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Special issue on econometrics and operational research

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SPECIAL ISSUE ON ECONOMETRICS AND OPERATIONAL RESEARCH

This special issue of *Kybernetika* contains research papers from the field of econometrics and operational research. It provides an overview of research activities of the authors from different Czech Universities as well as authors from several co-operating institutions, first of all, from Universidad del Pais Vasco in Bilbao.

The Department of Econometrics and Statistics of the Universidad del Pais Vasco hosts a group of excellent specialists in the area of time series autoregression and cointegration. The paper by F.J. Fernández-Macho investigates some possibilities how to introduce dynamics into the standard factor analysis. He treats also the delicate problem of typical economic time series which are nonstationary, therefore possess already their own dynamics. Emilio Caminero and Ignacio Díaz-Emparanza generalise a maximum likelihood method for testing seasonal cointegration. The generalisation is particularly suitable for cases with strongly seasonal monthly data. Critical values for the cointegration test statistics are obtained by Monte Carlo simulations and the performance of the method is illustrated on production indexes of the Spanish economics. Petr Mariel constructs a model of advertising efficiency based on differential game techniques, Nash equilibrium concept, and econometric simultaneous equations. The model is tested by using data from the German automobile industry. This last part of the paper is certainly of exceptional interest, because the data on advertising efficiency, similarly as all data about firms' public relations, are all but complaisantly published.

Václava Pánková presents a model which analyses the sources of inflation in the Czech Republic by using the latest available data. Specifically, she investigates the classical dependence of the inflation and unemployment, expressed by popular, and sometimes controversial Phillips curve concept. The paper by Jitka Dupačová and three co-authors deals with the problems connected with estimation of yield and volatility curves in bond portfolio management. They explore and compare several types of parametric and nonparametric regression models for estimation of the two curves and report on numerical experience based on data from the Italian bond market.

The last three papers thematically belong to the operational research category. Milan Vlach and Karel Zimmermann propose an algorithm for specification of starting times for a class of single machine scheduling problems. The goal is to minimise

the total penalty which is a sum of partial penalties generated when jobs are not processed within a specified time interval. A machine scheduling problem is investigated also by Petr Fiala. He proposes a procedure for optimising a parallel machine system with respect to two criteria: to minimise the total processing time and to minimise the number of job preemptions. The exact solution of the problem is NP-hard, the proposed algorithm is a heuristic one. Jan Pelikán describes an algorithm for decreasing the number of nodes and arcs in project management models by using suitable aggregations. The new aggregated model must, of course, preserve all essential characteristics of the original network.

Some papers in this issue are not particularly "reader friendly", that is, the authors use brief mathematical style, complicated formulas, and assume knowledge of related, often highly specialised results. But in its total the issue comprises a collection of new and significant contributions to econometrics and operational research.

Miroslav Mañas
Guest Editor