SCIENTIFIC REPORT regarding implementation of the project „Uncertainty, Complexity and Financial Stability” in the period January 2015 - December 2015
Worldwide, 2015 was an extremely fruitful year regarding the study of the financial system and investigation of conditions assuring its stability. Deepening the analysis of financial stability led to the conclusion that this topic is much more complex than was assumed at the beginning of the financial crisis, in 2007-2008.

At present, it is almost unanimously accepted that assuring financial stability represents a central problem of economic science. At the same time, identification of econometric models for calculating systemic risk, in order to avoid new financial crises, represents a problem of major importance for economic practice.

Taking into account the scientific relevance and the practical importance of the subject, the implementation team of the project PN-II-ID-PCE-2011-3-1054 developed in 2015 numerous scientific contacts with similar teams from European and American universities, as well as teams responsible with financial stability at the National (Central) Bank of Romania, at the Authority of Financial Supervision and at the European Central Bank.

The research activity performed by the team of the project „Uncertainty, Complexity and Financial Stability” was focused, during the year 2015, toward satisfying, in the best possible conditions, the objectives assumed through the Project Implementation Plan, namely:

- Further thorough analysis of the topology of the financial system of Romania, of the European Union, as well as of the world economy;

- Modeling the contagion phenomena in banking systems, with application to the Romanian banking system;

- Thorough study of the functioning mechanism of financial and currency markets, with special accent on building econometric models aiming at substantiating the role of volatility in price formation of financial assets. At the same time, we worked out econometric models for studying the yield curve of financial assets. The models were applied for the Romanian economy;

- Working out an econometric model for estimating the real equilibrium exchange rate for Romania;
- Modeling the transmission mechanism of monetary policy;

- Special attention was granted to investigating the way of correlating the financial cycle with the economic cycle and the influence of this correlation on the systemic risk;

- On the basis of the Additional Act Nr 2/2015 for implementation of the project, we started working out DSGE (Dynamic Stochastic General Equilibrium) type models and ABM (Agent-Based Model) type models; this activity will continue in 2016.

The results obtained in 2015 in the activity of implementing the project materialized in:

I. BOOKS


The work contains 18 chapters:

Ch. 1: ”Modeling and Forecasting the Yield Curve” (Jelea, A.)

Ch. 2: “Financial and Business Cycles. Worldwide Correlations and Determinants” (Zaharia, A.)

Ch. 3: “An Empirical Approach to Regime Switching Volatility Models” (Bănică, M. V.)

Ch. 4: “Stochastic Volatility Model under Bayesian Approach” (Gavrilă, L. I.)

Ch. 5: “Identifying the Monetary Policy Transmission Mechanism” (Chezan, V.)

Ch. 6: “Output Gap and Financial Cycles” (Stoica, M.)

Ch. 7: “Contagion. Systemic Risk” (Spoială-Slav, A.)

Ch. 8: “Models and Techniques for Quantifying Macroeconomic Risk” (Trușcă, N. D.)

Ch. 9: “Estimating Equilibrium Exchange Rate” (Nacu, I. A.)

Ch. 10: “The Transmission Mechanisms of Monetary Policy” (Roman, D. G.)

Ch. 11: “Early Warning Systems for Bankruptcy Prediction and Credit Risk Assessment” (Dumitran, R. A.)
Ch. 12: “Unconventional Monetary Policies: Impact of Verbal Intervertor” (Florescu, C. D.)

Ch. 13: “Modeling the Yield Curve Dynamics” (Gașpar, E.L.)

Ch. 14: ”The Transmission Mechanisms of Financial Shocks in Global Economy” (Lolev C. D. P.)

Ch. 15: “Banks' Self-Insurance Using Bail-In Measures” (Măgdălin, I. A.)

Ch. 16: “Volatility Modeling in Finance and Banking” (Marin, A.)

Ch. 17: “The Evolution of Fiscal Multipliers during the Global Financial Crisis. The Case of Romania” (Marin, C. G.)

Ch. 18: “Identifying the Effects of External Shocks on the Romanian Economy Using Factor Augmented VAR” (Chifu, A. M.)

The work has the following Acknowledgement: ”The present volume was supported by a Grant of the Romanian National Authority for Scientific Research, CNCS - UEFISCDI, Project number PN-II-IDPCE-2011-3-1054, entitled "Uncertainty, Complexity and Financial Stability", within the Romanian-American University Bucharest”.

II. ARTICLES PUBLISHED IN SCIENTIFIC JOURNALS: 8


In Table 1 we present the number of articles and the ISI journals in which they were published.

Table 1 – Articles published in 2015 in ISI journals

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Name of the ISI journal</th>
<th>ISSN</th>
<th>Impact Factor</th>
<th>Relative Influence Score</th>
<th>Articles published in 2015</th>
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<tbody>
<tr>
<td>1</td>
<td>Journal of Financial Intermediation</td>
<td>1042-9573</td>
<td>1,283</td>
<td>3,454</td>
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<tr>
<td>2</td>
<td>European Journal of Operational Research</td>
<td>0377-2217</td>
<td>1,203</td>
<td>1,576</td>
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</tr>
<tr>
<td>3</td>
<td>Journal of Banking &amp; Finance</td>
<td>0378-4266</td>
<td>1,094</td>
<td>1,191</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Romanian Journal of Economic Forecasting</td>
<td>1582-6163</td>
<td>0,167</td>
<td>0,072</td>
<td>2</td>
</tr>
</tbody>
</table>
III. PAPERS PRESENTED AT INTERNATIONAL CONFERENCES : 4

In 2015, the members of the implementation team of the project presented papers at 4 prestigious international scientific Conferences.


Project Director,

Iftekhar HASAN