

# Yajie Wang

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## Employment

Assistant Professor of Economics, University of Missouri, 2023 -

## Education

Ph.D. in Economics, University of Rochester, USA, 2017-2023

B.A. in Economics and B.S. in Mathematics, Renmin University of China, China, 2013-2017

## Research Interests

Macroeconomics, Labor, and Finance

## Working Papers

- “Uncertainty and Unemployment Revisited: The Consequences of Financial and Labor Contracting Frictions”, *Job Market Paper*, May 2023
- “Automation and the Rise of Superstar Firms”, with Hamid Firooz and Zheng Liu, *Federal Reserve Bank of San Francisco Working Paper*, April 2023

## Work In Progress

- “Borrowing From Workers: How Firms Backload Wages During Financial Distress”, *Federal Statistical Research Data Center (FSRDC) Project 2652*

## Presentations

Conferences and Seminars

- 2023: Shanghai University of Finance and Economics, Tsinghua University PBC School of Finance, University of Edinburgh, Dongbei University of Finance and Economics, University of Melbourne, University of Missouri, Kent State University, University of Exeter Business School, Singapore Management University, Midwest Macro (Clemson), Essex/RHUL/Bristol Junior SaM Workshops
- 2022: University of Rochester, the Federal Reserve Bank of Philadelphia, Midwest Macro (Logan), North America Summer Meeting (Miami), Asian Meeting of the Econometric Society (Tokyo), Young Economist Symposium (Yale)

## Discussions

- “Uncertainty, Liquidity Constraint, and Entrepreneurship” by Pengfei Wang, Daniel Yi Xu, Sichuang Xu, and Zhiwei Xu, *China International Conference in Macroeconomics*, June 2022

## Fellowships, Scholarships, and Awards

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| 2021-2023 | NSF Doctoral Dissertation Research Improvement Grants, PI is Professor Yan Bai         |
| 2022-2023 | Dean’s Post-Field Research Dissertation Completion Fellowship, University of Rochester |
| 2021      | Tapan Mitra Prize, Best 5th-Year Paper in Empirical Economics, University of Rochester |
| 2019      | Summer Research Grant, University of Rochester   |
| 2017-2022 | Graduate Fellowship and Tuition Scholarship, University of Rochester                   |
| 2015-2016 | National Scholarship, Renmin University of China                                       |

## Research Experience

- Special Sworn Status (SSS) Researcher, U.S. Census Bureau, 2021-Present
- Research Assistant for Professor Yan Bai, University of Rochester, 2019-2021
- Research Assistant for Professor George Alessandria, University of Rochester, 2020

## Teaching Experience

- Instructor, Department of Economics, University of Rochester
  - ECO 108 Principles of Economics (Summer 2021), Overall Rating: 4.6/5.0
  - ECO 108 Principles of Economics (Summer 2020), Overall Rating: 4.3/5.0
- Teaching Assistant, Department of Economics, University of Rochester
  - ECO 211 Money, Credit & Banking, Professor Narayana Kocherlakota (Spring 2020, 2021)
  - ECO 207 Intermediate Microeconomics, Professor Steven Landsburg (Fall 2019, 2020, 2021)
- Teaching Assistant, Simon Business School, University of Rochester
  - STR 427 Organizational Behavior, Professor Barry A. Friedman (Fall 2020)
  - STR 401 Managerial Economics, Professor Heikki Rantakari (Fall 2019, Fall 2020)

## Skills

**Languages:** Mandarin (native), English (fluent)

**Computer Skills:** Fortran, MATLAB, Python, Stata, R,  $\LaTeX$ , and SPSS

## References

- Professor Yan Bai (Co-Advisor), University of Rochester
- Professor Narayana Kocherlakota (Co-Advisor), University of Rochester
- Professor Mark Bills, University of Rochester
- Dr. Zheng Liu, Federal Reserve Bank of San Francisco

## **Uncertainty and Unemployment Revisited: The Consequences of Financial and Labor Contracting Frictions**

*(Job Market Paper)*

I build a novel search model to study how uncertainty shocks to firm-level productivity affect unemployment. The model's core is a labor contracting friction that implies wages are insensitive to transitory firm-level idiosyncratic shocks. When this interacts with a firm financial friction, wage bills become debt-like commitments by firms to workers, which firms are less likely to take on when high uncertainty raises firm default risks. As firms hire fewer workers, unemployment increases. Quantitatively, I find that the average peak-to-trough increase in unemployment during recessions implied by my baseline model is about the same as that in the data. The model's ability to capture unemployment dynamics diminishes markedly if I eliminate any of three elements: the financial friction, the labor contracting friction, or uncertainty shocks. My model also suggests that the labor market policy of subsidizing firms' wage bills performs better than increasing unemployment benefits during periods of elevated uncertainty.

## **Automation and the Rise of Superstar Firms**

*(with Hamid Firooz and Zheng Liu)*

Using industry-level data, we present evidence that the rise in automation technology contributed to the rise of superstar firms in the past two decades. We explain the empirical link between automation and industry concentration in a dynamic general equilibrium framework with heterogeneous firms and variable markups. A firm can operate a labor-only technology or, by paying a per-period fixed cost, an automation technology that uses both workers and robots as inputs. Given the fixed cost, more productive, larger firms are more likely to automate. Increased automation boosts labor productivity, enabling large, robot-using firms to expand further, which raises industry concentration. Our calibrated model does well in matching the highly skewed usage of automation toward a few superstar firms observed in the Census data. Since robots substitute for labor, increased automation raises sales concentration more than employment concentration, also consistent with empirical evidence. A modest subsidy for automating firms improves welfare since productivity gains outweigh increased markup distortions.

## **Borrowing From Workers: How Firms Backload Wages During Financial Distress**

A considerable amount of empirical research has shown that firms provide partial insurance to workers against shocks to their productivity. This paper asks about the opposite direction: do workers insure firms against shocks when firms face financial distress? To answer this question, I merge U.S. matched employer-employee data (LEHD) with firm-level financial data from Compustat. I find that workers in financially constrained firms have lower earnings growth first and higher growth later when there is a volatility shock. And the earnings decline is larger for firms with expected longer employment relationships. My findings imply that financially constrained firms borrow from workers through long-term employment relationships by back-loading wages. However, the magnitude is small.