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Yagan Hazard

Paris School of Economics

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Education

Ph.D candidate, Economics, Paris School of Economics. 2019-present
Thesis Title: *Essays on the Econometrics of Treatment Effect Models and Labor Economics.*
Expected date of completion: June 2023.

References:

Professor Luc Behaghel
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Professor Xavier D'Haultfœuille
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Professor Toru Kitagawa
Brown University, Department of Economics
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Diplôme de l'ENS, Economics, Ecole Normale Supérieure. 2016-2020
M.Sc, Economics, Paris School of Economics, *highest honours.* 2017-2019
B.Sc, Economics, PSL Research University, *highest honours.* 2014-2017

Research and Teaching Fields

Theoretical and Applied Econometrics, Labor Economics.

Visiting Positions

Visiting Research Scholar, Brown University (sponsored by Prof. Jesse Shapiro). Spring 2022

Teaching Experience

Fall 2021 *Advanced Treatment Effect Models*, Paris School of Economics (Graduate). TA for M. Tô. Topics: RCT, Clustering, RDD, IV, Marginal Treatment Effect Models, Advanced DID/TWFE

Spring 2021 *Econometrics 3*, Paris School of Economics (Graduate). TA for L. Behaghel and P. Ketz. Topics: Treatment Effect Models, Panel Data, Limited Dependent Variables and Selection Models

Conferences and Presentations

2022	2022 North American Winter Meetings of the Econometric Society, Brown Econometrics Coffee.
2021	PSE-CREST Econometrics Internal Seminar.
2020	PSE Labor and Public Economics Internal Seminar.

Honors, Scholarships and Grants

Jan. 2022	PSE Mobility Grant, €3840.
Dec. 2021	DARES (French Ministry of Labor, Statistical Unit) research grant, €190,387 Research project: Evaluating the effect of online training programs on employment: a randomized control trial (with P. Arni, L. Behaghel, M. Gurgand, R. Rathelot, and T. Zuber)
Aug. 2021	DARES (French Ministry of Labor, Statistical Unit) research grant, €61,221. Research project: Measuring occupational distances and the aggregate potential of training policies for labor force reallocation (with D. Mayaux and T. Zuber).
Oct. 2020	DARES (French Ministry of Labor, Statistical Unit) research grant, €289,656. Research project: Evaluating the effect of training programs on occupational transitions: a correspondence study (with G. Azmat, L. Behaghel, R. Rathelot and J. Sultan)

Research Papers

"Improving LATE estimation in experiments with imperfect compliance" (with S. Löwe).
Job Market Paper. 2022.

Abstract: Experiments with imperfect compliance are ubiquitous in applied economics and policy evaluation. Estimation of causal effects in such setting relies on an Instrumental Variable (IV) strategy, which can often yield imprecise and thus possibly uninformative inference when compliance rates are low. We tackle this issue by proposing a Test-and-Select estimator that exploits covariate information to restrict estimation to a subpopulation with non-zero compliance. We derive the asymptotic properties of our proposed estimator under standard and weak-IV-like asymptotics, and study its finite sample properties in Monte-Carlo simulations. We clarify under which conditions it dominates the usual 2SLS estimator in terms of precision. Under an assumption on the degree of treatment effect heterogeneity, our estimator remains first-order unbiased with respect to the Local Average Treatment Effect (LATE) estimand, setting it apart from alternatives in the burgeoning literature on the use of covariates to improve the precision of IV estimators. This robustness to treatment effect heterogeneity is illustrated using Monte-Carlo simulations and an application to a large-scale experiment on job search counseling. Our proposal therefore provides an alternative to applied economists seeking an improvement in precision while keeping an estimator more tightly linked to the original LATE estimand.

"Directing Job Search: A Large Scale Experiment" (with L. Behaghel, S. Dromundo, M. Gurgand and T. Zuber). 2022.

Abstract: We analyze the employment effects of directing job seekers' applications towards establishments likely to recruit, building upon an existing Internet platform developed by the French public employment service. Our two-sided randomization design, with about 1.2 million job seekers and 100,000 establishments, allows us to precisely measure the activation and redirection effects of the recommender system at hand. Indeed, aside from the overall effect on employment of our intervention — a 2% increase in job finding rates for women, who appear to be more activated by our treatment — part of our design aimed at reallocating the workforce from tight to slack markets in order to reduce the occupational mismatch. Building on the recent literature in the econometrics of interference effects, we estimate that by redirecting the search effort of some job seekers outside their initial job market, we reduced congestion in tight markets. However, this effect is partly offset by the increased competition in initially slack markets.

Work in Progress

"Bias-aware inference on LATE with bounded treatment effect heterogeneity" (with X. D'Hautefœuille and S. Löwe).

Abstract: As a follow-up research project, this work consider the setting studied in Hazard and Löwe (2022, see above) under the milder restriction of bounded treatment effect heterogeneity. We consider the use of bias-aware inference techniques, that have received a renewed attention in the recent econometric literature on treatment effect estimation. In the case of LATE estimation with heterogeneous first-stages across groups defined by covariates, our assumption of bounded treatment effect heterogeneity yields a set of restrictions on the relationship between the Intention-to-Treat (ITT) and the first-stage statistics within each group. We (i) derive the worst-case bias of an Anderson-Rubin statistic in this framework, (ii) propose a procedure to create bias-aware Confidence Intervals (CIs) for the LATE by (repeated) test inversion, and (iii) study the properties of the resulting CIs compared to standard inferential procedures.

"Empirical welfare maximization and optimal matching policies" (with T. Kitagawa).

Abstract: Suppose a policy maker has to choose (based on quasi-experimental data) how to match two types of individuals (e.g., job seekers and caseworkers, students and teachers etc.) to maximize a given measure of output (job finding rate, grades etc.). Following the empirical welfare maximization principle, a feasible decision rule could be to implement the allocation that would yield the highest possible output *as estimated from the sample*. How well would perform such a decision rule compared to the *actual* optimal allocation? Earlier work by T. Kitagawa and A. Tetenov (2018) have already derive finite sample guarantees on the performance of such rules for the choice of a binary treatment — but not for the choice of an entire matching policy, as is the goal of this project. Building on the optimal transport literature, we aim at deriving such bounds in this particular setting.

"Evaluating the effect of training programs on occupational transitions: a correspondence study" (with G. Azmat, L. Behaghel, R. Rathelot and J. Sultan). (*Ongoing experiment*).

Abstract: To which extent can short and/or long training programs help in moving from slack to tight labor markets? In order to answer this question, we send to firms fake CVs where we manipulate the occupation the applicant used to work in, and the type of training s/he has received related to the occupation firms are hiring in. Preliminary results are encouraging, showing contrasts between the different versions of the CVs tested. We plan on studying the heterogeneity of the effect of training programs on callback rates depending on labor market tightness, and relate it to the theoretical predictions of a search and matching model of the labor market.

"Measuring occupational distances and the aggregate potential of training policies for labor force reallocation" (with D. Mayaux and T. Zuber).

Abstract: How related are different jobs in terms of skills? To what extent training programs allow to move across jobs that differ in skills, and to what extent can this reduce the "mismatch" unemployment — i.e., the unemployment due to unbalances in labor demand vs. supply across occupations? The existing literature often answered the first question based on expert knowledge and existing job classification systems (O*NET, ROME classification in France etc.). Instead, we propose to build new measures of skill proximity across jobs based on job descriptions from vacancy data — using state-of-the-art Natural Language Processing (NLP) techniques. Making use of the skill distance measure produced, we describe the labor supply reallocations associated with the use of training programs by french job seekers — using comprehensive administrative data on unemployment spells, training use and employer-employee data. Comparing such occupational transitions in relationship with labor market tightness measures, we aim to assess the extent to which public funded training programs contribute to the reduction of mismatch unemployment.

"Evaluating the effect of online training programs on employment: a randomized controlled trial" (with P. Arni, L. Behaghel, M. Gurgand, R. Rathelot and T. Zuber). (*Pilot experiment done*).

Abstract: Training programs are famously difficult to evaluate in controlled experiments due to the absence of effective and ethical encouragement devices to increase training take-up rates. In this project, we collaborate with the French Public Employment Services (PES) in order to try various encouragement designs to increase the use of online training programs — that have been massively developed in the wake of the Covid pandemic. In order to maximize statistical power, we design our questionnaires with the aim to identify sub-populations that are more likely to comply to our encouragement — that is a combination of some information disclosure on tightness across neighboring labor markets and a decrease of the administrative burden associated to training inscription procedures.

Miscellaneous

Programming	R, Stata, Git, GitHub, Markdown
Communication	English (fluent), French (native)

Personal Information

Born 1996 / He/Him / French citizen / Practicing sport climbing and trail running in my free time