PREFACE

The present volume of Acta Universitatis Lodziensis - Economic and Social Sciences Section consists of papers presenting some new results on:

- a comparison of estimated power of run tests, modified Theil test and F tests all as the linearity tests of model $Y = \alpha_o + \alpha_1 X_1 + \alpha_2 X_2 + \varepsilon$;

- derivation of recursive formulae for probabilities connected with runs distributions (runs length distribution, number of runs distribution and their joint probability distribution, for instance, when successive observations in a sample are generated by a stationary Markov chain at two states);

- derivation of iterative least-squares estimators for the parameters of relations $y_i = \beta_o + \beta_1 X_i + u_i$ (where: a) $u_i = \rho u_{i-1} + \varepsilon_i$, ε_i follows "white noise" process, $0 \leqslant \rho \leqslant 1$; b) $u_i = \varepsilon_i - \theta_1 \varepsilon_{i-1}$, $|\theta_1| < 1$, $\varepsilon_i \sim I\mathcal{N}(0, d^2)$) and proving asymptotic normality of these estimators;

- consequences of replacement of the classical least-squares estimator $B_o = (X'X)^{-1}X'Y$, the predictor $\hat{Y}_o = XB_o$ and the residual vector $E = Y - \hat{Y}_o$ with their ridge counterparts using the ridge adjustment matrices cI and $C = \mathrm{diag}\,(c_1, \ldots, c_k)$ (where consequences concern traditionally used performance measures as well as the length of estimator, predictor, residual vector and their variances and density functions);

- some ranking of sample ridge estimators (with cI and C estimated) on the ground of Monte-Carlo results for the accuracy and predictive power measures of estimator's performance;

- an analysis of the range of five efficiency lower bounds for the general linear model with different shapes of autocorrelation schemes; these lower bounds have been made dependent on the four different forms of autocorrelation matrices Ω_i, $i =$

$= 1, \ldots, 4$, $|\varrho| < 1$, the sample size n, the number of parameters k, five analytical forms of lower bounds of determinental efficiency measure;

- consequences of bad-conditioning of statistical data on explanatory variables;
- definitions of ill-posed estimation problems;
- the definition of a family of regularized estimation quality functionals;
- deriving some of the regularized estimators under quadratic metric functionals, and showing how to analyse them;
- a comparative analysis of Kmenta's estimation method for CES-type production function and new Kmenta-like estimation methods with respect to their accuracy.

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