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Main Research Interests

Heterogeneous Agent Models, Learning and Bounded Rationality, Experimental Economics, Nonlinear Dynamics, Evolutionary Finance, Agent-Based Modeling, Economic and Social Networks

Current Position

from 07/2014 **Associate Professor**
Economics Discipline Group, UTS Business School

Affiliations

from 02/2012 **Research Associate**
Centre for Applied Macroeconomic Analysis (CAMA),
Australian National University

from 01/2012 **Research Fellow**
Center for Nonlinear Dynamics in Economics and Finance (CeNDEF),
University of Amsterdam

from 07/2005 **External Member**
Laboratory of Economics and Management,
Sant'Anna School of Advanced Studies, Pisa, Italy

Previous Positions

01/2012 – 06/2014 **Senior Lecturer**
Economics Discipline Group, UTS Business School

05/2008 – 01/2012 **Assistant Professor**
Faculty of Economics and Business, University of Amsterdam

08/2009 – 01/2012 **Research Fellow**
Tinbergen Institute, the Netherlands

10/2005 – 04/2008 **Post Doctoral Research Fellow**
Faculty of Economics and Business, University of Amsterdam

09/2001 – 07/2005 **Graduate Researcher**
Sant'Anna School of Advanced Studies, Pisa, Italy

Education

09/2001 – 07/2005 **Ph.D. in Economics**
Sant'Anna School of Advanced Studies, Pisa, Italy

09/2000 – 07/2001 **MA in Economics** (with Honors)
Consortium for Research and Continuing Education in
Economics (CORIPE Piemonte), Moncalieri (TO), Italy

09/1998 – 07/2000 **MA in Economics** (with Honors)
European University at St.Petersburg, Russia

09/1993 – 07/1998 **MSc in Mathematics** (with Honors)
St.Petersburg State University, Russia

Publications

1. “Microfoundations for Switching Behaviour in Heterogeneous Agents Models: An Experiment”, (with Te Bao and Jan Tuinstra), *Journal of Economic Behavior and Organization*, forthcoming. 2016.
2. “Connecting the Dots: Econometric methods for uncovering networks with an application to the Australian financial institutions”, (with Valentyn Panchenko), *Journal of Banking and Finance*, Vol. 61, pp. S241-S255, 2015.
3. “Interest Rate Rules and Macroeconomic Stability under Heterogeneous Expectations”, (with Tiziana Assenza, Cars Hommes and Domenico Massaro), *Macroeconomic Dynamics*, Vol. 17, pp. 1574-1604, 2013.
4. “Learning Cycles in Bertrand Competition with Differentiated Commodities and Competing Learning Rules”, (with Dávid Kopányi and Jan Tuinstra), *Journal of Economic Dynamics & Control*, Vol. 37, pp. 2562-2581, 2013.
5. “Evolutionary Selection of Expectations in Positive and Negative Feedback Markets”, (with Cars Hommes and Raoul Philippe), *Journal of Evolutionary Economics*, Vol. 23(3), pp. 663-688, 2013.
6. “Efficiency of Continuous Double Auctions under Individual Evolutionary Learning with Full or Limited Information”, (with Jasmina Arifovich, John Ledyard and Valentyn Panchenko), *Journal of Evolutionary Economics*, Vol. 23(3), pp. 539-573, 2013.
7. “The Impact of Short-Selling Constraints on Financial Market Stability in a Model with Heterogeneous Agents”, (with Jan Tuinstra), *Journal of Economic Dynamics & Control*, Vol. 37, pp. 1523-43, 2013.
8. “Evolutionary Selection of Individual Expectations and Aggregate Outcomes in Asset Pricing Experiments”, (with Cars Hommes), *American Economic Journal: Microeconomics*, Vol. 4(4), pp. 35-64, 2012.
9. “Asset Pricing with Heterogeneous Investment Horizons”, (with Giulio Bottazzi), *Studies in Nonlinear Dynamics & Econometrics*, Vol. 16(4), 2012.
10. “Excess Covariance and Dynamic Instability in a Multi-Asset Model”, (with Giulio Bottazzi, Paolo Pin and Matteo Marsili), *Journal of Economic Dynamics & Control*, Vol. 36, pp. 1142-1161, 2012.
11. “Evolution of Market Heuristic”, (with Cars Hommes), *Knowledge Engineering Review*, Vol. 27:2, pp. 255-271, 2012.
12. “Market Equilibria under Procedural Rationality”, (with Giulio Bottazzi), *Journal of Mathematical Economics*, Vol. 46, pp. 1140-1172, 2010.
13. “Wealth-driven Selection in a Financial Market with Heterogeneous Agents”, (with Pietro Dindo), *Journal of Economic Behavior & Organization*, Vol. 73(3), pp. 327-358, 2010.
14. “Asset Prices, Traders’ Behavior and Market Design”, (with Valentyn Panchenko), *Journal of Economic Dynamics & Control*, Vol. 33, pp. 1073–1090, 2009.
15. “Wealth-Driven Competition in a Speculative Financial Market: Examples with Maximizing Agents”, *Quantitative Finance*, Vol. 8, pp. 363–380, 2008.
16. “Evolutionary Switching between Forecasting Heuristics: An Explanation of an Asset-Pricing Experiment” (with Cars Hommes), pp. 41-53 in K.Schredelseker and F.Hauser (ed.) *Complexity and Artificial Markets*, Springer-Verlag, Berlin, 2008.
17. “Equilibria, Stability and Asymptotic Dominance in a Speculative Market with Heterogeneous Agents” (with Giulio Bottazzi and Francesca Pancotto), *Journal of Economic Dynamics & Control*, Vol. 30, pp. 1787–1835, 2006.

18. “Heterogeneous Beliefs under Different Market Architectures” (with Valentyn Panchenko), pp. 269–282 in C.Bruun (ed.) *Advances in Artificial Economics*, Springer-Verlag, Berlin, 2006.
19. “Equilibrium Return and Agents Survival in a Multiperiod Asset Market: Analytic Support of a Simulation Model” (with Pietro Dindo), pp. 3–15 in C.Bruun (ed.) *Advances in Artificial Economics*, Springer-Verlag, Berlin, 2006.
20. “Noisy Trading in the Large Market Limit” (with Giulio Bottazzi), pp. 137–146 in P.Mathieu, B.Beaufile and O.Brandouy (ed.) *Artificial Economics*, Springer-Verlag, Berlin, 2006.
21. “Speculative equilibria and asymptotic dominance in a market with adaptive CRRA traders” (with Giulio Bottazzi and Francesca Pancotto), in Proceedings of SPIE Conference “Noise and fluctuations in econophysics and finance”, vol. 5848, 2005.

Other Publications

1. “Introduction to Special Issue on Complexity in Economics and Finance”, (with William Branch), *Journal of Economic Dynamics and Control*, Vol. 33, pp. 1019–1022, 2009.
2. Review of *Macroeconomics at the Service of Public Policy* ed. by T.J. Sargent and J.Vilmunen, Oxford University Press, Oxford. *Economic Record*, 91, pp. 127–129, 2015.

Work in Progress

- 2016 “A model of network formation for the overnight interbank market”, with Andrea Deghi, Valentyn Panchenko and Paolo Pin.
- 2016 “Learning-to-Forecast with Genetic Algorithms”, with Cars Hommes and Tomasz Makarewicz.
- 2016 “Timing under Individual Evolutionary Learning in a Continuous Double Auction”, with Michiel van de Leur
- 2015 “A Simple Experiment on Fee Structure and Mutual Fund Choice”, with Te Bao, Angela Sutan and Jan Tuinstra.
- 2015 “Bayesian Estimation of the Heuristic Switching Model using Experimental Data”, with Cars Hommes and Valentyn Panchenko.
- 2015 “When Price-Takers meet Price-Makers”, with Dávid Kopányi.
- 2013 “Individual evolutionary learning in the double auction market with full or limited information: Laboratory experiment”, with Jasmina Arifovic, John Ledyard and Valentyn Panchenko.
- 2013 “Asset price dynamics with heterogeneous beliefs and local network interactions”, with Valentyn Panchenko.

Editorial Activity

- 2013 – *Journal of Economic Dynamics & Control*, associate editor
- 2009 special issue of the *Journal of Economic Dynamics & Control* on “Complexity in Economics and Finance”, editor

Referee for:

Journal of Economic Dynamics & Control, Journal of Economic Behavior & Organization, Journal of Economic Theory, Macroeconomic Dynamics, Economic Letters, Journal of Evolutionary Economics, Comparative Economic Studies, Quantitative Finance, Journal of Empirical Finance, Journal of Macroeconomics, Economic Inquiry, Studies in Nonlinear Dynamics & Econometrics, Industrial and

Corporate Change, Computational Economics, Journal of International Financial Markets, Institutions and Money, Journal of Economic Interaction and Coordination, Eastern Economic Journal, Decisions in Economics and Finance, The European Physical Journal B, Knowledge Engineering Review, Discrete Dynamics in Nature and Society, Physics Letters A.

Public Service

- 2016 member of the program committee of the WEHIA 2016 workshop.
- 2016 member of the program committee of the IFABS 2016 Barcelona Conference on “Risk in Financial Markets and Institutions: New challenges, New solutions”.
- 2015 member of the program committee of the International Conference on Computing in Economics and Finance.
- 2012 – 2014 elected member of the Advisory Council of the Society for Computational Economics
- 2014 member of the scientific committee for the 15th Schumpeter Conference (organised by the International Joseph A. Schumpeter Society).
- 2013 – 2014 member of the program committee of the International Conference on Economic Computing
- 2011 – 2013 member of the program committee of the International Conference on Computing in Economics and Finance (organised by the Society of Computational Economics).
- 2011 co-organizer of the 2011 Amsterdam Symposium on Behavioral and Experimental Economics with emphasis on Behavioral Finance and Learning in Macroeconomics.
- 2010 member of the program committee of the ESHIA 2010 workshop (organised by Society for Economic Science with Heterogeneous Interacting Agents).
- 2005 – 2009 co-organizer of the weekly seminar series “Economics Colloquia” at the University of Amsterdam.
- 10/2007 co-organizer of the one-week workshop “Complexity in Economics and Finance” in Lorentz Center, Leiden.
- 2006 co-organizer of the biweekly seminar series “Institutions and Decision Analysis” at the Tinbergen Institute, Amsterdam.

Grants and Awards

- 2014 – 2016 ARC grant “Heuristic-based behavioural models with an application to macroeconomics”, AUD 190,000.
- 2014 UTS Vice-Chancellor’s Teaching and Learning grant, “Enhancing students’ engagement and facilitating their active learning in a core Economics major subject “Economics for Business 2” by developing and introducing flipped learning tools”, AUD 7,000.
- 2013 – 2015 CIFR grant “Too central to fail: networks, risks and policy responses”, AUD 124,000.
- 2013 UTS Business Research Grant, AUD 10,000.
- 2013 UTS Business School External Grant Submission Assistance Scheme, AUD 7,500.
- 2012 UTS Business School External Grant Submission Assistance Scheme, AUD 5,000.

- 2011 INET (Institute for New Economic Thinking) grant “An International Network on Expectational Coordination” (coordinator R. Guesnerie, Paris School of Economics, EUR 62,500, for 13 universities, as a part of “Amsterdam node”).
- 2011 Visiting Professor fellowship, LUISS University, Rome, Italy, EUR 4,000.
- 2008 – 2011 FP7-SSH-2007-1.3.1 grant for European Union collaborative project “Polhia” (coordinator D. Delli-Gatti, UCSC, Milano), EUR 1,331,530 for 6 Universities, as a part of “Amsterdam node”.
- 2009 Outstanding Referee award from the *Journal of Economic Dynamics & Control*, EUR 250.
- 11/2009 research grant of the Paul Woolley Centre for Capital Market Dysfunctionality at the University of Technology, Sydney, AUD 5,000.
- 10/2007 grant to organize international research workshop at the Lorentz Center, Leiden, EUR 10,000
- 11/2005 1st Student Price for the paper presented in 12th International Meeting ASCEG 2005, Aix-en-Provence, France, EUR 1,000
- 09/2001 3-years full-time scholarship for the Ph.D. in Economics and Management, Sant’Anna School of Advanced Studies.

Visiting Positions

- 2013 – European University of St. Petersburg, Visiting Lecturer.
- 2013 summer school Friedrich Schiller University and the Max Planck Institute of Economics, Jena, Germany, Visiting Lecturer.
- 2007 University of New South Wales, Visiting Professor.

Teaching Experience

- 2012 – University of Technology, Sydney:
- Bachelor of Business: *Fundamentals of Mathematical Economics* (4), *Economics for Business 2* (4).
 - PhD program: *Mathematics for Economists* (2)
- 2006 – 2011 University of Amsterdam:
- M.Phil. in Econometrics program: *General Equilibrium Theory* (1), *Bounded Rationality* (5), *Nonlinear Economic Dynamics* (2).
 - BSc in Econometrics program: *Micro-Economics* (3), *Introductory Calculus* (3), *Introductory Linear Algebra* (1), *Intermediate Mathematics for Economists* (1), *Advanced Mathematics for Economists* (3).
- 2003 Sant’Anna School of Advanced Studies
- PhD program: *Mathematics for Economists* (1).

Student Supervision

- 2012 – 2013 University of Technology, Sydney
- Honours Theses: 1 student
- 2006 – 2011 University of Amsterdam
- PhD students: 1 student (joint supervision)
 - Master Theses: 3 students (main supervisor), 1 students (co-supervisor)

- Bachelor Theses: 13 students (sole and joint supervision)

Invited Seminars and Conference Presentations

- 2003 IWAMEM (International Workshop on Data Mining and Adaptive Modeling Methods for Economics and Management) in Porto, Portugal; Seminar at Scuola Superiore Sant'Anna, Pisa.
- 2004 WEHIA-2004 (Annual Workshop on Economics with Heterogeneous Interacting Agents), Kyoto, Japan; 10th International Conference on Computing in Economics and Finance, Amsterdam; Seminar at the University of Amsterdam.
- 2005 11th International Conference on Computing in Economics and Finance, Washington, USA; Workshop "Microscopic Stochastic Dynamics in Economics", ZiF (Center for Interdisciplinary Research), Bielefeld, Germany; 20th Annual Congress of the European Economic Association (EEA), Amsterdam; Workshop on "Bubbles, Herding and Market Crashes", Kiel, Germany; 12th International Meeting on Connectionist Approaches in Economics and Management, ASCEG 2005, Aix-en-Provence, France.
- 2006 12th International Conference on Computing in Economics and Finance, Limassol, Cyprus; Symposium on Agent-Based Computational Methods in Economics and Finance, Aalborg, Denmark; workshop on "Complex Markets", Marseille, France; seminars at the University of Amsterdam, Scuola Superiore Sant'Anna, Pisa, and the Università Ca' Foscari, Venice, Italy.
- 2007 15th Annual Symposium of The Society for Nonlinear Dynamics and Econometrics, Paris, France; 13th International Conference on Computing in Economics and Finance, Montreal, Canada; Workshop on "Statistical Physics and Financial Markets", Trieste, Italy; Workshop on "Perspectives in Nonlinear Dynamics", Trieste, Italy; Workshop on "Complexity in Economics and Finance", Lorentz Center, Leiden; Workshop on "Agent-Based Modelling", UNSW, Sydney; "Quantitative Methods in Finance" conference, UTS, Sydney; two seminars at the University of New South Wales, Sydney.
- 2008 Workshop on "Complex Markets" at the University of Warwick, UK; 14th International Conference on Computing in Economics and Finance, Paris, France; Symposium on Agent-Based Computational Methods in Economics and Finance, Innsbruck, Austria; Seminars at Scuola Superiore Sant'Anna, Pisa, the University of Amsterdam, and the Università Cattolica del Sacro Cuore, Milan, Italy.
- 2009 Workshop in honour of Roger Guesnere at the Paris School of Economics; 15th International Conference on Computing in Economics and Finance, Sydney, Australia; Summer workshop at Stanford Institute for Theoretical Economics, USA; Workshop on Evolutionary Finance at Centro di Ricerca Matematica Ennio De Giorgi, Pisa; Annual conference for Capital Market Dysfunctionality at The Paul Woolley Centre, UTS, Sydney; Seminars at the University of Amsterdam and at the University of Technology, Sydney, Australia.
- 2010 11th Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, University of Amsterdam; Workshop on Interacting Agents and Nonlinear Dynamics in Macroeconomics, University of Udine, Italy; 16th International Conference on Computing in Economics and Finance, City University London, UK; Workshop on Expectations, Asset Bubbles and Financial Crises, Erasmus University Rotterdam; Seminars at the University of Amsterdam, at the Bank of Canada, at the Simon Fraser University, Vancouver, Canada, at the University of Florence, Italy and at the Ruhr-University of Bochum, Germany.
- 2011 International Conference on Nonlinear Economic Dynamics and Financial Market Modelling, Guangzhou, China; 17th International Conference on Computing

in Economics and Finance, San Francisco, USA; GSDP Agent-based modeling workshop, Paris, France; POLHIA conference, Università Cattolica del Sacro Cuore, Milan, Italy; seminars at the University of Technology, Sydney and University of New South Wales.

- 2012 20th Annual Symposium of The Society for Nonlinear Dynamics and Econometrics, Istanbul, Turkey; 18th International Conference on Computing in Economics and Finance, Prague, Czech Republic; Latin American Meeting of the Econometric Society (LAMES), Lima, Peru; seminar at the University of New South Wales.
- 2013 CMSS Summer Workshop on Mathematical Economics, University of Auckland, New Zealand; Nonlinear Economic Dynamics conference, Siena, Italy; 19th International Conference on Computing in Economics and Finance, Vancouver, Canada; symposium “CeNDEF - 15” at the University of Amsterdam; seminars at the University of Tasmania, Australian National University.
- 2014 CMSS Summer Workshop on Mathematical Economics, University of Auckland, New Zealand; 20th International Conference on Computing in Economics and Finance, Oslo, Norway.
- 2015 20th Annual Workshop on the Economic Science with Heterogeneous Interacting Agents (WEHIA), Sophia Antipolis, France; 21th International Conference on Computing in Economics and Finance, Taipei, Taiwan; Australian Conference of Economists, Brisbane, Australia; Economic Science Association (ESA) world meeting, Sydney, Australia; seminars at the European University at St. Petersburg, Sant Anna School of Advanced Studies, University of Queensland, University of Adelaide.