



# DEPARTMENT OF ECONOMICS AND FINANCE Newsletter July-December 2023

### FEATURED RESEARCH



Battigalli, P., **Panebianco, F.**, and Pin, P. 2023. "Learning and selfconfirming equilibria in network games", *Journal of Economic Theory*, 212, 105700.

Consider a set of agents who play a network game repeatedly. Agents may not know the network topology. They may even be unaware that they are actually interacting with other agents in a network. Possibly, they just understand that their optimal action depends on an unknown state, that is, actually, an aggregate of the actions of their neighbors. In each period, every agent chooses an action that maximizes her instantaneous subjective expected payoff and then updates her beliefs according to what she observes. In particular, we assume that each agent only observes her realized payoff. A steady state of the resulting dynamic is a selfconfirming equilibrium given the assumed feedback. We identify conditions on the network externalities, agents' beliefs, and learning dynamics that make agents more or less active (or even inactive) in steady state compared to Nash equilibrium.

Indeed, Nash equilibrium action profiles are limit outcomes of learning paths when agents have perfect feedback about the payoff-relevant aspects of others' behavior. Yet, as we argue, such perfect feedback hypothesis may be too strong for some social networks applications and, if learning is based on imperfect feedback, non-Nash action profiles may result as the steady-state limits of learning paths.

In our analysis we assume that the only feedback agents receive is their realized payoff. This implies that they do not always identify the payoff-relevant aspects of the actions of others, represented by a payoff state. We analyze how agents use the feedback they receive to update their conjectures about the payoff state and best respond to them, and we characterize their limit behavior under different settings of local and global externalities. We show that if externalities are only local, active players are always able to infer the correct payoff-relevant state, whereas inactive players fall into an inactivity trap, and stay inactive even

when it would be objectively optimal not to do so. We study sufficient conditions over the network topology to ensure existence and stability of the selfconfirming equilibria. Conversely, if also global externalities are at play, these externalities play a confounding role and a multiplicity of equilibria arise where an arbitrary set of agents can be inactive and consistently decide to stay so, and the level of activity depends on the level of each agent's perceived centrality in the network. In particular, players may be more active if they think that they are more linked in the network than they actually are, and this can be welfare improving for the whole society. Also, agents with excessive perceived connectedness may prevent convergence of best reply paths to interior equilibria.

All these conditions are based on the network structure and on the type of externalities, on the conjectures that agents have, and on the rules that they use to update their conjectures. Thus, in some applications, knowing these conditions, a social planner or the owner of the network can try to change the beliefs of people to induce them to increase their activity levels.

# DEPARTMENT EVENTS

#### **FORTHCOMING EVENTS**

# Tuesday, January 9th, h. 12.00, Room G 051

ERICA PEREGO (CEPII)

"US Monetary Policy Spillovers to Developing Countries: the Commodity-Financial Channel"

Macro lunch Seminar

### Tuesday, January 16th, h. 12.00, Room G 141

GIULIA GITTI (Brown University)

"Nonlinearities in the Regional Phillips Curve with Labor Market Tightness" Department Seminar

### Friday, January 19th, h. 12.00, Room G 141

RICCARDO SILVESTRINI (Erasmus University Rotterdam and Tinbergen Institute)

"Market Power Increase and Sectoral Heterogeneity: the Role of e-Commerce Platforms"

Department Seminar

### Monday, January 22<sup>nd</sup>, h. 11.00, Room G 016

"Energy Policy for the Green Transition"

Tavola rotonda

### Tuesday, January 23rd, h. 12.00, Room G 141

LUCA NERI (Università di Bologna)

"Estimation of Continuous-time Linear DSGE Models from Discrete-time Measurements"

### Thursday, January 25th, h. 12.00, Room G 153

BIUNG-GHI JU (Seoul National University)

"Climate Justice: Historical Responsibility vs. International Paretianism" Department Seminar

### Friday, January 26th, h. 12.00

IVAN SAVIN (ESCP Business School)

"Dynamic Agent-based Modelling of a Global Climate Club" (co-authored with Pablo Núñez Yebra, Jeroen van den Bergh and Jozsef Zsiros)

CLE Seminar

### Monday, January 29th, h. 12.00

KRISTOFFER BERG (Oxford University) "Meritocratic Labor Income Taxation" CIFREL Seminar

### Wednesday, January 31st, h. 9.30, Sala Maria Immacolata

"Ripensare l'economia con Luigi Lodovico Pasinetti" Giornata di studio

### Thursday, February 1st, h. 12.00, Room G 241

FEDERICA COELLI (University of Zurich) "Educating like China" Department Seminar

#### Tuesday, February 6th, h. 12.00, Room G 141

JAN KEIL (Goethe University)
"Buy Now, Pay Later" and Impulse Shopping
Department Seminar

# Thursday, February 8th, h. 12.00, Room G 153

ADAM SOLIMAN (LSE)

"The Erosion of Homeownership and Minority Wealth" (with Steve Billings) Department Seminar

#### Tuesday, February 13th, h. 12.00, Room G 051

CATALIN-FLORINEL DRAGOMIRESCU-GAINA (Università Cattolica del Sacro Cuore)

"Managing the Chaos: Policy Challenges in a Hyperinflationary Environment" (joint work with A. Boitani and A. Monticini)

Macro lunch Seminar

### Thursday, February 15th, h. 12.00, Room G 153

DAVIDE DEBORTOLI (UPF)

"Asymmetric Monetary Policy Tradeoffs" (with M. Forni, L. Gambetti, and L. Sala)

### Friday, February 16th, h. 12.00

FRANCESCA LOTTI (Bank of Italy)

"Connecting to Power: Political Connections, Innovation, and Firm Dynamics" (co-authored with Ufuk Akcigit and Salomé Baslandze)

CLE Seminar

# Tuesday, February 20th, h 12.00, Room C4 (via Necchi 5, ex Conventino)

DARIO BONCIANI (Bank of England)

"Unemployment Risk, Liquidity Traps, and Monetary Policy" (joint work with J. Oh)

Macro lunch Seminar

### Monday, February 26th, h. 12.00

MATTEO PARADISI (EIEF)

"One Cohort at a Time. A New Perspective on the Declining Gender Pay Gap" CIFREL Seminar

### Thursday, February 29th, h. 12.00, Room G 153

MIRI STRYJAN (Aalto University)

"Balancing the Books and Morale: The Impact of Pay Systems and Job Rotation on Worker Turnover" (with Erika Deserranno, Julia Salmi, and Lame Ungwang) Department Seminar

#### Friday, March 1st, h. 12.00, Room G 134

JLENIA DI NOIA (IUSS, Università di Pavia)

"A High Resolution Input-Output Model to Assess the Economic Impact of Floods" (co-authored with Marcello Arosio, Alessandro Caiani, Luigi Cesarini e Beatrice Monteleone)

CLE Seminar

### Thursday, March 7th, h. 12.00, Room G 153

ROSSELLA ARGENZIANO (University of Essex)

"Data Governance with Vulnerable Populations" (with Francesco Squintani) Department Seminar

### Thursday, March 14th, h. 12.00, Room G 153

LIBERTAD GONZALEZ (Università Pompeu Fabra)

"Paternity Leave and Child Development" (with Lídia Farré, Claudia Hupkau, and Jenifer Ruiz-Valenzuela)

Department Seminar

### Tuesday, March 19th, h. 12.00,

EMILIANO SANTORO (Università Cattolica del Sacro Cuore)

"Consumer Durables in T(H)ANK Economies" (joint work with E. Holst Partsch and I. Petrella)

Macro lunch Seminar

#### Thursday, March 21st, h. 12.00, Room G 153

LUCIA CORNO (Università Cattolica del Sacro Cuore)

"Changing Harmful Gender Norms: Evidence from a Randomized Experiment on "Breast-Ironing" practice in Cameroon"

Internal Seminar

### Monday, March 25th, h. 12.00

VINCENZO MOLLISI (Università di Torino)

"Do Incompetent Politicians Breed Populist Voters? Evidence from Italian Municipalities"

CIFREL Seminar

### Tuesday, March 26th, h. 12.00

RICCARDO M. MASOLO (Università Cattolica del Sacro Cuore) "Mainly Employment: Survey-Based News and the Business Cycle" *Macro lunch Seminar* 

### Thursday, April 4th, h. 12.00

MARCO LE MOGLIE (Università Cattolica del Sacro Cuore)

Internal Seminar

### Thursday, April 11th, h. 12.00

RANDI HJALMARSSON (Gothenburg)

Department Seminar

### Thursday, April 18th, h. 12.00

LUCA STELLA (Università Cattolica del Sacro Cuore)

Internal Seminar

### Monday, April 29th, h. 12.00

PILAR-SORRIBAS NAVARRO (University of Barcelona) CIFREL Seminar

### Thursday, May 9th, h. 12.00

MARIA PETROVA (UPF)

Department Seminar

### Tuesday, May 14th, h. 14.00

"L'economia dei disastri naturali: prospettive e casi studio" Seminar

### Thursday, May 16th, h. 12.00

SANDRA SEQUEIRA (LSE)

Department Seminar

#### Thursday, May 23<sup>rd</sup>, h. 12.00

YVES ZENOU (Monash)

Department Seminar

# Monday, May 27th, h. 12.00

ZAREH ASATRYAN (ZEW)

CIFREL Seminar

### Thursday, May 30th, h. 12.00

FEDERICO ROSSI (Warwick)

### Thursday, June 6th, h. 12.00

ELENA VILLAR (Università Cattolica del Sacro Cuore) Internal Seminar

### Thursday, June 13th, h. 12.00

CLAUDIO LABANCA (Monash)

Department Seminar

### Monday, June 14th, h. 12.00

LAURENT SIMULA (University of Lyon) CIFREL Seminar

### July, 15th-17<sup>th</sup>, h. 9.00

"Economic Policy in Complex Environments" EPOC International Conference

#### **PAST EVENTS**

### Tuesday, September 5th, h. 12.00, Room G. 153

EVA MÖRK (Uppsala University) Department Seminar

### Monday, September 25th, h. 12.00

GIACOMO BRUSCO (University of Tübingen) CIFREL Seminar

### Thursday, September 28th, h. 12.00, Room G. 153

FLORIAN OSWALD (Science Po University) Department Seminar

### Thursday, October 5th, h. 12.00, Room G. 153

MATTEO SANDI (Università Cattolica del Sacro Cuore) Internal Seminar

#### Thursday, October 12th, h. 12.00, Room G. 153

THIEMO FETZER (Warwick University)

Department Seminar

# Friday, October 13th, h. 12.00, Room C. 017

SEBASTIAN POLEDNA (International Institute for Applied Systems Analysis) CLE Seminar

### October 18th-19th, Room Negri da Oleggio

"AGE-IT": the Contribution of Medical and Social Sciences *Workshop* 

### Thursday, October 19th, h. 12.00, Room G. 153

Luigi Paciello (EIEF)

#### Monday, October 23rd, h. 12.00

THIESS BUTTNER (FAU)
CIFREL Seminar

### Tuesday, October 24th, h. 12.00, Room 210 (via Necchi 5)

DAVID GOLDBAUM (University of Technology Sydney) CLE Seminar

#### Thursday, October 26th, h. 12.00, Room G. 153

OWEN OZIER (Williams College)

Department Seminar

### Friday, November 3<sup>rd</sup>, Room G 016

FLAVIO CALVINO (OECD)

CLE Seminar

### Thursday, November 9th, h. 12.00, Room G. 153

PIERO TEDESCHI and GIOVANNI URSINO (Università Cattolica del Sacro Cuore) Internal Seminar

#### Thursday, November 16th, h. 12.00, Room G. 153

FRANCESCO SOBBRIO (Tor Vergata University)

Department Seminar

### Tuesday, November 21st, h. 12.00, Room G 051

MASSIMO FERRARI MINESSO (European Central Bank)

Macro lunch Seminar

### Thursday, November 23rd, h. 12.00, Room G. 153

VOLCKER NOCKE (Mannheim University)

Department Seminar

### Monday, November 27th, h. 12.00

ELISA CASI-EBERARTHER (Norwegian School of Economics)

CIFREL Seminar

### Monday, November 27th, h. 15.30, Room OL. 103

Presentazione del rapporto INAPP: "Invecchiamento della forza lavoro nelle imprese Italian"

PIETRO CHECCUCCI (INAPP)

CRILDA PNRR Age-it Seminar

### Tuesday, November 28th, h. 12.00, Room G 051

RICCARDO MASOLO (Università Cattolica del Sacro Cuore)

Macro lunch Seminar

### Thursday, November 30th, h. 12.00, Room G 153

FRANCESCA PARODI (Università Cattolica del Sacro Cuore)

Internal Seminar

#### Thursday, December 5th, h. 12.00, Room G. 153

WAYNE SANDHOLTZ (Nova SBE)

Department Seminar

### Monday, December 11th, h. 12.00, Room G 041

MARTINA REPETTO (Department of Economics-University of Melbourne) CRILDA Seminar

### Tuesday, December 12th, h. 12.00, Room G 051

EMILIANO SANTORO (Università Cattolica del Sacro Cuore) Macro lunch Seminar

### Wednesday, December 13th, h. 16.00, Room G 001

"Inflazione, politica monetaria e settore bancario" Presentazione di Osservatorio Monetario n.3/2023

### Thursday, December 14th, h. 12.00, Room G. 153

MARCO TABELLINI (HBS)

Department Seminar

#### Friday, December 15th, Room G 122

MATTIA GUERINI (Fondazione ENI Enrico Mattei - FEEM) CLE Seminar

### Monday, December 18th, h. 12.00

ALESSANDRO SANTORO (University of Milano Bicocca) CIFREL Seminar

#### Wednesday, December 20th, h. 9.00, Room G 141, G 142, G 242

First UniCatt Political Economy Workshop

For more details and updates check the Seminars Webpage at: <a href="https://dipartimenti.unicatt.it/economia-finanza-seminari-seminari-dipartimento">https://dipartimenti.unicatt.it/economia-finanza-seminari-seminari-di-dipartimento</a>

#### **WORKING PAPERS**

**N.** 129 – "Mind the knowledge gap! The origins of declining business dynamism in a macro agent-based model" - **Domenico Delli Gatti**, Roberta Terranova and **Enrico Maria Turco** (October 2023).

**N. 130** – "Bootstrap Performance with Heteroskedasticity" - Russell Davidson and **Andrea Monticini** (November 2023).

#### RECENT PUBLICATIONS

- **Baglioni, A.** 2023. "Monetary policy implementation: which "new normal"?" *Journal of International Money and Finance*, vol.141.
- **Balduzzi, P.** 2023. "La nuova delega fiscale: che cosa cambierà?", *Aggiornamenti sociali*, 12 (74), pp. 655-663.
- **Barbetta, G.P.**, P. Chuard-Keller, G. Sorrenti, and **G. Turati**. 2023. "Good or Bad? Understanding the Effects over Time of Multigrading on Child Achievement", *Economics of Education Review*, 96, 102442, 1-8.
- **Boitani, A.**, and A. Pezzoli. 2023. "Antitrust e lotta alle disuguaglianze: obiettivo esplicito o esternalità consapevole?", *Mercato concorrenza regole*, a. XXV, n. 1-2, pp. 15-43.
- **Boitani, A.** 2023. "Merito, Meritocrazia e disuguaglianza", *Dizionario di dottrina sociale della Chiesa. Le cose nuove del XXI secolo*, 4: 7-15.
- **Bordignon, M.**, and **G. Turati**. 2023. "Evoluzione e prospettive del debito pubblico in un periodo di crisi permanente", in M. Baldini, M. D'Antoni, C. Mazzaferro, L. Rizzo, and S. Toso (a cura di), *La finanza pubblica italiana*: Rapporto 2022-2023, Bologna: Il Mulino, pp. 315-343.
- **Bordignon, M.**, L. Rizzo, and **G. Turati**. 2023. "L'autonomia differenziata", in M. Baldini, M. D'Antoni, C. Mazzaferro, L. Rizzo, S. Toso (a cura di), *La finanza pubblica italiana*: Rapporto 2022-2023, Bologna: Il Mulino, pp. 287-314.
- **Colombo, L.**, and V. Böhm. 2023. "Technology Choice with Externalities", Rivista internazionale di scienze sociali, 1: 65-93.
- Colombo, L., M. Longo, M. Motolese, and C.K. Nielsen. 2023. "Gerd Weinrich: Economic Theory in the Service of Policy Design", *Rivista internazionale di scienze sociali*, 1: 5-17.
- **Colombo, S., and** A. Mukherjee 2023. "Location of firms and outsourcing", *Games*, 14: 70.
- **Delli Gatti, D.**, A. Glielmo, M. Favorito, and D. Chanda. 2023. "Reinforcement Learning for Combining Search Methods in the Calibration of Economic ABMs" with Proceedings of the 4th ACM International Conference on AI in Finance (ICAIF '23), Brooklyn, NY.
- **Lucifora, C.**, A. Fenizia, D. Checchi. 2023. "Public- and private-sector jobs: a cross-country perspective, *Oxford Economic Papers*, 1–21.
- **Ovidi, M.**, D. Checchi and **L. Cappellari**. 2023. "Examining the impact of educational reforms on schooling and competences in PIAAC", in P. Mattei, X. Dumay, E. Mangez and J. Behrend (eds.), Oxford Handbook of Education and Globalization, Oxford: Oxford University Press.

**Panebianco, F.**, P. Battigalli, and P. Pin. 2023. "Learning and selfconfirming equilibria in network games", *Journal of Economic Theory*, 212, 105700.

**Panebianco, F.**, S. Della Lena, E. Manzoni. 2023. "On the transmission of guilt aversion and the evolution of trust", *Games and Economic Behavior*, 142: 765-793.

**Panebianco, F.**, N. Karagiannis-Axypolitidis, G. Bonanomi, and F. Giannino. 2023. "Plants' competition under autotoxicity effect: an evolutionary game", *Optimization Letters*, 1-18.

**Turati, G.** 2023. "Che cosa blocca l'attuazione della riforma della sanità territoriale (e non solo)? Qualche spunto di riflessione", *Corti Supreme e Salute*, n. 2, 2-5.

**Turati, G.**, M. C. Nurchis, and A. Heidar Alizadeh. 2023. "La relazione tra inquinamento e salute: una lettura interdisciplinare tra economia sanitaria e sanità pubblica", in A. Ferrara (a cura di), *Le conseguenze economiche delle crisi globali. Interazioni tra ambiente, salute ed economia*, Sarzana-Lugano: Agorà & Co., Tomo I, cap. 17, pp. 399-422.

### **DEPARTMENT NEWS**

#### **AWARDS AND APPOINTMENTS**

- Stefano Colombo on his appointment as Full Professor, Facoltà di Giurisprudenza.
- **Sebastiano Nerozzi** on his appointment as Full Professor, Facoltà di Economia.
- Enrico Maria Turco won the EAEPE Kapp Prize in September 2023 for the best article at EAEPE Conference.

#### Welcome to the new researchers joining the Department!

#### • Arianna Galliera (Associate Professor, Facoltà di Giurisprudenza)



Arianna is an Associate Professor at the Università Cattolica del Sacro Cuore since July 2023. She received a Master's degree (M.Sc.) in Quantitative Economics from the University of Alicante and completed her Ph.D. at the LUISS Guido Carli University in Rome. After completing her studies she worked as a post-doc at the LUISS Guido Carli University and the Politecnico di Milano and as a researcher at the Università Cattolica di Milano and the University of Parma.

She is also affiliated with the Center for the Economic Analysis of Risk (CEAR) at Georgia State

University. Her research interests span several fields of experimental (field and lab) and behavioral economics, with projects that analyze the individual and strategic choices of economic agents, with particular attention to risk preferences in different social contexts (and across different species!).

#### • Francesca Parodi (Researcher, Facoltà di Economia)



I am Assistant Professor of Economics at Cattolica University of Milan, I am also Research Fellow at the Institute for Fiscal Studies and Research Affiliate of CEPR. My main research interests are Macroeconomics, Public Economics, and Household Finance. I obtained a PhD in Economics from University College London and was previously Assistant Professor of Economics at Collegio Carlo Alberto-University of Turin.

### • Matteo Romagnoli (Post-Doc Researcher, Facoltà di Economia)



My name is Matteo Romagnoli. I am currently working with Professor Maria Luisa Mancusi on the economic implications and determinants of innovation in relation to population and workforce aging. I obtained my PhD in Economics and Statistics from the University of Milan-Bicocca with a thesis focused on the relationship between regulation and innovation in the electricity sector. During the third year of my PhD, I was a visiting doctoral student at the Climate Economics Chair in Paris, (Institut Louis Bachelier).

Prior to my doctoral studies, I completed my master's and bachelor's degrees in Economics at the University of Ferrara.

#### **LEAVING**

A few people left the Department. We thank them for all the work they have done and wish them all the best for their future careers.

Tiziana Assenza (Associate Professor in Economics) has moved to Toulouse School of Economics and IAST as Associate Professor of Economics. <a href="mailto:tiziana.assenza@tse-fr.eu">tiziana.assenza@tse-fr.eu</a>

Elenka Brenna (Adjunct Professor in Economics) has moved to Università del Piemonte Orientale (UPO), Novara, Dipartimento di Scienze del Farmaco as Assistant Professor of Economics. elenka.brenna@uniupo.it

Giulia Rivolta (Assistant Professor in Economics) has moved to Università degli Studi di Milano, Department of Economics, Management and Quantitative Methods as Post-doc Resercher. giulia.rivolta@unimi.it

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