Regression rank-scores tests in R

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R. Koenker a G. Basset (1978) proposed the regression quantiles as any generalization of usual quantiles to linear regression model. They characterized the regression quantile as the solution of the linear program. Gutenbrunner and Jurečková (1992) called the componenents of the optimal solution of dual problem as the regression rank scores. They showed that many aspects of the duality of order statistics and ranks in the location model generalize naturally to the linear model.

Gutenbrunner and Jurečková (1992) proposed some tests based on regression rank scores generated by truncated score functions. A general class of tests based on regression rank scores, parallel to classical rank tests as the Wilcoxon, normal scores and median, was constructed in Gutenbrunner et al. (1993). The tests of the Kolmogorov-Smirnov type were proposed by Jurečková (1992) and the tests of homoscedasticity in the linear model based regression rank scores were proposed by Gutenbrunner (1994). The concept of regression rank scores was extended in Koul and Saleh (1995), as autoregression rank scores, to the autoregressive (AR) model. The tests of the linear hypothesis on the AR parameter based on the autoregression rank scores were constructed in Hallin and Jurečková (1997) and in Hallin and el. (1997). A nonparametric test of independence of two autoregressive time series was considered Hallin and el. (2001). Goodness-of-fit tests in the model with nuisance regression and scale parameters were constructed by Jurečková, Picek and Sen (2003).

The purpose of this presentation is to show the implementation of above mentioned tests in R.

References

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