

## From the Editor

Nowadays, in the field of economic sciences and especially in those areas that require planning and organizing, models - in all their diversity and typology - are more frequently being used. The last decades have witnessed a growing tendency to better use mathematical models in these areas and this is mostly due to their capacity to rigorously condense the essential, as well as their possibility to be programmed with the help of computer techniques. Along with the latter, mathematical models have become instruments of scientific investigation of undeniable power and a prodigious "extension" of the human intelligence.

Applied mathematics – along with all its consolidated areas – has appeared as much an objective necessity, as it did as a reflection of the human being's desire to know more. It is well-known that a qualitative description of an observed phenomenon and the issuance of a law aren't enough to make a point, unless a more profound study of the qualitative laws that stay at the bottom of that phenomenon isn't made. Mathematics allows us to issue and evaluate the errors, to better reflect the more important factors that influence the observed phenomenon, to see how much the results depend on the data provided, and when solutions exist but cannot be determined exactly, to help approximate numerical solutions with appropriate methods of the numerical analysis.

The current book - *Mathematical Models in Economics* - has been put together with the purpose of giving an example of the possibilities to use specific modern methods (optimal control, neural networks, data envelopment analysis, wave equations, dynamical systems) that can be put into application on a very large scale, in numerous key-areas of the field of economics. Various analysis regarding the static case are made for a more profound understanding of the correlations that arise between different variables in micro and macroeconomics, and they are made as well taking into account the dynamic case, which brings this paper even closer to reality. Furthermore, another subject rendered by the book is that of economic mechanisms from a stochastic point of view (this is especially explained in the chapters regarding the game theory) which prove once more the random character of economic variables.

From the multitude of mathematical models regarding the dynamic of different economic variables, this book includes: allocation models, regional growth, dynamic models of the cycle of commerce, others models concerning the crisis of the Euro zone, decision-making models or advertising models. While some may be thoroughly analyzed, others reflect only a summarized matter of the problem.

The manner of presentation is clear, detailed, generously illustrated and provided with finalized mathematical calculations. The compatibility between the numerical results and real economic cases is remarkable and it proves once again the importance and the effectiveness of the subject undertook.

Hence, the book is a praiseworthy contribution of the authors to the field of economics, constituting itself as an exceptional scientific material. It can be of use to all those who – already having a basic understanding of the field of economics – wish to extend their knowledge and make decisions based on more rigorous calculations.