

Accepted Manuscript

Title: Interconnectedness as a Source of Uncertainty in Systemic Risk

Author: id="aut0005" author-id="S1572308916302200-098ba67df5ade5706ebe189b81e9a1de"> Tarik Roukny
id="aut0010" author-id="S1572308916302200-da729ee92cbe5e593510984fb18b8588"> Stefano Battiston
id="aut0015" author-id="S1572308916302200-30dd2992c1e3b31387dff2f1126f72e6"> Joseph E. Stiglitz



PII: S1572-3089(16)30220-0
DOI: <http://dx.doi.org/doi:10.1016/j.jfs.2016.12.003>
Reference: JFS 510

To appear in: *Journal of Financial Stability*

Received date: 19-2-2016
Revised date: 2-12-2016
Accepted date: 9-12-2016

Please cite this article as: Tarik Roukny, Stefano Battiston, Joseph E. Stiglitz, Interconnectedness as a Source of Uncertainty in Systemic Risk, *Journal of Financial Stability* (2016), <http://dx.doi.org/10.1016/j.jfs.2016.12.003>

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.

Interconnectedness as a Source of Uncertainty in Systemic Risk [☆]

Tarik Roukny^a, Stefano Battiston^b, Joseph E. Stiglitz^c

^a*Dept. General Economics, Ghent University, E-Mail: tarikroukny@gmail.com*

^b*Dept. Banking and Finance, University of Zurich*

^c*Columbia University*

Abstract

Financial networks have shown to be important in understanding systemic events in credit markets. In this paper, we investigate how the structure of those networks can affect the capacity of regulators to assess the level of systemic risk. We introduce a model to compute the individual and systemic probability of default in a system of banks connected in a generic network of credit contracts and exposed to external shocks with a generic correlation structure. Even in the presence of complete knowledge, we identify conditions on the network for the emergence of multiple equilibria. Multiple equilibria give rise to uncertainty in the determination of the default probability. We show how this uncertainty can affect the estimation of systemic risk in terms

[☆]We would like to thank Matthew Jackson, Darrel Duffie, Mathias Dewatripont, Koen Schoors, Martin Schneider, Antoine Mandel, Kartik Anand, Marco van der Leij, Agostino Capponi and Ariane Szafarz for insightful discussions on the model and the results of this paper. Further, we would like to thank also two anonymous referees and the editor of the Journal of Financial Stability for their very useful suggestions and comments. We are also grateful for the comments received from participants of various conferences including the Stanford Economic Network discussion group, the Columbia-INET seminar, the Centre Emile Bernheim Solvay seminar, the IRIDIA seminar, FiXS seminar, the CORE seminar, the Global Law Week, the WEHIA 2015, the 2015 RiskLab/BoF/ESRB Conference on Systemic Risk Analytics and the Banco de Mexico/CEMLA/UZH Conference on Network Models and Stress Testing. Part of this work was performed while Tarik Roukny was visiting the Economics Department of Stanford University, we therefore thank the hosting support provided during the visit. Tarik Roukny acknowledges financial support from the F.R.S. - FNRS of Belgium's French Community. Stefano Battiston acknowledges support from: FET Project SIMPOL nr. 610704, FET project DOLFINS nr 640772, and the Swiss National Fund Professorship grant no. PP00P1-144689. Stefano Battiston and Joseph Stiglitz acknowledge support from INET research program on Financial Stability.

Download English Version:

<https://daneshyari.com/en/article/7409152>

Download Persian Version:

<https://daneshyari.com/article/7409152>

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