

CURRICULUM VITAE ET STUDIORUM

ANDREA CARAVAGGIO

CONTACTS AND INFORMATION

Nonlinear dynamics, chaos, bifurcation theory, differential games, environmental economics, oligopoly dynamics, water management, growth theory.

RESEARCH INTERESTS

October 2023 - : Assistant Professor (RTD-b), Department of Economics and Statistics, University of Siena:

CURRENT POSITION

December 2020 - September 2023: Post Doc Researcher (RTD-a) , Department of Economics, University of Foggia:

PREVIOUS POSITIONS

February - December 2020: Post Doc Researcher (Assegnista di Ricerca), Department of Economics and Management, University of Pisa:

September - December 2019: Adjunct Professor, Department of Economics and Management, University of Pisa, A.Y. 2019-2020:

March - September 2019: Research Fellows, Department of Economics and Management, University of Pisa.

EDUCATION

November 2015 - October 2018 (Thesis dissertation on May, 24 2019): Ph.D. in Quantitative Methods for Economic Policy (*summa cum laude*), University of Macerata, Italy.

October 2015: M.Sc. in Economics, University of Pisa and Scuola Superiore Sant'Anna, Pisa, Italy.

VISITING APPOINTMENTS

March - June 2018: Visiting Ph.D fellow at the Department of Economics, School of Social Sciences of the University of Manchester, under the supervision of Prof. Mario Pezzino;

January - June 2015: Erasmus student (during the second year of M.Sc. in Economics) at the Durham University Business School, UK.

RECENT TEACHING ACTIVITY (FROM 2021)

Professor for the course of **Financial Mathematics** (B.Sc. in Economics and Management), 60 hours, University of Siena, Siena, A.Y. 2024-2025, 2023-2024, (classes held in English);

Professor for the course of **Computational Finance** (M.Sc. in Finance), 20 hours, University of Siena, Siena, A.Y. 2023-2024 (classes held in English);

Professor for the course of **Matlab: Instruments, Programming and Economic Applications**, Ph.D. in Quantitative Methods for Economic Policy, cycle XXXVIII, 10 hours, University of Macerata (classes held in English);

Professor for the course **Sistemi Dinamici e Applicazioni Economiche** (B.Sc. in Economia), 48 hours, University of Foggia, Foggia, A.Y. 2022-2023, 2021-2022;

Professor for the course **Matematica Generale** (B.Sc. in Economia Aziendale ed Economia), 64 hours, University of Foggia, Foggia, A.Y. 2022-2023, 2021-2022, 2020-2021;
Teaching assistant in **Mathematical Methods for Economics** (M.Sc. in Economics), 40 hours, Scuola Superiore Sant'Anna, Pisa, A.Y. 2021-2022, 2019-2020, 2018-2019 (classes held in english);

ACADEMIC ACTIVITIES

2023 - : Principal Investigator for a PRA 2022 Project (funded by University of Foggia) entitled "Optimal management of water resource in presence of heterogeneous stakeholders and seasonal effects: a game theoretic approach".
2021 - : Member for a PRA-HE 21 Project (funded by University of Foggia) entitled "Climate risk and sustainability: interdisciplinary research on emerging impacts and future perspectives for the financial intermediaries".

MAIN PUBLICATIONS (10 OF 18)

A. Caravaggio, A. Di Liddo and A. Martiradonna (2025). "Cooperation against invasions: multi-agent control of alien species in connected landscapes". *Annals of Operations Research*. DOI:10.1007/s10479-025-06759-6;
G. Biggi and A. Caravaggio (2024). "Striving for balance: past choices and future expectations in a critical resource competition dynamic model". *Journal of Economic Interaction and Coordination*. DOI:10.1007/s11403-024-00429-9;
A. Caravaggio, L. De Cesare and A. Di Liddo (2024). "Socio-economic determinants of pricing water for domestic use: A comparison of blocks and linear tariffs". *Socio-Economic Planning Sciences*, 93: 101876;
A. Caravaggio, L. De Cesare and A. Di Liddo (2024). "Optimal water tariffs for domestic, agricultural and industrial use". *Annals of Operations Research*, 1-31. DOI:10.1007/s10479-024-05822-y;
A. Caravaggio and M. Sodini (2023). "Environmental sustainability, nonlinear dynamics and chaos reloaded: 0 matters!". *Communications in Nonlinear Science and Numerical Simulation*, 117. DOI: 10.1016/j.cnsns.2022.106908;
A. Caravaggio, L. Gori and M. Sodini (2022). "Endogenous preferences in a dynamic Cournot duopoly". *Chaos Solitons & Fractals*, 161. DOI: 10.1016/j.chaos.2022.112303;
A. Caravaggio and Mauro Sodini (2022). "Local environmental quality and heterogeneity in an OLG agent-based model with spatial externalities". *Journal of Economic Interaction and Coordination*, 17 (1): 287-317. DOI:10.1007/s11403-022-00346-9;
A. Caravaggio and M. Sodini (2020). "I love shopping.....but what am I going to buy? Social interaction and consumption choices". *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 30 (9), DOI: 10.1063/5.0004988;
A. Caravaggio and M. Sodini (2020). "Monopoly with differentiated final goods and heterogeneous markets". *Chaos Solitons & Fractals*, ISSN: 0960-0779, Vol. 130, 109429, DOI: 10.1016/j.chaos.2019.109429. Web of Science Accession Number: WOS:000514570600041;
A. Caravaggio and M. Sodini (2018). "Heterogeneous players in a Cournot model with differentiated products". *Decisions in Economics and Finance*, Vol.40, n.2, pp.277-295, ISSN: 1593-8883, DOI: 10.1007/s10203-018-0228-x, Web of Science Accession Number: WOS:000454246200010, Scopus Identifier: 2-s2.0-85057304713.

EDITOR ACTIVITY

2022 - : Guest editor for the special issue "Nonlinear dynamics and complex systems" on the journal *Computational Economics* (ISSN: 0927-7099).

Pisa, September 11, 2025