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PROFESSIONAL EXPERIENCE

Federal Reserve Bank of New York

Financial Research Advisor (2022–)

Researcher, Applied Macroeconomics and Econometrics Center (2021–)

Vice President (2019-2022); Head of Capital Markets Function (2015–2019); Assistant Vice President (2015–2018); Research Officer (2014–2015); Senior Economist (2011–2013); Economist (2009–2011)

New York University

Adjunct Professor, Department of Economics (2011; 2016; 2022; 2023)

Goldman Sachs

Associate, US Economic Research/Global Markets Research (2002–2003); Analyst, US Economic Research (2000–2002)

EDUCATION

Ph.D., Economics, University of California–Berkeley, 2009

M.A., Statistics, University of California–Berkeley, 2006

B.S., Economics, Massachusetts Institute of Technology, 2000

PUBLICATIONS

"Sparse Trend Estimation" (with Nikolay Gospodinov and Hunter Wieman), *Review of Economics and Statistics*, forthcoming.

"Corporate Bond Market Distress" (with Nina Boyarchenko, Anna Kovner and Or Shachar), *Journal of Monetary Economics*, 152, 2025.

"Deconstructing the Yield Curve" (with Nikolay Gospodinov), *Review of Financial Studies*, 38(2), 2025.

"The Unemployment-Inflation Trade-off Revisited: The Phillips Curve in COVID Times" (with Stefano Eusepi, Marc Giannoni and Ayşegül Şahin), *Journal of Monetary Economics*, 145, 2024.

"On Binscatter" (with Matias Cattaneo, Max Farrell and Yingjie Feng), *American Economic Review*, 114(5), 2024.

"Subjective Intertemporal Substitution" (with Stefano Eusepi, Andrea Tambalotti and Giorgio Topa), *Journal of Monetary Economics*, 126(1), 2022.

"On the Factor Structure of Bond Returns" (with Nikolay Gospodinov), *Econometrica*, 90(1), 2022.

"Characteristic-Sorted Portfolios: Estimation and Inference" (with Matias Cattaneo, Max Farrell and Ernst Schaumburg), *Review of Economics and Statistics*, 102(3), 2020.

"A Unified Approach to Measuring u*" (with Stefano Eusepi, Marc Giannoni and Ayşegül Şahin), *Brookings Papers on Economic Activity*, 50(1), 2019.

"Nonlinearity and Flight-to-Safety in the Risk-Return Trade-off for Stocks and Bonds" (with Tobias Adrian and Erik Vogt), *Journal of Finance*, 74(4), 2019.

"Decomposing Real and Nominal Yield Curves" (with Michael Abrahams, Tobias Adrian, Emanuel Moench and Rui Yu), *Journal of Monetary Economics*, 84(1), 2016; formerly, "Pricing TIPS and Treasuries with Linear Regressions."

"Fundamental Disagreement" (with Philippe Andrade, Stefano Eusepi and Emanuel Moench), *Journal of Monetary Economics*, 83(1), 2016; formerly, "Noisy Information and Fundamental Disagreement."

"Regression-Based Estimation of Dynamic Asset Pricing Models" (with Tobias Adrian and Emanuel Moench), *Journal of Financial Economics*, 118(2), 2015.

"Bootstrapping Density-Weighted Average Derivatives" (with Matias Cattaneo and Michael Jansson), *Econometric Theory*, 30(6), 2014.

"Small Bandwidth Asymptotics for Density-Weighted Average Derivatives" (with Matias Cattaneo and Michael Jansson), *Econometric Theory*, 30(1), 2014.

"Generalized Jackknife Estimators of Weighted Average Derivatives" (with Matias Cattaneo and Michael Jansson), *Journal of the American Statistical Association*, 108(504), 2013; selected to be presented at the JASA Theory and Methods invited session of the 2013 Joint Statistical Meetings and published with discussions and rejoinder.

"Pricing the Term Structure with Linear Regressions" (with Tobias Adrian and Emanuel Moench), *Journal of Financial Economics*, 110(1), 2013.

"Optimal Inference for Instrumental Variables Regression with non-Gaussian Errors" (with Matias Cattaneo and Michael Jansson), *Journal of Econometrics*, 167(1), 2012.

"Robust Data-Driven Inference for Density-Weighted Average Derivatives" (with Matias Cattaneo and Michael Jansson), *Journal of the American Statistical Association*, 105(491), 2010.

"Dealing with Limited Overlap in Estimation of Average Treatment Effects" (with V. Joseph Hotz, Guido Imbens and Oscar Mitnik), *Biometrika*, 96(1), 2009; formerly, "Moving the Goalposts: Addressing Limited Overlap in Estimation of Average Treatment Effects by Changing the Estimand."

"Nonparametric Tests for Treatment Effect Heterogeneity" (with V. Joseph Hotz, Guido Imbens and Oscar Mitnik), *Review of Economics and Statistics*, 90(3), 2008.

BOOK CHAPTERS

"Changing Risk-Return Profiles" (with Miro Everaert, Domenico Giannone and Sean Hundtofte), *Recent Advances in Econometrics and Statistics—Festschrift in Honour of Marc Hallin,* Springer, 2024.

"The Term Structure of Expectations" (with Stefano Eusepi, Bruce Preston and Emanuel Moench), *Handbook of Economic Expectations,* Elsevier, 2023; preliminary draft available here.

BOOKS

"Resampling Asset Prices: An Identity-Based Approach" (with Nikolay Gospodinov) *in preparation for Cambridge University Press (Elements in Quantitative Finance).*

OTHER PUBLICATIONS

"HAC Corrections for Strongly Autocorrelated Time Series: Comment" (with Matias Cattaneo), *Journal of Business and Economic Statistics*, 32(3), 2014.

"Generalized Jackknife Estimators of Weighted Average Derivatives: Rejoinder" (with Matias Cattaneo and Michael Jansson), *Journal of the American Statistical Association*, 108(504), 2013.

"Fertility and the Personal Exemption: Comment" (with Gopi Shah Goda and Kevin Mumford), *American Economic Review*, 101(4), 2011.

POLICY PUBLICATIONS

"A Large Bayesian VAR of the United States Economy" (with Stefano Eusepi, Domenico Giannone, Eric Qian and Argia Sbordone), *International Journal of Central Banking*, 21(2), 2025.

"Estimating Natural Rates of Unemployment: A Primer" (with Brandyn Bok, Christopher J. Nekarda, and Nicolas Petrosky-Nadeau), *Federal Reserve Bank of San Francisco Working Paper*, 2023-25, 2023.

"The Primary and Secondary Corporate Credit Facilities" (with Nina Boyarchenko, Caren Cox, Andrew Danzig, Anna Kovner, Or Shachar, and Patrick Steiner), *Economic Policy Review,* 28(1), 2022.

"The Commercial Paper Funding Facility" (with Nina Boyarchenko, Anna Kovner, and Deborah Leonard), *Economic Policy Review,* 28(1), 2022.

"Unemployment Rate Benchmarks" (with Christopher J. Nekarda and Nicolas Petrosky-Nadeau), *Federal Reserve Board of Governors Finance and Economics Discussion Series, 2020-072*, 2020.

"Review of NY Fed Studies on the Effects of Post-Crisis Banking Reform" (with João A.C. Santos), *Economic Policy Review*, 24(2), 2018.

Working Group of the Committee on the Global Financial System, "Operationalising the Selection and Application of Macroprudential Instruments," *CGFS Papers,* No. 48, December 2012.

Blog Posts

"How Uncertain Is the Estimated Probability of a Future Recession?" (with Nikolay Gospodinov), May 2025.

"Expectations and the Final Mile of Disinflation" (with Stefano Eusepi and Ayşegül Şahin), March 2024.

"The New York Fed DGSE Model Perspective on the Lagged Effect of Monetary Policy" (with Marco Del Negro, Keshav Dogra, Pranay Gundam, Donggyu Lee, Ramya Nallamotu, and Brian Pacula), November 2023.

"A Bayesian VAR Model Perspective on the Lagged Effect of Monetary Policy" (with Marco Del Negro, Keshav Dogra, Pranay Gundam, Donggyu Lee, Ramya Nallamotu, and Brian Pacula), November 2023.

"How Large are Inflation Revisions? The Difficulty of Monitoring Prices in Real Time" (with Richard Audoly, Martín Almuzara, Davide Melcangi, and Roshie Xing), September 2023.

"Look out for Outlook-at-Risk" (with Nina Boyarchenko, Leonardo Elias and Ignacio Lopez Gaffney), May 2023.

"What is 'Outlook-at-Risk?'" (with Nina Boyarchenko, Leonardo Elias and Ignacio Lopez Gaffney), February 2023.

"How Is the Corporate Bond Market Functioning as Interest Rates Increase?" (with Nina Boyarchenko, Anna Kovner and Or Shachar), November 2022.

"Short-Dated Term Premia and the Level of Inflation" (with Peter Van Tassel and Charles Smith), September 2022.

"What is Corporate Bond Market Distress?" (with Nina Boyarchenko, Anna Kovner and Or Shachar), June 2022.

"How is the Corporate Bond Market Responding to Financial Market Volatility?" (with Nina Boyarchenko, Anna Kovner and Or Shachar), June 2022.

"The Persistent Compression of the Breakeven Inflation Curve" (with Nikolay Gospodinov and Desi Volker), *Liberty Street Economics*, March 2021.

"Measuring the Forest through the Trees: The Corporate Bond Market Distress Index" (with Nina Boyarchenko, Anna Kovner and Or Shachar), *Liberty Street Economics*, May 2020.

"The Primary and Secondary Market Corporate Credit Facilities" (with Nina Boyarchenko, Anna Kovner, Or Shachar and Peter Van Tassel), *Liberty Street Economics*, February 2021.

"The Commercial Paper Funding Facility" (with Nina Boyarchenko and Anna Kovner), *Liberty Street Economics*, May 2020.

"Reading the Tea Leaves of the U.S. Economy—Part Two" (with Domenico Giannone and David Lucca), *Liberty Street Economics*, February 2020.

"Reading the Tea Leaves of the U.S. Economy—Part One" (with Domenico Giannone and David Lucca), *Liberty Street Economics*, February 2020.

"Real Inventory Slowdowns" (with David Lucca and Casey McQuillan), *Liberty Street Economics*, November 2019.

"Changing Risk-Return Profiles" (with Domenico Giannone and Sean Hundtofte), *Liberty Street Economics*, October 2018.

"The Effects of Post-Crisis Banking Reforms" (with João Santos), *Liberty Street Economics*, October 2018.

"At the New York Fed: Conference on the Effects of Post-Crisis Banking Reforms" (with João Santos), *Liberty Street Economics*, June 2018.

"What Drives Forecaster Disagreement about Monetary Policy" (with Stefano Eusepi), *Liberty Street Economics*, August 2016.

"Forecasting Interest Rates over the Long Run" (with Tobias Adrian, Peter Diamond and Rui Yu), July 2016.

"Fundamental Disagreement: How Much and Why?" (with Stefano Eusepi), *Liberty Street Economics*, January 2016.

"Discounting the Long Run" (with Tobias Adrian, Peter Diamond and Rui Yu), *Liberty Street Economics*, August 2015.

"Which Growth Rate? It's a Weighty Subject" (with Emanuel Moench, David Lucca and Stefano Eusepi), *Liberty Street Economics*, December 2014.

“Learning from Disagreement: Evidence from Forecasters” (with Philippe Andrade, Emanuel Moench and Stefano Eusepi), *VoxEU*, December 2014.

“Survey Measures of Expectations for the Policy Rate” (with Emanuel Moench, William O'Boyle, Matthew Raskin, Carlo Rosa and Lisa Stowe), *Liberty Street Economics*, December 2014.

“Interest Rate Derivatives and Monetary Policy Expectations” (with Emanuel Moench, William O'Boyle, Matthew Raskin, Carlo Rosa and Lisa Stowe), *Liberty Street Economics*, December 2014.

“Connecting ‘the Dots’: Disagreement in the Federal Open Market Committee” (with Troy Davig, Stefano Eusepi and Emanuel Moench), *Liberty Street Economics*, September 2014.

“Treasury Term Premia: 1961-Present” (with Tobias Adrian, Emanuel Moench and Benjamin Mills), *Liberty Street Economics*, May 2014.

“Preparing for Takeoff? Professional Forecasters and the June 2013 FOMC Meeting” (with Stefano Eusepi and Emanuel Moench), *Liberty Street Economics*, September 2013.

“Do Treasury Term Premia Rise around Monetary Tightenings?” (with Tobias Adrian and Emanuel Moench), *Liberty Street Economics*, April 2013.

“Making a Statement: How Did Professional Forecasters React to the August 2011 FOMC Statement?” (with Stefano Eusepi and Emanuel Moench), *Liberty Street Economics*, January 2013.

“Is U.S. Monetary Policy Seasonal?” (with David Lucca), *Liberty Street Economics*, October 2012.

“Skills Mismatch, Construction Workers and the Labor Market” (with Ayşegül Şahin), *Liberty Street Economics*, March 2012.

“A Look at the Accuracy of Policy Expectations” (with Stefano Eusepi and Emanuel Moench), *Liberty Street Economics,* August 2011.

UNPUBLISHED PAPERS

“How Do We Learn About the Long Run?” (with Stefano Eusepi, Bruce Preston and Emanuel Moench), July 2025.

“Robust Empirical Asset Pricing” (with Nikolay Gospodinov and Ignacio Lopez Gaffney), January 2025.

“A Jackknife Variance Estimator for Panel Regressions” (with Nikolay Gospodinov and Ignacio Lopez Gaffney), January 2025.

“Learning from Survey Density Forecasts” (with Gizem Koşar and Martín Almuzara), December 2024.

“Beta-Sorted Portfolios” (with Matias Cattaneo, Yingjie Feng, and Weining Wang), November 2024.

“Is There Hope for the Expectations Hypothesis?” (with Stefano Eusepi and Emanuel Moench), November 2024.

“A Simple Diagnostic for Time-Series and Panel-Data Regressions” (with Nikolay Gospodinov and Ignacio Lopez Gaffney), October 2024.

“Nonlinear Binscatter Methods” (with Matias Cattaneo, Max Farrell and Yingjie Feng), July 2024.

“The Nonlinear Case Against Leaning Against the Wind” (with Nina Boyarchenko, Keshav Dogra, Leonardo Elias, and Ignacio Lopez Gaffney), May 2024.

"Fundamental Disagreement about Monetary Policy and the Term Structure of Interest Rates" (with Shuo Cao, Stefano Eusepi and Emanuel Moench), August 2021.

"Sovereign Yield Comovement" (with Tobias Adrian, Benson Durham and Emanuel Moench), November 2018.

"The Term Structure of Expectations and Bond Yields" (with Stefano Eusepi and Emanuel Moench), April 2018.

"Optimal Conditional Inference in Nearly-Integrated Autoregressive Processes" November 2008.

"Testing Parametric Relationships between Nonparametric Curves Using Series Estimation" June 2006.

SOFTWARE PACKAGES

`binsreg`: Binscatter regressions for Python, R, and Stata

`portsort`: Portfolio sorting estimators for R and Stata (in progress)

PAPERS ON STATISTICAL SOFTWARE

"Binscatter Regressions" (with Matias Cattaneo, Max Farrell and Yingjie Feng), *Stata Journal*, 25(1) 2025.

"Estimation and Inference using Portfolio Sorts" (with Matias Cattaneo, Yingjie Feng , Weining Wang and Zhijiang Ye), August 2021.

PROFESSIONAL ACTIVITIES

Associate Editor, *Journal of Empirical Finance* (2016–), *Journal of Business and Economic Statistics* (2022–)

Editorial Board, *American Economic Journal: Macroeconomics* (2024–)

Co-editor, *Economic Policy Review*, 2010–

Referee for: *American Economic Review, American Economic Journal: Macroeconomics, Econometrica, Economic Journal, Energy Economics, IMF Economic Review, Journal of the American Statistical Association, Journal of Applied Econometrics, Journal of Banking and Finance, Journal of Business and Economic Statistics, Journal of Econometrics, Journal of Empirical Finance, Journal of Finance, Journal of Financial Economics, Journal of Financial Markets, Journal of Monetary Economics, Management Science, National Science Foundation, Quantitative Economics, Quarterly Journal of Economics, Review of Asset Pricing Studies, Review of Economic Studies, Review of Economics and Statistics, Review of Financial Studies, Review of Finance, Statistics & Probability Letters, Studies in Nonlinear Dynamics & Econometrics*

Co-organizer of the workshop on "Effects of Post-Crisis Banking Reforms," Federal Reserve Bank of New York, June 2018

TEACHING

Instructor, New York University, Department of Economics
PhD Econometrics I: Fall 2011, Fall 2016

PhD Econometrics II: Spring 2022, Spring 2023

Graduate Student Instructor, University of California–Berkeley, Department of Economics
PhD Econometrics I: Fall 2006, Fall 2008
PhD Econometrics II: Spring 2007

Graduate Student Instructor, University of California–Berkeley, Master's in Financial Engineering Program
Empirical Methods in Finance: Spring 2007

AWARDS AND HONORS

Dean's Normative Time Fellowship, 2007–2008

Outstanding Graduate Student Instructor Award, 2007

Ford Foundation Pre-Doctoral Fellowship, 2004

SEMINARS AND PRESENTATIONS

Columbia University, Duke University, Federal Reserve Board, Federal Reserve Bank of San Francisco, Harvard University, MIT – Sloan, Interactions Workshop (Becker-Friedman Institute), LBS Summer Finance Symposium, NBER Summer Institute (Asset Pricing; Forecasting & Empirical Methods; Monetary Economics), Midwest Finance Association, New York University, Northwestern University, University of Notre Dame, Princeton University, Stanford University, University of California–Berkeley, UCLA, University of California–Riverside, University of Miami, University of Michigan, University of Rochester, University of Wisconsin, Yale University