

SHENG CHAO HO

Contact Information

Email: shengho@sas.upenn.edu

Phone: +1 (445) 225-9637

Education

2019-Present	Ph.D. in Economics, University of Pennsylvania (Expected: May 2024) <i>Committee: Xu Cheng (advisor), Frank Schorfheide (advisor), Petra Todd</i>
2017-2019	MPhil in Economics, University of Oxford, Nuffield College
2014-2017	B.Sc in Economics, National University of Singapore

Research Interests

Econometrics, Empirical Bayes Methods

Research

Working Papers

1. Optimal Estimation of Heterogeneous Parameters under Unknown Heteroskedasticity (*Job Market Paper*)

Abstract: This paper studies the large-scale estimation of heterogeneous parameters under limited information where the heterogeneity is on a unit-level, e.g., teachers or neighborhoods. We employ a normal sampling model with unknown heteroskedasticity and provide generalized Tweedie's formula for the posterior means of the heterogeneous parameters. We then use these to characterize the compound optimal estimators (the oracles) of the unit-specific mean and quantile parameters in terms of the density of certain sufficient statistics. Feasible versions are proposed for which we provide asymptotic compound optimal guarantees, where their compound risk is shown to be asymptotically equivalent to that of the infeasible oracles. Numerical experiments show that the proposed estimators are generally within 1–3% of the oracles for an extensive range of data generating processes, including ones calibrated to our empirical application. The estimators are employed in an empirical study of teachers' effects on students' test outcomes where we find that the teacher rankings can be highly sensitive to how one defines teacher quality, whether in terms of the mean or lower percentile students.

2. Shrinkage Estimation of Fixed Effects on Matched Data

Abstract: This paper develops a shrinkage estimator for a panel data model with two-way fixed effects. The hyperparameters that control the variance (degree of shrinkage) and the location of the prior are determined by minimizing an unbiased risk estimate. We established optimality of the proposed estimator by showing that it asymptotically attains the same loss as an oracle estimator with a hyperparameter that is chosen based on the knowledge of the fixed effects. In a Monte Carlo study we show that the proposed estimator outperforms a number of competitors, including the least squares estimator. The method is applied to the estimation of teacher values-added from a linked student-teacher data set obtained from the North Carolina Education Research Data Center.

Research Experience

2023	Research Assistant for Prof. Xu Cheng (University of Pennsylvania)
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Conferences

2023	Asia Meeting of the Econometric Society, Singapore
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Grants and Awards

2023 Teece Research Award, University of Pennsylvania
2019-2024 Overseas Postgraduate Scholarship, Singapore Management University

Skills

Programming: R, Julia, L^AT_EX
Languages: English (Native), Chinese (Fluent)