# Minchul Shin

Federal Reserve Bank of Philadelphia
Ten Independence Mall, Philadelphia, PA 19106

E–mail: visiblehand@gmail.com
Website: https://mcmcs.github.io

## Education

Ph.D., Economics, *University of Pennsylvania* (Penn), December 2015 (Thesis title: "Bayesian GMM")
– Advisors: Francis X. Diebold and Frank Schorfheide; Committee members: Xu Cheng and Francis J. DiTraglia

B.A./M.A., Economics, *Sungkyunkwan University* (SKKU), (February 2007/August 2008)

## Employment

*Federal Reserve Bank of Philadelphia*

| | |
|---|---|
| 2021– | Economic Advisor and Machine Learning Economist, Research Department |
| 2019–2020 | Senior Machine Learning Economist, Research Department |

*University of Pennsylvania, Wharton School*

| | |
|---|---|
| 2023– | Lecturer (Part-Time), Department of Statistics and Data Science |

*University of Illinois at Urbana-Champaign*

| | |
|---|---|
| 2016–2019 | Assistant Professor, Department of Economics |
| 2015–2016 | Lecturer, Department of Economics |

## Editorial positions

| | |
|---|---|
| 2020– | Associate Editor, *International Journal of Forecasting* |
| 2023– | Editorial Board Member, *Forecasting* |

## Publications and accepted papers (peer-reviewed academic article)

1. "On the Aggregation of Probability Assessments: Regularized Mixtures of Predictive Densities for Eurozone Inflation," with Francis X. Diebold (Penn) and Boyuan Zhang (Penn), *Journal of Econometrics*, In Press.
2. "Macroeconomic Forecasting and Variable Ordering in Multivariate Stochastic Volatility Models," with Jonas Arias (Philadelphia Fed) and Juan Rubio-Ramírez (Emory), *Journal of Econometrics*, 2023.
3. "The Causal Effects of Lockdown Policies on Health and Macroeconomic Outcomes," with Jonas Arias (Philadelphia Fed), Jesús Fernández-Villaverde (Penn), and Juan Rubio-Ramírez (Emory), *American Economic Journal: Macroeconomics*, 2023.
4. "A Statistical Learning Approach to Land Valuation: Optimizing the Use of External Information," with David Albouy (UIUC), *Journal of Housing Economics*, 2022.
5. "Bayesian Estimation and Comparison of Conditional Moment Models," with Siddhartha Chib (WUSTL) and Anna Simoni (CNRS), *Journal of the Royal Statistical Society: Series B*, 2022.
6. "DSGE-SVt: An Econometric Toolkit for High-Dimensional DSGE Models with SV and $t$ Errors," with Siddhartha Chib (WUSTL) and Fei Tan (SLU), *Computational Economics*, 2021.
7. "Probability Forecast Combination via Entropy Regularized Wasserstein Distance," with Ryan Cumings-Menon (Census), *Entropy*, 2020.
8. "A New Approach to Identifying the Real Effects of Uncertainty Shocks," with Molin Zhong (FRB), *Journal of Business and Economic Statistics*, 2020.
9. "Machine Learning for Regularized Survey Forecast Combination: Partially-Egalitarian Lasso and its Derivatives," with Francis X. Diebold (Penn), *International Journal of Forecasting*, 2019.
10. "Bayesian Estimation and Comparison of Moment Condition Models," with Siddhartha Chib (WUSTL) and Anna Simoni (CNRS), *Journal of the American Statistical Association (Theory & Methods)*, 2018.
11. "On the Comparison of Interval Forecasts," with Ross Askanazi (Cornerstone), Francis X. Diebold (Penn), and Frank Schorfheide (Penn), *Journal of Time Series Analysis*, 2018.
12. "Metropolitan Land Values," with David Albouy (UIUC) and Gabriel Ehrlich (Michigan), *Review of Economics and Statistics*, 2018.
13. "Measuring International Uncertainty: the Case of Korea," with Boyuan Zhang (UIUC), Molin Zhong (FRB), and Dong Jin Lee (Bank of Korea), *Economics Letters*, 2018.
14. "Real-Time Forecast Evaluation of DSGE Models with Stochastic Volatility," with Francis X. Diebold (Penn) and Frank Schorfheide (Penn), *Journal of Econometrics*, 2017.
15. "Assessing Point Forecast Accuracy by Stochastic Error Distance," with Francis X. Diebold (Penn), *Econometric Reviews*, 2017.

16. “Does Realized Volatility Help Bond Yield Density Prediction?,” with Molin Zhong (FRB), *International Journal of Forecasting*, 2017.
17. “Assessing Point Forecast Accuracy by Stochastic Loss Distance,” with Francis X. Diebold (Penn), *Economics Letters*, 2015.

## Other publications

18. “Measuring Disagreement in Probabilistic and Density Forecasts,” with Ryan Cumings-Menon (Census) and Keith Sill (Philadelphia Fed), *JSM Proceedings, Business and Economic Statistics Section, American Statistical Association,* 2020.
19. “Tracking U.S. Real GDP Growth During the Pandemic,” with Jonas E. Arias (Philadelphia Fed), *Economic Insights*, 2020.
20. “Bayesian GMM,” *Publicly Accessible Penn Dissertations*, 2009.

## Working papers

21. “Capital-Based Corporate Tax Benefits: Endogenous Misallocation through Lobbying,” with Tanida Arayavechkit (World Bank) and Felipe E. Saffie (Maryland), last revised 2019, *revision requested.*
22. “Tracking U.S. Retail Sales in Real-Time with Consumer Card Spending Data from Multiple Sources,” with Ryan C. Kobler (Philadelphia Fed), 2023.
23. “Inference Based on Time-Varying SVARs Identified with Sign Restrictions,” with Jonas E. Arias (Philadelphia Fed), Juan Rubio-Ramírez (Emory), Daniel F. Waggoner (Atlanta Fed and Emory), 2023.
24. “Regression Under Endogeneity: Bernstein-von Mises Theory and Bayes Factors Testing,” with with Siddhartha Chib (WUSTL) and Anna Simoni (CNRS), 2023.

## Other professional activities

- ◇ **Referee**: *Quantitative Economics* (×3), *Journal of Applied Econometrics (×7), Oxford Bulletin of Economics and Statistics (×3), Macroeconomic Dynamics* (×3), *Journal of Econometrics* (×8), *Statistica Sinica*, *Economic Notes*, *Journal of Business and Economic Statistics (×12)*, *Review of Economics and Statistics* (×3), *Econometrics and Statistics (×2)*, *Journal of Empirical Finance*, *International Journal of Central Banking*, *Journal of Business Cycle Research*, *Brazilian Journal of Probability and Statistics*, *Journal of Economic Theory and Econometrics*, *Empirical Economics* (×2), *Economics Letters* (×2), *International Journal of Forecasting (×4)*, *Entropy*, *European Economic Review*, *International Review of Financial Analysis*, *Australian Economic Papers*, *Journal of Macroeconomics*, *Journal of Forecasting* (×3), *Applied Economics Letters*, *Journal of Banking and Finance*, *AEJ-Macroeconomics*, *Journal of Finance*, *Management Science*, *Journal of Economic Dynamics and Control* (×2), *Journal of Economic Studies*, *Advances in Econometrics*, *International Economic Review* (×2), *Real Estate Economics*, *Econometric Reviews* (×3), *Journal of Money, Credit, and Banking. Canadian Journal of Economics. Quantitative Finance and Economics*, *IMF Economic Review.*
- ◇ **Reviewer**: National Science Foundation (×3), Social Sciences and Humanities Research Council of Canada, Society for Computational Economics (student prize).
- ◇ **Conference organized or assisted**:
  “NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics,” Aug 2023, Local organizer.
  “IAAE 2023 Annual Conference”, Jun 2023, Scientific Committee.
  “Machine Learning at Central Banks,” Apr 2021, Co-organizer.
  “Young Scholars Conference on Machine Learning in Economics and Finance,” Dec 2021, Dec 2022, Co-organizer.
  “Conference on Frontiers in Machine Learning and Economics: Methods and Applications,” Oct 2022, Co-organizer.

## Presentations

**Seminars:** University of Pennsylvania (Oct, 2021), University of Oklahoma (Feb, 2021), KAEA Virtual Seminar (Aug, 2020), Philadelphia Fed (brown bag seminar, Apr, 2020), Philadelphia Fed (Dec, 2018), Binghamton (Oct, 2017), Vanderbilt (Nov, 2016), Penn State (Oct, 2016), Purdue University (Apr, 2016), Atlanta Fed (Mar, 2016), UIUC (Internal seminar, March, 2016), Indiana University (Nov, 2015), Boston College (Nov, 2015), Cleveland Fed (Nov, 2015), Brown University (Oct, 2015), Université of Montréal (Oct, 2015), Philadelphia Fed (Jun, 2015), Sungkyunkwan University (Feb, 2015), Universitat Pompeu Fabra (Feb, 2015), University of Illinois at Urbana-Champaign (Feb, 2015), Board of Governors (Jan, 2015), University of Chicago (Booth, Jan, 2015), University of Toronto (Jan, 2015), University of Pennsylvania (Oct, 2014).

**Conferences:** [**2022**] Payments, Lending, and Innovations in Consumer Finance (Philadelphia Fed, Oct) [**2021**] System econometrics (Virtual, Oct); [**2020**] Joint Statistical Meeting 2020 (Virtual, Aug); [**2015-16**] Annual Conference on Real-Time Data Analysis, Methods, and Applications in Macroeconomics and Finance (CIRANO, Oct), SNDE conference (Univ. of Alabama, Mar), Boneyard Conference (UIUC, Apr); [**2014-15**] NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics (Washington University in St. Louis, May), NBER Summer Institute (July); [**Before 2014**] SoFiE-OMI Summer School (University of Oxford), International Symposium on Forecasting (KAIST, Seoul), Western Economic Association International 83rd Annual Conference.

**Conference discussions** (Click here for discussion slides): Interagency Risk Quantification Forum (FDIC, 2022), Conference on Real-Time Data Analysis, Methods, and Applications (FRB Philadelphia, 2020), System Committee on Econometrics Meeting (FRB Philadelphia, 2019).

## Other service and experience

- Economist recruiting committee, Federal Reserve Bank of Philadelphia, 2020, 2021, 2022, 2023.
- Past service at UIUC: organizer of econometrics seminar (2015–2016, 2018–2019), Junior faculty recruiting committee (2015–2016, 2016–2017), Awards committee (2015–2016), Faculty partner for the Freeman Fellows Program (2015–2016), Third year paper adviser/reader (×3).
- Research collaborator for the project on "Developing Korean Uncertainty Index," Bank of Korea, 2016.
- Visiting Research Scholar, Department of Economics, Texas A&M University, 2008–2009.
- Research Assistant for Professor Frank Schorfheide (Penn), 2011–2015.
- Research Assistant for Professor Joon Y. Park (SKKU and Indiana Univ.), 2007–2008.

## Fellowships, honors, and awards

- KAEA Young Scholar Award, The Korea-America Economic Association, 2020.
- David C. Lincoln Fellow, 2019–2020 (joint with David Albouy, UIUC).
- List of Teachers Ranked as Excellent (outstanding with *), UIUC, Fall 2015, Spring 2018*, Fall 2018*.
- Excellence in Teaching a Field Course (Ph.D.), UIUC, Spring 2016.
- University Fellowship, Penn, 2009–2010.
- Dean's Award and Alumni President's Award, SKKU, 2007.

## Teaching experience

- Applied Econometrics I (Graduate), Wharton, Fall 2023.
- Applied Econometrics II (Graduate), Wharton, Spring 2023.
- Time Series Analysis in Economics (Master), UIUC, Spring 2018, Fall 2018.
- Economic Forecasting (Undergraduate), UIUC, Spring 2016, Fall 2016, Spring 2018, Spring 2019.
- Applied Macroeconometrics (Ph.D.), UIUC, Fall 2015 and Fall 2016, Spring 2018.
- Predictive Modeling in Economics (Undergraduate), Teaching Assistant, Penn, Spring 2013 and Spring 2014.
- Econometrics I: Fundamentals (Ph.D.), Teaching Assistant, Penn, Fall 2012 and Fall 2013.
- Econometrics II: Methods (Ph.D.), Teaching Assistant, Penn, Spring 2011 and Spring 2012.
- Statistics for Economists (Undergraduate), Recitation Instructor, Penn, Fall 2010 and Fall 2011.

## Ph.D. dissertation supervision, * = "expected", `m` = "on the market"

| Name | Year, Univ. | Role | First position | (Co)-Main adviser |
|---|---|---|---|---|
| Boyuan Zhang | 2023, Penn | Member | Amazon.com | F. Diebold/F. Schorfheide |
| Mauricio Arango | 2022, UIUC | Member | Analysis Group | D. Albouy |
| Collin Philipps | 2021, UIUC | Main adviser | U.S. Air Force Academy | - |
| Aram Grigoryan | 2021, UIUC | Member | Wells Fargo | M. Polborn |
| Sebastian Laumer | 2021, UIUC | Member | UNC Greensboro | P. Amir-Ahmadi |
| Cesare Buiatti | 2019, UIUC | Main adviser | T.Rowe Price | S. Parente |
| Gustavo Cortes | 2019, UIUC | Member | Univ. of Florida | D. Bernhardt/G. Pennacchi |
| Ryan Cumings | 2019, UIUC | Member | U.S. Census Bureau | R. Koenker |
| Camila Henao | 2018, UIUC | Main adviser | T.Rowe Price | - |
| Jiah-Chian Wu | 2018, UIUC | Main adviser | National Chengchi Univ. | E. Forsythe |
| Ran Gao | 2017, UIUC | Other | Sichuan Univ. | |
| Joao B. Duarte | 2016, UIUC | Member | Cambridge Univ. | D. Bernhardt |
| Kijin Kim | 2016, UIUC | Member | Asian Development Bank | G. Hewings |

*****EOD, July 27, 2023*****