

## Prof. Paolo Russu

Full Professor of Mathematical methods of economy, finance and actuarial sciences  
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### SHORT BIO

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Paolo Russu is Full Professor of Mathematical methods at the University of Sassari. His research interests and major publications are mainly related to the Dynamical Systems (stability, bifurcations and analysis of complex behaviours) and their applications to the modelling of the evolution of Economic, Social, Biological systems. He has published numerous articles in prestigious journals: *International Game Theory Review*, *Journal of Mathematical Economics*, *Social Indicators Research*, *Journal of Economic Theory*, *Journal of Economic Dynamics and Control*, *Structural Change and Economic Dynamic*, *Ecological Economics*, *Chaos*, *Chaos Solitons & Fractals*, *Journal of Evolutionary Economics*, *Macroeconomic Dynamics*, *European Economic Review*.

### CURRENT RESEARCH INTERESTS

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*Problems of multi-stability (two or more coexisting stable equilibria, or more complex attracting sets) and study of global properties and bifurcations of the basins of attraction. Local and Global indeterminacy in Economic Growth. Evolutionary game in defensive medicine. Mathematical model and optimal control problem in bio-economics.*

### SELECTED PUBLICATIONS & WPs

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- Delpini, D., Melis, R., Russu, P., 2025. [Dynamical analysis of a prey-predator-tourist model: Environmental preferences and optimal fee control](#). *Chaos, Solitons & Fractals* 191, 115845.
- Antoci, A., Apollonio, M., Russu, P., Scandura, M., 2023a. [When humans play evolutionary games with animal species](#). *Ecological Modelling* 476, 110221.
- Antoci, A., Galeotti, M., Rabitti, G., Russu, P., 2023b. [A coevolution model of defensive medicine, litigation and medical malpractice insurance](#). *Communications in Nonlinear Science and Numerical Simulation* 117, 106935.
- Antoci, A., Borghesi, S., Galeotti, M., Russu, P., 2022. [Maladaptation to environmental degradation and the interplay between negative and positive externalities](#). *European Economic Review* 143, 104023.

### WORKING PAPERS

- “The ecology of animal species' behaviours in a Solow-type model” (with A. Antoci and D. Delpini), under review.
- “On the dynamics of green, dirty and relocating firms under the Emissions Trading System”, (with A. Antoci, S. Borghesi, L. Gori, M. Sodini).
- “Coevolutionary Dynamics of Physician and Bacterial Strategies in Antibiotic Resistance: An Evolutionary Game Theory Approach” (with A. Antoci, S. Borghesi, D. Delpini).