

Proposed Competition Topic

Global Interconnectedness of Financial Market Infrastructures

The financial crisis of 2008-2009 highlighted the importance of understanding interconnections within the financial system. Lehman Brothers wasn't the biggest player, but it was highly *connected* to other important institutions, so much so that the repercussions of its failure are still being felt today.

One of the results of the financial crisis has been increased regulation around the different types of data that institutions are required to collect, monitor, and make available to regulators, customers, and even to the general public. Along with this abundance of available data has come a push to develop new methods to visualize, categorize, and analyze large amounts of regulatory data and to build models to simulate stress events.

This competition invites participants to explore the financial networks created by financial market infrastructures (FMIs). Participants may choose one or more of the following FMIs: payment systems (PSS), central securities depositories (CSD), securities settlement systems (SSS), central counterparties (CCP), and/or trade repositories (TR). For example, each central counterparty serves a set of clearing members, each of which may be members of one or more other central counterparties. In addition to the direct links between CCPs and clearing members, CCPs are indirectly linked among themselves when they share common clearing members, while clearing members are indirectly linked when they are served by the same CCP(s). Although a primary purpose of CCPs is to mitigate risk, there is in fact some risk induced by the indirect links between CCPs and between clearing members. An analysis of the network created by CCPs and clearing members could help to quantify such risks, find risk concentrations, and serve as the basis for models to simulate possible cascading failures.

Contest entries should use the network(s) created from data about FMIs to develop a map of global interconnectedness of financial market infrastructures. The maps should shed light on the structure of the financial system, to highlight interesting patterns or connections, risk concentrations or identify systemically important institutions and pathways of contagion. Analysis of the networks may include (but is not limited to) measures of network centrality, failure simulations, and visualizations.

All data used in the entries should be from publicly available sources or be made publicly available if currently not available.