Uncovering the network structure of non-centrally cleared derivative markets evidences from regulatory data

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Abstract

The network structure of non-centrally cleared derivative markets, uncovered via the European Market Infrastructure Regulation (EMIR), is investigated with a focus on the Covid-19 market turmoil period. Initial and variation margin networks are reconstructed to analyze channels of potential losses and liquidity dynamics. Despite the absence of central clearing, the derivative network is found to be ultrasmall and a filtering tool is proposed to identify channels in the network characterized by the highest exposures. I find these exposures to be mainly toward institutions outside the euro-area (EA), emphasizing the need for cooperation across different jurisdictions. Anomalous behavior in terms of diverging first and second moments on the degree and strength distributions are detected, signaling the presence of large exposures generating extreme liquidity outflows. A reference table of parameters’ estimates based on real data is provided for different network sizes, with no break of confidentiality, making possible to simulate in a realistic way the liquidity dynamic in global derivative markets even when the access to supervisory data is not granted.

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