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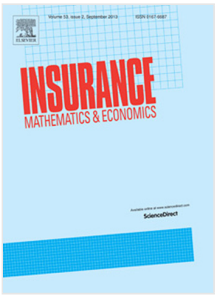

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The Network Structure and Systemic Risk in the Global Non-life Insurance Market

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Abstract

This paper contributes to the literature on systemic risk by assessing the systemic importance of insurers in the global non-life insurance market. First, we estimate the bilateral reinsurance claims matrix using the aggregate outstanding reinsurance data from ISIS and theoretically analyze the interconnectedness in the global reinsurance network using network indicators. The robustness of the estimated matrix is fully assured by sensitivity analysis. Second, we theoretically analyze the contagious defaults introducing the Eisenberg–Noe framework. Reinsurers play a dominant role in the reinsurance network and most of them are included in our data sample. The network analysis finds that some reinsurers with large centrality measures are central in the hierarchical structure of the network. The default analysis shows the occurrences of many stand-alone defaults and only one contagious default via the global reinsurance network after the global financial crisis. In addition, one stress test based on a hypothetical severe stress scenario predicts a few occurrences of contagious defaults in the future. It follows from these analyses that systemic risk via the global reinsurance network is relatively restricted in the global non-life insurance market. In conclusion, our methodology would help supervisory authorities develop an assessment approach for interconnectedness in the global reinsurance network and aid the implementation of insurer stress tests for default contagion.

Keywords: systemic risk; interconnectedness; contagious default; network indicator; G-SIIs

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