Complexity

Special Issue on **Financial Networks**

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CALL FOR PAPERS

Financial networks have been on the research agenda since the financial crisis of 2008. Today, both regulators and the academia recognize that interconnectedness is a crucial component that had a key role in the amplification of losses in the last crisis. Therefore, understanding the structure of financial networks is important for assessing, monitoring, and regulating financial systems. In addition, it washed away the belief that supervising banks in an individual manner was sufficient to guarantee a safe financial system, as networks can largely amplify negative spillover effects. In this sense, we have seen an increasing effort in designing novel mechanisms for macroprudential regulation that include overseeing aspects of the entire financial system, including its structure.

Though understanding how financial networks amplify shocks is of uttermost importance for policymakers, especially for financial stability and systemic risk issues, the literature is still at its early stages in understanding the role of financial networks as a medium for shock amplification. This mainly occurs because modern financial networks are inherently complex to analyze as economic agents participate in a multiplex of interrelationships in several different markets.

Modeling this heterogeneity of interconnections stands as an important open problem because each connection can potentially create contagion transmission channels that can amplify losses. Another component that further increases the modeling complexity is that each risk channel that arises from this multiplex of interconnections is potentially dependent of each other and thus can additively increase systemic risk in nonlinear ways.

Alternative modeling that uses methods from chaos theory, genetic algorithms, cellular automata, neural networks, and evolutionary game theory that will study the behavior of financial networks or its components is welcome.

Complex networks evolve rapidly overtime and their topology changes substantially. Understanding this evolution and its impact on systemic risk and financial stability is an important research question. There are many gaps in the literature and we hope to address some of them within this call for papers. We look for papers that contribute to the debate on complexity and financial networks.

Potential topics include but are not limited to the following:

- Financial stability
- Systemic risk
- Network prediction
- Interdependent networks
- Cross-system risk
- Default contagion
- Network topology
- Endogenous financial networks
- Investor networks
- Collective behaviour
- Network resilience
- Bayesian dynamic financial networks
- Financial regulation
- Multiplex networks
- Link prediction
- Interbank connections
- Systemic relevance
- Bank supervision
- Machine learning
- Econometrics of networks
- Agent based modeling
- Chaos
- Genetic algorithms
- Cellular automata
- Neural networks
- Deep learning
- Mean field theory
- Evolutionary game theory

Authors can submit their manuscripts through the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/complexity/fn/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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Submission Deadline
Friday, 3 November 2017

Publication Date
March 2018