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**Abstract title:**

Measuring the propagation of financial distress with Granger-causality tail risk networks

**Abstract:**

Using the test of Granger-causality in tail of Hong et al. (2009), we define and construct Granger-causality tail risk networks between 33 systemically important banks (G-SIBs) and 36 sovereign bonds worldwide. Our purpose is to exploit the structure of the Granger-causality tail risk networks to identify periods of distress in financial markets and possible channels of systemic risk propagation. Combining measures of connectedness of these networks with the ratings of the sovereign bonds, we propose a flight-to-quality indicator to identify periods of turbulence in the market. Our measure clearly peaks at the onset of the European sovereign debt crisis, signaling the instability of the financial system. Finally, we use the connectedness measures of the networks to forecast the quality of sovereign bonds. We find that connectedness is a significant predictor of the cross-section of bond quality.