

# Li Tan

[LiTanEconomics.com](http://LiTanEconomics.com)

## Contact Information

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## Doctoral Studies

Ph.D. Candidate in Economics, University of Missouri—Columbia, 2013-present  
Dissertation Title: *Three Essays in Labor Economics with Innovative Econometric Tools*  
Expected Completion Date: May 2018

## References

Professor Cory Koedel (dissertation advisor) <a href="mailto:koedelec@missouri.edu">koedelec@missouri.edu</a> Tel: 573-882-3871	Professor David Kaplan (dissertation committee) <a href="mailto:kaplandm@missouri.edu">kaplandm@missouri.edu</a> Tel: 573-884-8005
Professor Peter Mueser (dissertation committee) <a href="mailto:mueserp@missouri.edu">mueserp@missouri.edu</a> Tel: 573-882-6427	Professor Shawn Ni (dissertation committee) <a href="mailto:ni@missouri.edu">ni@missouri.edu</a> Tel: 573-882-3161
Professor Mark Ehlert <a href="mailto:ehlertm@missouri.edu">ehlertm@missouri.edu</a> Tel: 573-882-5559	Professor Eric Parsons <a href="mailto:parsonses@missouri.edu">parsonses@missouri.edu</a> Tel: 573-882-8780

## Prior Education

Ph.D. Candidate in Economics, Clemson University, 2012-13 (transferred due to research interests)  
M.S. in Financial Management, Australian National University, 2011-12  
B.E. in Industrial Engineering, Tsinghua University, 2005-09

## Research Interests

Applied Econometrics, Labor Economics, Public Economics, Economics of Education

## Recent Honors, Scholarships and Fellowships

2017	University of Missouri RDC Interdisciplinary Doctoral Fellowship (1 year, \$25,000, University Award)
2017	Harry Gunnison Brown Research Fellowship (Department Award)
2017	Professional Presentation Travel Award (Graduate School Award)
2017	Graduate Professional Council Travel Award (Graduate Professional Council Award)
2016	Norman Bowers Scholarship (Department Award)
2016	Summer Research Award (Department Award)
2014	Harry Gunnison Brown Graduate Student Fellowship (Department Award)

## Teaching Experience

Fall 2017	Teaching Assistant, Advanced Microeconomic Theory I (doctoral)
Fall 2016	Teaching Assistant, Advanced Microeconomic Theory I (doctoral)
Fall 2015	Teaching Assistant, Advanced Microeconomic Theory I (doctoral)
Fall 2014	Teaching Assistant, Advanced Microeconomic Theory I (doctoral) & Principles of Microeconomics
Spring 2014	Teaching Assistant, Money, Banking and Financial Markets
Fall 2013	Teaching Assistant, Money, Banking and Financial Markets

## **Research Work Experience**

Jan. 2015 to Present      Research Assistant at the Economic & Policy Analysis Research Center (EPARC), University of Missouri

Key projects: Missouri growth model, cross-state teacher mobility, human capital policies in public schools (Houston Independent School District)

Primary Supervisors: Mark Ehlert, Cory Koedel, and Eric Parsons

## **Professional Activities**

Conference Presentations      Association for Public Policy Analysis and Management 39<sup>th</sup> Annual Fall Research Conference (Nov. 2017)  
Midwest Econometrics Group 27<sup>th</sup> Annual Meetings (Oct. 2017)  
Missouri Valley Economics Association 53<sup>rd</sup> Annual Conference (Oct. 2016)  
Association for Education Fin. and Policy 41<sup>st</sup> Annual Conference (Mar. 2016)

## **Job Market Paper**

Tan, Li. Imputing Top-Coded Income Data in Longitudinal Surveys. *Job Market Paper*. ([link](#))

The incomes of top earners are typically top-coded in survey data to protect individuals' identities. Common imputation methods used to recover top-coded income values are limited in several ways when applied to longitudinal data. I show that the accuracy of imputed income values for top earners in longitudinal surveys can be improved significantly by incorporating information from multiple time periods into the imputation process in a simple way. Moreover, I introduce an innovative, nonparametric empirical Bayes imputation method that further improves imputation quality. With a sample of individuals for whom incomes are pseudo top-coded (i.e., in which the exact income figures are accessible but temporarily expunged), I show that the Bayesian imputation method reduces the root mean squared error of imputed income values by 19-46% relative to standard approaches in the literature. After documenting this improvement in performance, I illustrate the benefits of the Bayesian method for investigating multi-year income inequality.

## **Other Dissertation Research**

Tan, Li, & Koedel, Cory. New Estimates of the Redistributive Effects of Social Security. *Under Review*. ([link](#))

We forecast lifetime earnings of young workers to study the redistributive effects of Social Security, prospectively. Using data from an older generation of workers, we first establish that our forecasting method can recover the actual distribution of Average Indexed Monthly Earnings taken from Social Security Administration records. We then extend the method to forecast Social Security returns for recent cohorts and examine redistributive trends. Our methods and data are accessible, facilitating straightforward replications and extensions. Focusing on redistributions across race and education groups, and on men's own benefits, we show that Social Security exhibits little progressivity, and little progressivity improvement, for recent cohorts.

## **Additional Papers**

### **Publications**

Koedel, C., Li, J., Springer, M. G., & Tan, L. (2017). The Impact of Performance Ratings on Job Satisfaction for Public School Teachers. *American Educational Research Journal*, 54(2), 241 -278. ([link](#))

Spurred by the federal Race to the Top competition, the state of Tennessee implemented a comprehensive statewide educator evaluation system in 2011. The new system is designed to increase the rigor of evaluations and better differentiate teachers based on performance. The use of more differentiated ratings represents a significant shift in education policy. We merge teacher

performance evaluations from the new system with data from post-evaluation teacher surveys to examine the effects of the differentiated ratings on job satisfaction for teachers. Using a regression-discontinuity design, we show that higher ratings under the new system causally improve teachers' perceptions of work relative to lower ratings. Our findings offer the first causal evidence of which we are aware on the relationship between performance ratings and job satisfaction for individual teachers.

### Working Papers

Parsons, Eric, Koedel, Cory, & Tan, Li. Accounting for Continuous Student Disadvantage in Value-Added Models. CALDER Working Paper No. 179, *R&R in Journal of Educational and Behavioral Statistics*. ([link](#))

We study the relative performance of two policy relevant value-added models – a one-step fixed effect model and a two-step aggregated residuals model – using a simulated dataset well grounded in the value-added literature. A key feature of our data generating process is that student achievement depends on a continuous measure of economic disadvantage. This is a realistic condition that has implications for model performance because researchers typically have access to only a noisy, binary measure of disadvantage. We find that one- and two-step value-added models perform similarly across a wide range of student and teacher sorting conditions, with the two-step model modestly outperforming the one-step model in all but the most extreme cases of sorting. The reason for the generally superior performance of the twostep model is that it better handles the use of an error-prone, dichotomous proxy for student disadvantage.

Koedel, Cory, Li, Jiayi, Springer, Matthew G., and Tan, Li. Teacher Performance Ratings and Professional Improvement Effort. *Under Review*. ([link](#))

Like other public workers, teachers typically receive high and compressed ratings that do little to differentiate them based on performance. Motivated by empirical evidence of substantial variation in effectiveness among teachers, there has been a recent push to develop more informative evaluation systems with greater ratings dispersion. We study one of the first of these new systems, implemented in Tennessee, in order to understand how teachers respond to the provision of new, more-differentiated performance ratings. We focus on whether summative ratings influence teachers' self-directed professional improvement activities as measured by a statewide teacher survey. Using a regression discontinuity design, we find that teachers do not alter their time investments in professional improvement, or adjust their professional improvement activities based on evaluation feedback, in response to their ratings.

### Work in Progress

Selection into Adult Education: Who Enrolls and When?

The Effects of the Community Eligibility Provision on Value-Added Estimation (with Cory Koedel & Eric Parsons).

### Referee

*Economics of Education Review; Journal of Research on Educational Effectiveness*