Tarik Roukny

2, Inman Street,
02139 Cambridge,
Massachusetts, USA
roukny@mit.edu

Financial Intermediation, Networks, Technology,
Systemic Risk, Regulation, Market Design

Experience

2017 - now MASSACHUSETTS INSTITUTE OF TECHNOLOGY, MEDIA LAB
Postdoctoral Research Associate

2016 - 2017 GHENT UNIVERSITY, ECONOMICS DEPARTMENT
Postdoctoral Research Associate

2016 EUROPEAN SYSTEMIC RISK BOARD
External Expert

2015 (Fall) EUROPEAN SYSTEMIC RISK BOARD, EUROPEAN CENTRAL BANK
Trainee Program (Dr. Tuomas Peltonen)

2013 - 2015 DEUTSCHE BUNDESBANK, DEPARTMENT OF RESEARCH
External Researcher

2013 (Spring) DEUTSCHE BUNDESBANK, DEPARTMENT OF RESEARCH
Internship (Dr. Co-Pierre Georg)

Education

2011-2016 POLYTECHNIC SCHOOL & CHAIR OF FINANCE, SOLVAY BRUSSELS SCHOOL
Université Libre de Bruxelles (ULB)
Ph.D. in Engineering Sciences and Technology
Title: "*Financial Networks, Complexity and Systemic Risk*"
Supervisors: Hugues Bersini, Hugues Pirottes
Committee: Mathias Dewatripont, Renaud Lambiotte and Koen Schoors

2015 (Spring) STANFORD UNIVERSITY, DEPARTMENT OF ECONOMICS
Visiting Scholar (Prof. Matthew O. Jackson)

2014 (Fall) UNIVERSITY OF CAMBRIDGE, ISAAC NEWTON INSTITUTE
Systemic Risk Program (Prof. Fernando Vega-Redondo and Prof. Rama Cont)

2014 (Spring) UNIVERSITY OF OXFORD, SAID BUSINESS SCHOOL
Wiener-Anspach Fellow (Dr. Felix Reed-Tsochas)

2009 – 2011 POLYTECHNIC SCHOOL, ULB
M.Sc. Engineering and Information Technology
Summa Cum Laude - First Class Honours

2010 – 2011 UNIVERSIDAD POLITÈCNICA DE MADRID
Erasmus Exchange
Summa Cum Laude - First Class Honours

2006 – 2009 POLYTECHNIC SCHOOL, ULB
B.Sc. Engineering and Applied Sciences
Cum Laude

Short-term Visits

2017 European Systemic Risk Board, Media Lab - Massachusetts Institute of Technology (Prof. Cesar Hidalgo)

2016 Dep. Banking and Finance - University of Zurich (Dr. Marco D'Errico), De Nederlandsche Bank (Prof. Iman van Lelyveld)

2015 De Nederlandsche Bank (Prof. Iman van Lelyveld), National Spanish Tax Agency (Dr. Ignacio Gonzales)

2014 Banco de Mexico (Dr. Serafin Martinez-Jaramillo), Financial Networks Analytics (FNA) (Dr. Kimmo Soramaki), Dep. Banking and Finance - University of Zurich (Prof. Stefano Battiston)

2013 INET - University of Oxford (Prof. Doyne J. Farmer)

2012 IMT Lucca (Prof. Guido Caldarelli), Chair of System Design - ETH Zurich (Prof. Stefano Battiston)

Peer-Reviewed Publications

2018 *Generalists and Specialists in the Credit Market*
with Daniel Fricke (UCL - LSE - Deutsche Bundesbank)
Journal of Banking and Finance (in press)

2018 *Interconnectedness as a Source of Uncertainty in Systemic Risk*
with Stefano Battiston (UZH) and Joseph E. Stiglitz (Columbia University)
Journal of Financial Stability, Volume 35, 93-106

2016 *The Price of Complexity in Financial Networks*
with Stefano Battiston (UZH), Guido Caldarelli (IMT), Robert May (Oxford University) and Joseph E. Stiglitz (Columbia University)
Proceedings of the National Academy of Science (PNAS), 2016 113 (36) 10031-10036

2013 *Default Cascades in Complex Networks: Topology and Systemic Risk*
with Hugues Bersini (IRIDIA-ULB), Hugues Pirotte (SBSEM-ULB), Guido Caldarelli (IMT Lucca) & Stefano Battiston (ETH Zurich)
Scientific Reports, Nature Group, Volume 3: 2013

Working/Submitted Papers

2017 *Compressing Over-the-Counter Markets*
ESRB Ieke van den Burg Prize 2017
European Systemic Risk Board WP, 2017-44
with Marco D'Errico (ESRB)

2017 *A Macroprudential View on Portfolio Compression*
Available upon request
with Marco D'Errico (ESRB) and Tuomas Peltonen (ESRB)

Other Publications

2018 *Compressing OTC Markets - Policy Brief*
Research Bulletin, MIT Golub Center for Finance and Policy, 04/2018

2016 *Shedding lights on dark markets: first insights from the new EU-wide OTC derivative dataset*
with Jorge Abad (CEMFI), Inaki Aldasoro (BIS), Christoph Aymanns (LSE), Marco D'Errico (UZH), Linda Fache Rousova (ECB), Peter Hoffman (ECB) and Sam Langfield (ESRB)
Occasional Paper No. 11/16, European Systemic Risk Board

2014 *A Network Analysis of the Evolution the German Interbank Market*
with Co-Pierre Georg (Deutsche Bundesbank) & Stefano Battiston (UZH)
Discussion Paper, Deutsche Bundesbank, no 22/2014

Work in Progress

Centralised and Decentralised Multilateral Netting
with Marco D'Errico (ESRB) and Haoxiang Zhu (MIT Sloan)

A Market-based Approach to Central Bank Digital Currencies
with Christoph Aymanns (LSE)

Contest in Networks
with Ugo Bolletta (GREQAM) and Igor Letina (Bern University)

Awards and Grants

2017	Young Research Initiative Fellow, United Nations Trade and Development Conference
2017	Winner of the ESRB Ieke van den Burg Prize 2017
2016	Visiting Expert Grant, European Central Bank (ECB)
2015	US Visiting Grant, Belgian National Science Foundation (FRS-FNRS)
2014	Isaac Newton Fellowship, INI Program Systemic Risk, Cambridge University
2014	Project Support Grant, Wiener Anspach Foundation, Oxford University
2013-2015	Visiting Fellowship, Deutsche Bundesbank
2012-2016	Belgian National Science Foundation (FRS-FNRS) Fellowship
2011-2012	Seed Financing Doctoral Grant, National Bank of Belgium

Other Training

12/2016	"*Econometrics of Networks*" CORE, Univeristé Catholique de Louvain'
07/2013	"*Modeling and Policy Design for Financial Crises*" WEHIA, University of Reykjavik
07/2013	"*International School on Network Science*" NetSci, Technical University of Denmark, Copenhaguen
10/2012	"*Complex Financial Networks*" FOC - CRISIS, IMT Lucca

Academic Activities

Teaching	· Principles of Scientific Programming (Main Teacher) Cursus: Executive Master of Quantitative Finance 2014 *Solvay Brussels School of Economics and Management*
Academic Supervisor	· *Improving Financial Supervision through a User Friendly and Robust Framework* with Valentin Haarscher · *Analysing the Belgian Economic Fabric using Graph Theory* with Charles Hoffremon
Referee	· Journal of Financial Stability (Elsevier), Journal of Network Theory and Finance (Risk), Scientific Reports (Nature Group), Journal of Complex Networks (Oxford), Plos ONE (PLoS), EPJ Data Science (Springer), Physica A (Elsevier), Advances in Complex Systems
Conference Organisation	· GraphNet Seminars at ULB (Brussels), Deutsche Bundesbank Conference on Networks 2013 (Frankfurt), BENet 2014 (Brussels), BESC 2014 (Shanghai), BESC 2015 (Nanjing), Network Models and Stress-testing - CEMLA 2015 (Mexico), Regulatory Dataframeworks Workshop - ESRB (Frankfurt), Network Models and Stress-testing - CEMLA 2017 (Mexico), Postdoc Seminar Series at MIT Media Lab (Boston), Cryptovalley Conference (Zug), Complex Networks 2018 (Cambridge)

Conferences

2018	Belgian Finance Research Forum (Brussels), CompleNet 2018 (Boston)
2017	United Nations Conference on Trade and Development (Geneva), ESRB 2nd Annual Conference (Frankfurt), Workshop on Measurements and Control of Systemic Risk (Montreal), Conference on Complex Systems 2017 (Cancun), SIAM Network Workshop (Pittsburgh), International Conference on Network Science 2017 (Indianapolis), International Banking, Economics and Finance Association 2017 (San Diego), Joint Expert Group in Interconnectedness - ESRB/ECB (Frankfurt), First Conference of Financial Networks and Sustainability (Zurich), American Economic Association 2017 Annual Meeting (Chicago)
2016	BeNet 2016 (Louvain-La-Neuve), Systemic Risk in Derivatives Markets - Systemic Risk Center (London), IFABS 2016 (Barcelona), Joint Expert Group in Interconnectedness - ESRB/ECB (Frankfurt), Belgian Research Financial Forum (Brussels)
2015	Joint Expert Group in Interconnectedness - ESRB/ECB (Frankfurt), Stress Testing For Financial Stability - CEMLA/University of Zurich (Mexico), Systemic Risk Analytics - ESRB/Bank of Finland (Helsinki), Endogenous Networks and Equilibrium Dynamics - Banque de France (Paris)
2014	Network Analysis and Financial Stability Issues - CEMLA (Mexico), ECCS 2014 (Lucca), Global System Science Meeting (Lucca), Eco**2 Symposium - London School of Economics (LSE)
2013	Workshop on Financial Networks - Deutsche Bundesbank (Frankfurt), IFABS 2103 (Nottingham), WEHIA 2013 (Reykjavik), Second GSS Conference (Brussels), Networks of Networks - NetSci 2013 (Copenhagen), Network Approaches to Interbank Markets (Castellon)
2012	Modelling Financial Systems - Latsis Symposium (Zurich), Data-driven Modelling of Contagion Processes - ECCS 2012 (Brussels)

Seminars

2018	Finance lunch Seminar - MIT Sloan
2017	Finance Seminar - University of St. Gallen, LIDS Seminar - MIT, Financial Mathematics Seminar - Worcester Polytecnic School, Institute for Data, Systems and Society (IDSS) - MIT, Chair of Mathematical Finance - Imperial Colledge London, NaXys Seminar - University of Namur, Media Lab - MIT
2016	Interaction Seminar - GREQAM Université of Aix-Marseille, ESRB Seminar - European Central Bank, Research Seminar - The Nederlandsche Bank, CeNDEF- University of Amsterdam, CORE - Université Catholique de Louvain, Department of Economics - University of Ghent, CeReFIM - University of Namur, Departement of Banking and Finance - University of Zurich
2015	Media Lab - Massachusetts Institute of Technology (MIT), Department of Economics - Ghent University, Emile Bernheim Centre - Université Libre de Bruxelles, Department of Economics - Stanford University
2014	Isaac Newton Institute - University of Cambridge, NaXys - Université de Namur, Financial Complex Systems (FiXS) - Université Catholique de Louvain, INET - Oxford University, Paris School of Economics (PSE) - Unversité Paris Sorbonne-Panthéon
2013	DG-Market - European Commission, INET - Oxford University, IB2 - ULB and VUB (Brussels), ECARES - Solvay Brussels School of Economics and Management

Conference Discussions

06/2017	*CDS market structure and systemic risk* (Iman van Lelyveld) Session on Understanding Derivative Markets Using Trade Repository Data International Banking, Economics and Finance Association (IBEFA), San Diego
05/2014	*Mandatory Disclosure and Financial Contagion* (Gadi Barlevy) Interconnectedness: Building Bridges between Policy and Research International Monetary Fund (IMF) Conference, Washington DC
10/2013	*Taking Uncertainty Seriously: Simplicity versus Complexity in Financial Regulation* (Sujit Kapadia) Banking Regulation in Complex Financial Systems Deutsche Bundesbank Conference, Frankfurt

Computer Skills

C, C++, JAVA, HTML, CSS, PHP, SQL, MATLAB, R, Python, STATA, Qt, OpenGL, LISP, Perl, Bash, MS Office, Latex, Django, Git, Bootstrap

Software Development

NetGen (http://www.netgen-toolbox.net)
Open source software that cleans and analyzes raw data on financial networks. Aimed at helping policy makers and academics in analysing markets through the lens of data mining and network theory

Languages

French (native), English (fluent), Spanish (fluent), Dutch (basic), Arabic (basic)

last update: February 2018