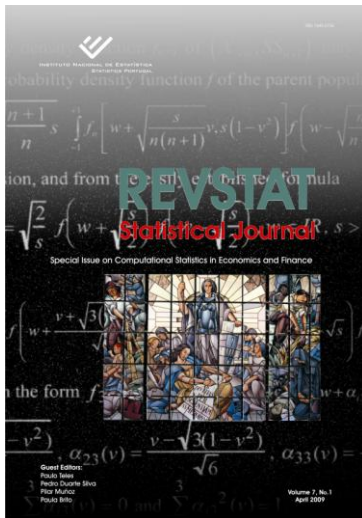24 June, 2013

# REVSTAT-Statistical Journal

## Volume 11, Number 2, June 2013

### REVSTAT- Statistical Journal



In 2003 the National Statistical Institute launched the scientific statistical journal **REVSTAT-STATISTICAL JOURNAL**, published in English two times a year, with a prestigious international Editorial Board, which came to substitute the *Revista de Estatística* [Statistical Review], published in Portuguese between 1996 and 2002.

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This Volume of **REVSTAT: Volume 11, No. 2 - June 2013**, includes five articles. Their abstracts are presented below:

#### THE EXACT JOINT DISTRIBUTION OF CONCOMITANTS OF ORDER STATISTICS AND THEIR ORDER STATISTICS UNDER NORMALITY

Authors: *Ayyub Sheikhi* and *Mahbanoo Tata.*

In this work we derive the exact joint distribution of a linear combination of concomitants of order statistics and linear combinations of their order statistics in a multivariate normal distribution. We also investigate a special case of related joint distributions discussed by He and Nagaraja (2009).

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## ON THE MAXIMUM LIKELIHOOD ESTIMATOR FOR IRREGULARLY OBSERVED TIME SERIES DATA FROM COGARCH(1,1) MODELS

Authors: *Moosup Kim* and *Sangyeol Lee.*

In this paper, we study the asymptotic properties of the maximum likelihood estimator (MLE) in COGARCH(1,1) models driven by Lévy processes as proposed by Maller et al. ([13]). We show that the MLE is consistent and asymptotically normal under some conditions relevant to the moments of the driving Lévy process and the sampling scheme.

## BOUNDARY KERNELS FOR DISTRIBUTION FUNCTION ESTIMATION

Author: *Carlos Tenreiro.*

Boundary effects for kernel estimators of curves with compact supports are well known in regression and density estimation frameworks. In this paper we address the use of boundary kernels for distribution function estimation. We establish the Chung-Smirnov law of iterated logarithm and an asymptotic expansion for the mean integrated squared error of the proposed estimator. These results show the superior theoretical performance of the boundary modified kernel estimator over the classical kernel estimator for distribution functions that are not smooth at the extreme points of the distribution support. The automatic selection of the bandwidth is also briefly discussed in this paper. Beta reference distribution and cross-validation bandwidth selectors are considered. Simulations suggest that the cross-validation bandwidth performs well, although the simpler reference distribution bandwidth is quite effective for the generality of test distributions.

## AN EXPONENTIAL-NEGATIVE BINOMIAL DISTRIBUTION

Authors: *Mahtab Hajebi, Sadegh Rezaei* and *Saralees Nadarajah.*

A new three-parameter distribution is proposed for modeling lifetime data. It is advocated as most reasonable among the many exponential mixture type distributions proposed in recent years. An account of the mathematical properties of the new distribution including estimation issues is presented. Two real data applications are described to show superior performance versus at least four of the known lifetime models.

## NONPARAMETRIC ESTIMATION FOR FUNCTIONAL DATA BY WAVELET THRESHOLDING

Authors: *Christophe Chesneau, Maher Kachour* and *Bertrand Maillot.*

This paper deals with density and regression estimation problems for functional data. Using wavelet bases for Hilbert spaces of functions, we develop a new adaptive procedure based on a term-by-term selection of the wavelet coefficients estimators. We study its asymptotic performances by considering the mean integrated squared error over adapted decomposition spaces.