

## Accepted Manuscript

Title: Financial networks and stress testing: challenges and new research avenues for systemic risk analysis and financial stability implications

Author: Stefano Battiston

PII: S1572-3089(18)30192-X  
DOI: <https://doi.org/doi:10.1016/j.jfs.2018.03.010>  
Reference: JFS 620

To appear in: *Journal of Financial Stability*

Author: Serafin Martinez-Jaramillo

PII: S1572-3089(18)30192-X  
DOI: <https://doi.org/doi:10.1016/j.jfs.2018.03.010>  
Reference: JFS 620

To appear in: *Journal of Financial Stability*

Please cite this article as: Stefano Battiston, Serafin Martinez-Jaramillo, Financial networks and stress testing: challenges and new research avenues for systemic risk analysis and financial stability implications, *Journal of Financial Stability* (2018), <https://doi.org/10.1016/j.jfs.2018.03.010>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



# Financial networks and stress testing: challenges and new research avenues for systemic risk analysis and financial stability implications<sup>☆</sup>

Stefano Battiston<sup>a</sup>, Serafin Martinez-Jaramillo<sup>b,\*</sup>

<sup>a</sup>*FINEXUS Center for financial networks and sustainability, Dept. of Banking and Finance, Univ. of Zurich*

<sup>b</sup>*Financial System Risk Analysis, Banco de México, Av. 5 de Mayo No. 1, Col. Centro, Ciudad de México*

---

## Abstract

Network models, stress testing methods and early warning systems are attracting growing interest both among scholars and practitioners. In this short paper, we illustrate some examples of the insights they have to offer both in terms of new fundamental scientific understanding and in terms of concrete applications to the policy area of financial stability and macro-prudential policy. Finally, we discuss some new research pathways that the field could engage in order to address the challenging questions still open.

*Keywords:* financial networks, systemic risk, financial contagion, financial stability.

---

## 1. Financial networks: the main insights and the main challenges for future research

In the recent years, the field of financial networks models and its applications to stress testing methods and financial stability have attracted growing interest both among scholars and practitioners. It has built both on the literature on complex networks (e.g. Barabási, 2011; Caldarelli, 2007; Dorogovtsev & Mendes, 2003; Barrat et al., 2008) and on the literature in economic networks (e.g. Jackson & Watts, 2002; Goyal & Vega-Redondo, 2005; Galeotti et al., 2010). Today, the field is mature to deliver concrete policy insights and policy applications to financial stability and macro-prudential regulation, as demonstrated by the increasing number of conferences bringing together policy makers and scholars<sup>1</sup>, highly visible positioning papers (Battiston et al., 2016e) and scientific articles (see more below), as well as practical outputs such as systemic risk dashboards<sup>2</sup>, recommendations for stress testing (BCBS, 2015), as well as new tools developed in collaborations among scholars and regulators<sup>3</sup>.

---

<sup>☆</sup>The authors would like to dedicate this paper and also the special issue to our friend, colleague and contributor Ivan Alves.

\*Corresponding author

*Email address:* [smartin@banxico.org.mx](mailto:smartin@banxico.org.mx) (Serafin Martinez-Jaramillo)

<sup>1</sup>see e.g. the IMF conference on Interconnectedness, April 2014, Washington DC; the joint conference of Banco de México, CEMLA, the Univ. of Zurich and the Journal of Financial Stability on "Network models, stress testing, and other tools for financial stability monitoring and macroprudential policy design and implementation", November 2015, Mexico City

<sup>2</sup>E.g. stress-test dashboard for the Euro Area banking system, see <https://simpolproject.eu/2016/06/09/debtrank-2> developed within the FET projects SIMPOL and DOLFINS, Battiston et al. (2016b)

<sup>3</sup>An example among many others is the collaboration between Univ. of Zurich and the European Systemic Risk Board for the development of the Flow of Risk Analysis of the CDS market, D'Errico et al. (2017); and with the European Central Bank on the analysis of systemically important banks and economic sectors in the Euro Area.

Download English Version:

<https://daneshyari.com/en/article/7409131>

Download Persian Version:

<https://daneshyari.com/article/7409131>

[Daneshyari.com](https://daneshyari.com)