Editorial

This Special Issue is focused on the most exciting areas of Econophysics of Markets and Economic Networks, mainly:

- statistical and probabilistic methods in economics and finance,
- scale-invariance and universality in financial time series,
- multi-scaling analysis and modeling,
- agent-based models in economics and finance,
- behavioral finance, bounded rationality, and learning,
- volatility, risk, and uncertainty in the markets,
- markets as complex adaptive systems,
- non-linear dynamics and econometrics, and
- complex socio-economic networks.

The Editors selected papers on the basis of both the importance of the contribution to the areas of Econophysics of Markets and Economic Networks, and novelty of approach. Each of the papers has undergone the usual refereeing process.

The first part of the Special Issue focuses on problems of the Non-linear dynamics and econometrics. The paper represented by Carl Chiarella, Hing Hung, and Peter Flaschel: Keynesian Macrodynamics: Convergence, Roads to Instability and the Emergence of Complex Business Fluctuations compares the traditional AS-AD growth model, with a Taylor policy rule replacing the conventional LM-curve with the New Keynesian approach with staggered price and wage setting and finds that whilst both approaches have common components, they have radically different dynamic implications due to the treatment of the forward-looking part of the wage-price spiral.

Next paper by Orlando Gomes: Nonlinear Inflation Expectations and Endogenous Fluctuations is focused on the standard new Keynesian monetary policy problem that is presentable as a set of linearized equations, for values of endogenous variables relatively close to their steady-state. As a result, only three possibilities are admissible in terms of long-term dynamics: the equilibrium may be a stable node, an unstable node or a saddle point. Fixed point stability (a stable node) is generally guaranteed for an active monetary policy rule. The benchmark model also considers extremely simple assumptions about expectations (perfect foresight is frequently assumed). Changes in the way inflation expectations are modelled imply a change in monetary policy results, when an active Taylor rule is considered. By assuming that inflation expectations are constrained by the evolution of the output gap, the implications of the policy interventions on: endogenous cycles, various periodicities, and chaotic motion will be observable for reasonable parameter values.

The second part of the Special Issue focuses on the volatility, risk, and uncertainty in the financial markets. The paper by Jozef Baruník, Lukáš Vácha, and Miloslav Vošvrda is focused on the power law behavior of Czech, Polish and Hungarian stock

markets and compare them to the benchmark U.S. and German stock markets. In the paper, authors show both the difference in the stock market behavior before the financial crisis and during the crisis as well as changes in the tail behavior of all indices.

The paper by Vít Bubák is oriented to evaluate the quantile forecasts of the daily equity returns on three of the most liquid stocks traded on the Prague Stock Exchange. It is demonstrated that a simple autoregressive model for realized volatility together with the assumption of a normal distribution for expected returns results in more accurate VaR forecasts relative to those based on other models (HAR, MIDAS) and/or other methods of computing the distribution of future returns.

The paper by Ladislav Krištoufek presents the finite sample properties of two most widely used methods of the Hurst exponent estimator: rescaled range analysis (R/S) and detrended fluctuation analysis (DFA). The results propose that R/S still remains useful and robust method even when compared to newer method of DFA which is usually preferred in recent literature.

Finally, the paper by Dror Y. Kenett, Yoash Shapira, Asaf Madi, Sharron Bransburg-Zabary, Gitit Gur-Gershgoren, and Eshel Ben-Jacob presents an innovative visualization tool that allows an investigation of the structure and dynamics of the market, through the study of correlations. This is based on a qualitative Stock Market Holography method. This qualitative measure is complemented by using of an eigenvalue entropy measure, to quantify information in the market changes in time. This paper covers new concepts for the study of financial markets in terms of structure and information as reflected by the changes in correlations over time.

Miloslav Vošvrda, Guest editor