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Education

Ph.D., Economics (2005), University of Michigan, Ann Arbor, MI
M.A., Economics (2002), University of Michigan, Ann Arbor, MI
B.A., Mathematics-Economics and Spanish (2000), *Summa Cum Laude* and Class Valedictorian,
Denison University, Granville, OH

Professional and Teaching Experience

Senior Vice President, Federal Reserve Bank of Cleveland, 2017–
Director of Research, 2023–
Associate Research Director, 2021–2022
Unit Head, Macroeconomic Forecasting, 2012–2022
Supervisor, Research Analysts, 2013–2022
Vice President, Federal Reserve Bank of Cleveland, 2012–2017
Vice President and Economist, Federal Reserve Bank of Kansas City, 2011–2012
Assistant Vice President and Economist, Federal Reserve Bank of Kansas City, 2010–2011
Senior Economist, Federal Reserve Bank of Kansas City, 2009–10
Economist, Federal Reserve Bank of Kansas City, 2005–09
Graduate Student Mentor, Department of Economics, University of Michigan, 2004–05
Instructor, Introduction to Macroeconomics, University of Michigan, 2002–04
Head Graduate Student Instructor, Intermediate Macroeconomic Theory, University of
Michigan, 2002–04
Graduate Student Instructor, Introduction to Macroeconomics, University of Michigan, 2001–02
Project/Research Assistant, Real Estate Appraisal Services, Inc., a subsidiary of Charter One
Bank, F.S.B., 1999–2004

Research and Teaching Interests

Monetary Economics; Macroeconomics; Price Setting and Price Rigidity; Inflation; Inflation
Expectations; Forecasting and Nowcasting; Okun's Law

Publications

“Average Inflation Targeting and Household Expectations” with Olivier Coibion, Yuriy
Gorodnichenko, and Raphael Schoenle (forthcoming) *Journal of Political Economy
Macroeconomics*. <https://www.journals.uchicago.edu/doi/abs/10.1086/722962>

- “Real-Time Density Nowcasts of U.S. Inflation: A Model-Combination Approach” with Saeed Zaman (forthcoming) *International Journal of Forecasting*.
<https://doi.org/10.1016/j.ijforecast.2022.04.007>
- “Asymmetric Responses of Consumer Spending to Energy Prices: A Threshold VAR Approach” with Saeed Zaman (2021) *Energy Economics* 95: 105127.
<https://doi.org/10.1016/j.eneco.2021.105127>
- “Forecasting GDP Growth with NIPA Aggregates: In Search of Core GDP” with Christian Garciga (2019) *International Journal of Forecasting* 35(4): 1814–28.
<https://doi.org/10.1016/j.ijforecast.2019.03.024>
- “Financial Nowcasts and Their Usefulness in Macroeconomic Forecasting” with Saeed Zaman (2019) *International Journal of Forecasting* 35(4): 1708–24.
<https://doi.org/10.1016/j.ijforecast.2018.10.012>
- “Nowcasting U.S. Headline and Core Inflation” with Saeed Zaman (2017) *Journal of Money, Credit and Banking* 49(5): 931–68. <https://doi.org/10.1111/jmcb.12401>
- “Drifting Inflation Targets and Monetary Stagflation” with Shujaat Khan (2015) *Journal of Economic Dynamics and Control* 52: 39–54. <https://doi.org/10.1016/j.jedc.2014.11.007>
- “Convenient Prices and Price Rigidity: Cross-Sectional Evidence” (2011) *Review of Economics and Statistics* 93(3): 1076–86. <https://www.jstor.org/stable/23016096>
- “Markov-Chain Approximations of Vector Autoregressions: Application of General Multivariate-Normal Integration Techniques” with Stephen J. Terry (2011) *Economics Letters* 110(1): 4–6. <https://doi.org/10.1016/j.econlet.2010.09.008>
- “A Tale of Two Rigidities: Sticky Prices in a Sticky-Information Environment” (2010) *Journal of Money, Credit and Banking* 42(8): 1543–64. <https://doi.org/10.1111/j.1538-4616.2010.00353.x>
- “Convenient Prices, Currency, and Nominal Rigidity: Theory with Evidence from Newspaper Prices” (2008) *Journal of Monetary Economics* 55(7): 1303–16.
<https://doi.org/10.1016/j.jmoneco.2008.07.009>
- “Stagflation” with Robert B. Barsky. In Adam Kuper and Jessica Kuper, eds. (2004) *The Social Science Encyclopedia*, 3rd ed., New York: Routledge.

Federal Reserve Publications

- “Indirect Consumer Inflation Expectations” with Ina Hajdini, Mathieu Pedemonte, Robert Rich, John Leer, and Raphael Schoenle (2022) Federal Reserve Bank of Cleveland *Economic Commentary* 2022–03. <https://doi.org/10.26509/frbc-ec-202203>
- “Expected Post-Pandemic Consumption and Scarred Expectations from COVID-19” with Michael McMain, Raphael Schoenle, Alexander Dietrich, Kristian Ove R. Myrseth, and Michael Weber (2021) Federal Reserve Bank of Cleveland *Economic Commentary* 2021–11. <https://doi.org/10.26509/frbc-ec-202111>
- “Inflation: Drivers and Dynamics 2020 Conference Summary” with Robert Rich, Raphael Schoenle, Philippe Andrade, Marco Del Negro, Colin Hottman, Christian Höynck, Matthias Meier, Giovanni Ricco, Elisa Rubbo, Daniel Villar, and Michael Weber (2021) Federal Reserve Bank of Cleveland *Economic Commentary* 2021–02. <https://doi.org/10.26509/frbc-ec-202102>

- “Inflation: Drivers and Dynamics 2020 CEBRA Annual Meeting Session Summary” with Robert Rich, Raphael Schoenle, Michael Lamla, Emanuel Mönch, and Michael Weber (2021) Federal Reserve Bank of Cleveland *Economic Commentary* 2021–03. <https://doi.org/10.26509/frbc-ec-202103>
- “Consumers and COVID-19: Survey Results on Mask-Wearing Behaviors and Beliefs” with Raphael S. Schoenle, Alexander M. Dietrich, Gernot J. Müller, Kristian Ove R. Myrseth, and Michael Weber (2020) Federal Reserve Bank of Cleveland *Economic Commentary* 2020–20. <https://doi.org/10.26509/frbc-ec-202020>
- “Inflation: Drivers and Dynamics | 2019 CEBRA Annual Meeting Session Summary” with Timo Haber, Jean-Paul L’Huillier, Julio Ortiz, Damjan Pfajfar, Robert W. Rich, and Raphael Schoenle (2020) Federal Reserve Bank of Cleveland *Economic Commentary* 2020–14. <https://doi.org/10.26509/frbc-ec-202014>
- “Consumers and COVID-19: A Real-Time Survey” with Raphael S. Schoenle, Alexander M. Dietrich, Keith Kuester, Gernot J. Müller, Kristian Ove R. Myrseth, and Michael Weber (2020) Federal Reserve Bank of Cleveland *Economic Commentary* 2020–08. <https://doi.org/10.26509/frbc-ec-202008>
- “Inflation: Drivers and Dynamics 2019 Conference Summary” with Andres Blanco, Mina Kim, Matthias Paustian, Robert Rich, Jane Ryngaert, Raphael Schoenle, Joris Tielens, Henning Weber, Michael Weber, Mirko Wiederholt, and Tony Zhang (2019) Federal Reserve Bank of Cleveland *Economic Commentary* 2019–22. <https://doi.org/10.26509/frbc-ec-201922>
- “Changing Policy Rule Parameters Implied by the Median SEP Paths” (2019) Federal Reserve Bank of Cleveland *Economic Commentary* 2019–06. [Link](#)
- “Have Inflation Dynamics Changed?” with Saeed Zaman (2017) Federal Reserve Bank of Cleveland *Economic Commentary* 2017–21. [Link](#)
- “Federal Funds Rates Based on Seven Simple Monetary Policy Rules” with Randal Verbrugge, Christian Garciga, Caitlin Treanor, and Saeed Zaman (2016) Federal Reserve Bank of Cleveland *Economic Commentary* 2016–07. [Link](#)
- “Measuring Inflation Forecast Uncertainty” with Saeed Zaman and Todd E. Clark (2015) Federal Reserve Bank of Cleveland *Economic Commentary* 2015–03. [Link](#)
- “On the Relationships between Wages, Prices, and Economic Activity” with Saeed Zaman (2014) Federal Reserve Bank of Cleveland *Economic Commentary* 2014–14. [Link](#)
- “The Slowdown in Residential Investment and Future Prospects” with Saeed Zaman (2014) Federal Reserve Bank of Cleveland *Economic Commentary* 2014–10. [Link](#)
- “When Might the Federal Funds Rate Lift Off? Computing the Probabilities of Crossing Unemployment and Inflation Thresholds (and Floors)” with Saeed Zaman (2013) Federal Reserve Bank of Cleveland *Economic Commentary* 2013–19. [Link](#)
- “What Drives Consumer Debt Dynamics?” with John Carter Braxton (2012) Federal Reserve Bank of Kansas City *Economic Review*, fourth quarter, 97(4): 31–54. [Link](#)
- “How Do Households Respond to Uncertainty Shocks?” with Shujaat Khan (2011) Federal Reserve Bank of Kansas City *Economic Review*, second quarter, 96(2): 5–34. [Link](#)
- “How Will Unemployment Fare Following the Recession?” with Stephen Terry (2009) Federal Reserve Bank of Kansas City *Economic Review*, third quarter, 94(3): 5–33. [Link](#)
- “How Useful Is Okun’s Law?” (2007) Federal Reserve Bank of Kansas City *Economic Review*, fourth quarter, 92(4): 73–103. [Link](#)

- “Inflation: Waiting for the Upturn” with Christian Garciga (2015) Federal Reserve Bank of Cleveland *Economic Trends*. [Link](#)
- “Difficulties Forecasting Wage Growth” (2015) Federal Reserve Bank of Cleveland *Economic Trends*. [Link](#)
- “Global Factors and Domestic Inflation” with William Bednar (2014) Federal Reserve Bank of Cleveland *Economic Trends*. [Link](#)
- “What’s Up in Inflation? Shelter and OER” with William Bednar (2014) Federal Reserve Bank of Cleveland *Economic Trends*. [Link](#)
- “Behind Recent Disinflation: 2010 Redux?” with William Bednar (2013) Federal Reserve Bank of Cleveland *Economic Trends*. [Link](#)
- “Inflation: Why It Is Low, and Why It Matters” with Todd E. Clark (2013) Federal Reserve Bank of Cleveland *Annual Report 2013*. [Link](#)
- “Achieving Maximum Long-Run Growth—An Introduction to the 2011 Economic Policy Symposium” in Federal Reserve Bank of Kansas City (2011) *Achieving Maximum Long-Run Growth, Proceedings of an Economic Policy Symposium at Jackson Hole*, pp. xxiii–xxxii. [Link](#)
- “Macroeconomic Challenges: The Decade Ahead—An Introduction to the 2010 Economic Policy Symposium” with Craig S. Hakkio in Federal Reserve Bank of Kansas City (2010) *Macroeconomic Challenges: The Decade Ahead, Proceedings of an Economic Policy Symposium at Jackson Hole*, pp. xxi–xxx. [Link](#)

Working Papers

- “Indirect Consumer Inflation Expectations: Theory and Evidence” with Ina Hajdini, John Leer, Mathieu Pedemonte, Robert W. Rich, and Raphael S. Schoenle, Federal Reserve Bank of Cleveland Working Paper no. 22-35. <https://doi.org/10.26509/frbc-wp-202235>
- “Low Passthrough from Inflation Expectations to Income Growth Expectations: Why People Dislike Inflation” with Ina Hajdini, John Leer, Mathieu Pedemonte, Robert W. Rich, and Raphael S. Schoenle, Federal Reserve Bank of Cleveland Working Paper no. 22-21. <https://doi.org/10.26509/frbc-wp-202221>
- “Greater Than the Sum of the Parts: Aggregate vs. Aggregated Inflation Expectations” with Alexander Dietrich, Kristian Ove R. Myrseth, Robert W. Rich, Raphael S. Schoenle, and Michael Weber, Federal Reserve Bank of Cleveland Working Paper no. 22-20. <https://doi.org/10.26509/frbc-wp-202220>
- “Real-Time Density Nowcasts of U.S. Inflation: A Model-Combination Approach” with Saeed Zaman, Federal Reserve Bank of Cleveland Working Paper No. 20-31. <https://doi.org/10.26509/frbc-wp-202031>
- “Average Inflation Targeting and Household Expectations” with Olivier Coibion, Yuriy Gorodnichenko, and Raphael Schoenle, Federal Reserve Bank of Cleveland Working Paper No. 20-26. <https://doi.org/10.26509/frbc-wp-202026>
VoxEU: <https://voxeu.org/article/average-inflation-targeting-and-household-expectations>
- “The Effects of Price Endings on Price Rigidity: Evidence from VAT Changes” with Doron Sayag and Avichai Snir, Federal Reserve Bank of Cleveland Working Paper No. 19-24. <https://doi.org/10.26509/frbc-wp-201924>

- “The Roles of Price Points and Menu Costs in Price Rigidity” Federal Reserve Bank of Cleveland Working Paper No. 19–23. <https://doi.org/10.26509/frbc-wp-201923>
- “Consumer Debt Dynamics: Follow the Increasees” with John Carter Braxton, Federal Reserve Bank of Cleveland working paper No. 14–01. [Link](#)
- “Alternative Methods of Solving State-Dependent Pricing Models” with Stephen J. Terry, Federal Reserve Bank of Kansas City Research Working Paper 08–10.
- “Convenient Prices and Price Rigidity: Cross-Sectional Evidence” Federal Reserve Bank of Kansas City Research Working Paper 08–04.
- “Regime Changes and Monetary Stagflation” Federal Reserve Bank of Kansas City Research Working Paper 06–05.

Media Citations

Print and radio: *Economist*, *Financial Times*, *New York Times*, *Plain Dealer*, *Wall Street Journal*, *Washington Post*, WCPN

Online: Bloomberg, Crain’s Cleveland Business, Financial Times’ FTAlphaville, Forbes, Market News International (MNI), MarketWatch, Money.com, New York Times’ The Upshot, Reuters, U.S. News and World Report, Wall Street Journal’s Grand Central and Real Time Economics, WSJ Pro Central Banking, Washington Post’s Wonkblog

Professional Development

Trailblazers, Federal Reserve System Leadership Initiative (October 2014)

Leadership Development Program, Center for Creative Leadership, Colorado Springs, CO (November 2011)

Excellence in Management Training, Federal Reserve Bank of Kansas City (February 2011)

Management Skills for New Managers, American Management Association, Overland Park, KS (November 2010)

Fellowships and Awards

President’s Award for Outstanding Achievement, Federal Reserve Bank of Cleveland (2014)

Chris Moore Spirit of Innovation Award, Federal Reserve Bank of Cleveland (2014)

Outstanding Graduate Student Instructor Award, Rackham Graduate School, University of Michigan (2004–05)

Teaching Commendations for Excellence in Instruction, Department of Economics, University of Michigan (2001–04)

Summer Research Fellowship, Department of Economics, University of Michigan (2001–02)

Sharfman Fellowship, Department of Economics, University of Michigan (2000–01)

Regents’ Fellowship, Rackham Graduate School, University of Michigan (2000–01)

President’s Medal, Denison University (2000)

Phi Beta Kappa, Denison University (1999)

Professional Activities

Referee:

American Economic Review; American Economic Journal: Macroeconomics; Journal of Monetary Economics; Review of Economics and Statistics; Journal of Economic Literature; Economic Journal; European Economic Review; Review of Economic Dynamics; American Economic Journal: Economic Policy; Journal of Business & Economic Statistics; Journal of Applied Econometrics; Journal of Money, Credit and Banking; Economics Letters; Journal of Economic Dynamics and Control; International Journal of Central Banking; B.E. Journals of Macroeconomics; Economic Modelling; Review of International Economics; Empirical Economics; International Journal of Forecasting; Journal of Macroeconomics; Southern Economic Journal; Manchester School; Computational Economics; Papers in Regional Science; Journal of Economic Studies; Czech Journal of Economics and Finance (Finance a uver)

Affiliations:

American Economics Association, International Institute of Forecasters

Committee Work:

Enterprise Risk Committee

Conference and Session Organization:

American Economics Association

- Session: “Causes and Consequences of Price Rigidity,” Philadelphia (January 2014)
- Session: “Price Dynamics and Price Rigidity,” Denver (January 2011)

Computational and Financial Econometrics (CFE)

- Scientific Program Committee, CFE 2022
- Scientific Program Committee, CFE 2021
- Scientific Program Committee, CFE 2020
- “Inflation Dynamics and Communications” (December 2020)
- “Inflation Dynamics” (December 2019)

Federal Reserve Bank of Cleveland/European Central Bank Inflation Conference

- “Inflation: Drivers & Dynamics 2022” (September 2022)
- “Inflation: Drivers & Dynamics 2021” (October 2021)
- “Inflation: Drivers & Dynamics 2020” (May 2020)
- “Inflation: Drivers & Dynamics 2019” (May 2019)
- “Inflation: Drivers & Dynamics 2018” (May 2018)
- “Inflation: Drivers and Dynamics” (September 2016)
- “Inflation, Monetary Policy, and the Public” (May 2014)

Federal Reserve Bank of Kansas City Jackson Hole Symposium

- “The Changing Policy Landscape” (2012)
- “Achieving Maximum Long-Run Growth” (2011)

Federal Reserve System Macro Meeting (Fall 2015, Spring 2016, Fall 2016, Spring 2017)

Campus/Community Involvement:

Faculty/staff mentor for first year students, University of Michigan (2002–03)

Research Presentations

- “Greater than the Sum of Its Parts: Aggregate vs. Aggregated Inflation Expectations”: 16th International Conference on Computational and Financial Econometrics (CFE 2022), online via London, U.K. (December 2022); Banca d’Italia Workshop, Inflation Expectations in Modern Macro: Theory and Empirics, Rome, Italy (November 2022)
- “Low Passthrough from Inflation Expectations to Income Growth Expectations: Why People Dislike Inflation”: Bank of Canada/European Central Bank/Federal Reserve Bank of New York Conference on Expectations Surveys, New York (October 2022)
- “Inflation Expectations: Category Expectations and Spending Plans”: Southern Economic Association (SEA) 91st Annual Meeting, online via Houston (November 2021)
- “Average Inflation Targeting and Household Expectations”: 14th International Conference on Computational and Financial Econometrics (CFE 2020), online via London, U.K. (December 2020)
- “Real-Time Density Nowcasts of U.S. Inflation: A Model-Combination Approach”: International Association for Applied Econometrics 2021 (IAAE 2021), online via Rotterdam, the Netherlands (June 2021); Society for Nonlinear Dynamics and Econometrics 28th Annual Symposium (SNDE 2020), online via Zagreb, Croatia (September 2020); 13th International Conference on Computational and Financial Econometrics (CFE 2019), London, U.K. (December 2019); Real-Time Data Analysis, Methods, and Applications, Brussels, Belgium (October 2019); 3rd Forecasting at Central Banks Conference, Ottawa, Canada (October 2019)
- “Asymmetric Responses of Consumer Spending to Energy Prices: The Role of Information and News Coverage”: Miami University (November 2018); 5th Conference of the International Association for Applied Econometrics (IAAE 2018), Montreal, Canada (June 2018); CEBRA Workshop for Commodities and Macroeconomics, Washington, DC (September 2017); Federal Reserve Bank of Kansas City Day-Ahead System Energy Meeting, Oklahoma City (September 2017); Society for Nonlinear Dynamics and Econometrics 25th Annual Symposium (SNDE 2017), Paris, France (March 2017)
- “Forecasting GDP Growth with NIPA Aggregates”: 2nd Forecasting at Central Banks Conference, London, U.K. (December 2018); International Institute of Forecasters’ 38th International Symposium on Forecasting, Boulder (June 2018)
- “The Effects of Price Endings on Price Rigidity: Evidence from VAT Changes”: 15th International Conference on Computational and Financial Econometrics (CFE 2021), online via London, U.K. (December 2021); European Central Bank Conference on Inflation in a Changing Economic Environment, Frankfurt, Germany (September 2019); Midwest Macroeconomics Meetings 2016, Kansas City (November 2016); Brandeis 3rd Annual Summer Workshop in International Economics and Finance (July 2014); American Economics Association, Philadelphia (January 2014)
- “The Roles of Price Points and Menu Costs in Price Rigidity”: 1st European Midwest Micro/Macro Conference (EM³C), Bonn, Germany (October 2018); Society for Economic Dynamics (SED 2016), Toulouse, France (July 2016); Kent State University (April 2015); Cleveland State University (November 2014); American Economics Association, Denver (January 2011); Federal Reserve System Committee on Business and Financial Conditions, Boston (November 2010); Federal Reserve Bank of San Francisco (November 2010); University of Oklahoma (September 2010); Midwest Macroeconomics Meetings 2010, East

- Lansing (May 2010); Society for Computational Economics' 15th International Conference on Computing in Economics and Finance, Sydney, Australia (July 2009)
- “Financial Nowcasts and Their Usefulness in Macroeconomic Forecasting”: 11th International Conference on Computational and Financial Econometrics (CFE 2017), London, U.K. (December 2017); Central Bank Forecasting Conference, St. Louis (November 2017); XIII Conference on Real-Time Data Analysis, Methods and Applications, Madrid, Spain (October 2017); 4th Conference of the International Association for Applied Econometrics (IAAE 2017), Sapporo, Japan (June 2017); International Institute of Forecasters' 35th International Symposium on Forecasting, Riverside (June 2015)
- “Consumer Debt Dynamics: Follow the Increasers”: Midwest Macroeconomics Meetings 2015, Rochester (November 2015)
- “Nowcasting U.S. Headline and Core Inflation”: 8th International Conference on Computational and Financial Econometrics (CFE 2014), Pisa, Italy (December 2014); International Institute of Forecasters' 34th International Symposium on Forecasting, Rotterdam, Netherlands (July 2014); Federal Reserve System Committee on Macroeconomics, Kansas City (April 2014)
- “Alternative Methods of Solving State-Dependent Pricing Models”: Midwest Macroeconomics Meetings 2009, Bloomington (May 2009); 17th Society for Nonlinear Dynamics and Econometrics Symposium, Atlanta (April 2009); 4th Dynare Conference, Boston (September 2008); Society for Computational Economics' 14th International Conference on Computing in Economics and Finance, Paris, France (June 2008)
- “Convenient Prices and Price Rigidity: Cross-Sectional Evidence”: American Economics Association, Atlanta (January 2010); Rimini Centre for Economic Analysis 2nd International Small Open Economies in a Globalized World Conference, Waterloo, Canada (June 2008)
- “A Tale of Two Rigidities: Sticky Prices in a Sticky-Information Environment”: American Economics Association, New Orleans (January 2008); Society for Computational Economics' 13th International Conference on Computing in Economics and Finance, Montreal, Canada (June 2007); Midwest Macroeconomics Meetings 2007, Cleveland (April 2007); Missouri Economics Conference, Columbia (March 2007); Federal Reserve System Committee on Business and Financial Conditions, Pittsburgh (November 2006)
- “Monetary Stagflation and Regime Changes”: Missouri Economics Conference, Columbia (March 2006)
- “Convenient Prices, Currency, and Nominal Rigidity: Theory with Evidence from Newspaper Prices”: Clarkson University (March 2007); University of California-San Diego (February 2005); Brandeis University (February 2005); Board of Governors of the Federal Reserve System (February 2005); Wellesley College (February 2005); College of the Holy Cross (February 2005); Virginia Commonwealth University (January 2005); United States Naval Academy (January 2005); Indiana University-South Bend (January 2005); Carleton College (January 2005); Kalamazoo College (January 2005); Federal Reserve Bank of Chicago (January 2005); Federal Reserve Bank of Kansas City (January 2005); University of Michigan (September 2004)

Discussions

- David López-Salido, Jeremy C. Stein, and Egon Zakrajšek, “Credit-Market Sentiment and the Business Cycle,” Fourth Annual Summer Workshop in International Economics and Finance, Brandeis University (July 2015)

- Etienne Gagnon and David López-Salido, “Small Price Responses to Large Demand Shocks,”
Federal Reserve System Committee on Macroeconomics, New Orleans (November 2014)
- Andrea Stella, “The Magnitude of Menu Costs: A Structural Estimation,” Federal Reserve
System Committee on Macroeconomics, Boston (November 2013)
- Avichai Snir and Daniel Levy, “Shrinking Goods and Sticky Prices,” American Economics
Association, Denver (January 2011)