

Federal Reserve Bank of San Francisco

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[FRBSF homepage](#) [Personal homepage](#) [Google Scholar profile](#)

Education

Ph.D. in Economics, University of Minnesota, 1997

M.A. in Economics, University of Minnesota, 1994

B.A. and M.A. in Economics, Renmin University of China, 1988 and 1991

Research Areas

Macroeconomics, Monetary policy, Credit and housing, International finance, Chinese economy

Professional Experience

Vice President of International Research, Federal Reserve Bank of San Francisco, November 2019 –

Director, Center for Pacific Basin Studies, Federal Reserve Bank of San Francisco, April 2016 –

Senior Research Advisor, Federal Reserve Bank of San Francisco, April 2014 –

Research Advisor, Federal Reserve Bank of San Francisco, August 2008 – March 2014

Associate Professor of Economics (with tenure), Emory University, Sept. 2006 – August 2009

Assistant Professor of Economics, Emory University: Sept. 2001 – August 2006

Assistant Professor of Economics, Clark University, Worcester, MA: 1997 – 2001

Other Professional Experience

Member of Board of Directors, 1990 Institute, Sep 2020 –

Technical Advisor, IMF Institute for Capacity Development, 2016

Special Term Professor, Shanghai Advanced Institute of Finance, 2012 –

Instructor, Dept. of Econ, University of Minnesota, Minneapolis, MN: 1994 – 1997

Visiting Scholar, Research Department, Federal Reserve Bank of Atlanta, Sept. 2001 – July 2008

Visiting Scholar, Federal Reserve Bank of Minneapolis: Summer 2007; 2005 – 2006; Summer 1999; Summer 1998; Winter 1998

Visiting Scholar, Department of Economics, University of Minnesota: 2005 – 2006; Spring 2004

Visiting Scholar, Department of Economics, Boston University, 2000 – 2001

Research Visitor, European Central Bank, Frankfurt, Germany: Summers 2001, 2002, and 2003

Editorial Services

Associate Editor, *Quantitative Economics*, 2019 – 2022

Editorial Board, *VoxChina*, 2017 –

Associate Editor, *Journal of Economic Dynamics and Control*, 2014 –

Associate Editor, *Journal of Money, Credit and Banking*, 2013 – 2018

Guest Co-Editor, *Journal of International Money and Finance* Special Issue for 2017 Asia Economic Policy Conference: Monetary Policy Challenges in a Changing Global Environment, July 2019

Guest Co-Editor, *Journal of International Money and Finance* Special Issue for 2019 Asia Economic Policy Conference: Monetary Policy under Global Uncertainty (*forthcoming*)

Working Papers and work in progress

1. “[Bank Risk-Taking and Monetary Policy Transmission: Evidence from China](#)” (with Xiaoming Li, Yuchao Peng, and Zhiwei Xu), Federal Reserve Bank of San Francisco Working Paper 2020-27, August 2020.
Media mentions: [VoxChina](#) (11/18/2020)
2. “[Can Pandemic-Induced Job Uncertainty Stimulate Automation?](#)” (with Sylvain Leduc), Federal Reserve Bank of San Francisco Working Paper 2020-19, May 2020.
Media mentions: [Bloomberg](#) (05/11/2020); [VoxEU](#) (06/14/2020)
3. “[Capital Controls and Income Inequality](#)” (with Mark M. Spiegel and Jingyi Zhang), Federal Reserve Bank of San Francisco Working Paper 2020-14, April 2020.
4. “[Robots or Workers? A Macro Analysis of Automation and Labor Markets](#)” (with Sylvain Leduc), Federal Reserve Bank of San Francisco Working Paper 2019-17, August 2019.
5. “[A Theory of Housing Demand Shocks](#)” (with Pengfei Wang and Tao Zha), Federal Reserve Bank of San Francisco Working Paper 2019-09, March 2019. [see also [NBER Working Paper No. 25667](#)]
6. “Technology Shocks in a Two-Sector DSGE Model” (with Susanto Basu and John G. Fernald), memo.

Publications in Refereed Journals

1. “Optimal Capital Account Liberalization in China” (with Mark M. Spiegel and Jingyi Zhang), *Journal of Monetary Economics* (in press).
2. “[Interest Rate Liberalization and Capital Misallocations](#)” (with Pengfei Wang and Zhiwei Xu), *American Economic Journal: Macroeconomics* (in press).
3. “The Weak Job Recovery in a Macro Model of Search and Recruiting Intensity” (with Sylvain Leduc), *American Economic Journal: Macroeconomics* 12(1), January 2020, pp. 310-343.
4. “Reserve Requirements and Optimal Chinese Stabilization Policy” (with Chun Chang, Mark M. Spiegel, and Jingyi Zhang), *Journal of Monetary Economics* 103, May 2019, pp. 33-51.
5. “Breaking the ‘Iron Rice Bowl’: Evidence of Precautionary Savings from the Chinese State-Owned Enterprises Reform” (with Hui He, Feng Huang, and Dongming Zhu), *Journal of Monetary Economics* 94, April 2018, pp. 94-113.
Media mentions: [VoxChina](#) (09/05/2018).
6. “Measuring the Effects of Dollar Appreciation on Asia: A FAVAR Approach” (with Mark Spiegel and Andrew Tai), *Journal of International Money and Finance* 74, June 2017, pp. 353-370.
7. “Uncertainty Shocks Are Aggregate Demand Shocks” (with Sylvain Leduc), *Journal of Monetary Economics* 82, September 2016, pp. 20-35. (**The most cited article in Journal of Monetary Economics since 2016**).

8. "Land Prices and Unemployment" (with Jianjun Miao and Tao Zha), *Journal of Monetary Economics* 80, June 2016, pp. 86-105.
9. "Capital Controls and Optimal Chinese Monetary Policy" (with Chun Chang and Mark Spiegel), *Journal of Monetary Economics* 74, September 2015, pp. 1-15 (**lead article, awarded the 2016 Sun Yefang Prize, China's highest award for economics research**).
10. "Optimal Monetary Policy and Capital Account Restrictions in a Small Open Economy" (with Mark M. Spiegel), *IMF Economic Review* 63, September 2015, pp. 298-324.
11. "Temptation and Self-Control: Some Evidence and Applications" (with K. Huang and Q. Zhu), *Journal of Money, Credit and Banking* 47(4), June 2015, pp.581-615.
12. "Credit Constraints and Self-fulfilling Business Cycles" (with Pengfei Wang), *American Economic Journal: Macroeconomics*, 6(1), January 2014, pp. 32-69.
13. "Land-Price Dynamics and Macroeconomic Fluctuations" (with Pengfei Wang and Tao Zha), *Econometrica* 81(3), May 2013, pp. 1147-1184.
14. "The Transmission of Productivity Shocks: What Do We Learn about DSGE Modeling?" (with Louis Phaneuf), *Annales d'Economie et de Statistique (Annals of Economics and Statistics)*, 109/110, June 2013, 283-304.
15. "Should the Central Bank be Concerned about Housing Prices?" (with Karsten Jeske), *Macroeconomic Dynamics* 17(1), January 2013, pp. 29-53.
16. "Sources of the Macroeconomic Fluctuations: A Regime-Switching DSGE Approach" (with Tao Zha and Dan Waggoner), *Quantitative Economics* 2(2), July 2011, pp. 251-301.
17. "Asymmetric Expectation Effects of Regime Shifts in Monetary Policy" (with Dan Waggoner and Tao Zha), *Review of Economic Dynamics* 12, April 2009, pp. 284-303.
18. "Learning, Adaptive Expectations, and Technology Shocks" (with Kevin Huang and Tao Zha), *Economic Journal* 119, March 2009, pp. 377-405.
19. "Gains from International Monetary Policy Coordination: Does It Pay to be Different?" (with E. Pappa), *Journal of Economic Dynamics and Control*, Vol. 32(7), July 2008, pp. 2085-2117
20. "Investment-Specific Technological Change, Skill Accumulation, and Wage Inequality" (with Hui He), *Review of Economic Dynamics*, Vol. 11(2), April 2008, pp. 314-334.
21. "Technology Shocks and Labor Market Dynamics: Some Evidence and Theory" (with L. Phaneuf), *Journal of Monetary Economics*, Vol. 54(8), November 2007, pp. 2534-2553.
22. "Business Cycles with Staggered Prices and International Trade in Intermediate Inputs" (with K. Huang), *Journal of Monetary Economics*, Vol. 54(4), May 2007, pp. 1271-1289.
23. "Sellers' Local Currency Pricing or Buyers' Local Currency Pricing: Does It Matter for International Welfare Analysis?" (with K. Huang), *Journal of Economic Dynamics and Control*, Volume 30(7), July 2006, pp. 1183-1213.
24. "Inflation Targeting: What Inflation Rate to Target?" (with K. Huang), *Journal of Monetary Economics*, Volume 52(8), November 2005, pp. 1435-1462.
25. "Does Trade Openness Matter for Aggregate Instability?" (with F. De Fiore), *Journal of Economic Dynamics and Control*, Volume 29(7), July 2005, pp. 1165-1192 (**lead article**).
26. "Why Does the Cyclical Behavior of Real Wages Change Over Time?" (with K. Huang and L. Phaneuf), *American Economic Review*, Volume 94 (4), September 2004, pp. 836-856.

27. “Input-Output Structure and Nominal Rigidity: The Persistence Problem Revisited” (with K. Huang), *Macroeconomic Dynamics*, Volume 8 (2), April 2004, pp. 188 – 206.
28. “Staggered Price-Setting, Staggered Wage-Setting, and Business Cycle Persistence” (with K. Huang), *Journal of Monetary Economics*, Volume 49 (2), March 2002, pp. 405 - 433.
29. “Production Chains and General Equilibrium Aggregate Dynamics” (with K. Huang), *Journal of Monetary Economics*, Volume 48 (2), October 2001, pp. 437 - 462.
30. “Seasonal Cycles, Business Cycles, and Monetary Policy,” *Journal of Monetary Economics*, Volume 46 (2), October 2000, pp. 441 - 464.

Other Publications

1. “[2019 Asia Economic Policy Conference, ‘Monetary Policy under Global Uncertainty’: Summary](#)” (with Mark M. Spiegel), *Journal of International Money and Finance* Special Issue (*forthcoming*).
2. “[Capital Regulations, Bank Risk-Taking, and Monetary Policy in China](#)” (with Xiaoming Li, Yuchao Peng, and Zhiwei Xu), *VoxChina*, November 18, 2020
3. “[The automation channel of pandemic-induced uncertainty](#)” (with Sylvain Leduc), *VoxEU*, June 14, 2020.
4. “[The Uncertainty Channel of the Coronavirus](#)” (with Sylvain Leduc), FRBSF Economic Letter 2020-07, March 30, 2020.
Media mentions: [Reuters](#) (03/30/2020), [Central Banking Newsdesk](#) (03/31/2020)
5. “[Are Workers Losing to Robots?](#)” (with Sylvain Leduc), FRBSF Economic Letter 2019-25, September 30, 2019.
Media mentions: [Bloomberg](#) (10/01/2019), [Washington Post](#) (10/01/2019), [Business Insider](#) (10/01/2019), [CBS News](#) (10/04/2019), [Daily Mail](#) (10/02/2019), [Thomas Net](#) (10/16/2019)
6. “[2017 Asia Economic Policy Conference, ‘Monetary Policy Challenges in a Changing Global Environment Conference’: Summary](#)” (with Mark M. Spiegel), *Journal of International Money and Finance* 95, July 2019, pp. 183-184.
7. “[Evidence of Precautionary Savings in China](#)” (with Hui He, Feng Huang, and Dongming Zhu), *VoxChina*, September 5, 2018
8. “[Is GDP Overstating Economic Activity?](#)” (with Mark M. Spiegel and Eric Tallman), FRBSF Economic Letter 2018-14, May 29, 2018, Federal Reserve Bank of San Francisco
9. “[Is Boomer Retirement Still Weighing Down U.S. Equity Markets?](#)” (with Mark M. Spiegel), SF Fed Blog, March 5, 2018
10. “[Dollar Appreciation and Asian Economies](#)” (with Mark M. Spiegel and Andrew Tai), *VoxChina*, June 20, 2017 (Inaugural issue)
11. “[Reserve Requirements as A Chinese Macro Policy Tool](#)” (with Mark M. Spiegel), *FRBSF Economic Letter* 2017-15, May 22, 2017, Federal Reserve Bank of San Francisco
12. “[Slow Credit Recovery and Excess Returns on Capital](#)” (with Andrew Tai), *FRBSF Economic Letter* 2016-28, September 26, 2016, Federal Reserve Bank of San Francisco

13. "[Is China's Growth Miracle Over?](#)" *FRBSF Economic Letter* 2015-26, August 10, 2015, Federal Reserve Bank of San Francisco
14. "[Discussion of Notarpietro and Siviero](#)," *Journal of Money, Credit and Banking*, Supplement to Vol. 47, No. 1, March-April 2015, pp. 411-417.
15. "[Global Aging: More Headwinds for U.S. Stocks?](#)" (with Mark Spiegel and Bing Wang), *FRBSF Economic Letter* 2014-38, December 22, 2014, Federal Reserve Bank of San Francisco.
16. "[Job Uncertainty and Chinese Household Savings](#)," *FRBSF Economic Letter* 2014-03, February 3, 2014, Federal Reserve Bank of San Francisco.
17. "[Uncertainty and the Slow Labor Market Recovery](#)" (with Sylvain Leduc), *FRBSF Economic Letter* 2013-21, July 22, 2013, Federal Reserve Bank of San Francisco.

Media mentions: Bloomberg (7/22/2013), Reuters (7/22/2013), Reuters (MacroScope, 7/23/2013), Wall Street Journal (9/24/2013), Economics One (John Taylor, 07/31/2013).
18. "[External Shocks and China's Monetary Policy](#)" (with Mark Spiegel), *FRBSF Economic Letter* 2012-36, December 3, 2012, Federal Reserve Bank of San Francisco.
19. "[Uncertainty, Unemployment, and Inflation](#)" (with Sylvain Leduc), *FRBSF Economic Letter* 2012-28, September 17, 2012, Federal Reserve Bank of San Francisco.

Media mentions: Bloomberg (09/17/2012), Christian Science Monitor (09/18/2012), The Economist (10/06/2012, print edition), and others.
20. "[Boomer Retirement: Headwinds for US Equity Markets?](#)" (with Mark Spiegel), *FRBSF Economic Letter* 2011-26, August 22, 2011, Federal Reserve Bank of San Francisco. Reprints: Merrill Lynch, Ludeman Capital Management, and Weir Financial.

Media mentions: Bloomberg (08/22/2011), The Economist (9/24/2011 and [9/29/2012](#), print editions), Financial Times (11/23/2012), US News and World Report, The Times, Forbes, CNN Money, MSNBC, Reuters, Christian Science Monitor, [CNBC](#) (09/24/2019), and others.
21. "[Does Headline Inflation Converge to Core?](#)" (with Justin Weidner), *FRBSF Economic Letter* 2011-24, August 1, 2011, Federal Reserve Bank of San Francisco.
22. "[Inflation: Mind the Gap](#)" (with Glenn Rudebusch), *FRBSF Economic Letter* 2010-02, January 19, 2010, Federal Reserve Bank of San Francisco.

Awards and Recognitions

The 2016 *Sun Yefang Financial Innovation Award* for the paper "Capital Controls and Optimal Chinese Monetary Policy" (with Chun Chang and Mark Spiegel), published in *Journal of Monetary Economics* in September 2015. The Sun Yefang Prize is China's highest award in economics and finance ([FRBSF press release](#))

Best Paper Award (second prize) for "Asymmetric Expectation Effects of Regime Shifts and the Great Moderation," presented at the conference on "The Phillips Curve and the Natural Rate of Unemployment" organized by the Kiel Institute for the World Economy, Kiel, Germany, June 3 – 4, 2007

Distinguished Instructor, Department of Economics, University of Minnesota, 1994, 1995, 1996

Professional Services

Panel Member, Research Grants Council (RGC) of Hong Kong, 2016 – 2018

Referee: *American Economic Review*, *Econometrica*, *Journal of Political Economy*, *Review of Economic Studies*, *AER: Insights*, *AEJ: Macro*, *Journal of Monetary Economics*, *Journal of International Economics*, *Review of Economics and Statistics*, *Review of Economic Dynamics*, *Journal of Economic Dynamics and Control*, *Journal of Money, Credit, and Banking*, *International Economic Review*, National Science Foundation, and other academic journals

Conference organization:

2021 China International Conference in Macroeconomics, Program Committee member, Beijing, June 28-30, 2021

2020 Pacific Basin Research Conference (Virtual), Federal Reserve Bank of San Francisco, November 19-20, 2020

2020 Annual Meeting of the Central Bank Research Association (CEBRA), session on “Capital Flows and Macroeconomic Policy”, September 1-3, 2020 (virtual)

2019 Asia Pacific Economic Policy Conference on “Monetary Policy under Global Uncertainty,” Center for Pacific Basin Studies, Federal Reserve Bank of San Francisco, November 14-15, 2019

2019 China International Conference in Macroeconomics, Program Committee member, Shenzhen, June 21-23, 2019

2018 Pacific Basin Research Conference, Federal Reserve Bank of San Francisco, November 16, 2018

2018 China International Conference in Macroeconomics, Program Committee member, Beijing, June 23-24, 2018

2017 Asia Pacific Economic Policy Conference on “Monetary Policy Challenges in a Changing Global Environment,” Center for Pacific Basin Studies, Federal Reserve Bank of San Francisco, November 16-17, 2017

Econometric Society Asia Meetings, Organizing Committee member and session organizer, Hong Kong, June 3-5, 2017

2016 Pacific Basin Research Conference, Federal Reserve Bank of San Francisco, November 18, 2016

2015 Asia Economic Policy Conference on “Policy Challenges in a Diverging Global Economy,” Center for Pacific Basin Studies, Federal Reserve Bank of San Francisco, November 19-20, 2015.

2014 Pacific Basin Research Conference, Federal Reserve Bank of San Francisco, November 7, 2014

AEA session on “Capital Controls,” San Francisco, January 2016

AEA session on “Capital Controls and Macro-Prudential Policies,” Philadelphia, January 2014

Panel speaker:

[Bank of Spain conference](#) on “Global Imbalances and Capital Flows in the Era of New Technologies,” Madrid, September 10-11, 2019 (see [video](#))

[China International Conference in Macroeconomics](#), Beijing, June 23-24, 2018

Peterson Institute for International Economics and Sasakawa Peace Foundation, High-Level Working Group on Japan-US Common Economic Challenges, January 3-4, 2016 (San Francisco)

IMF and Chinese University Hong Kong (Shenzhen), Conference on Housing and Financial Stability in China, Dec 17-19, 2015 (Shenzhen, China)

Shanghai Development Research Foundation (SDRF), Reinventing Bretton Woods Committee (RBWC), PBC School of Finance Tsinghua University (PBCSF), and SAIF, Conference on "Shift in Global Financial Governance and China's Financial Reform," Oct 31-Nov 1, 2015 (Shanghai)

CF40 and Peterson Institute for International Economics, Conference on "Financial Stability in China," October 6, 2015 (New York City)

Conference discussant:

Frontiers of Macroeconomics Conference, Shanghai Advanced Institute of Finance, December 8-9, 2018.

Credit Market Frictions, Business Cycles, and Monetary Policy: A Research Conference in Honor of Charles Carlstrom and Timothy Fuerst, University of Notre Dame, Oct 18-19, 2018

West Coast Workshop in International Finance, Santa Clara, November 3, 2017

NBER Chinese Economy Meeting, Boston, April 14-15, 2017

HKIMR Eighth Annual Conference on Chinese Economy, Hong Kong, January 12-13, 2017

ASSA meetings in Chicago, January 6-8, 2017

First Research Workshop on China's Economy, IMF and FRB Atlanta, Washington, DC, April 28-29, 2016

ASSA meetings in San Francisco, January 3-5, 2016

Conference on Housing Affordability, UCLA, September 17-18, 2015

JIMF-USC Conference on Financial Adjustment in the Aftermath of the Global Crisis 2008-9: New Global Order? Los Angeles, April 18-19, 2014

Northwestern-SAIF Conference on Business Cycles and Macroeconomic Policies, Shanghai, March 24-25, 2014

JMCB Conference on Housing, Stability and the Macroeconomy: International Perspectives, Dallas, November 14-15, 2013

NBER Chinese Economy Meeting, Oct 4-5, 2013

Conference on Monetary Policy in a Global Setting: China and the United States, Beijing, April 15-16, 2013

ASSA-AFA Conference in Chicago, January 8, 2012

Macro Conference on Financial Market Imperfections and Macroeconomics, Federal Reserve Bank of San Francisco, March 5, 2010

International Conference on Financial System and Monetary Policy Implementation, Bank of Japan, Tokyo, May 2009

Seminar and Conference Presentations in Recent 6 Years

- 2020** NBER Summer Institute (virtual meeting, July 6-11), FRBSF (August 14), Econometric Society World Congress (virtual meeting, Aug 17-21), UAB and Barcelona GSE (Oct 7), National University of Singapore (Oct 19), Florida Macro Seminar (Nov 13), FISF Mini-Macro Conference (Dec 3)
- 2019** Utah State University (April), West Coast Search and Matching Workshop (May, SF), SAIF (June), HKUST Macro Workshop (June), HKU (June), China International Conference in Macroeconomics (June, Shenzhen), SED (June, St. Louis), NBER Summer Institute (July), University of New South Wales (July, Sydney), Bank of Canada-Tsinghua PBCSF-University of Toronto Conference on the Chinese Economy (August, Ottawa), Fourth IMF-Atlanta Fed Workshop: China in the Global Economy (Sep, Atlanta), Bank of Spain conference “Global Imbalances and Capital Flows in the Era of New Technologies” (Sep, Madrid), INSEAD (Oct, Singapore), the Becker-Friedman Institute conference on “the Macroeconomy and Finance in China” (Dec, Beijing).
- 2018** University of New South Wales (Sydney, April), USF (April), Bank of Canada (April), ABFER 6th Annual Conference (Singapore, May), Econometric Society China Meeting (Shanghai, June), China International Conference in Macroeconomics (Beijing, June), China Development Research Center (Beijing, June), China National Bureau of Statistics (Beijing, June), FRBSF (July), IMF-Atlanta Fed 3rd China Workshop (Sep), People’s Bank of China (Beijing, Oct), Peking University (Beijing, Oct), West Coast Workshop in International Finance (Santa Cruz, Nov), Academia Sinica (Taipei, December)
- 2017** Cheung Kong Graduate School of Business (Beijing, Feb 24), Fudan University (Shanghai, May 31), Econometric Society Asia Meeting (Hong Kong, June 3-5), International Macro-Finance Conference (Chengdu, June 20-21), Bank of Canada-University of Toronto Conference on Chinese Economy (Toronto, Sep 29-30), UC Santa Cruz (Oct 3)
- 2016** IMF research seminar (April 6), IMF 1st Workshop on China’s Economy (Washington, DC, April 28-29), National University of Singapore Institute of Real Estate Studies 7th International Symposium (Singapore, May 19-20), Macroeconomics Conference at HKUST (Hong Kong, June 21-22), AFR Summer Institute of Economics and Finance (Hang Zhou, June 25-26), Conference on Business Cycles, Financial markets, and Monetary Policy with Special Applications to China (Beijing, August 30-31), Arizona State University (September 16), George Washington University annual conference on China (November 11), Central Bank of Chile conference on China (December 15)
- 2015** USC Conference on China Financial Sector (Feb), Wash U and St Louis Fed HULM conference (Apr), Bank of Canada and U of Toronto conference on Chinese economy (Apr), LAFE CYCLE conference (May), SED (June), NBER Summer Institute (July), Vienna Macro Workshop (Oct), IMF (Nov), UC Davis (Nov), CUHK (Dec)