

# ANNALIVIA POLSELLI

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## FIELDS OF INTEREST

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Causal machine learning, panel data models, robust estimation, applications in labour and gender economics

## EMPLOYMENT

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<b>British Academy Postdoctoral Fellow</b> Institute for Social and Economic Research (ISER), University of Essex. Project: “ <i>Double Machine Learning for Heterogeneous Treatment Effects with Panel Data</i> ”	Oct 2024–present
<b>Postdoctoral Research Fellow</b> Institute for Analytics and Data Science (IADS), University of Essex.  <i>Research visit:</i> Visiting Scholar, Department of Econometrics, Erasmus University Rotterdam.	2022– 2024  Feb 2024

## EDUCATION

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<b>PhD Economics</b> , University of Essex. Supervisors: Chambers, M. and Francesconi M. Examiners: Gupta, A. (internal) and Monfardini C. (external)	2018–2023
<b>MRes Economics</b> , University of Essex. Grade: Distinction. Supervisor: Sakarya N.	2017–2018
<b>MSc Economics</b> , University of Rome Tor Vergata. Grade: 110/110 <i>summa cum laude</i> . Supervisors: Peracchi, F. and Belotti F.	2015–2017
<b>BSc Economics</b> , University of Rome Tor Vergata. Grade: 110/110 <i>summa cum laude</i> . Supervisor: Becchetti L.	2012–2015

## JOB MARKET PAPER

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*Double Machine Learning for Static Panel Data Models with Instrumental Variables: New Method and Applications.* (with A. Baiardi, P. S. Clarke, and A. Naghi), arXiv preprint [arXiv:2603.20464](https://arxiv.org/abs/2603.20464).

**Short abstract.** This paper develops a Double Machine Learning estimator for static panel models with endogenous treatments (panel IV DML), and introduces weak-identification diagnostics for it. We revisit three influential migration studies that use shift-share instruments. In these settings, instrument validity depends on a rich covariate adjustment. In one application, panel IV DML strengthens the predictive power of the instrument and broadly confirms 2SLS results. In the other cases, flexible adjustment makes the instruments weak, leading to substantially more cautious causal inference than conventional 2SLS. Monte Carlo evidence supports these findings, showing that panel IV DML improves estimation accuracy under strong instruments and delivers more reliable inference under weak identification.

## PUBLICATIONS

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### Peer reviewed journals

2. Clarke, P. S. and **Polselli, A.** (2025). Double Machine Learning for Static Panel Models with Fixed Effects. *Econometrics Journal*. 29(1), 69-86, <https://doi.org/10.1093/ectj/utaf011>. (Editor’s choice)
1. Leoncini, R., Macaluso, M., and **Polselli, A.** (2024). Gender segregation: analysis across sectoral dominance in the UK labour market. *Empirical Economics*. <https://doi.org/10.1007/s00181-024-02611-1>

### Policy and Technical Reports

1. Buono, I. and **Polselli, A.** (2022). An International Map of Gender Gaps. *Questioni di Economia e Finanza (Occasional Paper)*, n. 714, Bank of Italy. [[article](#)][Media coverage: [SUERF](#), [Il Sole 24 Ore](#) (p.42; in Italian)]

## WORKING PAPERS

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3. `xtqml`: Double Machine Learning Estimation to Static Panel Data Models with Fixed Effects in R, (2025). <https://arxiv.org/abs/2512.15965>.
2. Influence Analysis with Panel Data, (2023). <https://arxiv.org/pdf/2312.05700.pdf>. [Stata commands]
1. Robust Statistical Inference in Panel Data Models with Fixed Effects, (2023). <https://arxiv.org/abs/2312.17676>.

## WORK IN PROGRESS

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3. Double Machine Learning for Static Panel Data Models with Interactive Fixed Effects. (with B. Chen and P. Clarke)
2. Double Machine Learning for Heterogeneous Treatment Effects with Panel Data.
1. Double Machine Learning for Dynamic Panel Data Models. (with P. Čížek and P. Clarke)

## GRANTS AND AWARDS

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<a href="#">The British Academy Postdoctoral Fellowship</a> (Grant no. PFSS24/240003; Award £399,693.93)	2024-2027
<i>World Bank Economic Review Excellence in Refereeing Award</i> for 2022	Feb 2023
SenSS Scholarship and UoE Social Sciences Doctoral Stipend, University of Essex.	2018-2022
'Giorgio Mortara' Fellowship, Bank of Italy. (award 3,000 EUR)	2018
<a href="#">Women of the Future Scholarship</a> , University of Essex. (award £20,000)	2017-2018

## TEACHING EXPERIENCE

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<b>Course instructor</b> , Department of Economics, University of Essex. EC969: Applications of Data Analysis (Postgraduate taught level).	Oct 2024-present
<b>Course instructor</b> , Essex Summer School, University of Essex. Course: <i>Machine learning for estimating treatment effects from observational data</i> (with D. Machlanski; hybrid delivery)	Summer 2024-present
<b>Assistant Lecturer</b> , University of Essex. EC251: Mathematical Methods (Undergraduate level). EC252: Introduction to Econometric Methods (Undergraduate taught level). Dual delivery.	2021-2022
<b>Graduate Teaching Assistant</b> , University of Essex. EC351: Mathematical Methods (Undergraduate level). Online delivery.	2019-2021
EC452: Introduction to Econometric Methods (Postgraduate taught level). Dual delivery.	2020-2021
EC352: Econometric Methods (Undergraduate level).	2019-2020
EC501: Econometric Methods (Postgraduate taught level).	2019-2020

## OTHER RESEARCH EXPERIENCE

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<b>Research Officer</b> , Dept. Economics, University of Essex.	April 2022
<b>Research Officer</b> , Dept. Economics & ISER, University of Essex.	Sept-Nov 2021
<b>Junior Consultant</b> , RIA Division, IFAD.	Jun-Jul 2020
<b>Research Assistant</b> , Dept. of Health Policy, LSE.	Dec-Mar 2020
<b>Research Scholar (internship)</b> , Dept. of International Relations, Bank of Italy.	Jul-Sept 2019
<b>Research Assistant</b> , ISER, University of Essex.	Feb-Apr 2019

## OTHER PROFESSIONAL ACTIVITIES

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<b>Reviewer for:</b> The Econometrics Journal, World Bank Journal, SN Business & Economics, Economics.	
<b>Organiser of:</b> ISER Junior Applied Research Group Official Network (JARGON) since 2024; Inaugural Essex PhD Conference in Applied Economics in 2023.	
Certified CADENZA D1 Associate Fellowship (AFHEA), University of Essex.	2020

## SEMINAR PRESENTATIONS AND CONFERENCES

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2026: IAAE; IPDC. 2025: EC<sup>2</sup> Conference; University of Turin\*; Essex Summer School Speakers Series\*; QMUL CausalML Worskshop\*; QMUL PhD/Postdoc Workshop; ICEEE.  
2024: CeMMAP PhD/Postdoc Econometrics Research Day; IPDC; RCEA-ICEEA; EUR internal seminar.  
2023: Annual MiSoC Workshop; UK Stata Conference; German Stata Conference; Petralia Workshop\*; ICEEE; Oceania Stata Conference.  
2022: International Conference of European Studies; PhD presentation at BSE Summer School.  
2020: RES Easter School, University of Bristol.  
(Invited talks marked with \*)

## STATISTICAL PACKAGES

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4. *xtdml* – Double Machine Learning for static panel data models with fixed effects. R package (CRAN), v0.1.12. <https://cran.r-project.org/web/packages/xtdml>.
3. *xtivdml* – Double Machine Learning for Static Panel Models with Fixed Effects and Endogenous Treatment. R package, v0.1.12. <https://github.com/POLSEAN/xtivdml>.
2. *xtlvr2plot* – Leverage-vs-residual diagnostics for panel data models with fixed effects. Stata command, v1.8. <https://github.com/POLSEAN/Influence-Analysis>.
1. *xtinfluence* – Influence analysis for linear panel data models with fixed effects. Stata command, v1.7. <https://github.com/POLSEAN/Influence-Analysis>.

## SOFTWARE

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*Statistical software:* R (advanced), STATA and MATA (advanced), Python (basic)  
*Typesetting:* L<sup>A</sup>T<sub>E</sub>X, MS Office

## REFERENCES

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