
AARON SMITH

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Employment

Daniel Barton DeLoach Endowed Chair, 2019-present, Department of Agricultural and Resource Economics, UC Davis.

Professor, 2014-present, Department of Agricultural and Resource Economics, UC Davis.

Associate Professor, 2007-2014, Department of Agricultural and Resource Economics, UC Davis.

Assistant Professor, 2001-2007, Department of Agricultural and Resource Economics, UC Davis.

Visiting Assistant Professor, 2000-2001, Department of Economics, UC Santa Barbara.

Visiting Assistant Professor, 1999-2000, Department of Economics, University of Virginia.

Teaching Assistant Consultant, 1997-98, Center for Teaching Development, UCSD.

Lecturer, 1994-95, 1996, 2000, University of Canterbury, Christchurch, New Zealand.

Education

Ph.D., Department of Economics, University of California, San Diego, June 1999.

Dissertation title: **"Stochastic Permanent Breaks"**

Chair of dissertation committee: Robert Engle.

B.S. (first class honors), University of Canterbury, Christchurch, New Zealand, May 1994.

Publications

1. "Productivity Spillovers from Pollution Reduction: Reducing Coal Use Increases Crop Yields" (with Konstantinos Metaxoglou), *American Journal of Agricultural Economics*, forthcoming 2019.
2. "Do Speculators Drive Commodity Prices Away From Supply and Demand Fundamentals?" (with Raymond P.H. Fishe), *Journal of Commodity Markets*, 15, 2018.
3. "Financialization and the Returns to Commodity Investments," (with Scott Main, Scott Irwin, and Dwight Sanders), *Journal of Commodity Markets*, 10: 22-28, 2018.
4. "A Century of U.S. Farm Productivity Growth: A Surge Then a Slowdown," (with Matthew A. Andersen, Julian M. Alston, and Philip G. Pardey), *American Journal of Agricultural Economics*, 100(4): 1072-1090, 2018. **Honorable Mention. Outstanding American Journal of Agricultural Economics Article Award, AAEA, 2019.**
5. "Policy Shocks and Market-Based Regulations: Evidence from the Renewable Fuel Standard," (with Gabriel E. Lade and C.-Y. Cynthia Lin Lawell), *American Journal of Agricultural Economics*, 100(3):707-731, 2018.

Publications (continued)

6. "Designing Climate Policy: Lessons from the Renewable Fuel Standard and the Blend Wall," (with Gabriel E. Lade and C.-Y. Cynthia Lin Lawell), *American Journal of Agricultural Economics*, 100(2):585-599, 2018.
7. "The Incentive to Overinvest in Energy Efficiency: Evidence From Hourly Smart-Meter Data," (with Kevin Novan), *Journal of the Association of Environmental and Resource Economists*, 5(3):577-605, 2018.
8. "Option-Implied Equity Premium Predictions via Entropic Tilting," (with Konstantinos Metaxoglou and Davide Pettenuzzo), *Journal of Financial Econometrics*, forthcoming 2018.
9. "Commodity Price Comovement and Financial Speculation: The Case of Cotton," (with Joseph Janzen and Colin Carter), *American Journal of Agricultural Economics*, 100(1): 264-285, 2018.
10. "The Effects of the Premium Subsidies in the U.S. Federal Crop Insurance Program on Crop Acreage," (with Jisang Yu and Daniel A. Sumner), *American Journal of Agricultural Economics*, 100(1): 91-114, 2018.
11. "Forecasting Stock Returns Using Option-Implied State Prices," (with Konstantinos Metaxoglou), *Journal of Financial Econometrics*, 15(3): 427-473, 2017.
12. "Commodity Storage and the Market Effects of Biofuel Policies," (with Colin Carter and Gordon Rausser), *American Journal of Agricultural Economics*, 99(4): 1027-1055, 2017. **Winner of Outstanding American Journal of Agricultural Economics Article Award, AAEA, 2018.**
13. "A Time Series Paradox: Unit Root Tests Perform Poorly When Data are Cointegrated," (with W. Robert Reed), *Economics Letters*, 151: 71-74, 2017.
14. "State Prices of Conditional Quantiles: New Evidence on Time-Varying Expected Returns," (with Konstantinos Metaxoglou), *Journal of Applied Econometrics*, 32(1):192-217, 2017.
15. "The Supplemental Nutrition Assistance Program, Energy Balance, and Weight Gain," (with Joanna Parks and Julian Alston), *Food Policy*, 61, 2016.
16. "Foreign Central Bank Activities in U.S. Futures Markets," (with Raymond P. H. Fishe and Michel A. Robe), *Journal of Futures Markets*, 36(1):3-29, 2016.
17. "Grouped Coefficients to Reduce Bias in Heterogeneous Dynamic Panel Models with Small T," (with Nathan Hendricks), *Applied Economics*, 47(40): 4335-4348, 2015.
18. "Futures Market Failure?" (with Scott Irwin and Philip Garcia), *American Journal of Agricultural Economics*, 97(1):40-64, 2015. **Winner of Quality of Research Discovery Award, AAEA, 2016.**
19. "Futures Prices in Supply Analysis: Are Instrumental Variables Necessary?" (with Nathan Hendricks and Joseph Janzen), *American Journal of Agricultural Economics*, 97(1):22-39, 2015.
20. "Ethanol Production and Gasoline Prices: A Spurious Correlation," (with Christopher Knittel), *Energy Journal*, 36(1), 2015.
21. "The Environmental Effects of Crop Price Increases: Nitrogen Losses from the U.S. Corn Belt," (with Nathan Hendricks, Sumathy Sinnathamby, Kyle Douglas-Mankin, Daniel Sumner, and Dietrich Earnhart), *Journal of Environmental Economics and Management*, 68(3): 507-526, 2014.
22. "Weather Shocks and Inter-Hemispheric Supply Responses: Implications for Climate Change Effects on Global Food Markets," (with Travis Lybbert and Dan Sumner), *Climate Change Economics*, 5(4), 2014.

Publications (continued)

23. "Crop Supply Dynamics and the Illusion of Partial Adjustment," (with Nathan Hendricks and Daniel Sumner), *American Journal of Agricultural Economics*, 96(5): 1469-1491, 2014. **Winner of Outstanding American Journal of Agricultural Economics Article Award, AAEA, 2015.**
24. "Hedging and Speculative Trading in Agricultural Futures Markets," (with Raymond P.H. Fische and Joseph Janzen), *American Journal of Agricultural Economics*, 96(2): 542-556, 2014. **Winner of Quality of Research Discovery Award, EAAE, 2015.**
25. "Cars on Crutches: How Much Abatement Do Smog Check Repairs Actually Provide?" (with Pierre Mérel, Jeffrey Williams, and Emily Wimberger), *Journal of Environmental Economics and Management*, 67(3): 371-395, 2014.
26. "Deconstructing Wheat Price Spikes: A Model of Supply and Demand, Financial Speculation, and Commodity Price Comovement," (with Michael K. Adjemian, Colin A. Carter, and Joseph P. Janzen), *USDA ERS Economic Research Report*, ERR-165, April 2014.
27. "The Nonlinear Multidimensional Relationship Between Stock Returns and the Macroeconomy," (with Pian Chen), *Applied Economics*, 45(35): 4985-4999, 2013
28. "Non-convergence in Domestic Commodity Futures Markets: Causes, Consequences and Remedies," (with Michael K. Adjemian, Phil Garcia, and Scott H. Irwin), *USDA Economic Information Bulletin*, EIB-115, 2013.
29. "Using USDA Forecasts to Estimate the Price Flexibility of Demand for Agricultural Commodities," (with Michael Adjemian), *American Journal of Agricultural Economics*, 94(4): 978-995, 2012.
30. "Identifying Informed Traders in Futures Markets," (with Raymond P.H. Fische), *Journal of Financial Markets*, 15(3): 329-359, 2012.
31. "Markov Breaks in Regression Models," *Journal of Time Series Econometrics*, 4(1): Article 3, 2012.
32. "Does the Red Flag Rule Induce Risk Taking in Sprint Finishes? Moral Hazard Crashes in Cycling's Grand Tours" (with Travis Lybbert, Troy Lybbert, and Scott Warren), *Journal of Sports Economics*, 13(6): 603-618, 2012.
33. "Immigration and the US Farm Labour Supply," (with J. Edward Taylor, Stephen R. Boucher, Peri L. Fletcher, and Antonio Yúnez-Naude), *Migration Letters*, 9(1): 87-99, 2012.
34. "Volatility Dynamics and Seasonality in Energy Prices: Implications for Crack-Spread Price Risk," (with Hiroaki Suenaga), *Energy Journal*, 32(3): 27-58, 2011.
35. "Commodity Booms and Busts," (with Colin Carter and Gordon Rausser), *Annual Review of Resource Economics*, 3: 87-118, 2011.
36. "Volatility Dynamics of NYMEX Natural Gas Futures Prices," (with Hiroaki Suenaga and Jeffrey Williams), *Journal of Futures Markets*, 28(4): 1-26, 2008.
37. "Efficiency of the California Electricity Reserves Market," (with Konstantinos Metaxoglou), *Journal of Applied Econometrics*, 22(6): 1127-1144, 2007.
38. "Estimating the Market Effect of a Food Scare: The Case of Genetically Modified StarLink Corn," (with Colin Carter), *Review of Economics and Statistics*, 2007, 89(3): 522-533. **Winner of Quality of Research Discovery Award, AAEA, 2008.**
39. "Maximum Likelihood Estimation of VARMA Models Using a State Space EM Algorithm," (with Konstantinos Metaxoglou), *Journal of Time Series Analysis*, 28(5): 666-685, 2007.

Publications (continued)

40. "Effects of Milk Marketing Order Regulation on the Share of Fluid-grade Milk in the United States," (with Joseph Balagtas and Daniel Sumner), *American Journal of Agricultural Economics*, 89(4): 839-851, 2007.
41. "Impacts of Policy Reforms on the Supply of Mexican Labor to U.S. Farms: New Evidence from Mexico," (with Steve Boucher, J. Edward Taylor, and Antonio Yunez-Naude), *Review of Agricultural Economics*, 29(1):4-16, 2007.
42. "Markov-Switching Model Selection Using Kullback-Leibler Divergence," (with Prasad Naik and Chih-Ling Tsai), *Journal of Econometrics*, 134(2): 553-577, 2006.
43. "Partially Overlapping Time Series: A New Model for Volatility Dynamics in Commodity Futures," *Journal of Applied Econometrics*, 20(3): 405-422, 2005.
44. "Level Shifts and the Illusion of Long Memory in Economic Time Series," *Journal of Business and Economic Statistics*, 23(3): 321-335, 2005.
45. "Forecasting in the Presence of Level Shifts," *Journal of Forecasting*, 24(8):557-574, 2005.
46. "Computer and Internet Use by Great Plains Farmers," (with Catherine Morrison Paul, Richard Goe, and Martin Kenney), *Journal of Agricultural and Resource Economics*, 29(3): 481-500, 2004.
47. "Stochastic Permanent Breaks" (with Robert Engle), *Review of Economics and Statistics*, 81(4): 553-574, 1999.

Books

1. *Essentials of Applied Econometrics*, (with J. Edward Taylor). University of California Press, 2016.

Book Chapters

1. "High Frequency Trading of Commodities," (with Raymond P.H. Fishe) in *Commodities: Markets, Performance, and Strategies*, Oxford University Press, 2018.
2. "Does speculation cause high food prices?" Comment on "Bubbles, Food Prices, and Speculation: Evidence from the CFTC's Daily Large Trader Data Files" by N.M. Aulerich, S.H. Irwin, and P. Garcia, in *The Economics of Food Price Volatility*, University of Chicago Press, 2014.

Outreach and Policy Articles

1. "Will Battle Between 'Big Corn' And 'Big Oil' Stall Next Generation Biofuels?" (with Vince Smith), *Investor's Business Daily*, May 2018.
2. "Time to reform renewable fuel policies for the public interest," (with Vince Smith), *The Hill*, Dec 2017.
3. "Biofuels, the Renewable Fuel Standard, and the Farm Bill," *American Enterprise Institute*, Dec 2017.
4. "Biofuel Policies: Robbing Peter to Pay Paul," *Agricultural and Resource Economics Update*, 19(3), 2016.
5. "Biofuels Policy in Limbo," *Agricultural and Resource Economics Update*, 18(2), 2014.
6. "Solving the Commodity Markets' Non-Convergence Puzzle," (with Michael K. Adjemian, Phil Garcia, and Scott H. Irwin), *Amber Waves*, August 2013. **Winner of Quality of Communication Award, AAEA, 2014.**

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7. "Do Gasoline Prices Account for Ethanol's Lower Energy Content?" (with Firas Abu-Sneneh and Colin Carter), *Agricultural and Resource Economics Update*, 16(2), 2012.
 8. "Comment on Request for a Waiver of the Renewable Fuels Standard," (with Firas Abu-Sneneh and Colin Carter), Comment to EPA on request for a waiver, under section 211(o)(7) of the Clean Air Act, of the renewable fuel standard volumes. Docket ID: EPA-HQ-OAR-2012-0632
 9. "Don't Blame It on the Rain: The Ethanol Mandate Is a Bad Idea in Any Year," (with Christopher Knittel), *Huffington Post*, 8/27/12.
 10. "Giving an Inch and Keeping a Mile: Why the Corn Lobby Let the Ethanol Tax Credit Expire," *Agricultural and Resource Economics Update*, 15(5), 2012.
 11. "Children of the Corn: The Renewable Fuels Disaster," *The American*, January 4, 2012.
 12. "The Food Price Boom and Bust," (with Colin Carter and Gordon Rausser), *Agricultural and Resource Economics Update*, 12(2), 2008.
 13. "What is the Price of Oil?" (with Joeri de Wit), *Agricultural and Resource Economics Update*, 11(5), 2008.
 14. "Commodity Futures: Exploring Price Determination and Volatility," *GARP Risk Review*, March/April, 2008.
 15. "Does the Internet Increase Farm Profits?" (with Catherine Morrison Paul), *Agricultural and Resource Economics Update*, 9(2), 2005.
 16. "New Hedging Techniques to Reduce Cotton Price Risk," *Agricultural and Resource Economics Update*, 8(1), 2004.

Working Papers

1. "Residential Building Codes Do Save Energy: Evidence From Hourly Smart-Meter Data," (with Kevin Novan and Tianxia Zhou), June 2018, *submitted*.
2. "Causality in Structural Vector Autoregressions: Science or Sorcery?" (with Dalia Ghanem), April 2019, *submitted*.
3. Food vs. Fuel? Impacts of Petroleum Shipments on Agricultural Prices (with James Bushnell and Jonathan Hughes), NBER WP 23924, June 2018, *submitted*.
4. "What Went Wrong? The Puzzle of Disappointing Commodity ETF Returns," (with Scott Main, Scott Irwin, and Dwight Sanders), June 2018, *submitted*.
5. "Effects of the Renewable Fuel Standard on Corn, Soybean and Wheat Prices," November 2018
6. "RIN Pass-Through at Gasoline Terminals," (with Sebastien Pouliot and James H. Stock), February 2017.
7. "Prospectus Words, Parts of Speech, and Uncertainty in IPO Pricing," (with Raymond P. H. Fische and David North), June 2015.
8. "Quantifying Obesity in Economic Research: How Misleading is the Body Mass Index?" (with Joanna Parks and Julian Alston), January 2014.

Activity

Associate Editor of American Journal of Agricultural Economics, 2009-2011.

Contractor, Commodity Futures Trading Commission, Office of the Chief Economist, 2009-2013.

Program Chair and Local Organizer, NBER-NSF Time Series Conference, September 2009.

Referee for American Economic Review, American Economic Journal: Economic Policy, Review of Economics and Statistics, Journal of Public Economics, Journal of Economic Surveys, Journal of Business and Economic Statistics, Journal of Applied Econometrics, Journal of Econometrics, Econometric Theory, Journal of Computational Statistics and Data Analysis, Journal of Economic Dynamics and Control, Journal of Time Series Analysis, Econometric Reviews, Journal of Forecasting, International Journal of Forecasting, Econometrics Journal, Journal of Multivariate Analysis, Journal of Finance, Journal of Futures Markets, Journal of Financial Econometrics, Journal of Empirical Finance, Journal of International Money and Finance, Journal of Behavioral and Experimental Finance, Economics Letters, Empirical Economics, Applied Economics, Journal of Productivity Analysis, Review of Development Economics, Eastern Economic Journal, American Journal of Agricultural Economics, Review of Agricultural Economics, Journal of Agricultural and Resource Economics, Journal of Agricultural Economics, Canadian Journal of Agricultural Economics, Agricultural Economics, Applied Economic Perspectives and Policy, Giannini Foundation Monograph Series, Journal of the Association of Environmental and Resource Economists, Journal of Environmental Economics and Management, Energy Journal, Energy Economics, Marine Resource Economics, National Science Foundation, National Institute of Food and Agriculture.

Grants

UC Davis Institute for Transportation Studies, 2018-19

National Wildlife Federation, 2017-18

USDA NIFA, 2016-18

Energy Foundation, 2014-15

Resources for the Future, 2014

USDA ERS, co-operative agreements, 2010-11, 2011-13.

USDA Office of the Chief Economist, co-operative agreement, 2010-11.

UC Center for Energy and Environmental Economics, 2010.

Giannini Foundation Minigrants, 02-03, 3-04, 4-05, 06-07, 09-10, 12-13, 13-14, 14-15, 15-16, 18-19.

Projects in Econometric Analysis Fellowship, UCSD, 1997-98.

Awards

Outstanding American Journal of Agricultural Economics Article Award, Honorable Mention, 2019

Outstanding American Journal of Agricultural Economics Article Award, 2018

Quality of Research Discovery Award, American Agricultural Economics Association, 2016

Erskine Fellow, University of Canterbury, February-March 2016

Outstanding American Journal of Agricultural Economics Article Award, 2015

Quality of Research Discovery Award, European Association of Agricultural Economists, 2014

Quality of Communication Award, Agricultural and Applied Economics Association, 2014

Quality of Research Discovery Award, American Agricultural Economics Association, 2008

AAREA/AAEA Young Professional's Exchange Travel Award: Heading South, 2005.

Alfred P. Sloan Doctoral Dissertation Fellowship 1998-99.

Seminar and Conference Presentations

Purdue University, Department of Agricultural Economics, April 2019

2018 Agricultural Commodity Futures Conference, Kansas City, April 2018

American Enterprise Institute, December 2017
University of Maryland, Dept of Agricultural and Resource Economics, February 2017
Cornell University, October 2016
American Enterprise Institute, May 2016
University of Illinois, Urbana-Champaign, Dept of Agricultural and Consumer Econ., April 2016
Lincoln University, Christchurch, New Zealand, March 2016
Ministry of Business, Innovation & Employment, Wellington, New Zealand, March 2016
University of Otago, Department of Economics, March 2016
University of Canterbury, Department of Economics and Finance, February 2016
Motu, Wellington, New Zealand, February 2016
Resources for the Future Forum on Outcomes of Federal Environmental Regulations, October 2015
USDA Economic Research Service, October 2015
AAEA Annual Meeting, San Francisco, July 2015
NBER Summer Institute, July 2015
American Enterprise Institute, February 2015
Oklahoma State University, Department of Agricultural Economics, November 2014
Federal Reserve Bank of St Louis, Econometrics Workshop, November 2014
Colorado School of Mines, School of Economics and Business, October 2014
Society for Financial Econometrics Annual Conference, Toronto, June 2014
AAEA Annual Meeting, Washington DC, August 2013
NBER/NSF Time Series Meeting, Texas A&M University, October 2012
California Econometrics Conference, UC Davis, September 2012
Economics of Food Price Volatility Conference, Seattle, August 2012
UC Davis, Department of Economics, May 2012
Berkeley Bioeconomy Conference, UC Berkeley, March 2012
Iowa State University, Department of Economics, September 2011
Chicago Mercantile Exchange, Chicago, September 2011
CFTC Conference on Commodity Markets, Washington DC, August 2011
USDA Office of the Chief Economist, August 2011
Commodities, the Economy and Money Conference, Calgary June 2011
Federal Reserve Bank of St Louis, Applied Econometrics Workshop, April 2011
University of Illinois, Urbana-Champaign, Dept of Agricultural and Consumer Econ., January 2011
University of Maryland, Dept of Agricultural and Resource Economics, November 2010
NBER/NSF Time Series Meeting, Duke University, October 2010
UC Center for Energy and Environmental Economics, June 2010
UC Davis, Graduate School of Management, June 2010
UC Davis, Department of Economics, May 2010
Commodity Futures Trading Commission, May 2010
University of Illinois, Urbana-Champaign, Dept of Agricultural and Consumer Econ., April 2010
UC Riverside, Department of Economics, February 2010
CFTC Round Table, Washington DC, June 2009
CIREQ time series conference, Montreal, May 2009
Commodity Futures Trading Commission, March 2009
UC Berkeley, Department of Agricultural and Resource Economics, March 2009
University of Illinois, Urbana-Champaign, Dept of Agricultural and Consumer Econ., Oct 2008
Giannini Foundation Conference, October 2008
NBER/NSF Time Series Meeting, Aarhus, Denmark, September 2008.
UC Davis, Department of Statistics, February 2008.
NBER/NSF Time Series Meeting, Iowa City, September 2007.
Federal Reserve Bank of St Louis, Econometrics Workshop, August 2007.

Stanford Institute for Theoretical Economics, Summer Workshop, June 2007.
North Carolina State University, Departments of Economics and ARE, November 2006.
Purdue University, Department of Agricultural Economics, October 2006.
Federal Reserve Bank of San Francisco, January 2001.
UC Santa Barbara, Department of Economics, January 2001.
New Zealand Econometrics Study Group, Dunedin, New Zealand, August 2000
Society for Nonlinear Dynamics and Econometrics, Annual Symposium, Atlanta, March 2000.
Arizona State University, Department of Economics, October 1999.
University of Auckland, Department of Economics, August 1998.
University of Canterbury, Department of Economics, August 1998.
University of Otago, Department of Economics, August 1998.
UC Riverside Econometrics Workshop, October 1998.
Econometrics and Statistics Summer Symposium, UC Berkeley, August 1998.
NBER Summer Institute, Cambridge MA, July 1998.
Econometric Society North American Summer Meeting, Montreal, June 1998.
Econometric Society North American Winter Meeting, Chicago IL, January 1998.
NBER/NSF Time Series Meeting, Duke University, October 1997.
UCSD Econometrics Workshop, October 1997.
UC Riverside, Department of Economics, October 2006.
UC Davis, Department of Economics, October 2006.
International Association of Agricultural Economists, Gold Coast, Australia, August 2006
New Zealand Econometrics Study Group, Dunedin, New Zealand, August 2006
University of Victoria, Department of Economics, British Columbia, October 2005.
Marketing Dynamics Conference, Sacramento, September 2005.
AARES Annual Meeting, Coffs Harbour, Australia, February 2005.
Commodity Futures Trading Commission, November 2004.
North Carolina State University, Dept. of Ag. and Resource Economics, November 2004.
NBER/NSF Time Series Meeting, Dallas, September 2004.
AAEA Annual Meeting, Denver, August 2004.
UC Davis, Department of Economics, December 2003.
UC Berkeley, Department of Agricultural and Resource Economics, November 2003.
NBER/NSF Time Series Meeting, Chicago, September 2003.
Joint Statistical Meetings, San Francisco, August 2003.
American Agricultural Economics Association, Annual Meeting, Montreal, July 2003.
Conference on Agricultural Policy Reform and the WTO, Capri, Italy, June 2003.
Econometric Society Summer Meetings, UCLA, July 2002
UC Davis, Department of Economics, April 2002.
UC Davis, Department of Agricultural and Resource Economics, January 2001.