

Curriculum Vitae
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John C. Williams

President and Chief Executive Officer
Federal Reserve Bank of New York
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Education

Ph.D. Economics, Stanford University, 1994
MSc. Economics, London School of Economics, 1989
A.B. Economics, University of California, Berkeley, 1984

Positions Held

Federal Reserve Bank of New York
President and Chief Executive Officer, 2018 - present
Federal Reserve Bank of San Francisco
President and Chief Executive Officer, 2011 - 2018
Executive Vice President and Director of Research, 2009 - 2011
Senior Vice President and Advisor, 2004 – 2008
Senior Research Advisor, 2003 – 2004
Research Advisor, 2002 – 2003
Board of Governors of the Federal Reserve System
Senior Economist, 1998 – 2002
Economist, 1994 – 1997
Stanford University Graduate School of Business (on leave from FRBSF)
Lecturer, 2008
Council of Economic Advisers (on leave from Board of Governors)
Senior Economist, 1999-2000

Professional Activities

Managing Editor, *International Journal of Central Banking*, 2011 – 2016
Research Associate, Centre for Applied Macroeconomic Analysis, 2008 – present
Associate Editor, *American Economic Review*, 2005 – 2008
Associate Editor, *Journal of Economic Dynamics and Control*, 2001 – 2005

Research Interests

Monetary policy under uncertainty and imperfect information; macroeconomics

Fellowships and Awards

Bradley Foundation Fellowship
Phi Beta Kappa

Published Research Articles

“Macroeconomic Drivers and the Pricing of Uncertainty, Inflation, and Bonds,” (with Brandyn Bok and Thomas M. Mertens), *Journal of Financial Economics*, forthcoming; Federal Reserve Bank of New York Staff Reports 1011, April 2022, revised April 2025.

“A New Approach to Assess Inflation Expectations Anchoring Using Strategic Surveys,” (with Olivier Armantier, Argia M. Sbordone, Giorgio Topa, and Wilbert van der Klaauw), *Journal of Monetary Economics*, 129, July 2022, S82-S101.

“What to Expect from the Lower Bound on Interest Rates: Evidence from Derivatives Prices,” (with Thomas M. Mertens), *American Economic Review*, 111 (8), August 2021, 2473-2505.

“Tying Down the Anchor: Monetary Policy Rules and the Lower Bound on Interest Rates,” (with Thomas M. Mertens), in John H. Cochrane and John B. Taylor (ed.) *Strategies for Monetary Policy*, Stanford, CA: Hoover Institution Press, 2020, 103-154.

“Monetary Policy Frameworks and the Effective Lower Bound on Interest Rates,” (with Thomas M. Mertens), *American Economic Association Papers and Proceedings*, 109, May 2019, 427-32.

“Measuring the Natural Rate of Interest: International Trends and Determinants,” (with Kathryn Holston and Thomas Laubach), *Journal of International Economics*, 108, May 2017, S59-S75.

“Measuring the Natural Rate of Interest Redux,” (with Thomas Laubach), *Business Economics*, 51(2), April 2016, 57-67.

“A Wedge in the Dual Mandate: Monetary Policy and Long-Term Unemployment,” (with Glenn D. Rudebusch), *Journal of Macroeconomics*, 47A, March 2016, 5-18.

“The Decline in the Natural Rate of Interest,” *Business Economics*, 50(2), April 2015, 57-60.

“Measuring the Effect of the Zero Lower Bound on Medium- and Longer-Term Interest Rates,” (with Eric T. Swanson), *American Economic Review*, 104 (10), October 2014, 3154-3185.

“Measuring the Effect of the Zero Lower Bound on Yields and Exchange Rates in the U.K. and Germany,” (with Eric T. Swanson), *Journal of International Economics*, 92 (S1), 2014, 2-21.

“A Defense of Moderation in Monetary Policy,” *Journal of Macroeconomics*, 38, December 2013, 137-150.

- “Monetary Policy Mistakes and the Evolution of Inflation Expectations,” (with Athanasios Orphanides), in Michael D. Bordo and Athanasios Orphanides (ed.), *The Great Inflation: The Rebirth of Modern Central Banking*, Chicago: University of Chicago Press, 2013, 255-297.
- “Have We Underestimated the Probability of Hitting the Zero Lower Bound?” (with Hess Chung, Jean-Philippe Laforte, and David Reifschneider), *Journal of Money, Credit and Banking*, 44, 2012, 47-82.
- “Simple and Robust Rules for Monetary Policy,” (with John B. Taylor), in Benjamin Friedman and Michael Woodford (ed.), *Handbook of Monetary Economics*, Volume 3B, North-Holland, 2011, 829-860.
- “Welfare-Maximizing Monetary Policy under Parameter Uncertainty,” (with Rochelle M. Edge and Thomas Laubach), *Journal of Applied Econometrics*, 25(1), January/February 2010, 129-143.
- “Heeding Daedalus: Optimal Inflation and the Zero Lower Bound,” *Brookings Paper on Economic Activity*, Fall 2009, 2010, 1-37.
- “Imperfect Knowledge and the Pitfalls of Optimal Control Policy,” (with Athanasios Orphanides), in Carl Walsh and Klaus Schmidt-Hebbel (ed.), *Central Banking, Analysis and Economic Policies: Monetary Policy Under Uncertainty and Learning*, Central Bank of Chile, 2009, 115-144.
- “Forecasting Recessions: The Puzzle of the Enduring Power of the Yield Curve,” (with Glenn D. Rudebusch), *Journal of Business and Economic Statistics*, 27(4), October 2009, 492-503.
- “A Black Swan in the Money Market,” (with John B. Taylor), *American Economic Journal: Macroeconomics*, 1(1), January 2009, 58-83.
- “Learning, Expectations Formation, and the Pitfalls of Optimal Control Monetary Policy,” (with Athanasios Orphanides), *Journal of Monetary Economics*, 55, October 2008, S80-S96.
- “Revealing the Secrets of the Temple: The Value of Publishing Central Bank Interest Rate Projections,” (with Glenn D. Rudebusch), in John Y. Campbell (ed.) *Asset Prices and Monetary Policy*, University of Chicago Press, 2008, 247-284.
- “Learning and Shifts in Long-Run Productivity Growth,” (with Rochelle M. Edge and Thomas Laubach), *Journal of Monetary Economics*, November 2007, 2421–2438.
- “Robust Monetary Policy with Imperfect Knowledge,” (with Athanasios Orphanides), *Journal of Monetary Economics*, August 2007, 1406-1435.
- “Inflation Targeting under Imperfect Knowledge,” (with Athanasios Orphanides), in Frederic Mishkin and Klaus Schmidt-Hebbel (ed.) *Monetary Policy under Inflation Targeting*, Central Bank of Chile, 2007. Reprinted in *FRBSF Economic Review*, 2007.

“Monetary Policy in a Low Inflation Economy with Learning,” in *Monetary Policy in an Environment of Low Inflation; Proceedings of the Bank of Korea International Conference 2006*, Seoul, Korea: The Bank of Korea, 2006, 199-228. Reprinted in *FRBSF Economic Review*, 2010.

“Monetary Policy with Imperfect Knowledge,” (with Athanasios Orphanides), *Journal of the European Economic Association*, 4 (2-3), April/May 2006, April-May 2006, 366–375.

“Monetary Policy under Uncertainty in Micro-founded Macroeconomic Models,” (with Andrew T. Levin, Alexei Onatski, and Noah Williams), *NBER Macroeconomics Annual 2005*, 20, Cambridge, Mass.: MIT Press, 2006, 229-287.

“Robust Estimation and Monetary Policy with Unobserved Structural Change,” in Jon Faust, Athanasios Orphanides, and David Reifschneider (ed.) *Models and Monetary Policy: Research in the Tradition of Dale Henderson, Richard Porter, and Peter Tinsley*, Washington, DC: Board of Governors of the Federal Reserve System, 2005. Reprinted in *FRBSF Economic Review*, 2005.

“The Decline of Activist Stabilization Policy: Natural Rate Misperceptions, Learning, and Expectations,” (with Athanasios Orphanides), *Journal of Economic Dynamics and Control*, November 2005, 1927-1950.

“Using a Long-Term Interest Rate as the Monetary Policy Instrument,” (with Bruce McGough and Glenn D. Rudebusch), *Journal of Monetary Economics*, 52, July 2005, 855-879.

“Inflation Scares and Monetary Policy,” (with Athanasios Orphanides), *Review of Economic Dynamics*, 8, April 2005, 498-527.

“Investment, Capacity, and Uncertainty: A Putty-Clay Approach,” (with Simon Gilchrist), *Review of Economic Dynamics*, 8, January 2005, 1-27.

“Imperfect Knowledge, Inflation Expectations, and Monetary Policy,” (with Athanasios Orphanides), in Ben S. Bernanke and Michael Woodford (ed.) *The Inflation-Targeting Debate*, Chicago: University of Chicago Press, 2004, 201-234.

“Measuring the Natural Rate of Interest,” (with Thomas Laubach), *Review of Economics and Statistics*, 85(4), November 2003, 1063–1070.

“Robust Monetary Policy with Competing Reference Models,” (with Andrew T. Levin), *Journal of Monetary Economics*, 50, July 2003, 945–975.

“The Performance of Forecast-Based Monetary Policy Rules under Model Uncertainty,” (with Andrew T. Levin and Volker Wieland), *American Economic Review*, 93(3), June 2003, 622-645.

“Simple Rules for Monetary Policy,” *Federal Reserve Bank of San Francisco Economic Review*, 2003, 1-12.

“Robust Monetary Policy Rules with Unknown Natural Rates,” (with Athanasios Orphanides), *Brookings Papers on Economic Activity*, Vol. 2, 2002, 63-145.

“Three Lessons for Monetary Policy in a Low Inflation Era,” (with David Reifschneider), *Journal of Money, Credit and Banking*, 32(4), November 2000, 936-966.

“Putty-Clay and Investment: A Business Cycle Analysis,” (with Simon Gilchrist), *Journal of Political Economy*, 108(5), October 2000, 928-960.

“Too Much of a Good Thing? The Economics of Investment in R&D,” (with Charles Jones), *Journal of Economic Growth*, 5, March 2000, 65-85.

“Robustness of Simple Monetary Policy Rules under Model Uncertainty,” (with Andrew Levin and Volker Wieland), in John Taylor (ed.) *Monetary Policy Rules*, University of Chicago Press, 1999.

“Aggregate Disturbances, Monetary Policy, and the Macroeconomy: The FRB/US Perspective,” (with David Reifschneider and Robert Tetlow), *Federal Reserve Bulletin*, January 1999, 1-19.

“Measuring the Social Rate of Return to R&D,” (with Charles Jones), *Quarterly Journal of Economics*, November 1998, 1119-1135.

“The Evolution of Macro Models at the Federal Reserve Board,” (with Flint Brayton, Andrew Levin, and Ralph Tryon), *Carnegie-Rochester Conference Series on Public Policy*, 47, December 1997, 43-81.

“The Role of Expectations in the FRB/US Macroeconomic Model,” (with Flint Brayton, Eileen Mauskopf, David Reifschneider, and Peter Tinsley), *Federal Reserve Bulletin*, April 1997, 227-245.

“Expectations, Learning and the Costs of Disinflation: Experiments using the FRB/US Model,” (with A. Bomfim, R. Tetlow, and P. von zur Muehlen), *Monetary Policy and the Inflation Process*, Basel, Switzerland: Bank of International Settlements, 1997.

Discussions and Comments

“Discussion of ‘Monetary Policy Transmission to Real Activity’,” by Seth Carpenter, Michael Feroli, David Mericle, Linda Tesar, and Kenneth West, U.S. Monetary Policy Forum, New York City, March 07, 2025.
<https://www.newyorkfed.org/newsevents/speeches/2025/wil250307>

“Discussion of ‘Prospects for Inflation in a High Pressure Economy: Is the Phillips Curve Dead or Is It Just Hibernating?’ by Peter Hooper, Frederic S. Mishkin, and Amir Sufi, U.S. Monetary Policy Forum, New York, NY, Feb 22, 2019.
<https://www.newyorkfed.org/newsevents/speeches/2019/wil190222>

“Discussion of ‘Language after Liftoff: Fed Communication Away from the Zero Lower Bound’,” by Michael Feroli, David Greenlaw, Peter Hooper, Frederic S. Mishkin, and Amir Sufi, U.S. Monetary Policy Forum, New York, NY, February 26, 2016. <http://www.frbsf.org/our-district/press/presidents-speeches/williams-speeches/2016/february/language-after-liftoff-fed-communication-away-from-the-zero-lower-bound/>

“Discussion of Discussion of ‘Housing, Monetary Policy, and the Recovery,’” by Michael Feroli, Ethan S. Harris, Amir Sufi, and Kenneth D. West, U.S. Monetary Policy Forum, New York, NY, February 24, 2012. <https://www.frbsf.org/our-district/press/presidents-speeches/williams-speeches/2012/february/williams-housing-monetary-policy-recovery/>

“Monetary Policy and Housing Booms,” *International Journal of Central Banking*, 7(1), March 2011, 345-354.

“Wrap-up Discussion,” in: Renee Fry, Callum Jones, and Christopher Kent (ed.) *Inflation in an Era of Relative Price Shocks*, Sydney, Australia: Reserve Bank of Australia, May 2010, 342-346.

“The Zero Lower Bound: Lessons from the Past Decade,” *NBER International Seminar on Macroeconomics*, 6, 2010, 367-375.

“Discussion of ‘Free Flows, Limited Diversification: Openness and the Fall and Rise of Stock Market Correlations, 1890-2001’ by Quinn and Voth,” *NBER International Seminar on Macroeconomics*, 6, 2010, 48-52.

“Discussion of ‘A Snapshot on Inflation Targeting in its Adolescence’ by Kenneth Kuttner,” in Christopher Kent and Simon Guttmann (ed.) *The Future of Inflation Targeting*, Sydney, Australia: Reserve Bank of Australia, November 2004, 43-46.

“Discussion of ‘Disagreement about Inflation Expectations’ by N. Gregory Mankiw, Ricardo Reis, and Justin Wolfers,” in Mark Gertler and Kenneth Rogoff (ed.) *NBER Macroeconomics Annual 2003*, 18, Cambridge, Mass.: MIT Press, 2004, 257-268.

Other Publications

“The Zero Lower Bound Remains a Medium-Term Risk,” (with Sophia Cho and Thomas M. Mertens), *Federal Reserve Bank of New York Liberty Street Economics*, July 07, 2025. <https://libertystreeteconomics.newyorkfed.org/2025/07/the-zero-lower-bound-remains-a-medium-term-risk/>

Comparing Apples to Apples: “Synthetic Real Time” Estimates of R Star,” (with Sophia Cho), *Federal Reserve Bank of New York Liberty Street Economics*, March 03, 2025. <https://libertystreeteconomics.newyorkfed.org/2025/03/comparing-apples-to->

apples-synthetic-real-time-estimates-of-r-star/

“When Are Central Bank Reserves Ample?” (with Gara Afonso, Domenico Giannone, and Gabriele La Spada), *Federal Reserve Bank of New York Liberty Street Economics*, August 13, 2024.

<https://libertystreeteconomics.newyorkfed.org/2024/08/when-are-central-bank-reserves-ample/>

“Innovating for the Future, Heeding Lessons from the Past,” (with Nikhil Rathi), *The Teller Window*, Federal Reserve Bank of New York, August 17, 2023.

<https://tellerwindow.newyorkfed.org/2023/08/17/innovating-for-the-future-heeding-lessons-from-the-past/>

“Measuring the Ampleness of Reserves,” (with Gara Afonso and Gabriele La Spada), *Federal Reserve Bank of New York Liberty Street Economics*, October 5, 2022.

“Taming Inflation Scares,” (with Athanasios Orphanides), in Robert G. King and Alexander L. Wolman (ed.) *Essays in Honor of Marvin Goodfriend: Economist and Central Banker*, Richmond, VA: Federal Reserve Bank of Richmond, 2022, 217-227.

“What Do Consumers Think Will Happen to Inflation?”, (with Olivier Armantier, Fatima-Ezzahra Boumahdi, Gizem Kosar, Jason Somerville, Giorgio Topa, and Wilbert van der Klaauw), *Federal Reserve Bank of New York Liberty Street Economics*, May 26, 2022.

“What Are Consumers’ Inflation Expectations Telling Us Today?” (with Olivier Armantier, Leo Goldman, Gizem Kosar, Giorgio Topa, and Wilbert van der Klaauw), *Federal Reserve Bank of New York Liberty Street Economics*, February 14, 2022

“The Research–Policy Nexus: ZLB, JMCB, and FOMC,” *Journal of Money, Credit and Banking*, Vol. 52 (S2), December 2020, 601-605.

“The Future Fortunes of R-star: Are They Really Rising?,” *Federal Reserve Bank of San Francisco Economic Letter*, 2018-13, May 21, 2018.

“Supporting Strong, Steady, and Sustainable Growth,” *Federal Reserve Bank of San Francisco Economic Letter*, 2018-10, April 9, 2018.

“Expect the Expected: Staying Calm When the Data Meet the Forecasts,” *Federal Reserve Bank of San Francisco Economic Letter*, 2018-03, February 5, 2018.

“Monetary Policy and the Economic Outlook: A Fine Balancing Act.” *Federal Reserve Bank of San Francisco Economic Letter*, 2017-36, December 18, 2017.

“The Perennial Problem of Predicting Potential.” *Federal Reserve Bank of San Francisco Economic Letter*, 2017-32, November 6, 2017.

“Interest Rates and the ‘New Normal’.” *Federal Reserve Bank of San Francisco Economic Letter*, 2017-29, October 10, 2017.

“Monetary Policy’s Role in Fostering Sustainable Growth,” *Federal Reserve Bank of San Francisco Economic Letter*, 2017-22, August 7, 2017.

“The Global Growth Slump: Causes and Consequences,” *Federal Reserve Bank of San Francisco Economic Letter*, 2017-19, July 3, 2017.

“Preparing for the Next Storm: Reassessing Frameworks and Strategies in a Low R-star World,” *Federal Reserve Bank of San Francisco Economic Letter*, 2017-13, May 8, 2017.

“DSGE models: A cup half full,” in: *DSGE Models in the Conduct of Policy: Use as intended*, VoxEU Ebook, edited by: Refet Gürkaynak and Cédric Tille, April 28, 2017. <http://voxeu.org/content/dsge-models-conduct-policy-use-intended>

“Three Questions on R-star,” *Federal Reserve Bank of San Francisco Economic Letter*, 2017-05, February 21, 2017.

“Looking Back, Looking Ahead,” *Federal Reserve Bank of San Francisco Economic Letter*, 2017-02, January 23, 2017.

“Longview: The Economic Outlook,” *Federal Reserve Bank of San Francisco Economic Letter*, 2016-24, August 22, 2016.

“Monetary Policy in a Low R-star World,” *Federal Reserve Bank of San Francisco Economic Letter*, 2016-23, August 15, 2016.

“Economic Outlook: Springtime Is on My Mind,” *Federal Reserve Bank of San Francisco Economic Letter*, 2016-16, May 16, 2016.

“Data Dependence Awakens,” (with Benjamin Pyle), *Federal Reserve Bank of San Francisco Economic Letter*, 2016-12, April 11, 2016.

“Rules of Engagement,” *Federal Reserve Bank of San Francisco Economic Letter*, 2016-06, February 29, 2016.

“The Right Profile: Economic Drivers and the Outlook,” *Federal Reserve Bank of San Francisco Economic Letter*, 2016-05, February 22, 2016.

“After the First Rate Hike,” *Federal Reserve Bank of San Francisco Economic Letter*, 2016-01, January 11, 2016.

“Dancing Days Are Here Again: The Long Road Back to Maximum Employment,” *Federal Reserve Bank of San Francisco Economic Letter*, 2015-36, December 7, 2015.

“Will Interest Rates Be Permanently Lower?” VoxEU, November 26, 2015.

<http://www.voxeu.org/article/evidence-low-real-rates-will-persist>

“The Economic Outlook: Live Long and Prosper,” *Federal Reserve Bank of San Francisco Economic Letter*, 2015-31, October 5, 2015.

“Measuring Monetary Policy’s Effect on House Prices,” *Federal Reserve Bank of San Francisco Economic Letter*, 2015-28, August 31, 2015.

“The Recovery’s Final Frontier?” *Federal Reserve Bank of San Francisco Economic Letter*, 2015-23, July 13, 2015.

“Macroprudential Policy in a Microprudential World,” *Federal Reserve Bank of San Francisco Economic Letter*, 2015-18, June 1, 2015.

“Looking Forward: The Path for Monetary Policy,” *Federal Reserve Bank of San Francisco Economic Letter*, 2015-17, May 26, 2015.

“Monetary Policy and the Independence Dilemma,” *Federal Reserve Bank of San Francisco Economic Letter*, 2015-15, May 11, 2015.

“The Value of Lifelong Learning,” *Federal Reserve Bank of San Francisco 2014 Annual Report*, April 2015.

“The View from Here: Outlook and Monetary Policy,” *Federal Reserve Bank of San Francisco Economic Letter*, 2015-08, March 9, 2015.

“Inflation Targeting and the Global Financial Crisis: Successes and Challenges,” *Fourteen Years of Inflation Targeting in South Africa and the Challenge of a Changing Mandate*, South African Reserve Bank Conference Series 2014, Pretoria, South Africa: South African Reserve Bank, 2015, 95-111.

“Policy Rules in Practice,” *Journal of Economic Dynamics and Control*, 49, December 2014, 151-153.

“Navigating toward Normal: The Future for Policy,” *Federal Reserve Bank of San Francisco Economic Letter*, 2014-31, October 20, 2014.

“Financial Stability and Monetary Policy: Happy Marriage or Untenable Union?” *Federal Reserve Bank of San Francisco Economic Letter*, 2014-17, June 9, 2014.

“The Economic Recovery and Monetary Policy: The Road Back to Ordinary,” *Federal Reserve Bank of San Francisco Economic Letter*, 2014-16, June 2, 2014.

“The San Francisco Fed and the West: A Century of Reinvention,” (with Sam Zuckerman), *Federal Reserve Bank of San Francisco 2013 Annual Report*, April 2014.

“Monetary Policy at the Zero Lower Bound: Putting Theory into Practice,” The Hutchins Center on Fiscal & Monetary Policy, The Brookings Institution, January 16, 2014.

“Housing, Banking, and the Recovery: The Outlook,” *Federal Reserve Bank of San Francisco Economic Letter*, 2014-02, January 13, 2014.

“Rebalancing the Economy: A Tale of Two Countries,” *Federal Reserve Bank of San Francisco Economic Letter*, 2013-33, November 12, 2013.

“Forward Policy Guidance at the Federal Reserve,” VoxEU, October 16, 2013.
<http://www.voxeu.org/article/forward-policy-guidance-federal-reserve>

“Will Unconventional Policy Be the New Normal?” *Federal Reserve Bank of San Francisco Economic Letter*, 2013-29, October 7, 2013.

“Bubbles Tomorrow, Yesterday, but Never Today?” *Federal Reserve Bank of San Francisco Economic Letter*, 2013-27, September 23, 2013. Reprinted in: *Business Economics*, 2013, 48 (4), 224-230.

“The Economic Recovery: Past, Present, and Future,” *Federal Reserve Bank of San Francisco Economic Letter*, 2013-18, July 1, 2013.

“Economic Outlook: Moving in the Right Direction,” *Federal Reserve Bank of San Francisco Economic Letter*, 2013-15, May 20, 2013.

“Cash Is Dead! Long Live Cash!” *Federal Reserve Bank of San Francisco 2012 Annual Report*, April 2013, 7-15.

“The Economy and Fed Policy: Follow the Demand,” *Federal Reserve Bank of San Francisco Economic Letter*, 2013-05, February 25, 2013.

“Monetary Policy in Uncertain Times,” *Federal Reserve Bank of San Francisco Economic Letter*, 2013-02, January 21, 2013.

“The Federal Reserve’s Unconventional Policies,” *Federal Reserve Bank of San Francisco Economic Letter*, 2012-34, November 13, 2012.

“The Economic Outlook and Federal Reserve Policy,” *Federal Reserve Bank of San Francisco Economic Letter*, 2012-30, October 1, 2012.

“The Outlook and Monetary Policy Challenges,” *Federal Reserve Bank of San Francisco Economic Letter*, 2012-22, July 23, 2012.

“Monetary Policy, Money, and Inflation,” *Federal Reserve Bank of San Francisco Economic Letter*, 2012-21, July 9, 2012.

“Opening the Temple,” *Federal Reserve Bank of San Francisco 2011 Annual Report*, April 2012, 7-14.

“The Slow Recovery: It's Not Just Housing,” *Federal Reserve Bank of San Francisco Economic Letter*, 2012-11, April 9, 2012.

“The Federal Reserve and the Economic Recovery,” *Federal Reserve Bank of San Francisco Economic Letter*, 2012-02, January 17, 2012.

“Unconventional Monetary Policy: Lessons from the Past Three Years,” *Federal Reserve Bank of San Francisco Economic Letter*, 2011-31, October 3, 2011.

“Economics Instruction and the Brave New World of Monetary Policy,” *Federal Reserve Bank of San Francisco Economic Letter*, 2011-17, June 6, 2011.

“Maintaining Price Stability in a Global Economy,” *Federal Reserve Bank of San Francisco Economic Letter*, 2011-14, May 9, 2011.

“What Is the New Normal Unemployment Rate?” (with Justin Weidner), *Federal Reserve Bank of San Francisco Economic Letter*, 2011-5, February 14, 2011.

“Estimating the Macroeconomic Effects of the Fed's Asset Purchases,” (with Hess Chung, Jean-Philippe Laforte, and David Reifschneider), *Federal Reserve Bank of San Francisco Economic Letter*, 2011-3, January 31, 2011.

“Two Cheers for Bagehot,” in Subir Gokarn (ed.), *Challenges to Central Banking in the Context of Financial Crisis*, New Delhi, India: Academic Foundation, 2011, 333-347.

“The Shape of Things to Come,” (with Justin Weidner), *Federal Reserve Bank of San Francisco Economic Letter*, 2010-15, May 17, 2010.

“How Big Is the Output Gap?” (with Justin Weidner), *Federal Reserve Bank of San Francisco Economic Letter*, 2009-19, June 12, 2009.

“The Risk of Deflation,” *Federal Reserve Bank of San Francisco Economic Letter*, 2009-12, March 27, 2009.

“Inflation Persistence in an Era of Well-Anchored Inflation Expectations,” *Federal Reserve Bank of San Francisco Economic Letter*, Number 2006-27, October 13, 2006.

“The Natural Rate of Interest,” *Federal Reserve Bank of San Francisco Economic Letter*, Number 2003-32, October 31, 2003.

Unpublished Working Papers

“The Optimal Supply of Central Bank Reserves under Uncertainty,” (with Gara Afonso, Gabriele La Spada, and Thomas M. Mertens), Federal Reserve Bank of New York Staff Reports 1077, November 2023, revised December 2023.

“Measuring the Natural Rate of Interest after COVID-19,” (with Kathryn Holston and Thomas Laubach), Federal Reserve Bank of New York Staff Reports 1063, June 2023.

“The Curious Case of the Rise in Deflation Expectations,” (with Olivier Armantier, Gizem Kosar, Jason Somerville, Giorgio Topa, and Wilbert van der Klaauw), Federal Reserve Bank of New York Staff Reports 1037, October 2022, revised November 2023.

“Scarce, Abundant, or Ample? A Time-Varying Model of the Reserve Demand Curve,” (with Gara Afonso, Domenico Giannone, and Gabriele La Spada), Federal Reserve Bank of New York Staff Reports 1019, May 2022, revised May 2025.

“Learning and the Role of Macro Factors in the Term Structure,” (with Thomas Laubach and Robert Tetlow), mimeo, October 2007.

“The Responses of Wages and Prices to Technology Shocks.” (with Rochelle M. Edge and Thomas Laubach), Federal Reserve Bank of San Francisco Working Paper 03-21, December 2003.

“Parameter Uncertainty and the Central Bank’s Objective Function,” (with Andrew T. Levin), manuscript, May 2003.

“The Optimal Monetary Policy Response to Shifts in Growth,” (with Rochelle Edge and Thomas Laubach), manuscript, May 2003.

“Transition Dynamics in Vintage Capital Models: Explaining the Postwar Catch-Up of Germany and Japan,” (with Simon Gilchrist) Finance and Economics Discussion Series 2001-07, February 2001.

“What’s Happened to the Phillips Curve?,” (with Flint Brayton and John Roberts), Finance and Economics Discussion Series 1999-49, September 1999.

“The Limits to ‘Growing an Economy’,” Finance and Economics Discussion Series 95-30, 1995.