
Foreword

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Biographical notes: Constantin Zopounidis is Professor of Financial Management and Operations Research at the Technical University of Crete (Greece), Distinguished Research Professor in Audencia Nantes, School of Management (France), and Senior Academician of the Royal Academy of Economics and Financial Sciences of Spain. He has published more than 400 papers in research journals, edited volumes, and conference proceedings and he has edited and authored 70 books in the areas of finance, accounting, operations research, and management science. In recognition of his scientific work, he has received several awards from international research societies.

During the past decades finance has undergone significant changes keeping pace with the technological innovations and the socio-economic changes that affected the global business environment. The changes in the field of finance resulted to a transformation of its nature from a descriptive science to an analytic science, involved with the identification of the relationship among financial decisions and the decision environment and ultimately to an engineering science, involved with the design of new financial products and the development of innovations with regard to financial instruments, processes and solutions.

This transformation began in the late 1950s with the work of Markowitz on portfolio selection and later, during the 1970s, with the work of Black and Scholes on option pricing. These pioneering works have demonstrated that the descriptive character of financial theory was gradually progressing towards a more analytic one that ultimately led to the engineering phase of finance by the late 1980s.

Several financial researchers and practitioners consider the engineering phase as a new era in finance. This led to the introduction of the term ‘financial engineering’ to describe the new approach on the study of financial decision making problems. Since the late 1980s financial engineering has consolidated its position among financial researchers and practitioners, referring to the design, development and implementation of innovative financial instruments and processes and the formulation of innovative solutions to financial decision making problems.

For an analyst (practitioner or academic researcher) to be able to address the three major aspects of financial engineering (design, development, implementation) in an innovative way, the knowledge of financial theory is not enough. While the financial theory constitutes the underlying knowledge required to address financial engineering problems, some synthesis and analysis approaches are also necessary for innovation.

Thus, the major characteristic of this new context is the extensive use of advanced decision analysis and modelling tools to manage the increasing complexity of the financial and business environments. These tools originate from a variety of different disciplines including statistical analysis, econometrics, artificial intelligence and operations research. Thus, the role of financial decision makers (financial engineers) within the financial engineering context becomes even more complex. They are not only involved in the application of the financial theory, but also in the knowledge of advanced methodological tools and quantitative analysis techniques in order to address effectively financial decision problems.

These issues are particularly important in text context of financial risk management. The concept of risk is central to the theory and practice of finance. Risk is quite challenging to define, measure, and manage. In the capital adequacy regulatory framework of Basel II, multiple types of financial risks are identified, including credit risk, market risk, and operational risk, whereas the revision with Basel III is expected to further add liquidity risk as a distinct component. The financial innovations introduced over the years have provided new opportunities to investors, financial institutions, and firms, but they have also introduced new risks. The recent credit crisis that began from USA and the ongoing sovereign debt crisis in Europe are the most recent examples that there is still too much work to be done in terms of the procedures and practices used for managing financial risks.

With these remarks in mind, I hope that the establishment of the *International Journal of Financial Engineering and Risk Management (IJFERM)*, will provide a very useful international forum for academic researchers and practitioners, facilitating the exchange of new ideas, the presentation of innovative theoretical and empirical results, as well as the analysis of the international best practices in the area through case studies and applied research. *IJFERM* is particularly interested in promoting and strengthening the research on the use of innovative quantitative modelling approaches in the areas of finance engineering and risk management, including both traditional fields such as probability theory, stochastic calculus, statistics, econometrics, as well as new approaches emerging from other disciplines such as management science/operations research and artificial intelligence.

The first issue of *IJFERM* comprises six papers, including five papers from the special issue on 'Commodities financial management', as well as a regular paper on credit scoring in consumer loans (by Ganopoulou, Giapoutzi, and Kosmidou). The special issue has been guest edited by Dr. Kostas Andriosopoulos, Prof. Michael Tamvakis, and Prof. Rita D'Ecclesia, who have done an excellent job in compiling a very interesting set of high quality papers.

Sincere thanks must be expressed to all the authors whose contributions have been essential in creating this first issue of the journal and the guest editors. I also owe a great debt to those who worked long and hard to review all the submitted papers and contributed to the achievement of this issue's high standard. Finally, I should also express my gratitude to Inderscience for supporting the publication of this new journal and all the editorial board members who have accepted to take part in this new effort. I feel confident that with their support *IJFERM* will soon be established as a premier journal in its field.