

## CALL FOR PAPERS

# Special Issue on Risk Analysis in Complex Systems: Intelligent Systems and Finance

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Complexity has emerged as a significant scientific framework for approaching problems in a world of increasing interdependence and integration. Developing the necessary analytical framework and compiling an efficient armoury of problem solving tools is an interdisciplinary enterprise. Merging disciplines offers many opportunities for synergies and cross-fertilization. The challenge is to reformulate management science within the complexity framework through extending the arsenal of modelling techniques and analytical approaches with concepts and tools from physics, biology, computer science, psychology, etc. For example interdisciplinary activity directed at financial problems has so far resulted in the development of econophysics, financial engineering, financial econometrics, computational finance, and behavioural finance. The application of intelligent systems approaches can potentially enhance theory and practice in all these areas.

Risk analysis in complex systems is particularly important. The characteristically high degrees of interdependence and integration in complex systems require more sophisticated approaches to risk identification and measurement.

- In international financial markets shocks propagate even to markets where the fundamentals are sound. Furthermore linkages between markets may vary systematically or be unstable.
- In financial institutions risk is created by both external and internal factors. An overall value-at-risk measure therefore contains interdependent risk components of different types potentially hiding the significance of particular components and interactions.
- In a single market the bounded rationality of market participants can lead to failures to appreciate the presence and potential consequences of risk.

State-of-the-art papers are requested, addressing financial markets and institutions as complex systems, and integrating intelligent systems dimensions into the analysis and management of their inherent risks. Papers dealing with the following topics would be particularly welcome, although other related work will also be welcomed:

- financial contagion detection and measurement
- financial institutions as complex systems
- herding behaviour and its impact on securities pricing
- high-frequency financial data
- alternatives risk measurements
- agent based simulation and scenario analysis
- soft computing approaches
- heuristic search and bounded rationality models
- hybrid frameworks and generalised theory of uncertainty

Authors should clearly indicate in the title page *Special Issue: Risk Analysis in Complex Systems: Intelligent Systems and Finance*, and follow the manuscript style instructions provided at <http://www3.interscience.wiley.com/journal/5697/home/ForAuthors.html>. The manuscripts should be submitted both in print and electronically.

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Submitted papers are expected to present original research contributions, and clearly relate to the aims and scope of the journal of Intelligent Systems in Accounting, Finance and Management. Further questions can be directed to the Guest Editors.

**Revised Submission deadline: 15 September, 2008**