methods have followed the development of contemporary statistics, and turned into a complete body of modern, flexible and powerful techniques. In this talk, we show how this evolution, from distribution-freeness to group invariance and tangent space projections, eventually may reconcile the enemy brothers of statistics---efficiency and robustness.