Jens Klooster

Erasmus University Rotterdam and Tinbergen Institute

Contact

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Christina Månson
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Education

Ph.D., Econometrics, Erasmus University Rotterdam, 2024 (expected).
Junior Visiting Scholar, Nuffield College, University of Oxford, Hilary Term 2023.

M.Sc., Stochastics and Financial Mathematics, University of Amsterdam, 2019.
M.Sc., Economics *(cum laude)*, University of Amsterdam, 2018.
B.Sc., Mathematics, University of Amsterdam, 2016.
B.Sc., Economics, University of Amsterdam, 2016.

References

Prof. dr. Chen Zhou
Professor of Statistics
Erasmus University Rotterdam
zhou@ese.eur.nl

Dr. Mikhail Zhelonkin
Associate Professor
Erasmus University Rotterdam
zhelonkin@ese.eur.nl

Prof. dr. Bent Nielsen
Professor of Econometrics
University of Oxford
bent.nielsen@nuffield.ox.ac.uk

Prof. dr. Frank Windmeijer
Professor of Statistics
University of Oxford
frank.windmeijer@stats.ox.ac.uk

Research

Primary fields: Econometric and statistical theory.
Secondary fields: Causal inference, applied econometrics.

Job Market Paper

– **Outlier Robust Inference in a General Class of Instrumental Variable Models**

We consider the problem of providing outlier robust inference in a general class of instrumental variable models that includes the linear instrumental variable model and the endogenous probit model. It is well known that classical instrumental variable regression tools can be unreliable in this context due to outliers. Therefore, we propose a general robust framework to construct weak instrument robust testing procedures that are also robust to outliers. The framework is constructed upon M-estimators and we show that classical weak instrument robust tests, such as the Anderson-Rubin test and the conditional likelihood ratio test can be obtained as special cases. As it turns out that the classical tests are not robust to outliers, we show how to construct robust alternatives. We investigate the robustness properties of the robust test statistics and show that their asymptotic distributions are the same as the classical test statistics. The theoretical results are corroborated by a simulation study. Finally, we revisit three empirical studies affected by outliers and apply the robust tests to re-evaluate their results.

Publication

- **Outlier Robust Inference in the Instrumental Variable Model With Applications to Causal Effects**, with Mikhail Zhelonkin, *Journal of Applied Econometrics* (Accepted).

  The Anderson-Rubin (AR) test is an important method that allows for reliable inference in the instrumental variable model when the instruments are weak. Yet, the robustness properties of this test have not been formally studied. As it turns out that the AR test is not robust to outliers, we show how to construct an outlier robust alternative - the robust AR test. We investigate the robustness properties of the robust AR test and show that the robust AR statistic asymptotically follows a chi-square distribution. The theoretical results are illustrated by a simulation study. Finally, we apply the robust AR test to three different case studies that are affected by different types of outliers.

Work in progress

- **Outlier Robust Inference in Weak Linear Instrumental Variable Models** (with Mikhail Zhelonkin)
- **On the Performance of M-estimators Under Outlier Contamination** (with Bent Nielsen).
- **Outlier Robust Inference in the Instrumental Variable Model in Stata** (with Matthias Hofstede, Andrea Naghi and Mikhail Zhelonkin).

Presentations

2023

- Nuffield Econometrics Lunch Seminar (Oxford)
- YES Causal Inference Workshop (Eindhoven)
- International Conference on Robust Statistics (Toulouse)
- International Association of Applied Econometrics (Oslo)
- European Summer Meetings of the Econometric Society (Barcelona)

2022

- Netherlands Econometric Study Group (Groningen)
- Econometric Institute Internal Seminar (Rotterdam)
- International Association of Applied Econometrics (London)

- International Conference on Robust Statistics (Waterloo)
- 2nd International Econometrics PhD Conference (Rotterdam)
- European Winter Meetings of the Econometric Society (Berlin)

2021

- Econometric Institute Internal Seminar (online)
- European Winter Meetings of the Econometric Society (online)

Teaching

Erasmus School of Economics, Erasmus University Rotterdam

- Supervisor, Master Thesis, 2023.
- Supervisor, Seminar Case Studies in Applied Econometrics, 2023.
- Supervisor, Bachelor Thesis, 2020, 2021, 2022, 2023.
- Supervisor, Financial Case Studies, 2020, 2021, 2022.
- Teaching Assistant, Academic Skills, 2020.
- Teaching Assistant, Financial Derivatives, 2022, 2023.
- Teaching Assistant, Quantitative Risk Management, 2019, 2020, 2022.

Amsterdam School of Economics, University of Amsterdam

- Teaching Assistant, Mathematics II, 2018
- Teaching Assistant, Econometrics, 2018
- Teaching Assistant, Microeconomics, 2016
- Teaching Assistant, Statistics I, 2014, 2015, 2017, 2018
- Teaching Assistant, Mathematics I, 2014, 2015, 2016, 2017

Professional Activities

- Co-organizer, Reading Group on Differential Privacy, 2022.
- Co-organizer, Econometric Institute PhD Conference (9^{th} edition), 25 March 2022.
- Local Organizing Committee, DSSV-ECDA Conference, July 7 - 9, 2021.

Awards

- Travel Award of $500CAD to participate at ICORS 2022.
- Travel Award of $150USD to participate at IAAE 2022.
- Best Poster Award NESG 2022 (€100).

Languages & Skills

Dutch (native), English (fluent)

Stata, LaTeX, R

Latest CV update: October 22, 2023