

# Oriol Vallès Codina

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EU National | US Permanent Resident

## PROFESSIONAL SUMMARY

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I am an ecological macroeconomist and computational social scientist with a Ph.D. in Economics from the New School for Social Research, specializing in structural change and development. My interdisciplinary research focuses on the intersection of economic theory, data science and visualization, the natural sciences, and environmental sustainability. I have extensive experience in academic research, teaching, and consulting.

## RESEARCH AND TEACHING INTERESTS

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- Ecological Macroeconomics
- Multi-Sector Growth and Structural Change
- Uneven Development
- History of Economic Thought
- Data Science
- Complexity Science

## EDUCATION

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### Ph.D. in Economics

2014–2021

*New School for Social Research*

New York, NY, US

Dissertation: "Economic Production as Life: A Classical Approach to Computational Social Science"

Advisors: Anwar Shaikh, Duncan Foley, Willi Semmler

### M.A. in Anthropology

2011–2014

*Columbia University of New York*

New York, NY, US

Thesis: "Political Economy of the Spanish Housing Bubble, 1998-2008"

Readers: Michael Blim, Terence D'Altroy

### M.Sc. in Bioinformatics

2009–2011

*Universitat Pompeu Fabra*

Barcelona, ES

### B.Sc. in Physics

2003–2009

*Universitat Autònoma de Barcelona*

Barcelona, ES

## WORK EXPERIENCE

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### Research Consultant

2024–Present

*World Bank*

Washington DC, US

*Agence Française de Développement*

Paris, FR

*De la Salle University*

Manila, PH

### Postdoctoral Research Fellow

2022–2024

*Leeds University Business School*

Leeds, UK

### Postdoctoral Research Fellow in Innovation Policy

2020–2021

*University College London*

London, UK

### Teaching Assistant and Fellow, Research Fellow

2016–2020

*New School for Social Research*

New York, NY, US

## PUBLICATIONS

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### Peer-Reviewed Articles

- Fevereiro, J. B. R. T., Genovese, A., Purvis, B., Passarella, M. V. & **Vallès Codina, O.** (2025). "Macroeconomic Models for Assessing the Transition towards a Circular Economy: A Review." *Ecological Economics*. (Accepted with Minor Revisions)
- **Vallès Codina, O.** & Semmler, W. (2024). "Time Scales of the Low-Carbon Transition: A Data-Driven Dynamic Multi-Sector Growth Model." *Journal of Economics and Statistics (Jahrbücher für Nationalökonomie und Statistik)*. [\[link\]](#)
- **Vallès Codina, O.** (2023). "Business cycles, sectoral price stabilization, and climate change mitigation: A model of multi-sector growth in the tradition of the Bielefeld disequilibrium approach." *Journal of Economic Behavior & Organization*, 216, 636–653. [\[link\]](#)
- Hartasánchez, D. A., Brasó-Vives, M., Fuentes-Díaz, J., **Vallès Codina, O.** & Navarro, A. (2015). "SeDuS: segmental duplication simulator." *Bioinformatics*, 32(1), 148–150. [\[link\]](#)
- Hartasánchez, D. A., **Vallès Codina, O.**, Brasó-Vives, M., & Navarro, A. (2014). "Interplay of Interlocus Gene Conversion and Crossover in the Molecular Evolution of Segmentally Duplicated Sequences: the Neutral Scenario." *G3*, 4(8), 1479–1489. [\[link\]](#)
- **Vallès Codina, O.**, Möbius, R., Rüdiger, S., & Schimansky-Geier, L. (2011). "Traveling echo waves in an array of excitable elements with time-delayed coupling." *Physical Review E*, 83(3). [\[link\]](#)

### Books

- Booss-Bavnbek, B., Christensen, J. H., Richardson, K., & **Vallès Codina, O.** (2024). *Multiplicity of Time Scales in Complex Systems: Challenges for Sciences and Dissemination* (Volume I and II). Springer/Birkhauser. [\[link\]](#)

### Book Chapters

- Booss-Bavnbek, B., Christensen, J. H., Richardson, K., & **Vallès Codina, O.** (2024). "Introduction." *Multiplicity of Time Scales in Complex Systems: Challenges for Sciences and Dissemination* (Volume I). Springer/Birkhauser.
- Bimpizas-Pinis, M., Genovese, A., Kaltenbrunner, A., Kesidou, E., Purvis, B., Ramos Torres Fevereiro, J.B., **Vallès Codina, O.** and Veronese Passarella, M. (2023). "Using input-output stock-flow consistent models to simulate and assess 'circular economy' strategies." In Passaro, R., Barca, S., Pansera, M. (Eds.), *Circular Economy for Social Transformation: multiple paths to achieve circularity*, JUST2CE E-book. [\[link\]](#)
- Holloway, C., Barbareschi, G., **Vallès Codina, O.**, Colton, N., Eide, A. H., Morgado-Ramirez, Z. D., Danemayer, J., Kattel, R., & Austin, V. (2023). "A human rights-based approach to assistive technology provision in global policy." In *Research Handbook on Disability Policy*, Edward Elgar Publishing, pp. 807–822. [\[link\]](#)

### Encyclopedia Entries

- **Vallès Codina, O.** (2022). "Discrete-Time Models", "Punctuated Equilibrium Theory", "Subsistence", "System Dynamic Models", & "Temporal Dynamics" In Haddad, B. & Solomon, B.D. (eds.) *Dictionary of Ecological Economics*, Edward Elgar Press. [\[link\]](#)

### Working Papers

- **Vallès Codina, O.** (2024). "Environmentalism without class struggle is just gardening: An Ecological Interpretation of the Ricardian Model." For *Ecological Economics*.

- **Vallès Codina, O.** (2022). "The Purely Economic Case for Investing in Health for All in Lower- and Upper-Middle Income Countries: input-output and network analysis of their industrial ecosystem." UCL Institute for Innovation and Public Purpose, Working Paper Series (IIPP WP 2022-03). For *Health Policy and Planning*. [link]
- **Vallès Codina, O.** (2020). "Classical-Evolutionary Dynamics of Price Formation." Working Paper. New School for Social Research, Department of Economics. [link]

## Work in Progress

- **Vallès Codina, O.**, Fevereiro, J. B. R. T., Kaltenbrunner, A., Kesidou, E., & V. Passarella, M. "Climate policies in the Global North exacerbate North-South inequalities." For *Ecological Economics*
- **Vallès Codina, O.**, Rodousakis, N., Soklis, G., & Yajima, T. G. "Input-output analysis of global value chains of German energy"
- **Vallès Codina, O.** & Chatzarakis, N. "The mathematical consistency of neoclassical and classical theories of value". For *Review of Political Economy*
- **Vallès Codina, O.**, Masterson, T., & Antonopoulos, R. "Clusters of European poverty and exclusion"
- **Vallès Codina, O.** "A conflict theory of pricing". For *Industrial and Corporate Change*
- **Vallès Codina, O.** "The core-periphery structure of global trade". For *Review of International Political Economy*
- **Vallès Codina, O.** "Classifying prototypes of national industrial structures"
- **Vallès Codina, O.** "Cycles of migration in coupled Goodwin models"
- **Vallès Codina, O.** "No evidence of long-term regional income convergence in Europe, 1900-2015"

## PROFESSIONAL SERVICE

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### Editorial Service

- **Guest Editor**, *Multiplicity of Time Scales in Complex Systems: Challenges for Sciences and Dissemination* (Volume I and II), Springer/Birkhauser 2024

### Referee Service

- *Springer/Nature Mathematics*
- *Review of Political Economy*
- *Review of Evolutionary Political Economy*
- *Jahrbücher für Nationalökonomie und Statistik*

## FELLOWSHIPS AND AWARDS

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|---|-----------|
| • JUST2CE – A Just Transition to the Circular Economy     | 2022–2024 |
| • Growinpro - Growth Welfare Innovation Productivity      | 2020–2021 |
| • New School for Social Research Dean's Merit Scholarship | 2014–2016 |
| • La Caixa Foundation Fellowship for Graduate Study       | 2011–2013 |
| • FARO Global Fellowship                                  | 2009      |
| • Erasmus Fellowship                                      | 2007–2008 |

## CONFERENCES AND WORKSHOP PRESENTATIONS

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### Invited Talks and Workshops

- "Stock-flow Consistent Macroeconomics in the Face of the Climate Crisis" 2024  
*Angelo King Institute, De la Salle University* Manila, PH
- "Meeting the Challenges of Climate Change" 2023  
*New School for Social Research* New York, NY, US
- "Towards a Macroeconomics of the Just Transition to a Circular Economy: Stabilizing Unstable Economy-Ecology Interactions" 2023  
*Levy Economics Institute at Bard College* Red Hook, NY, US
- "Stabilizing Economic Fluctuations and Economy-Environment Interactions with a Novel Macroeconomic Model of Multi-Sector Growth: Ecological Applications of the Bielefeld Disequilibrium Approach" 2022  
*Forum for Macroeconomics and Macroeconomic Policies, Hans-Boeckler Stiftung* Berlin, DE
- "Introduction to Coding Dynamical Systems and Agent-Based Models in Ecological Economics and Classical Political Economy" 2022  
*Bamberg University* Bamberg, DE
- "Classical Political Economy in the Context of the Uneven Climate Crisis" 2022  
*University of València* València, ES
- "Agent-based Classical Competition" 2021  
*First International Workshop on Agentization, George Mason University* Fairfax, VA, US
- "Multiplicity of Time Scales in Economic Systems" 2021  
*Conference on "Multiplicity of Time Scales in Complex Systems: Challenges for Sciences and Dissemination", Roskilde University* Copenhagen, DK
- "The Green Transition" 2020  
*Institute for Innovation and Public Purpose, University College London* London, UK
- "Classical-Evolutionary Dynamics of Price Formation" 2019  
*Oeconomia - History, Methodology, Philosophy, Paris 1 University* Paris, FR
- "The Perils Anew of Peripheralization for Italy and Its Regions" 2018  
*Italian Studies Seminar, Columbia University* New York, NY, US

### Panels Organized

- "Stock-Flow Consistent Input/Output Macroeconomics" 2023  
*International Input-Output Association Conference* Alghero, IT
- "Climate Change" 2021  
*Eastern Economic Association Conference* New York, NY, US

### Conference Papers

- "An Ecological Interpretation of the Ricardian Growth Model" 2024  
*Ecological Economics Conference* Pontevedra, ES
- "An Ecological Interpretation of the Ricardian Growth Model" 2024  
*Eastern Economic Association* Boston, MA, US
- "The Macroeconomics of a Socially Just Transition to a Circular Economy" 2024  
*Eastern Economic Association* Boston, MA, US
- "Input-Output and Network Analysis of the Industrial Ecosystem of Health and Assistive Technologies Industries" 2022  
*European Association for Evolutionary Political Economy* Napoli, IT

- "Input-Output and Network Analysis of the Industrial Ecosystem of Health and Assistive Technology Industries" 2022  
*Association for Heterodox Economics* London, UK
- "Assessing the Speed of Substitution of Carbon Technologies" 2021  
*Forum for Macroeconomics and Macroeconomic Policies, Hans-Boeckler Stiftung* Berlin, DE
- "The Green Transition" 2021  
*Eastern Economic Association Conference* New York, NY, US
- "Directed Technical Change Towards Decarbonization" 2020  
*14th International Computational and Financial Econometrics Conference* London, UK
- "Evolutionary Dynamics of Real Competition" 2020  
*New School for Social Research Economics Brown Bag Seminar* New York, NY, US
- "An Evolutionary Approach to Real Competition" 2019  
*Eastern Economic Association Conference* New York, NY, US
- "Real Competition Within a Single Industry" 2018  
*History of Economics Society Conference* Chicago, IL, US
- "The Perils Anew of Peripheralization for Italy and Its Regions" 2017  
*Capitalist Development in Hostile Environments Conference* Calabria, IT

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## TEACHING EXPERIENCE

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- **Social Networks** 2023  
*University of Massachusetts Amherst* Amherst, MA, US  
Corresponding Instructor
- **Introduction to Coding Dynamical Systems and Agent-Based Models** 2022  
*University of Bamberg* Bamberg, DE  
Sole Instructor
- **Computational Workshop on Dynamical Systems** 2020  
*New School for Social Research* New York, NY, US  
Sole Instructor
- **Advanced Mathematical Methods for Economic Modeling** 2020  
*New School for Social Research* New York, NY, US  
Graduate Teaching Assistant
- **Historical Foundations of Political Economy** 2016  
*New School for Social Research* New York, NY, US  
Graduate Teaching Assistant
- **Introduction to Political Economy** 2016–2020  
*Eugene Lang College, The New School* New York, NY, US  
Undergraduate Teaching Assistant
- **Origins of the Crisis in the Eurozone** 2016–2019  
*Eugene Lang College, The New School* New York, NY, US  
Teaching Fellow (Sole Instructor)

## RESEARCH EXPERIENCE

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- **Research Assistant to Paulo dos Santos** 2017–2018  
*New School for Social Research* New York, NY, US  
Produced agent-based simulations of competitive price-setting firms in a simple classical circuit-of-capital framework.
- **Research Assistant to William Milberg, Cédric Durand** 2015–2017  
*New School for Social Research* New York, NY, US  
Parsed data from OECD, WIOD, and Compustat databases; econometrics on intellectual property monopoly and firm growth.
- **Research Assistant to Michael Blim** 2014  
*Dept. of Anthropology, Graduate Center, CUNY* New York, NY, US  
Performed cluster analysis on the complex core-periphery structure of the Italian and European economic geography.
- **Research Assistant to Arcadi Navarro** 2010–2011  
*Barcelona Biomedical Research Park* Barcelona, ES  
Programmed computer simulations of large-scale genetic populations.
- **Research Assistant to Lutz Schimansky-Geier** 2009  
*Department of Physics, Humboldt University* Berlin, DE  
Programmed computer simulations of dynamical neuronal networks.

## LANGUAGES

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- **Natural** Catalan (native), Spanish (native), English (expert), Italian (fluent), German (basic)
- **Artificial** R, Markdown, Quarto, LATEX, C, C++, Julia, Python, PERL, HTML, PHP, Matlab

## ADDITIONAL TRAINING

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- **Oxford Summer School in Economic Networks** 2019  
*Oxford University* Oxford, UK
- **School of Advanced Studies in the Reappraisal of the Surplus Approach** 2018  
*Roma Tre University* Roma, IT

## REFERENCES

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- **Marco V. Passarella**  
Associate Professor of Political Economy  
*University of L'Aquila* | L'Aquila, IT  
marco.veronesepassarella@univaq.it
- **Andrea Genovese**  
Professor of Logistics and Supply Chain Management  
*Sheffield University Management School* | Sheffield, UK  
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- **Duncan Foley**  
Leo Model Professor of Economics  
*New School for Social Research* | New York, NY, US  
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- **Willi Semmler**  
Arnhold Professor of International Cooperation and Development  
*New School for Social Research* | New York, NY, US

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