Journal of Econometrics 211 (2019) 1–3

Contents lists available at ScienceDirect

Journal of Econometrics

journal homepage: www.elsevier.com/locate/jeconom

Editorial

Annals Issue in Honor of Jerry A. Hausman

Editors' Introduction

1. Introduction

It is a rare privilege for students and friends to celebrate a scholar's accomplishments even as he remains as active as ever. This volume marks just such an occasion, a permanent tribute to Jerry A. Hausman's positive life-changing impact on so many over the years. The wide range of contributions of "Jerry's kids" is a direct consequence of the extraordinary breadth and depth of Jerry's interests, expertise, and generosity. No part of econometrics and economics more broadly was uninteresting to him, and every subfield Jerry touched was materially better for it. It is the hope and aspiration of every author in this volume that our scholarship measures up to the high standards that Jerry set with his remarkable example.

2. Reflections and reminiscences

We start this Annals issue with Jerry's personal reflections on his research and academic career (Hausman, 2019). This paper is followed by his long-time colleague Paul Joskow's reminiscences of his life with Jerry since they both arrived as Assistant Professors at MIT in 1972 (Joskow, 2019). The second part of Joskow's paper describes some of Jerry's most salient contributions to energy economics.

3. Nonlinear budget sets

The next group of papers in this volume follows in the footsteps of Hausman's contributions to the area of nonlinear budget sets. Beffy et al. (2019) begin with a model of the labor supply with restrictions on the number of hours available to workers, showing that knowledge of the choice distribution allows recovery of the preference distribution, and vice versa. They then use recent UK Family Expenditure Survey data following a policy change affecting family nonlinear budget constraints to show that the unrestricted model fails to explain the choices made by a significant number of British working-age mothers, while the two-offer model provides a much closer fit to the data. In the next paper, Blomquist and Simula (2019) derive the marginal deadweight loss for nonlinear income tax systems and show that is different than using a linearized version of the nonlinear budget constraints, which overestimates the marginal deadweight loss when the marginal income tax increases with the taxable income. They calculate the correct marginal deadweight loss for the US at three different points in the last four decades, and find the linearized procedure overestimated its magnitude by 5% to 27% for plausible values of the elasticity of taxable income. Finally in this section, Harding and Lamarche (2019) introduce a computationally easy two-step estimation procedure for quantile regression in panel data models, motivated by non-random attrition in randomized field trials. They test this estimator through a series of Monte Carlo simulations and an empirical time-of-use electricity pricing and consumption model.

4. Discrete decisions

This section, on discrete choice, begins with Matzkin (2019)'s novel methods for recovering the derivatives of non-parametric utility functions of the alternatives in a discrete choice set for both the separable and nonseparable cases, assuming only the probability of choosing one alternative outside the set. It is followed by Chernozhukov et al. (2019), a paper on the identification of average effects in random coefficient multinomial choice models, with panel results showing nonidentification of marginal effects off the diagonal under time stationarity. This section concludes with Isakov et al. (2019)'s application of Bayesian decision analysis to optimize randomized clinical trial design by disease prevalence and severity for the US drug approval process, a discrete decision fraught with tremendous financial and ethical implications.

https://doi.org/10.1016/j.jeconom.2018.12.001

5. Panels

The third section, on panels, contains two papers, the first by Jeffrey Wooldridge and the second by Jason Abrevaya. Wooldridge (2019) treats the problem of correlated random effects models in unbalanced panels, extending the approaches of Mundlak and Chamberlain to the unbalanced case when unobserved heterogeneity is correlated with observed covariates and sample selection. Abrevaya (2019) considers a different problem of missing data, that of potential missing outcomes. Also following Chamberlain, a classical minimum distance estimator is developed for the static fixed-effects model, consistent with a missing-at-random assumption, and extended to autoregressive fixed-effects models with lagged dependent variables.

6. Specification tests

The next section speaks to the intellectual substance of Hausman's original specification test. It begins with Woutersen and Hausman (2019) demonstrating a method to increase the power of Hausman's original 1978 test by restricting both null and alternative hypotheses when estimating the covariance matrix. Following this, Aït-Sahalia and Xiu (2019) develop a test for the presence of market microstructure noise in high-frequency data that proceeds by comparing two different volatility estimators, one robust and one non-robust, in the spirit of Hausman's original specification test. This has the immediately practical consequence of establishing a 2009 boundary line before which the use of 5-minute returns for Dow Jones and S&P 100 constituents is problematic due to microstructure noise. Fu and Hong (2019) then develop a model-free consistent test for the presence of structural change in regression, avoiding the direct nonparametric estimation of the regression function and the "curse of dimensionality" by instead testing the time-varying properties of the Fourier transform of the data. Kuersteiner (2019) concludes this section by obtaining functional central limit theorems for dependent processes indexed by Besov classes and illustrating their use in a Hausman specification test for linearity of the conditional mean.

7. Multi-step estimators

The section on multi-step estimators begins with Hahn and Ridder (2019)'s derivation of influence functions for estimators that use control functions to allow for endogeneity, including controls that are conditional cumulative distribution functions. They give a test for overidentifying restrictions, and also find that differentiability of the moment condition is a necessary condition for regularity. It concludes with Andrews (2019)'s investigation of the behavior of common estimators in misspecified models for linear instrumental variable models with a single endogenous regressor, finding that the limited information maximum likelihood estimand exhibits the most extreme nonlinear and discontinuous behavior.

8. Convolution

Finally, Schennach (2019) studies convolution without independence to round out this volume. Schennach demonstrates the usefulness of subindependence, which reduces the dimensionality of the independence constraint to that of a conditional mean assumption. Schennach provides motivation, equivalences, extensions of the concept, methods of random variable generation, and multiple tests for subindependence, presenting the case for adding it to the econometrician's armory.

9. Conclusion

The impact of a scholar can be measured not just by that scholar's body of work, but also by his or her influence on others. We hope the contributions contained in this volume provide a clear sense of Jerry Hausman's indelible impact on our profession. And despite his long career, Jerry is as productive as ever, inspiring the rest of us to try to keep up. In contrast to the cliché that "the student has become the master", Jerry's recent work confirms that the master is still the master.

Congratulations, Jerry, and thank you!

References

Abrevaya, Jason, 2019. Missing dependent variables in fixed-effects models. J. Econometrics 211 (1), 151–165.
Aït-Sahalia, Yacine, Xiu, Dacheng, 2019. A Hausman test for the presence of market microstructure noise in high frequency data. J. Econometrics 211 (1), 176–205.
Andrews, Isaiah, 2019. On the structure of IV estimands. J. Econometrics 211 (1), 294–307.
Beffy, Magali, Blundell, Richard, Bozio, Antoine, Laroque, Guy, To, Maxime, 2019. Labour supply and taxation with restricted choices. J. Econometrics 211 (1), 16–46.
Blomquist, Sören, Simula, Laurent, 2019. Marginal deadweight loss when the income tax is nonlinear. J. Econometrics 211 (1), 47–60.
Chernozhukov, Victor, Fernandez-Val, Ivan, Newey, Whitney K., 2019. Nonseparable multinomial choice models in cross-section and panel data. J. Econometrics 211 (1), 104–116.
Fu, Zhonghao, Hong, Yongmiao, 2019. A model-free consistent test for structural change in regression possibly with endogeneity. J. Econometrics 211 (1), 206–242.
Hahn, Jinyong, Ridder, Geert, 2019. Three-stage semi-parametric inference: Control variables and differentiability. J. Econometrics 211 (1), 262–293.
Harding, Matthew C., Lamarche, Carlos, 2019. A panel quantile approach to attrition bias in big data: Evidence from a randomized experiment. J. Econometrics 211 (1), 61–82.

Hausman, Jerry A., 2019. An econometric life. J. Econometrics 211 (1), 4–10.
Isakov, Leah, Lo, Andrew W., Montazerhodjat, Vahid, 2019. Is the FDA too conservative or too aggressive?: A Bayesian decision analysis of clinical trial design. J. Econometrics 211 (1), 117–136.
Joskow, Paul L., 2019. Jerry Hausman. J. Econometrics 211 (1), 11–15.
Kuersteiner, Guido, 2019. Invariance principles for dependent processes indexed by Besov classes with an application to a Hausman test for linearity. J. Econometrics 211 (1), 243–261.
Matzkin, Rosa L., 2019. Constructive identification in some nonseparable discrete choice models. J. Econometrics 211 (1), 83–103.
Schennach, Susanne M., 2019. Convolution without independence. J. Econometrics 211 (1), 308–318.
Wooldridge, Jeffrey M., 2019. Correlated random effects models with unbalanced panels. J. Econometrics 211 (1), 137–150.
Woutersen, Tiemen, Hausman, Jerry A., 2019. Increasing the power of specification tests. J. Econometrics 211 (1), 166–175.

Yacine Aït-Sahalia *
E-mail address: yacine@princeton.edu.

Andrew W. Lo
Whitney K. Newey
Available online 12 December 2018

* Corresponding editor.