

Ziyao Wang

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EDUCATION

Ph.D. in Economics , Northeastern University, Boston, USA	2021-2026 (expected)
<i>Dissertation Committee: James Dana (co-chair), Jordi Jaumandreu (co-chair), Santiago Caicedo, Jianfei Cao</i>	
M.S. in Economics , University of Wisconsin-Madison, USA	2021
M.S. in Finance & Economics , with Distinction, University of Southampton, Southampton, UK	2019
B.S. in Economics , China University of Geosciences, Wuhan, CHN	2017

FIELDS OF INTEREST

General Interest: Industrial Organization, Development and Growth, Applied Econometrics
Special Focus: Productivity, Technological Change, Market Power, Economics of AI

WORKING PAPERS

[Non-neutral Technological Change in Chinese Manufacturing](#) [*Job Market Paper*]

Privatization and Non-neutral Technological Change in Chinese Manufacturing

Artificial Intelligence (AI) and Endogenous Productivity: Evidence from Korean Firms (*joint with Jae Wook Jung*)

WORK IN PROGRESS

Vertical Licensing, Pricing, and Welfare: Evidence from the Instant Coffee Market (*joint with Muhammad Shabanpour*)

PRESENTATIONS

Chinese Economists Society North America Annual Conference, Ann Arbor, USA	Mar 2025
Western Economic Association International Annual Conference, San Francisco, USA	June 2025
Chinese Economists Society China Annual Conference, Guangzhou, China	July 2025
University of Mannheim & Center for European Economic Research (ZEW), Mannheim, Germany	July 2025
Boston University, Empirical Micro Workshop, Boston, USA	Sept 2025
BU-BC Green Line Macro Meeting, Boston, USA	Oct 2025
MIT Sloan, FutureTech Seminar, Boston, USA	Dec 2025
ASSA Annual Meeting, Poster Session, Philadelphia, USA	Jan 2026

RESEARCH EXPERIENCE

Research Assistant: <i>Sovereign Debt and Rollover Risk</i> for Jun Ma, Northeastern University	2024- Present
Research Assistant: <i>Synthetic Control Method with Spillover</i> for Jianfei Cao, Northeastern University	2021- 2022

TEACHING EXPERIENCE

Northeastern University:

Lecturer: <i>Principle of Microeconomics</i> (Evaluation: 4.8/5.0)	2024 Summer
Lecturer: <i>Principle of Microeconomics</i> (Evaluation: 4.7/5.0)	2023 Summer
Discussion Instructor: <i>Principle of Microeconomics</i> (Evaluation: 4.9/5.0)	2022 Fall-2024 Spring
Teaching Assistant: <i>Statistics, Public Finance, Urban Economics</i>	2021 Fall-2022 Spring

University of Mannheim & ZEW:

TA for Jordi Jaumandreu: <i>Estimating the Production Function, Productivity, and Markups</i> (PhD level)	2025
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HONORS&FUNDINGS

- **CSSH Multi-generational Research Team Program**, *Northeastern University* 2022
- **CSSH Scholar Award** (*summer funding*), *Northeastern University* 2021-2026
- **Dean's List Award**, *University of Southampton* 2019

LEADERSHIP&SERVICE

Student Representative – <i>Belonging Committee</i> , Department of Economics, Northeastern University	Oct 2024 – Present
Vice President – <i>College Volunteer Association</i>	
Outstanding Director in Student Union , China University of Geosciences	2013 –2014

SKILLS

Languages: Mandarin (native), English (fluent)
Software and Programming: MATLAB, STATA, R, Python, LaTeX, SQL
Citizenship/Visa Status: China/F1

REFERENCES

James Dana

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Department of Economics and
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Business,
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Jordi Jaumandreu

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Jianfei Cao

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Non-neutral Technological Change in Chinese Manufacturing [Job Market Paper]

This article identifies firm-level factor-augmenting productivity for capital, labor, and materials using Chinese manufacturing data from 1998 to 2008, a period of state-owned enterprise reform. We develop a novel method to estimate the parameters of a CES production function and recover the three types of factor-augmenting productivity. Results suggest technological change is strongly biased: labor-augmenting productivity grew 12% annually, capital-augmenting 5%, and material-augmenting 1.4%. Factor-augmenting productivity growth varies by sector and ownership. Productivity growth was driven primarily by incumbents, whereas entrants improved capital efficiency and exiters enhanced labor efficiency. We explain factor cost-share shifts through productivity gaps and relative input prices.

Privatization and Non-neutral Technological Change in Chinese Manufacturing

This paper examines how ownership transformation during China's state-owned enterprise (SOE) reform affected the direction of firm-level technological change. Using Chinese manufacturing data from 1998–2008, I estimate a nested CES production function with factor-augmenting productivities and embed privatization directly into the law of motion for each productivity to address endogenous ownership change. I also relax perfect-competition assumptions in labor markets by allowing ownership-specific rent sharing, which separates true labor-augmenting technological change from wage markdowns. Using the estimates, we quantify how privatization shifts labor-augmenting productivity and compare labor market power between SOEs and private firms.

Artificial Intelligence (AI) and Endogenous Productivity: Evidence from Korean Firms

(joint with Jae Wook Jung)

This paper studies how artificial intelligence (AI) adoption affects firm-level productivity in South Korea. Using a 2017–2023 panel covering all major market sectors, we combine direct survey measures of AI adoption with a structural model of endogenous productivity dynamics to address selection into adoption. We estimate that AI adopters experience, on average, a short-run revenue gain of about 5%. The effects are heterogeneous across time and sectors: gains are largest in Information and Communication Technology (ICT), statistically weak in Trade and other services, and slightly negative in Manufacturing. We also document heterogeneity by application area: firms that deploy AI in product or service development and in sales/marketing exhibit larger short-run revenue improvements, whereas AI used primarily in production processes delivers effects that are economically small.