

Sander van Beek

s.g.h.van.beek@rug.nl | Personal webpage

Current position

- PhD candidate in econometrics at the University of Groningen (September 2023–present)
Defense expected in Summer 2027
- Two-month research visit to Princeton University, hosted by Prof. Bo Honoré

Fields

- Econometric theory (primary), labor economics (secondary)

Education

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| – Research Master in Economics & Business (cum laude) | University of Groningen | 2021–2023 |
| – BSc Econometrics and Operations Research | University of Groningen | 2018–2021 |

Extracurricular

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| – NIPE Summer School on Econometrics of Big Data | University of Minho | 2022 |
| – TRR 391 Summer School on Generalized Additive Modelling | TU Dortmund University | 2025 |

Research

Job market paper

- Identification and Estimation in Mixture Cure Models Without Sufficient Follow-Up
 - *Abstract:* Duration data often involve a fraction of individuals who never experience the event of interest. Without assumptions on the tail of the duration distribution, the probability of experiencing the event and the duration distribution of those who do are not separately identified. Identification is typically achieved by assuming that follow-up outlasts all finite durations, but this is often implausible in economic applications. I show that if the two depend on the covariates through linear indices that are not proportional, the indeterminacy reduces to a single constant with identified bounds, without any tail assumption. I propose estimators for the indices, for both functions up to this constant, and for its bounds. Monte Carlo simulations show that the proposed estimators perform well when follow-up is short, whereas estimators that assume long follow-up remain biased as the sample size grows. I illustrate the estimators with Swedish register data on unemployment durations, where many spells are still ongoing when follow-up ends.

Work in progress

- Testing for Unobserved Heterogeneity in Duration Analysis Using Time-Varying Explanatory Variables, with Gerard van den Berg and Bo Honoré
 - *Abstract:* Statistical inference of hazard rates is plagued by effects of systematic unobserved heterogeneity among subjects or units. With single-spell duration data it is often difficult to adequately deal with this. We provide a test based on the presence of a time-varying explanatory variable. It exploits the fact that past values of the variable affect the current hazard rate by way of the current composition of survivors in terms of their unobservables. The test does not require a proportional hazard specification or parametric functional forms. Indeed, it has high power even if the model with heterogeneity is not point-identified. We apply the test to unemployment duration register data, covering the Swedish population 1996–2021, where we use a local labor-market tightness indicator as a time-varying explanatory variable.

- Semiparametric Estimation of a Proportional Hazard Model with Interaction Effects between Observed and Unobserved Determinants, with Gerard van den Berg and Enno Mammen
 - *Abstract:* The mixed proportional hazards (MPH) model is the standard framework for duration analysis. It restricts observed covariates and unobserved heterogeneity to enter the hazard function separately, so every covariate has the same proportional effect on the hazard regardless of an individual's unobserved heterogeneity. This paper develops semiparametric estimators for a transformation model that generalizes the MPH model by allowing observed covariates to interact linearly with unobserved heterogeneity. We provide $\sqrt{n}$ -consistent and asymptotically normal estimators for all model parameters, the transformation function, and the variance of unobserved heterogeneity, without assuming parametric forms for the baseline transformation or the distribution of unobserved heterogeneity. We assess finite-sample performance in simulations and illustrate the method with Swedish unemployment duration data.

Teaching

University of Groningen

- Lectures and tutorials
 - Econometric Tools for Data Analysis (MSc, tutorials 2022–2025, lecturer 2025–present)
 - Numerical Methods for EOR (BSc, 2024–present)
 - Statistiek BDK (BSc, Dutch-taught, 2023–present)
 - Mathematics for E&BE (BSc, 2023–2024)
 - Statistics I for IB (BSc, 2022–2023)
 - Mathematics for Minor Finance (BSc, 2022–2023)
 - Probability Distributions (BSc, 2019–2020)
- Supervision
 - Bachelor's Thesis for EOR (BSc, 2023–present)
- Course development
 - Probability Theory for EOR (BSc, 2022–2023)
 - Risk Insurance (BSc, 2022–2023)
 - Statistical Modelling for EOR (BSc, 2020–2021)

Presentations

2026

- Econometrics Research Unit seminar (Groningen)
- Princeton Econometrics Student Seminar (Princeton)
- Netherlands Econometrics Study Group (Tilburg)

2025

- IAAE Annual Conference (Turin)
- Netherlands Econometrics Study Group (Leuven)
- FEBRI PhD Conference (Groningen)

2024

- Netherlands Econometrics Study Group (Maastricht)
- University of Groningen Workshop on Causal Inference + Machine Learning (Groningen)

Refereeing activities

- Referee for *Spatial Economic Analysis*

Organizational experience

- Vice president of the General Board of ESN Groningen (2023–2024)

Languages and skills

- Dutch (native), English (fluent)
- C++, Stata, R, Python

References

Prof. dr. Gerard van den Berg
Professor of Economics
University of Groningen
Email: gerard.van.den.berg@rug.nl

Prof. dr. Tom Boot
Professor of Economics
University of Groningen
Email: t.boot@rug.nl

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