

CHRISTOPHER ROLAND KNITTEL

Sloan School of Management
Massachusetts Institute of Technology
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<http://knittel.world>

CURRENT APPOINTMENTS:

2016-present, George P. Shultz Professor, Massachusetts Institute of Technology
2011-present, Professor of Applied Economics, Sloan School of Management, MIT
2012-present, Director, Center for Energy and Environmental Policy Research, MIT
2017-present, Co-Director, Electric Power Systems Low Carbon Energy Center, MIT
2013-present, Faculty Co-Director, The E2e Project, MIT, UCB, University of Chicago
2013-present, Associate Scholar, Harvard Environmental Economics Program
2007-present, Research Associate, National Bureau of Economic Research
Groups: Environmental Economics and Energy, Industrial Organization, and Productivity
2007-present, Associate Editor, *The Journal of Energy Markets*
2013-present, Associate Editor, *The Journal of Transportation Economics and Policy*

PREVIOUS APPOINTMENTS:

2011-2016, William Barton Rogers Professor of Energy Economics, Sloan School of Management, Massachusetts Institute of Technology
2015-2018, Group Head, Applied Economics Group, Sloan School of Management
2014-2018, Co-Editor, *Journal of Public Economics*
2007-2013, Associate Editor, *American Economic Journal – Economic Policy*
2006-2012, Associate Editor, *The Journal of Industrial Economics*
2006-2011, Associate Professor of Economics, University of California, Davis
2003-2011, Visiting Research Fellow, University of California Energy Institute
2005-2011, Faculty Affiliate, Institute of Transportation Studies, UC Davis
2006-2011, Strategy and Policy Thread Leader for STEPS
2008-2010, Member, Economic and Allocation Advisory Committee for AB32's cap-and-trade program, State of California
2008-2011, Chancellor's Fellow, University of California, Davis
2002-2006, Assistant Professor of Economics, University of California, Davis
2004-2007, Faculty Research Fellow, National Bureau of Economic Research.
Groups: Environmental Economics and Energy, Industrial Organization, and Productivity
1999-2002, Assistant Professor of Finance and Economics, School of Management, Boston University
1996-1999, Research Assistant, University of California Energy Institute
1994-1996, Teaching Assistant, University of California, Davis

EDUCATION:

Ph.D., University of California, Berkeley, 1999 (Economics)

M.A., University of California, Davis, 1996 (Economics)

B.A., California State University, Stanislaus, *summa cum laude*, 1994 (Economics and Political Science)

PUBLICATIONS:

- Burger, Scott P., Christopher R. Knittel, Ignacio J. Perez-Arriaga, Ian Schneider, and Frederik vom Scheidt. “The Efficiency and Distributional Effects of Alternative Residential Electricity Rate Designs.” Forthcoming in *The Energy Journal*.
- Jacobsen, Mark, Christopher R. Knittel, James Sallee, and Arthur van Benthem. “Sufficient Statistics for Imperfect Externality-Correcting Policies.” Forthcoming in *Journal of Political Economy*.
- Knittel, Christopher R., Konstantinos Metaxoglou, and Andre Trindade. “Natural Gas Prices and Coal Displacement: Evidence from Electricity Markets.” Forthcoming in *International Journal of Industrial Organization*.
- Hashmat Khan, Christopher R. Knittel, Konstantinos Metaxoglou, and Maya Papineau. “How do Carbon Emissions Respond to Business-Cycle Shocks?” Forthcoming in *The Journal of Macroeconomics*.
- Bartik, Alexander W., Janet Currie, Michael Greenstone, Christopher R. Knittel. “The Local Economic and Welfare Consequences of Hydraulic Fracturing.” Forthcoming *The American Economic Journal: Applied Economics*.
- Allcott, Hunt and Christopher R. Knittel. “Are Consumers Poorly Informed About Fuel Economy? Evidence from Two Experiments.” *The American Economic Journal: Economic Policy*, 11(1), February 2019, pp. 1-37.
- Knittel, Christopher R. and Ryan Sandler. “The Welfare Impact of Indirect Pigouvian Taxation: Evidence from Transportation.” *The American Economic Journal: Economic Policy*, 10(3), November 2018, pp. 211-242.
- Knittel, Christopher R., Ben Meiselman, and James Stock. “The Pass-Through of RIN Prices to Wholesale and Retail Fuels under the Renewable Fuel Standard,” *Journal of the Association of Environmental and Resource Economists*, 4(4), December 2017, pp. 1081-1119.
- Blonigen, Bruce A., Knittel, Christopher R., and Anson Soderbery. “Keeping it Fresh: Strategic Product Redesigns and Welfare.” *International Journal of Industrial Organization*, 53, July 2017, pp. 170-214.
- Bushnell, James, Stephen Holland, Jonathan Hughes, Christopher R. Knittel. “Strategic Policy Choice in State-Level Regulation: The EPA’s Clean Power Plan.” *The American Economic Journal: Economic Policy*, 9(2), May 2017, pp. 57-90.
- Covert, Thomas, Michael Greenstone, and Christopher R. Knittel. “Will We Ever Stop Using Fossil Fuels?” *Journal of Economic Perspectives*, 30(1), Winter 2016, pp. 117-138.
- Knittel, Christopher R., Konstantinos Metaxoglou, and Andre Trindade. “Are we fracked? The impact of falling gas prices and the implications for coal-to-gas switching and carbon emissions.” *Oxford Review of Economic Policy*, 32(2), Summer 2016, pp. 241-259.
- Busse, Meghan, Christopher R. Knittel, Jorge Silva-Risso, and Florian Zettelmeyer. “Who is Exposed to Gas Prices? How Gasoline Prices Affect Automobile Manufacturers and

- Dealerships.” *Quantitative Marketing and Economics*, 14(1), March 2016, pp. 41-95.
- Knittel, Christopher R., Konstantinos Metaxoglou. “Working with Data: Two Empiricists’ Experience,” *Journal of Econometric Methods*, 2016.
 - Knittel, Christopher R. and Robert S. Pindyck. “The Simple Economics of Commodity Price Speculation.” *The American Economic Journal: Macroeconomics*, 8(2), April 2016, pp. 85-110.
 - Christopher R. Knittel, Douglas L. Miller and Nicholas J. Sanders. “Caution Drivers! Children Present: Traffic, pollution and infant health.” *The Review of Economics and Statistics*, 98(2), May 2016, pp. 350-366.
 - Holland, Stephen P., Jonathan E. Hughes, Christopher R. Knittel, and Nathan C. Parker. “Some Inconvenient Truths About Climate Change Policy: The Distributional Impacts of Transportation Policies.” *Review of Economics and Statistics*, 97(5), December 2015, pp. 1052-1069.
 - Allcott, Hunt, Christopher R. Knittel, and Dmitry Taubinsky. “Tagging and Targeting of Energy Efficiency Subsidies.” *The American Economic Review, Papers & Proceedings*, 105(3), May 2015.
 - Holland, Stephen P., Jonathan E. Hughes, Christopher R. Knittel, and Nathan C. Parker. “Unintended Consequences of Transportation Carbon Policies: Land-Use, Emission, and Innovation,” joint with Stephen P. Holland (UNC), Jonathan E. Hughes (Colorado), and Nathan Parker (UC Davis--ITS). *The Energy Journal*, 36(3).
 - Knittel, Christopher R. and Aaron Smith. “Ethanol Production and Gasoline Prices: A Spurious Correlation” *The Energy Journal*, 36(1).
 - Fowlie, Meredith, et. al. “An economic perspective on the EPA’s Clean Power Plan.” *Science*, 2014; 346 (6211): 815 DOI: [10.1126/science.1261349](https://doi.org/10.1126/science.1261349).
 - Knittel, Christopher R. “The Origins of US Transportation Policy: Was There Ever Support for Gasoline Taxes?” *Tax Policy and the Economy*, 2014, pp 97-131.
 - Knittel, Christopher R. and Konstantinos Metaxoglou. “Estimation of Random Coefficient Demand Models: Challenges, Difficulties and Warnings.” *The Review of Economics and Statistics*, 96(1), March 2014, pp. 34-59.
 - Knittel, Christopher R. “Transportation Fuels Policy Since the OPEC Embargo: Paved with Good Intentions.” *The American Economic Review, Papers & Proceedings*, 103(3), May 2013.
 - Knittel, Christopher R. and Victor Stango. “Celebrity Endorsements, Firm Value and Reputation Risk: Evidence from the Tiger Woods Scandal.” *Management Science*, 60(1), January 2014, pp. 21-37.
 - Busse, Meghan, Christopher R. Knittel and Florian Zettelmeyer. “Are Consumers Myopic? Evidence from New and Used Car Purchases.” *The American Economic Review*, 103(1), February 2013, pp. 220-256.
 - Knittel, Christopher R. “Reducing Petroleum Use from Transportation.” *The Journal of Economic Perspectives*, 26(1), Winter 2012, 93-118.
 - Fowlie, Meredith, Christopher R. Knittel and Catherine Wolfram. “Sacred Cars: Optimal Regulation of Stationary and Non-stationary Pollution Sources.” *The American Economic Journal: Economic Policy*, 4(1), February 2012, 98-126.
 - Knittel, Christopher R. “Automobiles on Steroids: Product Attribute Trade-offs and Technological Progress in the Automobile Sector.” *The American Economic Review*, 101(7), 2011, pp. 3368-3399.

- Knittel, Christopher R. and Konstantinos Metaxoglou. "Challenges in Merger Simulation Analysis," *The American Economic Review, Papers & Proceedings*, 101(3), May 2011, pp. 56-59.
- Knittel, Christopher R. and Victor Stango. "Strategic Incompatibility in ATMs." *The Journal of Banking and Finance*, 35(10), October 2011, pp. 2627-2636.
- Knittel, Christopher R. and Jason J. Lepore. "Tacit Collusion in the Presence of Cyclical Demand and Endogenous Capacity Levels." *The International Journal of Industrial Organization*, 28(2), March 2010, pp. 131-144.
- Stewart, Scott, John J. Neumann, Christopher R. Knittel, and Jeffrey Heisler. "Absence of Value: An Analysis of Investment Allocation Decisions by Institutional Plan Sponsors," *Financial Analyst Journal*, 65(6), November/December 2009. *Winner of the Graham and Dodd Award of Excellence.*
- Knittel, Christopher R. and Victor Stango. "How Does Incompatibility Affect Prices?: Evidence from ATMs," *The Journal of Industrial Economics*, LVII(3), September 2009, pp. 557-582.
- Holland, Stephen P., Jonathan E. Hughes and Christopher R. Knittel. "Greenhouse Gas Reductions under Low Carbon Fuel Standards?," *The American Economic Journal: Economic Policy*, 1(1), February 2009, pp. 106-146.
- Borenstein, Severin, James Bushnell, Christopher R. Knittel and Catherine Wolfram. "Trading Inefficiencies in California's Electricity Markets," *The Journal of Industrial Economics*, LVI(2), June 2008, pp. 347-378.
- Feenstra, Robert and Christopher R. Knittel. "Re-Assessing the Quality Adjustment to Computer Prices: Do U.S. Procedures Overstate the Gains?," *Price Index Concepts and Measurement*, NBER and the Chicago Press.
- Knittel, Christopher R. and Konstantinos Metaxoglou. "Diagnosing Unilateral Market Power in Electricity Reserves Market," *The Journal of Energy Markets*, 1(1), Spring 2008.
- Knittel, Christopher R. and Victor Stango. "Incompatibility, Product Attributes and Consumer Welfare: Evidence from ATMs," *The BE Journal of Economic Analysis & Policy, Advances*, 8(1), January 2008. Available at: <http://www.bepress.com/bejeap/vol8/iss1/art1>.
- Hughes, Jonathan E., Christopher R. Knittel and Daniel Sperling. "Evidence of a Shift in the Short-Run Price Elasticity of Gasoline." *The Energy Journal*, 29(1), January 2008.
- Heisler, Jeffrey, Christopher R. Knittel, John J. Neumann and Scott Stewart. "Why Do Institutional Plan Sponsors Hire and Fire their Investment Managers?" *Best Paper Award for the 31st NBEA Conference. The Journal of Business and Economics Studies*, 13(1), Spring 2007, pp. 88-116.
- Kim, Dae-Wook and Christopher R. Knittel "Biases in Static Oligopoly Models? Evidence from the California Electricity Market," *The Journal of Industrial Economics*, LIV(4), December 2006, pp. 451-470.
- Knittel, Christopher R. "The Adoption of State Electricity Regulation: The Role of Interest Groups," *The Journal of Industrial Economics*, LIV(2), June 2006.
- Knittel, Christopher R. and Michael R. Roberts. "Financial Models of Deregulated Electricity Prices: An Application to the California Market," *Energy Economics*, 27(5), September 2005, pp. 791-817.
- Knittel, Christopher R. "Regulatory Restructuring and Incumbent Price Dynamics: The Case of Local Telephone Markets," *Review of Economics and Statistics*, 86(2), May 2004, pp. 614-625.

- Knittel, Christopher R. and Victor Stango. “Price Ceilings as Focal Points for Tacit Collusion: Evidence from the Credit Card Market,” *The American Economic Review*, 93(5), December 2003, pp. 1703-1729.
- Knittel, Christopher R. “Market Structure and the Pricing of Electricity and Natural Gas,” *The Journal of Industrial Economics*, LI(2), June 2003, pp. 167-191.
- Knittel, Christopher R. “Alternative Regulatory Methods and Firm Efficiency: Stochastic Frontier Evidence the US Electricity Industry,” *Review of Economics and Statistics*, 84(3), August 2002, pp. 530-540.
- Borenstein, Severin, James Bushnell, and Christopher R. Knittel. “Market Power in Electricity Markets: Beyond Concentration Measures,” *The Energy Journal*, 20(4), October 1999, pp. 65-88.
- Knittel, Christopher R. “Long Distance Rates: Search Costs, Switching Costs, and Market Power,” *Review of Industrial Organization*, 12(4), August 1997, pp. 519-536.

WORKING PAPERS:

- Knittel, Christopher R. and Elizabeth Murphy. “Generational Trends in Vehicle Ownership and Use: Are Millennials Any Different?” Revisions requested from *The Energy Journal*.
- Busse, Meghan, Christopher R. Knittel and Florian Zettelmeyer. “Did ‘Cash for Clunkers’ Deliver? The Consumer Effects of the Car Allowance Rebate System.” Revisions requested from *The American Economic Journal: Economic Policy*.
- Ge, Yanbo, Christopher R. Knittel, Don MacKenzie, and Stephen Zoepf. “Racial and Gender Discrimination in Transportation Network Companies.” Second set of revisions requested from *Journal of Public Economics*.
- Burlig, Fiona, Christopher R. Knittel, David Rapson, Mar Reguant, Catherine Wolfram. “Machine Learning from Schools about Energy Efficiency.” In submission.
- Archsmith, James, Kenneth Gillingham, Christopher R. Knittel, and David Rapson. “Attribute Substitution in Household Vehicle Portfolios.” Revised and resubmitted to *The Rand Journal of Economics*.
- Chen, Chia-Wen, Wei-Min Hu, Christopher R. Knittel. “Subsidizing Fuel Efficient Cars: Evidence from China's Automobile Industry.” Revised and resubmitted to *The American Economic Journal: Economic Policy*.
- Busse, Meghan, Christopher R. Knittel and Florian Zettelmeyer. “Stranded Vehicles: The Incidence of Gasoline Taxes Through the Lens of Vehicle Values.”

AWARDS, HONORS, AND GRANTS:

- Graham and Dodd Award of Excellence, from *Financial Analyst Journal*, 2010.
- Tom Mayer Distinguished Teaching Award, 2010
- Chancellor’s Fellowship, UC Davis (one of five faculty members), 2008
- Barry D. McNutt Award for Excellence in Automotive Policy Analysis (with Jonathan Hughes and Dan Sperling), 2008
- National Science Foundation Grant (with Victor Stango), 2008-2010, \$240,000
- Chevron Bio-Fuel Research Grant, 2007-2008, \$127,000
- Chevron Bio-Fuel Research Grant, 2007-2008, \$77,000
- Chevron Bio-Fuel Research Grant (Co-PI), 2007-2009, \$370,000
- Woods Institute for the Environment Leadership Scholar Training, 2007
- Distinguished Paper, 2006 Academy of Finance
- University of California Energy Institute Research Grant, 2005-2006, \$50,000

- Best Paper Award for the 31st NBEA Conference
- ASUCD Excellence in Teaching Award, 2004
- University of California Energy Institute Research Grant, 2003
- Faculty Research Grant, UC Davis, 2002, 2003, 2004, 2005, 2006
- Institute of Governmental Affairs Junior Faculty Grant, 2002, 2003, 2004, 2005
- Junior Faculty Research Grant, Boston University, 2001
- Graduate Fellowship, University of California, Berkeley, 1997–1999
- Graduate Fellowship, University of California, Davis, 1994–1996
- Institute of Transportation Fellow, University of California, Davis, 1995–1996
- Student Commencement Speaker, California State University, Stanislaus, 1994

REFEREE SERVICES:

Agricultural Economics, American Economic Review, Bulletin of Economic Research, Census Bureau, Econometrica, Economic Inquiry, The Economic Journal, Economics Letters, Energy Economics, The Energy Journal, Energy Studies Review, European Economic Review, International Journal of Industrial Organization, International Journal of Power and Energy Systems, Journal of Banking and Finance, The Journal of Business, Journal of Business and Economic Statistics, Journal of Economic Behavior and Organization, Journal of Economic Education, Journal of Economics and Management Strategy, Journal of Futures Markets, Journal of Industrial Economics, Journal Institutional and Theoretical Economics, Journal of Law and Economics, Journal of Political Economy, Politics and Economics, Quarterly Journal of Economics, Rand Journal of Economics, Resource and Energy Economics, Review of Economic Studies, Review of Economics and Statistics, Review of Industrial Organization, Review of Network Economics, Southern Economic Journal, Socio-Economic Planning Sciences, Utilities Policy, University of California Energy Institute Grant Program, NSF Grant Program

REGULATORY FILINGS:

- Arons, S.M., A.R. Brandt, M.A. Delucchi, A. Eggert, A.E. Farrell, B.K. Haya, J. Hughes, B.M. Jenkins, A.D. Jones, D.M. Kammen, S.R. Kaffka, C.R. Knittel, D.M. Lemoine, E.W. Martin, M.W. Melaina, J.M. Ogden, R.J. Plevin, D. Sperling, B.T. Turner, R.B. Williams, C. Yang, 2007. “A Low-Carbon Fuel Standard for California, Part 1: Technical Analysis.” Available Online: <http://www.lcfs.ucdavis.edu>.
- Brandt, A.R., A.E. Farrell, B.K. Haya, J. Hughes, B.M. Jenkins, A.D. Jones, D.M. Kammen, C.R. Knittel, M.W. Melaina, M. O’Hare, R.J. Plevin, D. Sperling, 2007. “A Low-Carbon Fuel Standard for California, Part 2: Policy Analysis.” Available Online: <http://www.lcfs.ucdavis.edu>.
- Peer Review Comments on AB 1493, California Environmental Protection Agency Air Resource Board, September 2004.
- “Comments on the Use of Computer Models for Merger Analysis in the Electricity Industry,” (Joint with Severin Borenstein and James Bushnell), Federal Energy Regulatory Commission. Docket No. PL98-6-000, June 1998.
- “A Cournot-Nash Equilibrium Analysis of the New Jersey Electricity Market,” December 1997. (Joint with Severin Borenstein and James Bushnell). Filed with the New Jersey Public Utility Commission as testimony on the potential for market power in a deregulated Pennsylvania-Jersey-Maryland Power Pool.

CONSULTING:

- Expert Witness, Qualcomm, Inc., deposed

- Expert Witness, CBL Associates Properties, Inc., deposed
- Expert Witness, AVM Technologies, L.L.P., deposed
- Expert Witness, Department of Justice
- Expert Witness, Class action suit regarding front loader washing machines, deposed
- Expert Witness, Internal Revenue Service, testified
- Expert Witness, Wisconsin Alumni Research Foundation, deposed and testified
- Expert Witness, Texas Instruments, Inc., deposed and testified
- Expert Witness, Rembrandt Vision Technologies, L.L.P., deposed
- Expert Witness, St. Clair Intellectual Property Consultants, Inc., deposed
- Consultant, Delta Airlines
- Consultant, Customers First! Coalition
- Consultant, Energy Information Agency
- Consultant, Korean Electric Power Company
- Consultant, California Air Resource Board
- Consultant, City of West Sacramento

PH.D. AND M.A. COMMITTEES (FIRST JOB):

MIT:

Sruthi Davuluri (MA, E3)
Scott Burger (MIT)
Nick Hagerty (UCB)
Stephen Zoepf (MIT)
Ricardo Charles (MA, DOE)
Parisa Bastini (Cambridge University)
Donald MacKenzie (University of Washington)
Jennifer Peck (Swarthmore)

UC Davis:

Anson Soderbery (Purdue University)
Nick Sanders (chair, SIEPR Post Doc, Stanford University)
Chia-Wen Chen (chair, on-going)
Chenguang Li (University of Wisconsin)
Jonathan Hughes (chair, University of Colorado, Boulder)
Adib Bagh (University of Kentucky, Math and Economics)
Seungjoon Lee (Korean Insurance Research Institute)
Jason Lepore (chair, Cal Poly)
Wei-Min Hu (Peking University)
Byeongil Ahn (Gyeongsang University)
Konstantinos Metaxoglou (chair, Bates and White LLC)
Lan Li (University of Melbourne)
Neil Norman (Cornerstone Research)
Dae-Wook Kim (chair, Korean Institute for Industrial Economics and Trade)

Boston University:

Gustavo Genoni (2002, Finance, IAE, School of Business, Universidad Austral)
John Neumann (2003, Finance, St. John's University)

TEACHING:

- MIT
 - Energy Economics and Policy, MBA (5 times)

- Rating: Mean 6.65/Median 7 (out of 7)
 - Sloan Rating: 4.8 out of 5
 - Energy Economics and Policy, Undergraduate (4 times)
 - Rating: Mean 6.66/Median 7 (out of 7)
- UC Davis
 - Graduate Empirical Industrial Organization (6 times)
 - Ratings: Mean 4.9 (out of 5)
 - Transportation Economics (4 times)
 - Ratings: Mean 4.7
 - Intermediate Microeconomics (1 time),
 - Ratings: Mean 4.8
 - Undergraduate Industrial Organization (9 times)
 - Ratings: Mean 4.8
- Boston University
 - Modeling Business Decision Making,
 - Spring 2000, Spring 2001 and Spring 2002
 - Ratings: 4.53 (out of 5), 4.77, 4.70
 - Modeling Business Decision Making (honors),
 - Spring 2001 and Spring 2002
 - Ratings: 4.88, 4.70

UNIVERSITY SERVICE:

MIT:

Variety of personnel committees
Energy Minor Oversight Committee
Energy Education Task Force
Executive Education Committee

UC Davis:

2007-2008, Co-writer (with Jean Vandergehst) of a proposal for a Graduate Program in "Energy Science and Technology" and "Energy Policy and Management"
2006-Present, Member, Energy Institute Steering Committee
2008, Founding Faculty Member, UC Davis Energy Institute
2005-2006, Hiring Committee and Interviewing Committee
2004-2005, Hiring Committee and Interviewing Committee
2002-2003, Hiring Committee and Interviewing Committee
2002-2007, Graduate Advisor
Oral committees: Dae-Wook Kim, Konstantinos Metaxoglou, Neil Norman (chair), Seungjoon Lee, Wei-Min Hu, Lan Li (ARE), Sunhwa Lee, Byeongil Ahn (ARE), Michele Amaral, David Ong, Adib Bagh, Jason Lepore, Bei Li, Chenguang Li (ARE), Tina Saitone (ARE), Carlo Russo (ARE), Sandhya Patlolla (ARE), Jon Hughes (TTP), Peter Huckfeldt, Kyungwon Rho, Nick Sanders, Chia-Wen Chen, Joeri de Witt (ARE), In-Sung Lee (TTP), Anson Soderbery, Nils Johnson (TTP), David McCollum (TTP)

Boston University:

2000-2001, Finance Hiring Committee and Interviewing Committee
1999-2000, Finance Hiring Committee