

GLENN D. RUDEBUSCH

Curriculum Vitae
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Employment

Brookings Institution, Hutchins Center on Fiscal & Monetary Policy
Nonresident Senior Fellow, 2022 to current
Federal Reserve Bank of San Francisco
Executive Vice President, Senior Policy Advisor, 2017 to 2022
Executive Vice President, Director of Economic Research, 2011 to 2017
Senior Vice President, Associate Director of Research, 2004 to 2011
Vice President, Head of Macroeconomic Research, 2002 to 2004
Senior Research Advisor, 2000 to 2002
Research Officer, 1994 to 2000
Board of Governors of the Federal Reserve System, Washington, DC
Senior Economist, Division of Monetary Affairs, 1993-1994
Economist, Division of Monetary Affairs, 1992-93
Economist, Division of Research and Statistics, 1986-92

Other Activities

New York University, Volatility and Risk Institute of the Stern School of Business
Senior Fellow, 2022 to current
University of Oxford, Nuffield College
Visiting Scholar, Autumn 2022
Banque de France, Paris
Senior Visiting Scholar, Spring 2011
Bank of England, London
Senior Houblon-Norman Fellow, Fall 2010
University of California at Berkeley
Lecturer, Haas School of Business, Fall 1995 to Fall 1998
European University Institute, Florence, Italy
Fulbright Distinguished Chair in Economics, Spring 1996

Education

Ph.D. in Economics, University of Pennsylvania, Philadelphia, PA, 1986
B.A. in Mathematics, Northwestern University, Evanston, IL, 1981

Publications: Articles

- “The Rising Cost of Climate Change: Evidence from the Bond Market,” Forthcoming in *The Review of Economics and Statistics*. (with Michael Bauer)
- “When Will Arctic Sea Ice Disappear? Projections of Area, Extent, Thickness, and Volume.” Forthcoming in *Journal of Econometrics*. (with Diebold et al.)
- “Why the Fed and ECB Parted Ways on Climate Change: The Politics of Divergence in the Global Central Banking Community.” Working paper, 2023. (with DiLeo et al.)
- “Climate Policy Curves: Linking Policy Choices to Climate Outcomes.” Working paper, 2022. (with Hänsel et al.)
- “Climate Models Underestimate the Sensitivity of Arctic Sea Ice to Carbon Emissions.” Working paper, 2023. (with Frank Diebold)
- “US benefit-cost analysis requires revision,” *Science*, May 25, 2023, Vol 380, Issue 6647, p. 803. (with others)
- “Where is the Carbon Premium? Global Performance of Green and Brown Stocks,” *Journal of Climate Finance* 1, December 2022, 100006. (with Michael Bauer, Daniel Huber, and Ole Wilms)
- “Probability Assessments of an Ice-Free Arctic: Comparing Statistical and Climate Model Projections,” *Journal of Econometrics* 231 (2), December 2022, pp. 520-534. (with Francis X. Diebold)
- “Climate Change Is a Source of Financial Risk.” In *Climate Change: Managing the Financial Risk and Funding the Transition*, ed. by Jing Zhang, Risk Books, 2022, pp. 41-48.
- “On the Evolution of US Temperature Dynamics.” In *Essays in Honor of M. Hashem Pesaran: Prediction and Macro Modeling* (Advances in Econometrics, Vol. 43A), ed. by Chudik, Hsiao, and Timmermann, Emerald Publishing Limited, 2022, pp. 9-28. (with Francis X. Diebold)
- “Interest Rates under Falling Stars.” *American Economic Review* 110 (5), May 2020, pp. 1316–1354. (with Michael Bauer)
- “A New Normal for Interest Rates? Evidence from Inflation-Indexed Debt.” *The Review of Economics and Statistics* 101(5), December 2019, pp. 933–949. (with Jens Christensen)

- “Term Structure Analysis with Big Data: One-Step Estimation Using Bond Prices.” *Journal of Econometrics* 212 (1), September 2019, pp. 26-46. (with Martin Andreasen and Jens Christensen)
- “Resolving the Spanning Puzzle in Macro-Finance Term Structure Models.” *Review of Finance* 21 (2), March 2017, pp. 511-553. (with Michael Bauer)
- “Monetary Policy Expectations at the Zero Lower Bound.” *Journal of Money, Credit, and Banking* 48 (7), October 2016, pp. 1439-1465. (with Michael Bauer)
- “Modeling Yields at the Zero Lower Bound: Are Shadow Rates the Solution?” In *Dynamic Factor Models* (Advances in Econometrics, Vol. 35), ed. by Eric Hillebrand and Siem Jan Koopman, Emerald Publishing Group, 2016. pp. 75-125. (with Jens H. E. Christensen)
- “Pricing Deflation Risk with U.S. Treasury Yields.” *Review of Finance* 20 (3), May 2016, pp. 1107-1152. (with Jens H. E. Christensen and Jose Lopez)
- “A Wedge in the Dual Mandate: Monetary Policy and Long-Term Unemployment.” *Journal of Macroeconomics* 47A, March 2016, pp. 5-18. (with John C. Williams)
- “A Probability-Based Stress Test of Federal Reserve Assets and Income.” *Journal of Monetary Economics* 73, July 2015, pp. 26-43. (with Jens H. E. Christensen and Jose Lopez)
- “Estimating Shadow-Rate Term Structure Models with Near-Zero Yields.” *Journal of Financial Econometrics* 13 (2), Spring 2015, pp. 226-259. (with Jens H. E. Christensen)
- “The Signaling Channel for Federal Reserve Bond Purchases.” *International Journal of Central Banking* 10(3), September 2014, 233-289. (with Michael D. Bauer)
- “Do Central Bank Liquidity Facilities Affect Interbank Lending Rates?” *Journal of Business and Economic Statistics* 32(1), January 2014, 136-151. (with Jens H. E. Christensen and Jose Lopez)
- “Term Premia and Inflation Uncertainty: Empirical Evidence from an International Panel Dataset: Comment.” *American Economic Review* 104(1), January 2014, 323–337. (with Michael D. Bauer and Jing Cynthia Wu)
- “Discussion of ‘Complexity and Monetary Policy.’” *International Journal of Central Banking* 9(S1), January 2013, 219-228.
- “Extracting Deflation Probability Forecasts from Treasury Yields.” *International Journal of Central Banking* 8(4), December 2012, 21-60. (with Jens H. E. Christensen and Jose Lopez)

- “The Response of Interest Rates to U.S. and U.K. Quantitative Easing.” *Economic Journal* 122, November 2012, F385-F414. (with Jens H. E. Christensen)
- “Correcting Estimation Bias in Dynamic Term Structure Models.” *Journal of Business and Economic Statistics* 30, July 2012, 454-467. (with Michael D. Bauer and Jing Cynthia Wu)
- “The Bond Premium in a DSGE Model with Long-Run Real and Nominal Risks.” *American Economic Journal: Macroeconomics* 4, January 2012, pp. 105-43. (with Eric Swanson)
- “The Affine Arbitrage-Free Class of Nelson-Siegel Term Structure Models.” *Journal of Econometrics* 164, September 2011, pp. 4-20. (with Jens H. E. Christensen and Francis X. Diebold)
- “Inflation Expectations and Risk Premiums in an Arbitrage-Free Model of Nominal and Real Bond Yields.” *Journal of Money, Credit, and Banking* 42, September 2010, pp. 143-178. (with Jens H. E. Christensen and Jose A. Lopez)
- “Macro-Finance Models of Interest Rates and the Economy.” *The Manchester School* 78, 2010, pp. 25-52.
- “An Arbitrage-Free Generalized Nelson-Siegel Term Structure Model.” *Econometrica* 77, November 2009, pp. 33-64. (with Jens H. E. Christensen and Francis X. Diebold)
- “Forecasting Recessions: The Puzzle of the Enduring Power of the Yield Curve.” *Journal of Business and Economic Statistics* 27, October 2009, pp. 492-503. (with John C. Williams)
- “Examining the Bond Premium Puzzle with a DSGE Model.” *Journal of Monetary Economics* 55, October 2008, pp. 111-126. (with Eric Swanson)
- “Revealing the Secrets of the Temple: The Value of Publishing Central Bank Interest Rate Projections.” in *Asset Prices and Monetary Policy*, ed. by J.Y. Campbell, 2008, Chicago: University of Chicago Press, pp. 247-284. (with John C. Williams)
- “A Macro-Finance Model of the Term Structure, Monetary Policy, and the Economy.” *Economic Journal* 118, July 2008, pp. 906-926. (with Tao Wu)
Awarded annual Royal Economic Society prize for the best paper published in the *Economic Journal*.
- “Discussion of ‘Cracking the Conundrum.’” *Brookings Papers on Economic Activity*, 2007(1), pp. 317-329.

- “Accounting for a Shift in Term Structure Behavior with No-Arbitrage and Macro-Finance Models.” *Journal of Money, Credit, and Banking* 39 (2-3), March 2007, pp. 395-422. (with Tao Wu)
- “The Bond Yield ‘Conundrum’ from a Macro-Finance Perspective.” *Monetary and Economic Studies* 24(S-1), December 2006, pp. 83-128. (with Eric Swanson and Tao Wu)
- “Monetary Policy Inertia: Fact or Fiction?” *International Journal of Central Banking* 2(4), December 2006, pp. 85-135.
- “The Macroeconomy and the Yield Curve: A Dynamic Latent Factor Approach.” *Journal of Econometrics* 131, March-April 2006, pp. 309-338. (with Francis X. Diebold and S. Boragan Aruoba)
Awarded Geewax-Terker Prize for Outstanding Financial Research, 2004
- “Using a Long-Term Interest Rate as the Monetary Policy Instrument.” *Journal of Monetary Economics* 52, July 2005, pp. 855-879. (with Bruce McGough and John C. Williams)
- “Modeling Bond Yields in Finance and Macroeconomics.” *American Economic Review, Papers and Proceedings* 95, May 2005, pp. 415-420. (with Francis X. Diebold and Monika Piazzesi)
- “Assessing the Lucas Critique in Monetary Policy Models.” *Journal of Money, Credit, and Banking* 37, April 2005, pp. 245-272.
- “Estimating the Euler Equation for Output.” *Journal of Monetary Economics* 51, September 2004, pp. 1133-1153. (with Jeffrey Fuhrer)
- “Term Structure Evidence on Interest Rate Smoothing and Monetary Policy Inertia.” *Journal of Monetary Economics* 49, September 2002, pp. 1161-1187.
- “Assessing Nominal Income Rules for Monetary Policy with Model and Data Uncertainty.” *Economic Journal* 112, April 2002, pp. 402-432.
- “Eurosystem Monetary Targeting: Lessons from U.S. Data.” *European Economic Review* 46, 2002, pp. 417-442. (with Lars Svensson)
- “Is the Fed Too Timid? Monetary Policy in an Uncertain World.” *Review of Economics and Statistics* 83, May 2001, pp. 203-217.
- “Opportunistic and Deliberate Disinflation Under Imperfect Credibility.” *Journal of Money, Credit, and Banking* 32, November 2000, pp. 707-721. (with Antulio Bomfim)

- “Policy Rules for Inflation Targeting.” in *Monetary Policy Rules*, ed. by J. Taylor, 1999, University of Chicago Press: Chicago, pp. 203-246. (with Lars Svensson)
- “Do Measures of Monetary Policy in a VAR Make Sense?” *International Economic Review* 39, November 1998, pp. 907-931.
- “Do Measures of Monetary Policy in a VAR Make Sense? A Reply to Christopher A. Sims.” *International Economic Review* 39, November 1998, pp. 943-948.
- “Monetary Policy and the Term Structure of Interest Rates: An Overview of Some Recent Research.” in *Monetary Policy and Interest Rates*, ed. by I. Angeloni and R. Rovelli, 1998, St. Martin's Press: New York, pp. 263-271.
- “Judging Instrument Relevance in Instrumental Variables Estimation.” *International Economic Review* 37, May 1996, pp. 283-298. (with Alastair Hall and David Wilcox)
- “Monetary Policy and Credit Conditions: Evidence from the Composition of External Finance: Comment.” *American Economic Review* 86, March 1996, pp. 300-309. (with Steve Oliner)
- “Measuring Business Cycles: A Modern Perspective.” *Review of Economics and Statistics* 78, February 1996, pp. 67-77. (with Francis X. Diebold)
- “The Lucas Critique Revisited: Assessing the Stability of Empirical Euler Equations for Investment.” *Journal of Econometrics* 70, January 1996, pp. 291-316. (with Steve Oliner and Dan Sichel)
- “New and Old Models of Business Investment: A Comparison of Forecasting Performance.” *Journal of Money, Credit, and Banking* 27, August 1995, pp. 806-826. (with Steve Oliner and Dan Sichel)
- “Federal Reserve Interest Rate Targeting, Rational Expectations, and the Term Structure.” *Journal of Monetary Economics* 24, April 1995, pp. 245-274.
- “A Comment on ‘Rational Expectations and the Economic Consequences of Changes in Regime.’” in *Macroeconometrics: Developments, Tensions, and Prospects*, ed. by K. Hoover, 1995, Kluwer Academic Press: Boston, pp. 345-349.
- “The Uncertain Unit Root in Real GNP.” *The American Economic Review* 83, March 1993, pp. 264-272.
- “Further Evidence on Business-Cycle Duration Dependence.” in *Business Cycles, Indicators, and Forecasting*, ed. by M. Watson and J. Stock, 1993, University of

- Chicago Press for the NBER, pp. 255-280. (with Francis X. Diebold and Dan Sichel)
- “Sources of the Financing Hierarchy for Business Investment.” *The Review of Economics and Statistics* 74, November 1992, pp. 643-654. (with Steve Oliner)
- “Have Postwar Economic Fluctuations Been Stabilized?” *The American Economic Review* 82, September 1992, pp. 993-1005. (with Francis X. Diebold)
- “Trends and Random Walks in Macroeconomic Time Series: A Re-examination,” *International Economic Review* 33, August 1992, pp. 661-680.
- “Forecasting Output with the Composite Leading Index: A Real-Time Analysis.” *Journal of the American Statistical Association* 86, September 1991, pp. 603-610. (with Francis X. Diebold)
- “On the Power of Dickey-Fuller Tests Against Fractional Alternatives.” *Economics Letters* 35, 1991, pp. 155-160. (with Francis X. Diebold)
- “Is Consumption Too Smooth? Long Memory and the Deaton Paradox.” *The Review of Economics and Statistics* 73, February 1991, pp. 1-9. (with Francis X. Diebold)
- “Turning Point Prediction With the Composite Leading Index: An Ex Ante Analysis.” in *Leading Economic Indicators: New Approaches and Forecasting Records*, ed. by K. Lahiri and G.H. Moore, 1991, Cambridge University Press, pp. 231-256. (with Francis X. Diebold)
- “A Nonparametric Investigation of Duration Dependence in the American Business Cycle.” *Journal of Political Economy* 98, June 1990, pp. 596-616. (with Francis X. Diebold)
- “Long Memory and Persistence in Aggregate Output.” *Journal of Monetary Economics* 24, September 1989, pp. 189-209. (with Francis X. Diebold)
- “An Empirical Disequilibrium Model of Labor, Consumption, and Investment in the United States.” *International Economic Review* 30, August 1989, pp. 633-654.
- “Scoring the Leading Indicators.” *Journal of Business* 62, July 1989, pp. 369-391. (with Francis X. Diebold)
- “Are Productivity Fluctuations Due to Real Supply Shocks?” *Economics Letters* 27, 1988, pp. 327-331.

“Stochastic Properties of Revisions in the Index of Leading Indicators.” *Proceedings of the American Statistical Association, Business and Economic Statistics Section*, 1987, pp. 712-717, Washington, DC: American Statistical Association. (with Francis X. Diebold)

“Testing for Labor Market Equilibrium with an Exact Excess Demand Disequilibrium Model.” *The Review of Economics and Statistics* 68, August 1986, pp. 468-476.

Publications: Books

Yield Curve Modeling and Forecasting: The Dynamic Nelson-Siegel Approach. 2013, Princeton University Press: Princeton. (with Francis X. Diebold)

Business Cycles: Durations, Dynamics, and Forecasting. 1999, Princeton University Press: Princeton. (with Francis X. Diebold)

The Estimation of Macroeconomic Disequilibrium Models with Regime Classification Information. 1987, Springer-Verlag: New York.

Publications: Articles in Federal Reserve Economic Reviews

“Macroeconomic Implications of Changes in the Term Premium.” *Review*, Federal Reserve Bank of St. Louis, 2007, July/August, 89(4), pp. 241-269. (with Brian Sack and Eric Swanson)

“Five Questions About Business Cycles.” *Economic Review*, Federal Reserve Bank of San Francisco, 2001, pp. 1-15. (with Francis X. Diebold)

“Taylor’s Rule and the Fed: 1970-1997.” *Economic Review*, Federal Reserve Bank of San Francisco, 1998, No. 3, pp. 3-16. (with John Judd)

“Is There a Broad Credit Channel for Monetary Policy?” *Economic Review*, Federal Reserve Bank of San Francisco, 1996, No. 1, pp. 3-13. (with Steve Oliner)

“Is There a Bank Lending Channel for Monetary Policy?” *Economic Review*, Federal Reserve Bank of San Francisco, 1995, No. 2, pp. 3-20. (with Steve Oliner)

“Shorter Recessions and Longer Expansions.” *Business Review*, Federal Reserve Bank of Philadelphia, November-December 1991, pp. 13-20. (with Francis X. Diebold)

Publications: FRBSF Economic Letter

- “Climate Change Costs Rise as Interest Rates Fall,” October 20, 2021. (with Bauer).
- “Climate Change Is a Source of Financial Risk.” February 8, 2021.
- “The Economics of Climate Change: A First Fed Conference.” December 16, 2019. (with Hale and Jorda)
- “Climate Change and the Federal Reserve.” March 25, 2019.
- “A Review of the Fed’s Unconventional Monetary Policy.” December 3, 2018.
- “New Evidence for a Lower New Normal in Interest Rates.” June 19, 2017. (with Christensen)
- “Why Are Long-Term Interest Rates So Low?” December 5, 2016. (with Bauer)
- “Has the Fed Fallen behind the Curve This Year?” November 7, 2016. (with Nechio)
- “Will the Economic Recovery Die of Old Age?” February 8, 2016.
- “Residual Seasonality and Monetary Policy.” August 24, 2015. (with Wilson and Pyle)
- “The Puzzle of Weak First-Quarter GDP Growth.” May 18, 2015. (with Wilson and Mahedy)
- “Optimal Policy and Market-Based Expectations.” April 13, 2015. (with Bauer)
- “Does Slower Growth Imply Lower Interest Rates?” November 10, 2014. (with Leduc)
- “Stress Testing the Fed.” March 24, 2014. (with Christensen and Lopez)
- “Expectations for Monetary Policy Liftoff.” November 18, 2013. (with Bauer)
- “What Caused the Decline in Long-term Yields?” July 8, 2013. (with Bauer)
- “Signals from Unconventional Monetary Policy.” November 21, 2011. (with Bauer)
- “The Fed’s Interest Rate Risk.” April 11, 2011.
- “The Fed’s Exit Strategy for Monetary Policy.” June 14, 2010.
- “Inflation: Mind the Gap.” January 19, 2010. (with Liu)
- “Disagreement about the Inflation Outlook.” October 5, 2009. (with Leduc and Weidner)
- “The Fed’s Monetary Policy Response to the Current Crisis.” May 22, 2009.
- “Publishing Central Bank Interest Rate Forecasts.” January 25, 2008.
- “Publishing FOMC Economic Forecasts.” January 18, 2008.
- “Monetary Policy Inertia and Recent Fed Actions.” January 26, 2007.
- “Monetary Policy and Asset Price Bubbles.” August 5, 2005.
- “Finance and Macroeconomics.” May 2, 2003. (with Richard Dennis)
- “Macroeconomic Models for Monetary Policy.” April 19, 2002. (with Tao Wu)
- “Has a Recession Already Started?” October 19, 2001.
- “How Sluggish Is the Fed?” March 2, 2001.
- “Structural Change and Monetary Policy.” April 28, 2000.
- “How Fast Can the New Economy Grow?” February 25, 2000.
- “Monetary Policy and Monetary Institutions.” April 16, 1999.
- “How Did the Economy Surprise Us in 1998?” March 5, 1999.
- “The Goals of U.S. Monetary Policy.” January 29, 1999. (with John Judd)

“Describing Fed Behavior.” December 25, 1998. (with John Judd)
“U.S. Inflation Targeting: Pro and Con.” May 29, 1998. (with Carl Walsh)
“Central Bank Inflation Targeting.” May 22, 1998. (with Carl Walsh)
“Interest Rates and Monetary Policy.” June 13, 1997.
“Is Opportunistic Monetary Policy Credible?” October 4, 1996.
“New Estimates of the Recent Growth in Potential Output.” November 24, 1995.
“Federal Reserve Policy and the Predictability of Interest Rates.” June 23, 1995.
“What Are the Lags in Monetary Policy?” February 3, 1995.