Weiwei Wu

PhD Candidate
University of Missouri

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Education

- **University of Missouri** — Columbia, Missouri, USA
  PhD in Economics, minor in Statistics — *Expected Graduation: May,2017*
  - Dissertation Title: *Two Applications of Lifecycle Models: Teachers' Retirement under Time-varying Pension Rules and the Income-health Correlation in PSID*
  - Committee: Shawn Ni(chair), Michael Podgursky, Aaron Hedlund, Chong He.
  - GPA:3.94/4.00
- **University of Missouri** — Columbia, Missouri, USA
  MA in Economics (GPA:3.94/4.00) — *2011 - 2015*
- **Nankai University** — Tianjin, China
  Bachelor of Science in Economics (GPA:88/100) — *2007 - 2011*

Research Fields

Labor Economics, Health Economics, Computational Economics, Econometric Modeling

Research Experience

- **Research Assistant**
  Economic & Policy Analysis Research Center (EPARC), University of Missouri . . . 2015-Present
  - Extended an option-value model to analyze teachers' retirement decisions
  - Solved and estimated structural models numerically in Fortran and ran simulations
  - Developed a moment based Markov chain Monte Carlo (MCMC) approach to estimate structural models
  - Processed and cleaned data for more than 3 million individuals with SAS in both Windows and Linux system
  - Analyzed panel survey data and generated survey reports
  - Processed data and generated dynamic 3D plots in R
  - Presented research results in professional conferences
  - Wrote research papers independently or as a team member
- **Research Assistant**
  School of Economics in Nankai University 2009-2011
  - Participated in 'Research of Internet of Things (IOT) Industry in Tianjin City'
  - Summarized the pattern of IOT in Europe, US, Japan, and South Korea.
  - Collected first-hand data through a five-day field survey of the leading enterprises of IOT industry in Tianjin
  - Wrote a report entitled "Research on Development Strategies for Internet of Things (IOT) Industry in Tianjin City"

Teaching Experience

- **Graduate Instructor**
  University of Missouri . . . . . Summer 2014
  - Taught more than 50 students in full responsibility.
  - Made syllabus, slides, homework, and quizzes for students
  - Evaluation:4.2/5.0. Won the department teaching award

- **Teaching Assistant**
  University of Missouri 2012-2015
  - Served in the following courses:
    * Principles of Microeconomics
    * Principles of Macroeconomics
    * Money, Banking, and Financial Markets
    * General Economics
    * Theory of the Firm
  - Led teams of 5-7 TAs as head TA, and helped 400-600 students per semester
  - Organized TA meetings, review sessions, and exams independently
  - Held office hours and helped students with different linguistic/cultural backgrounds

- **Online Teaching Assistant**
  Executive MBA program in University of Missouri 2017
  - Served in: Microeconomics for Business
  - Tutored students via online video chat
  - Guided and evaluated students' term projects

Awards, Grants & Honors

The Norman Bowers Scholarship (Research Award) 2016
Harry Gunnison Brown Graduate Student Teaching Award 2014
Harry Gunnison Brown Graduate Student Fellowship (Best Graduate Student) 2012
Excellent Graduation Thesis of Nankai University 2011
Excellent student reward of Nankai University 2008-2011
The first Prize of Lixing Research Fund in Department of Economics, Nankai University . . . 2009
Excellent student of Guangzhou, China 2000,2007

Professional Activities

Conference Presentations:

Missouri Valley Economic Association Annual Conference 2016
Economics Graduate Students Conference at Washington University in St. Louis 2016
Chinese Economists Society Annual Conference 2013
China Meeting of the Econometric Society 2013

Referee:

Journal of Economics; Journal of Applied Mathematics

Professional Membership:

American Economic Association; Econometric Society

Publications

- Dale Ballou, Katherine Canon, Mark Ehlert, **Weiwei Wu**, Sy Doan, Lori Taylor, Matthew Springer. "Final Evaluation Report: Tennessees Strategic Compensation Programs Findings on Implementation and Impact 2010-2016. Tennessee Consortium for Research Evaluation and Development", Peabody College, Vanderbilt University. (2016)

- Xinghe Wang, **Weiwei Wu**, Chenhang Zeng "On the Welfare Effect of Uniform Input Pricing with Endogenous Choice of Channel Structure in the Downstream Industry" *Firms Strategic Decisions: Theoretical and Empirical Findings Vol. 2* by Kazuhiro Ohnishi (2016) 162-197

- **Weiwei Wu**. "Empirical Analysis on the Factors that Attract Overseas Students to Return". Journal of the Knowledge Economy, 2(November, 2010). In Chinese.

- Yue Yang & **Weiwei Wu**. "Model Analysis and Research on Start Justice". Managers' Journal, 1 (April, 2010). In Chinese.

Current Research

- **How Do Changing Pension Rules Affect Retirement Behaviour? A Study of Missouri Teachers**
  (Job Market Paper)
  From 1995 to 2002 Missouri's teacher pension rules changed frequently. The effects of these rule changes on retirements can usefully be examined in a structural model. I use an option-value model to fit a panel data set of Missouri teacher retirements in the presence of these pension enhancements. An important feature of the Missouri experience (and common in other states) was that (1) there were consecutive pension rule enhancements, and (2) the sample of remaining teachers in each year is endogenous to the recent history of pension enhancements. Failure to take into account this endogeneity leads to over-predicting retirement. I develop two methods to correct this sample censoring bias, which greatly improve the model's fit to the data. Based on the good in and out of sample fit, I use the model to simulate the effects of pension rule changes. I find that the pension enhancements in the late 1990's failed to retain experienced teachers, and led to earlier retirements. A series of more generalized model-based simulations also show both higher contribution rates and higher replacement rates encourage early retirements.

- **The Late-Career Teacher Retention** with Dongwoo Kim, Cory Koedel, Shawn Ni, Michael Podgursky
  Working Paper: Revise and Resubmit at **Journal of Policy Analysis and Management**
  A vast research literature is devoted to analyzing causes of and potential remedies for early-career teacher attrition. However, much less attention has been paid to late-career attrition among experienced teachers, which is driven primarily by retirement plan incentives. Although there is some variation across states, it is generally the case that late-career teachers retire at much younger ages than their professional counterparts. Moreover, given the well-documented returns to teaching experience, late-career exits are on average more costly to students in K-12 schools than early-career exits. This study uses structural estimates from a dynamic retirement model to simulate the effect of targeted retention bonuses for senior teachers rated as effective or teaching in high-need fields. While the cost per incremental year of instruction is expensive in the short run, it declines over time. Moreover, because labor supply decisions are forward-looking, a temporary bonus has much smaller effects than a permanent one. These findings highlight the value of stability in policies aimed at extending teachers careers. Overall our results suggest that

carefully-targeted retention bonuses can be useful tool in raising the quality of the teaching workforce and closing achievement gaps.

- **On Policies for Late-Career Teacher Retention** with Shawn Ni, Michael Podgursky
  (Work in Progress)
  Pension rules push experienced teachers in K-12 schools to retire earlier than other professionals. The early exits of late-career exits are costly on student learning and on school finance. This study evaluates policies that remedy the push effect on effective teachers in an option-value model, in which the parameters are policy invariant. We first show that the parameters have good out-of-sample fit under different pension rules, in different states and years. Then we use the model to simulate the effects of several policies for retaining late-career teachers. We find that converting the current defined benefit (DB) to defined contribution (DC) effectively retains teachers; and that under the DB rules well designed retention bonuses can also be quite effective. We choose retention bonuses under the DB rules by solving a problem of optimal policy design.

- **Dynamics of Occupations, Health, and Earnings**
  (Work in Progress)
  I use a life-cycle model to explore the dynamic relationships among occupations, health, and earnings observed from Panel Study of Income Dynamics (PSID) data. The simulations from the calibrated model fit the data well. Several simulation-based counter-factual experiments show that the occupations are mainly decided by education. 'Manual' occupations lead to faster health deterioration and lower income than 'non-manual' occupations. Conditioning on occupation, health affects the labor supplied and labor income.

Personal Skills

- **Other Languages:** Mandarin(native), Cantonese(fluent)
- **Computer:** FORTRAN (with OpenMP), SAS (in both Windows and Linux), R, Matlab, STATA, Maple, Winbugs, Latex, Microsoft Office

References

- **Shawn Ni**, Professor and Department Chair, University of Missouri
  - nix@missouri.edu (573)882-3161
- **Michael Podgursky**, Professor, University of Missouri
  - podgurskym@missouri.edu (573)884-7741
- **X. H. Wang**, Middlebush Professor of Economics and DGS, University of Missouri
  - wangx@missouri.edu (573)882-4954
- **Mark Ehlert**, Associate Research Professor, University of Missouri
  - ehlertm@missouri.edu (573)882-5559