Publication List

Judging the judges: evaluating the accuracy and national bias of international gymnastics judges (published article)

Reference	Heiniger, S., and Mercier, H. Judging the judges: evaluating the accuracy and national bias of international gymnastics judges. *Journal of Quantitative Analysis in Sports 17*, 4 (2021), 289–305
Description	We design, describe and implement a statistical engine to analyze the performance of gymnastics judges to provide an objective measure of judging skill and to detect bias and persistent misjudging. Judging a gymnastics routine is a random process that we model using heteroscedastic random variables. The dependence between judging variability and performance quality has never been properly studied. We leverage the intrinsic judging error variability and individual judging skills to detect outlier marks and study the national bias of judges favoring athletes of the same nationality. Our main observation is that there are significant differences between the best and worst judges, both in terms of accuracy and national bias.
My contribution	All authors have contributed equally.
Overall impact	Published in 'Journal of Quantitative Analysis in Sports' – Q1 in Social Sciences (miscellaneous).

The Heterogeneous Response of Real Estate Asset Prices to a Global Shock (submitted manuscript)

Reference	Heiniger, S., Koeniger, W., and Lechner, M. The heterogeneous response of real estate asset prices to a global shock. *CESifo Working paper* (2023). ssrn.com/abstract=4363179
Description	We estimate the transmission of the pandemic shock in 2020 to prices in the residential and commercial real estate market by causal machine learning, using granular data at the municipal level for Germany. We exploit differences in the incidence of Covid infections and short-time work at the municipal level for the identification of epidemiological and economic effects of the pandemic. We find that (i) a larger incidence of Covid infections temporarily reduced rents for retail real estate; (ii) a larger incidence of short-time work temporarily reduced rents of office real estate; and (iii) the pandemic increased asset prices of real estate, particularly in the top price segment of commercial real estate.
My contribution	All authors have contributed equally.
Overall impact	Currently under review. Presented at 'Young Swiss Economists Meeting 2023'.

A general framework to quantify the event importance in multi-event contests (submitted manuscript)

Reference	Goller, D., and Heiniger, S. A general framework to quantify the event importance in multi-event contests. *arXiv preprint* (2022). https://arxiv.org/abs/2207.02316
Description	We propose a statistical framework for quantifying the importance of single events that do not provide intermediate rewards but offer implicit incentives through the reward structure at the end of a multi-event contest. Applying the framework to primary elections in the US, where earlier elections have greater importance and influence, we show that schedule variations can mitigate the problem of front-loading elections. When applied to European football, we demonstrate the utility and meaningfulness of quantified event importance in relation to the in-match performance of contestants, to improve outcome prediction, and to provide an early indication of public interest.
My contribution	All authors have contributed equally.
Overall impact	Currently under review. Presented at 'Reading Online Sport Economics Seminar (14. October 2023)'.
Replication Code, Data, and Results	Goller, D., and Heiniger, S. Replication code and results for: 'A general framework to quantify the event importance in multi-event contests'. *Harvard Dataverse* (2022). https://doi.org/10.7910/DVN/F3QA9N

Model Selection within Causal Panel Data Models using Matrix Completion Methods. (ongoing research project)

Reference	No working paper available yet.
Description	Matrix completion estimators for causal panel data models use nuclear norm minimization to regularize the rank of the underlying factor model. This convex optimization problem allows for a simultaneous regularization of a potentially high-dimensional set of covariates. This integrated model selection property does not affect the theoretical bounds of the estimator. A two-step procedure with first selecting the optimal model and a second estimation without covariate regularisation ensures unbiased estimates of the average treatment effects on the treated. Simulations show that the proposed estimator is consistent in parameter estimation and variable selection.
My contribution	Single-authored project.

Google Scholar Profile

Link to profile	https://scholar.google.ch/citations?hl=de&user=IrGZRuUAAAAJ

[*Publication List for the public GitHub page'*]

Zurich - Switzerland, March 1, 2023