Discussion of

A network approach to critical functions assessment using financial market infrastructures data

by Jose Fique

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Kimmo Soramäki

FNA

Summary and Motivation

The paper proposes **network-based indicators** that are constructed
from **bilateral-level financial market infrastructure (FMI) data**
based on a unique report collected to support resolution planning.

This allows to:

- Carry impact analysis, and understand chains of events
- Add a network aspect that cannot be done by participants
  alone
- Assess disruptions to critical function
- Measure who is affected

Why is this important now?

- Higher reliance on "systems" with rules, less on judgement
- State sponsored cyber attacks, National Security
- Covid revealed vulnerability of supply networks
- Ability to measure and quantify the above in policy
  assessment

Discussion points

- Networks in context
  a. The network is Global
  b. Each FMI has a set of subnetworks

- Measuring Criticality
  a. Indicators, Network Indicators vs Simulation

Context: The network is Global

Analysis is often contain on national or regional level due to data constraints

Example:
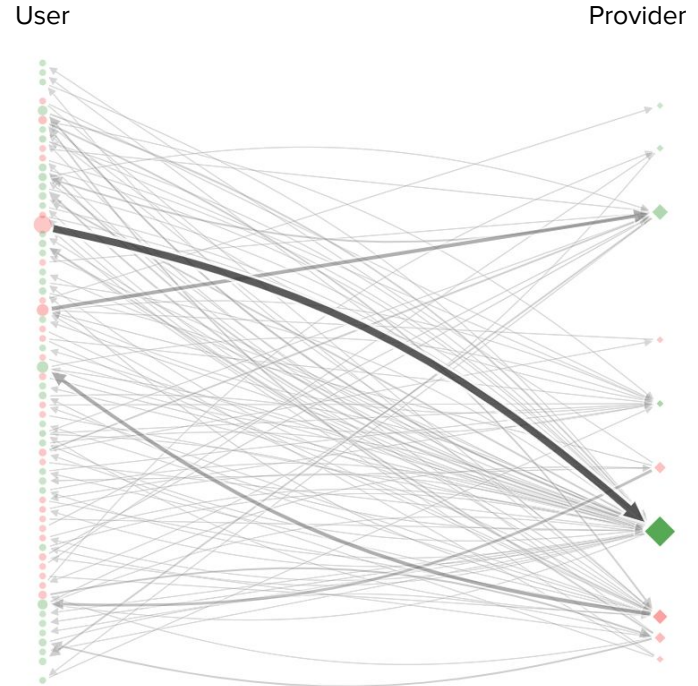Global CCP network sourced from publicly available data
[Link]

Each FMI is a set of subnetworks

Participants play multiple roles within FMIs

- Settlement banks
- Custodians
- Lines of credit
- Liquidity providers
  Nostros
- ...

Concentrations arise in provision of these roles.

User   Provider

Indicators, Network indicators and Simulation

The analysis on criticality uses some network measures

- In-degree - unweighted
- Impact In-degree – weighted
- # of walks* of length two to FMIs

Some global measures of centrality might capture contagion aspects better?

The indicator should capture the process of contagion.

Different processes for different FMIs?

eg SinkRank (Cook Soramaki, 2013), captures a scenario where a payment system participant becomes a liquidity sink

Benefit of indicators vs simulation? (faster, easier to explain & use vs more accurate and versatile)