ZHU WANG

(November 2025)

Federal Reserve Bank of Richmond
Web: https://www.richmondfed.org/research/people/wang
Phone: (804) 385-0752
Email: zhu.wang@rich.frb.org

EMPLOYMENT:

Federal Reserve Bank of Richmond, Research Department

Vice President, January 2019 – Present
Senior Economist, June 2011 – December 2018

Federal Reserve Bank of Kansas City, Research Department

Senior Economist, January 2007 – May 2011
Economist, July 2004 – December 2006

EDUCATION:

Ph.D. Economics, University of Chicago, Chicago, IL, 2004.
Dissertation: *Learning, Diffusion and Industry Life Cycle*
Advisors: Boyan Jovanovic (Chair), Robert Lucas, Gary Becker, Chad Syverson

M.A. Economics, Rutgers University, New Brunswick, NJ, 1999.

B.A. Economics, Peking University, Beijing, China, 1996.

RESEARCH FIELDS:

Applied Macroeconomics, Industry Dynamics and Productivity,
Banking, Payments, and Financial Systems

WORKING PAPERS:

"Idea Diffusion and Property Rights" (with Boyan Jovanvoic).
Revise and resubmit at the *Review of Economic Studies*.

"Technology Adoption and Leapfrogging: Racing for Mobile Payments" (with Pengfei Han).
Revise and resubmit at the *Management Science*.

"Real Estate Commissions and Homebuying" (with Borys Grochulski).
Under journal review.
Media coverage: *Fortune*, *WSJ*, *CNN*, *NY Times*, *NPR*.

"Two-Sided Platforms and the 6 Percent Real Estate Broker Commission" (with Borys Grochulski).
Under journal review.

ACADEMIC PUBLICATIONS:

"Two-sided Market, R&D, and Payments System Evolution" (with Bin Grace Li and James McAndrews). ***Journal of Monetary Economics***, 2020, Vol. 115, 180-199.

"Competitors, Complementors, Parents and Places: Explaining Regional Agglomeration in the U.S. Auto Industry" (with Luis Cabral and Daniel Yi Xu).
Review of Economic Dynamics, 2018, Vol. 30, 1-29 **(Lead Article)**.

"Should Platforms Be Allowed to Charge Ad Valorem Fees?" (with Julian Wright).
Journal of Industrial Economics, 2018, Vol. 66, 739-760.

"Ad Valorem Platform Fees, Indirect Taxes, and Efficient Price Discrimination" (with Julian Wright). ***RAND Journal of Economics***, 2017, Vol. 48, 467-484.

"Innovation, Deregulation, and the Life Cycle of a Financial Service Industry" (with Fumiko Hayashi and Bin Grace Li). ***Review of Economic Dynamics***, 2017, Vol. 26, 180-203.

"Payment Choice and Currency Use: Insights from Two Billion Retail Transactions" (with Alexander Wolman). ***Journal of Monetary Economics***, 2016, Vol. 84, 94-115.

"Price Cap Regulation in a Two-sided Market: Intended and Unintended Consequences."
International Journal of Industrial Organization, 2016, Vol. 45, 28-37.

"Why Do Payment Card Networks Charge Proportional Fees?" (with Oz Shy).
American Economic Review, 2011, Vol. 101, 1575-1590.

"Market Structure and Payment Card Pricing: What Drives the Interchange?"
International Journal of Industrial Organization, 2010, Vol. 28, 86-98.

"Income Distribution, Market Size and the Evolution of Industry."
Review of Economic Dynamics, 2008, Vol. 11, 542-565.

"Technological Innovation and Market Turbulence: The Dot-com Experience."
Review of Economic Dynamics, 2007, Vol. 10, 78-105.

FEDERAL RESERVE & OTHER PUBLICATIONS:

"How Exclusive Homebuyer Representation Contracts Help Keep Commissions High" (with Borys Grochulski). *Economic Brief*, Federal Reserve Bank of Richmond, September 2025.

"Rounding Up: The Impact of Phasing Out the Penny" (with Russell Wong).
Economic Brief, Federal Reserve Bank of Richmond, July 2025.

"Buy Now, Pay Later: Market Impact and Policy Considerations."
Economic Brief, Federal Reserve Bank of Richmond, January 2025.

"Artificial Intelligence: Potentials and Prospects."
Econ Focus, Federal Reserve Bank of Richmond, Third Quarter 2024.

"Real Estate Commissions and Home Search Efficiency" (with Borys Grochulski). *Economic Brief*, Federal Reserve Bank of Richmond, March 2024.

"Removing Conflict of Interest for Agents of Homebuyers" (with Borys Grochulski). *Economic Brief*, Federal Reserve Bank of Richmond, October 2023.

"Innovation, Diffusion and Intellectual Property Rights." *Economic Brief*, Federal Reserve Bank of Richmond, July 2023.

"A Historical Perspective on Digital Currencies" (with Huberto Ennis and Russell Wong). *Economic Brief*, Federal Reserve Bank of Richmond, June 2022.

"Are There Compelling Reasons to Consider a Central Bank Digital Currency for the U.S.?" *Economic Brief*, Federal Reserve Bank of Richmond, June 2022.

"Why Is the U.S. Lagging in Adopting Mobile Payments?" (with Pengfei Han). *Economic Brief*, Federal Reserve Bank of Richmond, June 2021.

"Should the Fed Issue Digital Currency?" (with Jessie Romero and Russell Wong). *Economic Brief*, Federal Reserve Bank of Richmond, March 2021.

"Coronavirus and Auto Lending: A Market Outlook." *Special Reports*, Federal Reserve Bank of Richmond, April 2020.

"Technology Diffusion: The Case of Internet Banking" (with Richard Sullivan). *Economic Quarterly*, Federal Reserve Bank of Richmond, First Quarter 2020.

"Why Do Platforms Use Ad Valorem Fees? Evaluating Two Alternative Explanations." *Economic Quarterly*, Federal Reserve Bank of Richmond, Fourth Quarter, 2018.

"The Decline in Currency Use at a National Retail Chain" (with Alexander Wolman). *Economic Quarterly*, Federal Reserve Bank of Richmond, Second Quarter, 2018.

"What Two Billion Retail Transactions Reveal about Consumers' Choice of Payments" (with David Price and Alexander Wolman). *Economic Brief*, Federal Reserve Bank of Richmond, April 2017, No. 17-04.

"Consumer Payment Choice in the Fifth District: Learning from a Retail Chain" (with Alexander Wolman). *Economic Quarterly*, Federal Reserve Bank of Richmond, First Quarter, 2016.

"Did the Durbin Amendment Reduce Merchant Costs? Evidence from Survey Results" (with Renee Haltom). *Economic Brief*, Federal Reserve Bank of Richmond, December 2015.

"The Impact of the Durbin Amendment on Merchants: A Survey Study" (with Scarlett Schwartz and Neil Mitchell). *Economic Quarterly*, Federal Reserve Bank of Richmond, Third Quarter, 2014.

"Welfare Analysis of Debit Card Interchange Fee Regulation" (with Tim Sablik). *Economic Brief*, Federal Reserve Bank of Richmond, October 2013.

"Why Do Debit Card Networks Charge Percentage Fees?" (with David Price). *Economic Brief*, Federal Reserve Bank of Richmond, February 2013.

"Explaining an Industry Cluster: The Case of U.S. Car Makers from 1895-1969" (with David Price). *Economic Brief*, Federal Reserve Bank of Richmond, October 2012.

"Debit Card Interchange Fee Regulation: Some Assessments and Considerations." *Economic Quarterly*, Federal Reserve Bank of Richmond, Third Quarter, 2012.

"Regulating Debit Cards: The Case of *Ad Valorem* Fees." *Economic Review*, Federal Reserve Bank of Kansas City, First Quarter, 2010.

"Nonbanks and Risk in Retail Payments: EU and US" (with ECB and KC Fed staff). *Managing Information Risk and the Economics of Security*, edited by Eric M. Johnson, Springer Publishing, 2008.

"Nonbanks in the Payments System: Innovation, Competition, and Risk – A Conference Summary" (with Richard Sullivan). *Economic Review*, Federal Reserve Bank of Kansas City, Third Quarter, 2007.

"Scale without Mass: Business Process Replication and Industry Dynamics - Discussion." *Proceedings*, Federal Reserve Bank of San Francisco, November 2007.

"Online Banking Comes of Age." *Ten*, Federal Reserve Bank of Kansas City, Winter 2006.

JOURNAL REFEREE:

American Economic Review, Econometrica, Journal of Political Economy, Quarterly Journal of Economics, American Economic Review: Insights, Economic Journal, International Economic Review, Journal of Monetary Economics, Journal of Economic Theory, Journal of Economic Growth, Rand Journal of Economics, Review of Economics and Statistics, Management Science, Review of Economic Dynamics, European Economic Review, Journal of Applied Econometrics, Journal of Economic Dynamics & Control, Journal of Industrial Economics, Journal of Money, Credit and Banking, International Journal of Industrial Organization, International Journal of Central Banking, Journal of Economics & Management Strategy, Industrial and Corporate Change, Canadian Journal of Economics, Japanese Economic Review, Economics Letters, Economic Inquiry, Journal of Banking and Finance, Review of Industrial Organization, Economica, Manchester School, Southern Economic Journal

INVITED VISITS:

Visiting Scholar

Federal Reserve Bank of New York, Research Department, Jun 2006, Oct 2007, Dec 2011.
New York University, Economics Department, Stern School of Business, Spring 2008.

Invited Participant

NBER Entrepreneurship Working Group, 2004 – present.

TEACHING EXPERIENCE:

Lecturer, Department of Economics, University of Chicago, Spring 2003.
Teaching Assistant, Graduate School of Business, University of Chicago, 2002 – 2003.
Lecturer, Department of Economics, Rutgers University, Summer 1999.
Teaching Assistant, Department of Economics, Rutgers University, 1996 – 1999.

OTHER EXPERIENCE:

Program Committee, Economics of Payments XIV conference, Bank of Italy, 2025.
Program Committee, Technology-Enabled Disruption Conferences, Federal Reserve, 2022–2025.
Organizer, Technology Diffusion and Productivity Conference, Richmond Fed, 2019.
Seminar Series Coordinator, Research Department, Richmond Fed, 2013–2018.
Program Committee, Federal Reserve System Applied Micro Meeting, Richmond, VA, 2012.
Seminar Series Coordinator, Research Department, Kansas City Fed, 2007–2011.
Organizing Committee, International Payments Conferences, Kansas City Fed, 2005–2009.
Program Committee, Midwest Finance Association Annual Meeting, 2006.

PROFESSIONAL AFFILIATIONS:

American Economic Association, Econometric Society, European Economic Association