APPLICATIONS OF MATHEMATICS AND STATISTICS IN ECONOMY THE 12TH INTERNATIONAL SCIENTIFIC CONFERENCE

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The 12th international conference Applications of Mathematics and Statistics in Economy (AMSE) 2009 was organized by the Department of Statistics and Probability of the Faculty of Informatics and Statistics of Economic University in Prague, the Czech Republic in Uherske Hradiste (Czech Republic), 26-28 August 2009. This conference is alternately organized by the Department of Quantitative Methods and Informatics of the Faculty of Economics, Matej Bel University in Banska Bystrica, the Slovak Republic and by the Department of Statistics of Wrocław University of Economics, Poland and by the Department of Statistics and Probability of the Faculty of Informatics and Statistics of Economic University in Prague, the Czech Republic. The presentation of latest knowledge and applications of mathematics and statistics in economy and scientific results of participants from these universities have been the main purpose of these conferences. The first such a conference was held in Liptovsky Trnovec, the Slovac Republic in 1998. The initiator of the idea of AMSE was Professor M. Abraham from Matej Bel University.

There were 37 contributions in 6 sessions at the l2th conference AMSE 2009. *The Dynamic Modelling of Economic Processes – Celebration of the Derivative of a Function* presented by R. Zimka opened this conference. He showed how the dynamic meaning of the derivative of a function enabled to construct dynamic models of economic processes. In the contribution *New Developments in Fuzzy Cluster Analysis* H. Rezankowa and D. Husek presented the relation of fuzzy clustering, soft clusters ensembles, similarity of fuzzy clusters, visualization of clustering results, interactive exploration of fuzzy clusters and techniques for cluster number determination. The paper *Utility*

function in an Insurance presented by J. Spirkova introduced the concept of generation of the utility function not only in the insurance, but also in other area of the decision making. O. Vilikus in the contribution *Clustering Data Based on Directly Unobservable Attributes* explored ways how to handle heterogeneous samples in parameters of estimated models with the use of latent variable models. Problems with the estimation of gross domestic product were presented by L. Peceny in the paper *Temporal Disaggregation of GVA in Construction Sector.* K. Makovinyiova and R. Zimka presented the paper *On the necessary condition for the bifurcation of a torus in a macroeconomic model.* They investigated four-dimensional macroeconomic models of small open economy. The development of income, capital stock, interest rate and money stock were analyzed in the model. In the contribution *Empirical Analysis of the Czech Macroeconomic Consumption Function* L. Valentova Pulpanova presented the results of survey research of relationship between consumption expenditures and income. In the paper *Dynamic Model of Small Open Economy under Fixed Exchange Rate* P. Medvedova analyzed the free dimensional dynamic model a small open economy, describing the development of net real national income, real physical capital stock and nominal money stock. In the contribution *On the Hardwick's Rule in Multidimension Case* A. Dekret studied the intergeneration equity problem which neglects optimal consumption. J. Kahounova and J. Vojtech presented two kinds of models for extreme values in the paper *Limitting Probability of Random Sample Maximum*. In the contribution *Fitting Gluten Quantity and Gluten Index in Mixture Model of Base Flours* C. Kozyra presented the results of estimating the mixture model of same base flourto receive flour possessing wanted properties, which are determined by tolerance limits. I. Pecakova and O. Vojacek presented the paper *Discrete Choice* Models, which summarized models for categorical dependent variable and statistical systems applicable for their estimation. In his paper *Time of Crystal Balls (GDP Predictions in Crisis)* J. Cadil pointed at one contemporary analytical problem connected with economic crisis. E. Zimkova and V. Uradnicek assessed in the paper *Synchronisation of Business Cycles-Cross Country Analyses* the degree of co-movements of German, French, Italian and Slovak economies over the last 15 years.

E. Mazurek and M. Kośny presented the article *Influence of Child Tax Credit on Inequality in Gross and Net Income in Poland.* In the contribution *Methods Used for Price Measurement* P. Coufalova presented methods such as Price Sensitive Meter, BPTO and Conjoint Analysis used in market research. S. Heilpern presented the paper *Generalized binominal distribution-Dependent Version.* He studied the Markov binominal model, which may be applied in insurance. In the paper *Model-Based Curve Clustering Using Unsupervised Learning* P. Pesout focused on some efficient methods of clustering trajectories. In the contribution *Categorical Data Analysis in R* M. Prokop showed the possibilities of statistical software R in categorical data analysis. R. Pavelka presented the paper *Application of Density Mixture in the Probability Model Construction of Wage Distributions.* He drew attention that the statistical model of wage distribution can be formulated as a mixture of log-normal distributions. V. Jerabkova analyzed *Unemployment in the Czech Republic and Its Prediction Based on Box-Jenkins Methodology.* J. Boruvkowa and B. Minarik presented the paper *The Linear Regression Model of Education Expenditure in the EU* and the results of analysis sphere of education using the latest available data of Eurostat. In the contribution *The Tendency of Slovak University Students in Their Future Economic Activities* A. Kascakova and G. Nedelova analyzed the affective factors of enterprise of the Slovakian University students. In the paper *The Impact of Human Capital on Productivity in all Industries in the Czech Republic* K. Vlatavska examined the importance of investments in human capital for increasing both national and international competitiveness of industries. In the contribution *Testing the Validity of the Black Version of the CAMP* M. Boda and M. Kanderova focused on the empirical verification of the black version of CAPM in theory and practice. M. Cicha presented the paper *Risk-Neutral Option Pricing* and introduced derivatives pricing tool derived from the binominal tree process of underlying asset price under the assumption of constant volatility. In the contribution *Nonparametric Estimation of Long Volatility with Wavelets* M. Basta described a nonparametric way to the estimation of the logarithm of volatility from the logarithm of squared returns. A. Nikodem considered *Approximation of the Stop-Loss Premium for the Compound Poisson Distribution* and compared it to

light tailed and heavy tailed claim size distribution. P. Laco and M. Bukovska compared *Impact of Seasonal Variations on Tourism Businesses in Slovakia and Czech Republic* using the methods of econometric analysis. In their paper *Predicting Financial Distress of Slovak Companies Using Fuzzy Sets Theory* P. Kral and V. Hiadlovsky focused on the application of fuzzy sets theory in the classification process. In the paper *Alternative Use of Control Charts in Company Financial Proceeding* P. Klimek and M. Kovarlik dealt with company financial stability regulation with the help of SPC (statistical process control) methods, specifically with the help of control charts and capability indexes of the process. In the contribution *Some Approximations of Ruin Probability in Finite Time* A. Iwanicka showed that corrected diffusion approximation gives most accurate results of all considered methods. P. Zimmermann described *The Settlement Process and Its Properties.* In the paper *Longevity in Insurance* M. Perina analyzed longevity risk and mortality risk from the actuarial point of view and focused on the issues of embedded value calculation and asset liability management in insurance. In her paper *Migration, Mobility and Trade Flows Between Selected New EU Members* E. Kacerova presented relations in the form of human migration in four countries (Czech Republic, Slovakia, Hungry and Poland). T.Fiala and J. Langhamrova analyzed *Changes in the Age Structure of the Population in the Czech Republic and Economics Consequences*.