

Achim Ahrens

February 28, 2024

CONTACT

Leonhardshalde 21, LEH C-4, CH-8092 Zurich. Email: achim.ahrens@gess.ethz.ch.

Website: achim.ahrens.de

CURRENT POSITIONS

Since 9/19 Senior Researcher (equiv. to Non-tenure track Assistant Professor) and Senior Data Scientist at *Public Policy Group*, ETH Zurich, Switzerland, and *Immigration Policy Lab* (ETH Zurich/Stanford University)

Since 11/21 Research Affiliate (ETH AI Center)

PREVIOUS POSITIONS

2017-19 Post-doctoral Research Fellow at the *Economic and Social Research Institute*, Ireland

2015-17 Research Associate at the *Heriot-Watt University*, UK

EDUCATION

2017 PhD in Economics, *Heriot-Watt University*, Edinburgh, UK

2012 MSc in Economics (with Distinction), *University of Edinburgh*, UK

2011 BA in Economics, Law & Social Sciences, *University of Erfurt*, Germany
Major subject: Economics; minor: Social Sciences.

INTERESTS

Applied econometrics, causal inference & machine learning, labor economics & migration.

WORKING PAPERS

Ahrens, A., Hansen, C.B., Schaffer, M.E., & Wiemann, T. *Model Averaging and Double Machine Learning*. (Under review, J. of Applied Econometrics)

This paper discusses pairing double/debiased machine learning (DDML) with *stacking*, a model averaging method for combining multiple candidate learners, to estimate structural parameters. We introduce two new stacking approaches for DDML: *short-stacking* exploits the cross-fitting step of DDML to substantially reduce the computational burden and *pooled stacking* enforces common stacking weights over cross-fitting folds. Using calibrated simulation studies and two applications estimating gender gaps in citations and wages, we show that DDML with stacking is more robust to partially unknown functional forms than common alternative approaches based on single pre-selected learners. We provide Stata and R software implementing our proposals.

Ahrens, A., Hangartner, D., Kurer, S., Stampi-Bombelli, A. *Optimal treatment allocation using policy trees: An application to immigrant naturalization.* (R&R, J. of Applied Econometrics)

Despite the known benefits for socio-economic integration, many eligible immigrants in Switzerland do not apply for citizenship. We estimate a policy rule for an information campaign encouraging immigrants in the City of Zurich to naturalize. The policy rule is a decision tree assigning treatments for each individual based on observed characteristics. We assess performance by fielding the policy rule on one-half of a sample of eligible immigrants, while sending random treatment letters to the other half. Despite only moderate levels of heterogeneity, the policy tree yields a larger, albeit insignificant, increase in application rates than each individual treatment.

Ahrens, A., Beerli, A., Hangartner, D., Kurer, S., & Siegenthaler, M. *The Labor Market Effects of Restricting Refugees' Employment Opportunities.* (Under review, American Economic Review)

This paper investigates whether employment restrictions contribute to refugees having poorer labor market outcomes than citizens. Utilizing linked register data from Switzerland and within-canton policy variation between 1999–2015, we find substantial negative effects on employment and earnings when refugees are barred from working upon arrival, excluded from specific sectors or regions, or face resident prioritization. Removing 10% of refugees' outside options reduces job-to-job mobility by 7.5% and wages by 3.0%, widening the wage gap to citizens in similar jobs. The restrictions depress refugees' labor market outcomes even after they apply, but do not spur emigration nor benefit other immigrants.

Ahrens, A., Casali, M., Hangartner, D., Sánchez, R. *Cash-Based Interventions Improve Multidimensional Integration Outcomes of Venezuelan Immigrants.* (R&R, World Development)

Since 2015, over 7 million Venezuelans have been forced to leave their homes, seeking refuge predominantly in neighboring countries across Latin America and the Caribbean. This study evaluates the impact of a cash-based intervention (CBI) on multidimensional integration outcomes of highly vulnerable Venezuelan immigrants in Peru. Utilizing an original panel survey of beneficiaries and the staggered rollout of the program, which provided a one-time payment of 760 soles (approximately 190 USD or 74% of the monthly minimum wage), we estimate that the CBI increased the IPL-24 index—an overall measure of immigrant integration capturing several dimensions—by at least 0.12 standard deviations. This increase is mainly driven by improvements in the navigational, social and economic components of the IPL-24 index. Moreover, the CBI boosted self-employment by 2 percentage points and raised the intention to emigrate from Peru by 1.2 percentage points. Additionally, our heterogeneity analysis reveals that the benefits of the fixed-amount cash payment diminish significantly with the size of the household. We discuss how these findings inform the design of future CBI programs aimed at supporting vulnerable immigrant and refugee families.

Auer, D., Slotwinski, M., Ahrens, A., Hangartner, D., Kurt, S., Stutzer, A. *Social Assistance and Refugee Crime.* (To be submitted shortly, AEJ: Applied)

Amidst intense policy debates, the relationship between welfare and refugee crime remains underexplored. Addressing this gap, our study focuses on Switzerland, where mobility restrictions on exogenously assigned refugees coincide with cantons' autonomy in setting social assistance rates. Linking time-varying cantonal benefit rates between 2009 and 2016 to individual-level administrative data, we find that higher social assistance reduces criminal charges, especially for petty crimes and drug offenses. Simultaneously, we find no discernible labor market repercussions. Highlighting its role in mitigating criminal behavior among refugees, this research suggests social assistance as a cost-effective measure to improve refugee welfare and enhance public safety.

ONGOING PROJECTS

Ahrens, A., Bächli, M., Hangartner, D., Lalive, R. *Path2Work: Targeted support of job search for refugees using an online job platform.* <https://www.path2work.ethz.ch/>

Ahrens, A., Hangartner, D., Kurer, S., Siegenthaler, M. *Incentive or Impediment? The Short- and Long-Term Impact of Low Welfare Support on Refugee Integration.*

PEER-REVIEWED PUBLICATIONS

Ahrens, A., Hansen, C.B., Schaffer, M.E., Wiemann, T. (Forthcoming). ddml: Double/debiased machine learning in Stata. *Stata Journal*.

Ahrens, A., Hansen, C.B., Schaffer, M.E. (2023). pystacked: Stacking generalization and machine learning in Stata. *Stata Journal*, 23(4), pp.909-931.

Ahrens, A., & Lyons, S. (2021). Do rising rents lead to longer commutes? A gravity model of commuting flows in Ireland. *Urban Studies*, 58(2), 264-279.

O'Toole, C., Martinez-Cillero, M., & Ahrens, A. (2021). Price regulation, inflation, and nominal rigidity in housing rents, *Journal of Housing Economics*, 52, 101769.

Ahrens, A., FitzGerald, J., & Lyons, S. (2020) Commuting across the Irish border, *Economics Letters* 190, 109060.

Ahrens, A., Hansen, C. B., & Schaffer, M. E. (2020). lassopack: Model selection and prediction with regularized regression in Stata. *The Stata Journal*, 20(1), 176–235.

Ahrens, A. (2015). Civil Conflicts, Economic Shocks and Night-time Lights. *Peace Economics, Peace Science and Public Policy* 21(4), 433–444.

Ahrens, A. and Bhattacharjee, A. (2015). Two-Step Lasso Estimation of the Spatial Weights Matrix. *Econometrics* 3(1), 128–155.

Ahrens, A., Kovandzic, T. V. and Vieraitis, L. M. (2015). Do execution moratoriums increase homicide? Re-examining evidence from Illinois. *Applied Economics* 47(31), 3243–3257.

Ahrens, A. and Zweynert, J. (2012). Conditionality or specificity? Bulgaria and Romania's economic transition performance in comparative perspective. *Post-Communist Economies* 24(1), 291–307.

POLICY REPORTS

Evaluating the Effects of Cash-Based Interventions on the Integration of Vulnerable Venezuelan Migrants in Peru. With Monica Aguilar Folch, Ace Dela Cruz, Jobst Koehler, Morgane Reina and Karla Sulca (International Organization of Migration) and Dominik Hangartner, Marine Casalis, Rodrigo Sánchez (ETH Zurich).

Impact evaluation of the job vacancy notice obligation I. With Rafael Lalive, Patrick Arni, Tobias Lehmann, Dominik Hangartner, Joelle Pianzola, 2021. Commissioned by the State Secretariat for

Economic Affairs.

A review of the methodologies used in compiling owner-occupiers' housing indices. With Beirne, K., Economides, P., Kostarakos, I., McQuinn, K. and O'Toole, C., 2020. Commissioned by the Central Statistical Office, Ireland.

Land Use and Spatial Planning Issues. With Tom Gillespie, Ronan Lyons and Seán Lyons. In Research on the Environment, Health, Consumer Behaviour and the Economy: ESRI Environment Research Programme 2018-2020. ESRI Report November 2020. Commissioned by the Environmental Protection Agency, Ireland.

Trends in rental price inflation and the introduction of rent pressure zones in Ireland. With Martinez-Cillero, M. and O'Toole, C., 2019. Economic and Social Research Institute. Commissioned by the Residential Tenancy Board, Ireland.

STATISTICAL SOFTWARE PACKAGES FOR STATA & R

Ahrens, A., Hansen, C., Schaffer, M., Wiemann, T. (2024). *ddml: Double/Debiased Machine Learning*. R package version 0.2.0.9000, <https://thomaswiemann.com/ddml/>.

Ahrens, A., Hansen, C., Schaffer, M., Wiemann, T. (2023). *ddml: Stata module for Double/Debiased Machine Learning*. Statistical Software Components S459175, Boston College Department of Economics.

Ahrens, A., Hansen, C., Schaffer, M. (2022). *pystacked: Stata module for stacking generalization and machine learning in Stata*. Statistical Software Components S459115, Boston College Department of Economics.

Ahrens, A., Hansen, C., Schaffer, M. (2018). *lassopack: Stata module for lasso, square-root lasso, elastic net, ridge, adaptive lasso estimation and cross-validation*. Statistical Software Components S458458, Boston College Department of Economics.

Ahrens, A., Hansen, C., Schaffer, M. (2018). *pdslasso: Stata module for post-selection and post-regularization OLS or IV estimation and inference*. Statistical Software Components S458459, Boston College Department of Economics.

PRESENTATIONS

7/24 Leibniz IOS Summer Academy (München, Germany, *Keynote speaker, planned*), 8/23 Econometric Society European Meetings (Barcelona, Spain), 6/23 International Association for Applied Econometrics (Oslo, Norway), 5/23 Machine Learning in Program Evaluation, High-dimensionality and Visualization Techniques (LISER, Luxembourg), 5/23 Society of Labor Economists (Philadelphia, PA), 03/23 University of Bern, Sociology seminar (CH, *invited*), 11/22 Stata Conference (Bern, CH), 10/22 AI+Economics Workshop (Zurich, CH), 9/22 European Association of Labour Economists (Padova, Italy), 8/22 European Economic Association (Milan, Italy), 6/22 Barcelona School of Economics (Spain), 5/22 University of Bath seminar (UK, *invited*), 3/22 Applied ML Days (Lausanne, CH), 7/19 Joint Statistical Meeting (Denver, US), 10/18 Stata Conference (Zurich, CH, *Keynote speaker*).

WORKSHOPS “MACHINE LEARNING FOR ECONOMISTS”

5/23 Inter-American Development Bank (Washington, DC), 8/22 Scottish Graduate Program in Economics (St Andrews, UK), 2/22 Chiang Mai University (Thailand), 10/20 Universidad Internacional de Andalucía (Seville, Spain), 9/19 Italian Stata Users Group meeting (Florence), 6/19 Irish Postgraduate and Early Career Economics Workshop (NUI Galway, Ireland).

SELECTED TEACHING EXPERIENCES

2024	Lecturer “Methods III: Causal Inference”, <i>ETH Zurich</i>
2021–2023	Tutorial Instructor “Methods IV: Statistical learning”, <i>ETH Zurich</i>
2019	Tutorial Instructor “Methods II: Quantitative Methods”, <i>ETH Zurich</i>
2016	Instructor “Energy Markets and Policy”, <i>University of Stirling, UK</i>
1/2015	Guest Lecturer “Applications for Econometrics”, <i>University of Edinburgh (UoE)</i>
2012-15	Teaching Assistant “Econometrics 1” & “Econometrics 2” (MSc), <i>UoE</i>
2013/14	Teaching Assistant “Economics 2”, <i>UoE</i>

GRANTS AND AWARDS

2023	J-PAL Displaced Livelihoods Initiative (\$75,000, Co-Principal Investigator)
2015	Stuart A. Bremer Travel Award
2012	Economic and Social Research Council PhD Scholarship (ESRC)

SKILLS & OTHER

Refereeing: Journal of Econometrics, Journal of Business & Economic Statistics, Journal of Applied Econometrics, Economic Letters, Labour Economics, Review of Development Economics, Economica, Urban Studies, Oxford Economic Papers, Stata Journal, Italian Economic Journal, Industrial and Corporate Change, International Journal of Housing Markets and Analysis.

Software: R, Stata, Python, Julia, SQL, QGIS, Matlab, Git, L^AT_EX

Languages: German (native), English (fluent)

ACADEMIC REFERENCES

Dominik Hangartner. Public Policy Group & Immigration Policy Lab, ETH Zurich.

`dominik.hangartner@gess.ethz.ch`.

Christian B. Hansen. University of Chicago Booth School of Business.

`Christian.Hansen@chicagobooth.edu`.

Rafael Lalive. Faculty of Business and Economics, University of Lausanne, ETH Zurich.

`Rafael.Lalive@unil.ch`.

Michael Siegenthaler. KOF Swiss Economic Institute, ETH Zurich.

`siegenthaler@kof.ethz.ch`.