Andrei Zeleneev

Contact information

Department of Economics
Julis Romo Rabinowitz Building
Princeton, NJ 08544

Website: www.azeleneev.com
E-mail: zeleneev@princeton.edu
Phone: (609) 516-5498

Placement Director	Stephen Redding	reddings@princeton.edu	(609) 258-4016
Graduate Administrator	Laura Hedden	lhedden@princeton.edu	(609) 258-4006

Education

Princeton University
Ph.D. in Economics (expected) 2020
M.A. in Economics 2016

New Economic School
M.A. (*cum laude*) in Economics 2014

Moscow Institute of Physics and Technology
B.S. (*with Highest Honors*) in Applied Physics and Mathematics 2012

References

Professor Kirill S. Evdokimov
Department of Business and Economics
Universitat Pompeu Fabra
Phone: +1 (203) 435-7385
E-mail: kirill.evdokimov@upf.edu

Professor Bo E. Honoré
Department of Economics
Princeton University
Phone: (609) 258-4014
E-mail: honore@princeton.edu

Professor Ulrich K. Müller
Department of Economics
Princeton University
Phone: (609) 258-4520
E-mail: umueller@princeton.edu

Research Interests

Econometrics, Applied Econometrics

Job Market Paper

Identification and Estimation of Network Models with Nonparametric Unobserved Heterogeneity

Homophily based on observables is widespread in networks. Therefore, homophily based on unobservables (fixed effects) is also likely to be an important determinant of the interaction outcomes. Failing to properly account for latent homophily (and other complex forms of unobserved heterogeneity, in general) can result in inconsistent estimators and misleading policy implications. To address this concern, I consider a network model with nonparametric unobserved heterogeneity, leaving the role of the fixed effects and the nature of their interaction unspecified. I argue that the outcomes of the interactions can be used to identify agents with the same values of the fixed effects. The variation in the observed characteristics of such agents allows me to identify the effects of the covariates, while controlling for the impact of the fixed effects. Building on these ideas, I construct several estimators of the parameters of interest and characterize their large sample properties. The suggested approach is not specific to the network context and applies to general two-way models with nonparametric unobserved heterogeneity, including large panels. A Monte-Carlo experiment illustrates the usefulness of the suggested approaches and supports the large sample theory findings.

Working Papers

Simple Estimation of Semiparametric Models with Measurement Errors (with Kirill Evdokimov)
The goal of this paper is to propose a practical way of addressing the errors-in-variables (EIV) problem in the Generalized Method of Moments (GMM) framework. To provide a practical estimation method we limit our analysis to the empirical settings with measurement errors of moderate magnitude, i.e., we focus on applications in which the researcher expects the potential EIV bias to be of roughly the same order of magnitude as the standard errors. The main advantage of focusing on such settings is that it allows us to propose a simple estimation procedure. For any initial set of moment conditions, our approach provides a "corrected" set of moment conditions that do not suffer from the EIV bias. The EIV-robust estimator is then computed as a standard GMM estimator with the corrected moment conditions. We show that our estimator is root-n consistent, and the usual tests (e.g, t-test) provide valid inference about the true parameter, even when the "naive" estimator (that ignores the EIV problem) may have a large bias with its confidence intervals having 0% coverage, and the corresponding tests wrongly rejecting the true null hypothesis 100% of the time. Our estimator does not involve any nonparametric estimation, which can be particularly useful in settings with multiple mismeasured covariates. One important application of the approach is nonlinear regression estimation with mismeasured covariates. We illustrate the properties of the proposed estimator and provide a comparison with some other methods of dealing with EIV problem available in this special case.

Issues of Nonstandard Inference in Measurement Error Models (with Kirill Evdokimov)
Models with errors-in-variables (EIV) often employ instrumental variable approaches to remove the EIV bias. This paper points out that in such models the issue of nonstandard inference can arise even when the instruments are strong. Moreover, this occurs at very important points of parameter space; for instance, when the coefficient on the mismeasured regressor in a nonlinear regression is close to zero. The root of the problem is weak identification of the nuisance parameters, such as the distribution of the measurement error or control variable. These parameters are weakly identified when the mismeasured variable only has a small effect on the outcome. As a result, the estimators of the parameters of interest generally are not asymptotically normal and the standard tests and confidence sets can be invalid. We illustrate how this issue arises in several estimation approaches. This complication can be particularly problematic when the nuisance parameters are infinite-dimensional. Making use of the specific structure of the EIV problem, the paper proposes simple approaches to conducting uniformly valid inference about the parameter of interest. The high-level conditions are illustrated by a detailed analysis of a semiparametric approach to EIV in the general moment condition settings.

Errors-In-Variables in Large Nonlinear Panel and Network Models (with Kirill Evdokimov)
We consider estimation of general nonlinear semiparametric panel data models with fixed effects. Estimation of such models implicitly relies on the within variation of covariates, which aggravates the Errors-In-Variables (EIV) bias problem. First, we derive the formulas for the bias of m-estimators in large panel data. We show that the bias of common parameters includes both the direct effect of EIV and the EIV bias of the incidental parameters (fixed effects). Then, we propose an estimator that removes the EIV bias in nonlinear models using panel instrumental variables. We show how lagged values of covariates can serve as such instruments in panel data. The estimator does not

involve any nonparametric estimation, and can accommodate serially correlated and/or multivariate measurement errors. We establish the asymptotic properties of the estimator. Combined with a jackknife procedure, the estimator is asymptotically normal and unbiased. The properties of the estimator are illustrated in a Monte Carlo simulation. In addition, the estimation approach can be adapted for estimation of large network data models with measurement errors. In particular, we show how the network structure provides instruments needed to eliminate the EIV bias.

Teaching Experience

Teaching Assistant, Princeton University

ECO 302: Econometrics (U), Prof. Kirill S. Evdokimov	F2016, F2017
ECO 302: Econometrics (U), Prof. Bo E. Honoré	F2018
ECO 518: Econometric Theory II (G), Prof. Mark Watson and Kirill S. Evdokimov	S2017
ECO 518: Econometric Theory II (G), Prof. Christopher Sims and Kirill S. Evdokimov	S2018

Teaching Assistant, New Economic School

Probability and Statistics (G)	F2013
Econometrics (G)	S2014

Research Experience

Research Assistant for Prof. Kirill S. Evdokimov	2015-2017
Research Assistant for Prof. Bo E. Honoré	2018

Fellowships, Honors, and Awards

Econometrics Research Program Fellowship, Princeton University	2019
Princeton University Graduate Fellowship	2014-2020
British Petroleum Scholarship, New Economic School	2013-2014
Higher Education Support Program Fellowship, Open Society Institute	2012-2014
New Economic School Full Tuition Grant	2012-2014
Russian Presidential Scholarship, Moscow Institute of Physics and Technology	2012
Abramov-Frolov Fellowship, Moscow Institute of Physics and Technology	2009-2012
Scholarship for Academic Excellence, Moscow Institute of Physics and Technology	2008-2012
International Physics Olympiad Winner Fellowship (from V. Potanin)	2008-2014
Winner of the 39th International Physics Olympiad	2008
Absolute Winner of the Russian Physics Olympiad	2007, 2008

Languages

English (fluent), Russian (native)