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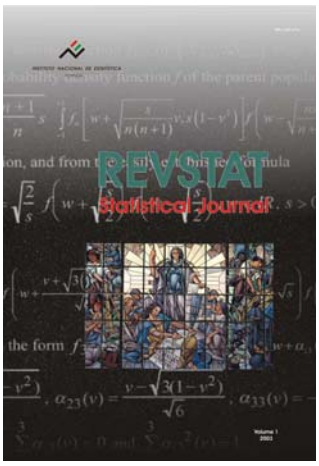

In 2003 the National Statistical Institute launched the scientific statistical journal **REVSTAT-STATISTICAL JOURNAL**, published in English two times a year, with a prestigious international Editorial Board, which came to substitute the *Revista de Estatística* (Statistical Review), published in Portuguese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

The aim of the Editorial Board of **REVSTAT** is to publish articles of high scientific content, developing innovative statistical scientific methods and introducing original research, grounded in substantive problems, covering all branches of Probability and Statistics. Surveys of important areas of research in the field are also welcome.

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This Volume of **REVSTAT: Volume 2, No. 1–June 2004**, which is now come out, publish four articles of which abstracts are presented down:

CHANGES OF STRUCTURE IN FINANCIAL TIME SERIES AND THE GARCH MODEL

Authors: *Thomas Mikosch* and *Cătălin Stărică*

In this paper we propose a goodness of fit test that checks the resemblance of the spectral density of a GARCH process to that of the log-returns.

The asymptotic behavior of the test statistics are given by a functional central limit theorem for the integrated periodogram of the data.

A simulation study investigates the small sample behaviour, the size and the power of our test.

We apply our results to the S&P500 returns and detect changes in the structure of the data related to shifts of the unconditional variance.

We show how a long-range dependence type behaviour in the sample ACF of absolute returns might be induced by these changes

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EXPONENTIALITY VERSUS GENERALIZED PARETO – A RESISTANT AND ROBUST TEST

Author: *M. Fátima Brilhante*

Using resistant and robust methods we propose the statistic $T_n = (F_U - M)/(M - F_L)$ for testing exponentiality versus generalized Pareto, where F_U, F_L and M are, respectively, the upper and lower fourths and the median of a random sample of size n.

The statistic T_n is based on the statistic $V_n = (X_{n:n} - M)/(M - X_{1:n})$ used by *Gomes* (1982) to discriminate extremal models in a similar context but with a higher breakdown point.

The simulated power of T_n is compared with the simulated power of $U_n = X_{n:n}/M$ and V_n, which can also be used to test the exponential behaviour of the sample data.

Although we observe that the power of T_n is lower than the power of U_n and V_n, we show that the performance of the first test is better than the performance of the two other tests when compared to broadened situations and mixtures commonly used to evaluate resistance and robustness.

SIMULTANEOUS TAIL INDEX ESTIMATION

Authors: *Jan Beirlant* and *Yuri Goegebeur*

The estimation of the extreme-value index γ based on a sample of independent and identically random variables has received considerable attention in the extreme- value literature. However, the problem of combining data from several groups is hardly studied.

In this paper we discuss the simultaneous estimation of tail indices when data on several independent data groups are available.

The proposed methods are based on regression models linking tail related statistics to the extreme-value index and parameters describing the second order tail behaviour.

For heavy-tailed distributions ($\gamma > 0$), estimators are derived from an exponential regression model for rescaled log-spacings of successive order statistics as described in *Beirlant et al*. (1999) and *Feuerverger* and *Hall* (1999).

Estimators for $\gamma \in IR$ are obtained using the linear model for *UH* – statistics given in *Beirlant et al*. (2000a).

In both cases, the optimal number of extremes to be used in the estimation is derived from the asymptotic mean square error matrix.

ESTIMATION PARETO TAIL INDEX USING ALL OBSERVATIONS

Authors: *A Fialová, J. Jurecková* and *J. Picek*

We propose an estimator of the Pareto tail index m of a distribution, that competes well with *Hill*, *Pickands* and moments estimators.

Unlike the above estimators, that are based only on the extreme observations, the proposed estimator utilizes all observations; its idea rests in the tail behaviour of the sample mean X_n, having a simple structure under heavy-tailed F.

The observations, partitioned into N independent samples of sizes n, lead to N sample means whose empirical distribution function is the main estimation tool.

The estimator is strongly consistent and asymptotically normal as $N \to \infty$, while n remains fixed. Its behaviour is illustrated in a simulation study.

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