Eric Qian

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Office Contact Information

Department of Economics, Princeton University
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Research Interests

Econometrics, Macroeconomics, Monetary Economics

Education

Princeton University
Ph.D. Candidate in Economics — *2020-2026 (Expected)*
M.A. in Economics — *2020–2022*

New York University
Non-Degree Student — *2018–2019*

University of North Carolina at Chapel Hill
Bachelor of Science in Mathematics and Statistics (Highest Distinction) — *2014–2018*

Duke University
Minor in Economics (Robertson Scholars Program) — *2014–2018*

Honors and Awards

Marimar and Cristina Torres Prize for Best Third Year Paper, Princeton University — *2023*

Harold Willis Dodds Merit Fellowship in Economics, Princeton University — *2020–2021*

Princeton University Graduate Fellowship — *2020–*

VAULT Award, Federal Reserve Bank of New York — *2018, 2020*

Robertson Scholars Program, UNC-Chapel Hill and Duke University — *2014–2018*

Departmental Highest Honors, UNC-Chapel Hill (Department of Statistics and Operations Research) — *2018*

Honors Carolina Laureate, UNC-Chapel Hill — *2018*

Phi Beta Kappa, UNC-Chapel Hill — *2018*

Publications and Ongoing Projects

1. Double Robustness of Local Projections and Some Unpleasant VARithmetic with José Luis Montiel Olea, Mikkel Plagborg-Møller, and Christian K. Wolf. Working paper (2024).

   We consider impulse response inference in a locally misspecified stationary vector autoregression (VAR) model. The conventional local projection (LP) confidence interval has correct coverage even when the misspecification is so large that it can be detected with probability approaching 1. This follows from a "double robustness" property analogous to that of modern estimators for partially linear regressions. In contrast, VAR confidence intervals dramatically undercover even for misspecification so small that it is difficult to detect statistically and cannot be ruled out based on economic theory. This is because of a "no free lunch" result for VARs: the worst-case bias and coverage distortion are small if, and only if, the variance is close to that of LP. While VAR coverage can be restored by using a bias-aware critical value or a large lag length, the resulting confidence interval tends to be at least as wide as the LP interval.

2. Heterogeneity-robust granular instruments. arXiv:2304.01273 [econ] (November 2023). *Torres Prize*.

   Granular instrumental variables (GIV) has experienced sharp growth in empirical macro-finance. The methodology's rise showcases granularity's potential for identification in a wide set of economic environments, like the estimation of spillovers and demand systems. I propose a new estimator—called robust granular instrumental variables (RGIV)—that allows researchers to study unit-level heterogeneity in spillovers within GIV's framework. In contrast to GIV, RGIV also allows for unknown shock variances and does not require skewness of the size distribution of units. I also develop a test of overidentifying restrictions that evaluates RGIV's compatibility with the data, a parameter restriction test that evaluates the appropriateness of the homogeneous spillovers assumption, and extend the framework to allow for observable explanatory variables. Applied to the Euro area, I find strong evidence of country-level heterogeneity in sovereign yield spillovers. In simulations, I show that RGIV produces reliable and informative confidence intervals.

3. Are Inflationary Shocks Regressive? A Feasible Set Approach with Felipe Del Canto, John Grigsby, and Conor Walsh. NBER Working Paper No. 31124 (2023).

   We develop a framework to measure the welfare impact of inflationary shocks throughout the distribution. The first-order impact of a shock is summarized by the induced movements in agents' feasible sets: their budget constraint and borrowing constraints. To measure this impact, we combine estimated impulse response functions with micro-data on household consumption bundles, asset holdings and labor income for different US households. Applying the framework, we find that inflationary oil shocks are regressive, but a monetary expansion is progressive. In both cases, the dominant channel is the effect of the shock on asset accumulation, not movements in goods prices or labor income.

4. SVAR Identification From Higher Moments: Has the Simultaneous Causality Problem Been Solved? with José Luis Montiel Olea and Mikkel Plagborg-Møller. *AEA Papers and Proceedings* (2022).

   Two recent strands of the literature on Structural Vector Autoregressions (SVARs) use higher moments for identification. One of them exploits independence and non-Gaussianity of the shocks; the other, stochastic volatility (heteroskedasticity). These approaches achieve point identification without imposing exclusion or sign restrictions. We review this work critically, and contrast its goals with the separate research program that has pushed for macroeconometrics to rely more heavily on credible economic restrictions and institutional knowledge, as is the standard in microeconometric policy evaluation. Identification based on higher moments imposes substantively stronger assumptions on the shock process than standard second-order SVAR identification methods do. We recommend that these assumptions be tested in applied work. Even when the assumptions are not rejected, inference based on higher moments necessarily demands more from a finite sample than standard approaches do. Thus, in our view, weak identification issues should be given high priority by applied users.

5. A Large Bayesian VAR of the U.S. Economy with Richard Crump, Stefano Eusepi, Domenico Giannone and Argia Sbordone. *Federal Reserve Bank of New York Staff Reports* (August 2021).

   We model the United States macroeconomic and financial sectors using a formal and unified econometric model. Through shrinkage, our Bayesian VAR provides a flexible framework for modeling the dynamics of thirty-one variables, many of which are tracked by the Federal Reserve. We show how the model can be used for understanding key features of the data, constructing counterfactual scenarios, and evaluating the macroeconomic environment both retrospectively and prospectively. Considering its breadth and versatility for policy applications, our modeling approach gives a reliable, reduced form alternative to structural models.

6. Nowcasting the Great Recession with Patrick Adams, Domenico Giannone, Argia Sbordone, and Mihir Trivedi. Chapter in *Alternative Economic Indicators* (2020).

   We assess the New York Fed Staff Nowcast's ability to provide accurate, early estimates of GDP in two case studies. First, using real-time data, we track the movements of real GDP predictions during the Great Recession. In the decline and subsequent recovery, the nowcast provides an early and reliable signal for the direction of growth. Second, we investigate how the 2019 partial federal government shutdown affected the ability to monitor macroeconomic conditions. Simulating similar patterns of data scarcity for past quarters, we find that the releases unaffected by the shutdown provide ample information for generating accurate predictions.

Blog Articles

1. What Do Financial Conditions Tell Us about Risks to GDP Growth? with Patrick Adams, Tobias Adrian, Nina Boyarchenko, Domenico Giannone, and Nellie Liang. Federal Reserve Bank of New York, *Liberty Street Economics* (May 21, 2020).
2. Just Released: Historical Reconstruction of the New York Fed Staff Nowcast, 2002–15 with Patrick Adams, Domenico Giannone, and Argia Sbordone. Federal Reserve Bank of New York, *Liberty Street Economics* (July 12, 2019).
3. Global Trends in Interest Rates with Marco Del Negro, Domenico Giannone, Marc Giannoni, Andrea Tambalotti, and Brandyn Bok. Federal Reserve Bank of New York, *Liberty Street Economics* (February 27, 2019).
4. Monitoring Economic Conditions during a Government Shutdown with Patrick Adams, Domenico Giannone, and Argia Sbordone. Federal Reserve Bank of New York, *Liberty Street Economics* (February 5, 2019).
5. Opening the Toolbox: The Nowcasting Code on GitHub with Patrick Adams, Brandyn Bok, Daniele Caratelli, Domenico Giannone, Argia Sbordone, Camilla Schneier, and Andrea Tambalotti. Federal Reserve Bank of New York, *Liberty Street Economics* (August 10, 2018).

Research Positions

Research Assistant to Mikkel Plagborg-Møller	*Summer 2021, Summer 2022, Summer 2023*
Research Assistant to John Grigsby	*Spring 2022*
Senior Research Analyst, Federal Reserve Bank of New York	*2018 –2020*
Summer Analyst, Federal Reserve Bank of New York	*2017*

Teaching Experience

Macroeconomic Analysis for Policymakers (Advanced), Princeton University	*Spring 2023*
Teaching Assistant for John Grigsby	
Statistics and Data Analysis for Economics, Princeton University	*Fall 2022*
Teaching Assistant for Oscar Torres-Reyna	

Professional Activities

Presentations and Seminars

North American Summer Meeting of the Econometric Society (2023)

Refereeing

Journal of Monetary Economics, *Quantitative Economics*, *Journal of Applied Econometrics*

Services

Organizer of the Princeton Econometrics Student Workshop (2023-2024), First-year graduate student mentor (2022-2024)

Skills

MATLAB, R, Julia, LaTeX, Python, Stata, EViews, SAS

Additional Information

Nationality	American
Activities	Running, making coffee, tennis

Last updated: May 2024