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Systemic risk assessment through high order clustering coefficient. (English) Zbl 07421965

Summary: In this article we propose a novel measure of systemic risk in the context of financial networks. To this aim, we provide a definition of systemic risk which is based on the structure, developed at different levels, of clustered neighbours around the nodes of the network. The proposed measure incorporates the generalized concept of clustering coefficient of order \( l \) of a node \( i \) introduced in [the authors, “Stratified cohesiveness in complex business networks”, J. Bus. Res. 129, 515–526 (2021; doi:10.1016/j.jbusres.2020.04.005]. Its properties are also explored in terms of systemic risk assessment. Empirical experiments on the time-varying global banking network show the effectiveness of the presented systemic risk measure and provide insights on how systemic risk has changed over the last years, also in the light of the recent financial crisis and the subsequent more stringent regulation for globally systemically important banks.

MSC:
91G45 Financial networks (including contagion, systemic risk, regulation)

Keywords:
systemic risk; clustering coefficient; community structures; network analysis; cross-border banking

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References:
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