Anders Bredahl Kock

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CONTACT INFORMATION

Department of Economics
University of Oxford
St. Hilda's College

Link to personal website

RESEARCH INTERESTS

Hypothesis Testing in High-Dimensional Models, Sequential Treatment Allocation, Machine Learning, Multi-Armed Bandits.

EDUCATION

Aarhus University, Aarhus, Denmark

Ph.D., Economics, November 2011.

- Thesis Title: *Forecasting and Oracle Efficient Econometrics.*
- Advisors: Niels Haldrup and Timo Teräsvirta.

APPOINTMENTS

- Post.Doc. at Aarhus University 2011–2015.
- Assistant Professor at Aarhus University 2015–2016.
- Associate Professor at Aarhus University, 2016–2017.
- Associate Professor at the University of Oxford and Tutorial Fellow at St. Hilda's College, 2017–2022.
- Professor at the University of Oxford and Tutorial Fellow at St. Hilda's College, 2022–.
- Research Fellow: Aarhus Center for Econometrics, 2025–.

PUBLICATIONS

1. Regularizing Fairness in Optimal Policy Learning with Distributional Targets *Joint with David Preinerstorfer.* Accepted by **Journal of Econometrics**.
2. Enhanced Power Enhancements for testing many moment equalities: Beyond the 2 and ∞-norm. *Joint with David Preinerstorfer.* Acccepted by **Journal of the American Statistical Association**.
3. Data-Driven Tuning Parameter Selection for High-Dimensional Vector Autoregressions. *Joint with Rasmus Søndergaard Pedersen and Jesper Riis-Vestergaard Sørensen.* **Journal of the American Statistical Association**, 2025+.
4. Moment-Dependent Phase Transitions in High-Dimensional Gaussian Approximations. *Joint with David Preinerstorfer.* **Statistics & Probability Letters**, 2024, Volume 211.
5. A Ridge-Regularised Jackknifed Anderson-Rubin Test. *Joint with Max-Sebastian Dovì and Sophocles Mavroeidis.* **Journal of Business and Economic Statistics**, 2024, Volume 42, Pages 1083–1094.
6. Functional Sequential Treatment Allocation with Covariates. *Joint with David Preinerstorfer and Bezirgen Veliyev.* Accepted by **Econometric Theory**.
7. Superconsistency of Tests in High Dimensions. *Joint with David Preinerstorfer.* Accepted by **Econometric Theory**.

8. Consistency of p-norm based Tests in High Dimensions: Characterization, Monotonicity, Domination. Joint with *David Preinerstorfer*. **Bernoulli**, 2023, Volume 29, Pages 2544–2573.

9. Treatment Recommendation with Distributional Targets. *Joint with David Preinerstorfer and Bezirgen Veliyev*. **Journal of Econometrics**, 2023, Volume 234, Pages 624–646.

10. Functional Sequential Treatment Allocation. Joint with *David Preinerstorfer and Bezirgen Veliyev*. **Journal of the American Statistical Association**, 2022, Volume 117, Pages 1311–1323.

11. Inference in Partially Identified Models with many Moment Inequalities using Lasso. *Joint with Mehmet Caner, Federico Bugni, and Soumendra Lahiri*. **Journal of Statistical Planning and Inference**, 2020, Volume 206, Pages 211–248.

12. Power in High-Dimensional Testing Problems. *Joint with David Preinerstorfer*. **Econometrica**, 2019, Volume 87, Issue 3, Pages 1055–1069.

13. Uniform Inference in High-Dimensional Dynamic Panel Data Models with Approximately Sparse Fixed Effects. *Joint with Haihan Tang*. **Econometric Theory**, 2019, Volume 35, Issue 2, Pages 295–259.

14. Asymptotically Honest Confidence Regions for High-Dimensional Parameters by the Desparsified Conservative Lasso. *Joint with Mehmet Caner*. **Journal of Econometrics**, 2018, Volume 203, Issue 1, Pages 143–168.

15. Modeling and Forecasting Large Realized Covariance Matrices and Portfolio Choice. *Joint with Marcelo Medeiros and Laurent Callot*. **Journal of Applied Econometrics**, 2017, Volume 32, Issue 1, Pages 140–158.

16. Sharp Threshold Detection based on Sup-Norm Error Rates in High-Dimensional Models. *Joint with Mehmet Caner, Laurent Callot and Juan Andrés Riquelme*. **Journal of Business and Economic Statistics**, 2017, Volume 35, Issue 2, Pages 250–264.

17. Oracle Inequalities, Variable Selection and Uniform Inference in High-Dimensional Correlated Random Effects Panel Data Models. **Journal of Econometrics**, 2016, Volume 195, Issue 1, Pages 71–85.

18. Consistent and Conservative Model Selection with the Adaptive Lasso in Stationary and Nonstationary Autoregressions. **Econometric Theory**, 2016, Volume 32, Issue 1, Pages 243–259.

19. Forecasting Macroeconomic Variables using Neural Network Models and Three Automated Model Selection Techniques. *Joint with Timo Teräsvirta*. Invited submission to **Econometric Reviews**, 2016, Volume 35, Issue 8–10, Pages 1753–1779.

20. Lassoing the Determinants of Retirement. *Joint with Malene Kallestrup-Lamb and Johannes Tang Kristensen*. **Econometric Reviews**, 2016, Volume 35, Issue 8–10, Pages 1522–1561.

21. Oracle Inequalities for Convex Loss Functions with Non-Linear Targets. *Joint with Mehmet Caner*. **Econometric Reviews**, 2016, Volume 35, Issue 8–10, Pages 1377–1411.

22. Oracle Inequalities for High-Dimensional Vector Autoregressions. *Joint with Laurent Callot*. **Journal of Econometrics**, 2015, Volume 186, Issue 2, Pages 325–344.

23. Forecasting Performance of Three Automated Modelling Techniques During the Economic Crisis 2007–2009. *Joint with Timo Teräsvirta.* **International Journal of Forecasting**, 2014, Volume 30, Issue 3, Pages 616–631.

24. On the Oracle Property of the Grouped Adaptive Lasso for Vector Autoregressions. *Joint with Laurent Callot.* Published in **Essays in Nonlinear Time Series Econometrics**, 2014, edited by N. Haldrup, M. Meitz and P. Saikkonen. Oxford University Press.

25. Oracle Efficient Variable Selection in Random and Fixed Effects Panel Data Models, **Econometric Theory**, 2013, Volume 29, Issue 1, Pages 115–152.

26. Forecasting the Finnish Consumer Price Inflation Using Artificial Neural Network Models and Three Automated Model Selection Techniques. *Joint with Timo Teräsvirta.* **Finnish Economic Papers** (invited submission), 2013, Volume 26, Issue 1, Pages 13–24.

27. Forecasting with Nonlinear Time Series Models. *Joint with Timo Teräsvirta.* Handbook chapter prepared for **Oxford Handbook on Economic Forecasting**, 2011, edited by M.P. Clements and D.F. Hendry. Oxford University Press.

28. Forecasting with Universal Approximators and a Learning Algorithm. **Journal of Time Series Econometrics**, 2011, Volume 3, Issue 3, Article 3.

Working papers

- Winsorized mean estimation with heavy tails and adversarial contamination. *Joint with David Preinerstorfer.* Revision submitted to **Electronic Journal of Statistics**.

Submitted

- High-dimensional Gaussian and bootstrap approximations for robust means. *Joint with David Preinerstorfer*

- Robustness for free: asymptotic size and power of max-tests in high dimensions. *Joint with David Preinerstorfer*

Permanent working papers

- Oracle Inequalities for High Dimensional Panel Data Models. Permanent working paper as it was completely changed into "Oracle Inequalities, Variable Selection and Uniform Inference in High-Dimensional Correlated Random Effects Panel Data Models", published in the **Journal of Econometrics**.

- Optimal Sequential Treatment Allocation. *Joint with Martin Thyrsgaard.* Superseded by Functional Sequential Treatment Allocation. Joint with *David Preinerstorfer and Bezirgen Veliyev* and published in **Journal of the American Statistical Association**, 2022, Volume 117, Pages 1311–1323.

- High-Dimensional Linear GMM. *Joint with Mehmet Caner.*

Contributions to books

- Penalized Time Series Regression. *Joint with Marcelo Medeiros and Gabriel Vasconcelos.* Chapter in **Macroeconomic Forecasting in the Era of Big Data**, 2019, edited by Peter Fuleky. Springer.

Awards and Grants

- Offered Danish National Research Foundation Chair. Granted 2023. DKK 7,513,057.
- ERC Consolidator Grant. Granted 2023. Euro 1,470,436.
- ESRC grant jointly with Alex Gibberd, Department of Mathematics and Statistics, Lancaster University. Granted 2021. GBP 148,784.
- Multa Scripsit Award from **Econometric Theory**, 2019–20.
- Winner of 2017 award for best teacher at the Department of Economics, Aarhus University (elected by the student council). Only one award given per year. Nominated four out of five times I taught the course.
- AUFF Assistant Professor Starting Grant. Granted 2015. DKK 1,815,000, approximately USD 261,200.
- Winner of 2013 award for best teacher at the Department of Economics, Aarhus University (elected by the student council). DKK 7,500, approximately USD 1,200. Only one award given per year.
- AUFF Ph.D. award of 2012 of DKK 50,000, approximately USD 8,800 (Aarhus University Research Council award for best Ph.D. thesis in social sciences in 2011)
- Nominated (along with four others) for best teacher at the Department of Economics, Aarhus University in 2012.
- Sapere Aude award, 2011/12 (Danish Independent Research Council young elite researcher). DKK 1,007,064, approximately USD 177,000.
- PostDoc scholarship (FSE) granted by the Danish Agency for Science, Technology and Innovation. Granted 2011. DKK 1,371,856, approximately USD 234,907.
- AUFF travel grant. Granted 2011, DKK 37,000, approximately USD 6,000.

Teaching Experience

Aarhus University, Aarhus, Denmark

- Teaching *Mathematical Economics I*, Fall 2011, Fall 2012, Fall 2013, Fall 2015, Fall 2016 (undergraduate mathematics course).
- Teaching graduate course in High-Dimensional Statistics (taught at Department of Mathematical Sciences), Fall 2016.
- Teaching *Quantitative Research Methods* (introductory statistics) in the International Business programme, Spring 2016, Spring 2017.
- Teaching parts of *Applied Time Series Econometrics*, 2013.
- PhD course on High-Dimensional Econometrics, March 2015.
- Supervision of several bachelor theses in 2012–16.
- Supervision of several master theses, 2014–2016.
- Taught at SIDE 2017 Summer School on High-Dimensional Econometrics, joint with Mehmet Caner, Perugia, Italy.

University of Oxford, Oxford, UK

- MPhil 1st year econometrics, HT 2018–2021.
- MPhil 2nd year econometrics, HT 2018–2021.
- MPhil Advanced Econometrics, MT 2021–2022.
- MPhil Further Mathematical Methods, TT 2022–2023.

Editorial Duties

- Associate Editor at **Journal of Econometrics**, 2024–.
- Associate Editor at **Econometric Theory**, 2023–.
- Associate Editor at **Journal of Business and Economic Statistics**, 2021–.
- Associate Editor at **Statistical Papers**, 2020–.

Conference organization

- Area coordinator for econometrics at Econometric Society European Meeting (ESEM), 2021 and 2022.
- Member of programme committee for CFE 2021.
- Member of scientific committee for International Association of Applied Econometrics (IAAE) 2024 Asia Meeting.

Refereeing

Advances in Statistical Analysis, Annales de l'Institut Henri Poincaré (B) Probabilités et Statistiques, Annals of Statistics, Artificial Intelligence in Medicine, Bernoulli, Biometrika, Bulletin of Economic Research, Computational Economics, Economics Letters, Econometrica, Econometric Theory, Econometrics Journal, Econometric Reviews, Empirical Economics, Financial Markets and Portfolio Management, International Journal of Forecasting, Journal of the American Statistical Association, Journal of Applied Econometrics, Journal of Banking and Finance, Journal of Business and Economic Statistics, Journal of Econometrics, Journal of Financial Econometrics, Journal of Multivariate Analysis, Journal of Statistical Planning and Inference, Managerial and Decision Economics, Oxford Bulletin of Economics and Statistics, Review of Economic Studies, Scandinavian Journal of Statistics, Statistical Methods and Applications, Statistical Papers, Studies in Nonlinear Dynamics & Econometrics, The Review of Economics and Statistics.

Book reviews

- Stationary Stochastic Processes for Scientists and Engineers, by Georg Lindgren, Holger Rootzen and Maria Sandsten. Published in **The American Statistician**.