

Severin Borenstein

<i>Work Addresses</i>		<i>Home</i>
Haas School of Business	U.C. Energy Institute	15 Ardilla Road
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Education:

1974-1976	Carleton College, Northfield, MN
1977-1978	University of California, Berkeley, A.B. Economics (1978)
1979-1983	Massachusetts Institute of Technology, Ph.D. Economics (1983)

Teaching and Research Interests:

Primary Fields:	Industrial Organization, Business Strategy, Government Regulation, Energy Policy and Economics, Applied Microeconomic Theory
Other Fields:	Finance, Public Finance

Teaching Positions Held:

1983-1990	Assistant Professor of Economics and Public Policy, Department of Economics and Institute of Public Policy Studies, University of Michigan
1989-1990	Visiting Assistant Professor of Economics, Department of Economics, University of California, Davis
1990-1994	Associate Professor of Economics, Department of Economics, University of California, Davis
1992,1993	Visiting Associate Professor of Business Economics (Autumn), Haas School of Business, University of California, Berkeley
1994	Visiting Associate Professor of Business Economics (March), Distance learning MBA for Cathay Pacific Airlines School of Business, University of Michigan
1994	Visiting Professor of Strategic Management (Winter), Graduate School of Business, Stanford University
1994-1996	Professor of Economics, Department of Economics, University of California, Davis
1996-present	Professor of Business, Haas School of Business, University of California, Berkeley Chair, Economic Analysis and Policy Group, 1998-99 E.T. Grether Professor of Business Administration and Public Policy, 2000-present

Other Professional Positions:

1978-1979	Staff Economist, Office of Economic Analysis, U.S. Civil Aeronautics Board
1990-1996	Research Associate, Institute of Transportation Studies, University of California, Davis
1992-2002	Co-Director, Program On Workable Energy Regulation,

	University of California Energy Institute
1992-present	Research Associate, National Bureau of Economic Research
1992-present	Associate Editor of <i>Review of Economics and Statistics</i>
1993-2000	Associate Editor of <i>International Journal of Industrial Organization</i>
1993-1995	Associate Editor of <i>Journal of Industrial Economics</i>
1994-present	Director, University of California Energy Institute
1995-2000	Editor of <i>Journal of Industrial Economics</i>
1997-2003	Member, Governing Board of California Power Exchange Corporation
1999-2000	Member, California Attorney General's Gasoline Task Force
1999-2002	Co-Director, National Bureau of Economic Research Project on E-Commerce
2002-present	Co-Director, Center for the Study of Energy Markets, University of California Energy Institute
2004-present	Member, Board of Editors, <i>Journal of Economic Literature</i>
2007-present	Member, Board of Editors, <i>American Economic Journal: Economic Policy</i>

Honors, Scholarships, Fellowships and Grants:

1979-81	M.I.T. Graduate Scholarship
1982-83	Alfred P. Sloan Foundation Research Fellowship
1986	University of Michigan Rackham Research Fellowship
1986-87	University of Michigan Teaching Development Award
1987-90	National Science Foundation Research Grant #SES-8711576 Title: Efficiency in the Allocation of Operating Licenses
Fall 1987	Michigan Economic Society Undergraduate Teaching Award
1988-89	University of Michigan Rothschild Research Fellowship
1991-93	Universitywide Energy Research Group Research Grant (with Colin Cameron) Title: Asymmetric Retail Gasoline Price Responses to Crude Oil Price Changes
1996-97	Recipient, Cheit Award for Best Teacher in Haas MBA Program
1996-97	Finalist, Cheit Award for Best Teacher in Haas PhD Program
1998-99	National Bureau of Economic Research/Sloan Foundation Research Grant (with Joseph Farrell) Title: Why Do Firms Cut Costs?
2001-present	California Energy Commission Research Grant to U.C. Energy Institute Title: Center for the Study of Electricity Markets
2002	Voted Favorite Core Curriculum Professor by Haas MBA Class of 2002
2002	Hewlett Foundation/Energy Foundation Research Grant Title: Price-Responsive Demand in Electricity Markets
2003-04	California Energy Commission Research Contract to U.C. Energy Institute Title: Market Power in California's Gasoline Market
2005	Distinguished Service Award, Public Utility Research Center, University of Florida
2005	Distinguished Faculty Mentoring Award (for graduate student mentoring), U.C. Berkeley
2005-2006	Finalist, Cheit Award for Best Teacher in Haas Daytime MBA Program

Journal Publications:

“Price Discrimination in Free-Entry Markets,” *RAND Journal of Economics*, **16**(Autumn 1985).

“On the Efficiency of Competitive Markets for Operating Licenses,” *Quarterly Journal of Economics*, **103**(May 1988).

“Market Incentives for Safe Commercial Airline Operation,” (with Martin Zimmerman), *American Economic Review*, **78**(December 1988).

“The Economics of Costly Risk Sorting in Competitive Insurance Markets,” *International Review of Law and Economics*, **9**(June 1989).

“How to Carve a Medical Degree: Human Capital Assets in Divorce Settlements,” (with Paul Courant), *American Economic Review*, **79**(December 1989).

“Hubs and High Fares: Dominance and Market Power in the U.S. Airline Industry,” *RAND Journal of Economics*, **20**(Autumn 1989).

“Airline Mergers, Airport Dominance, and Market Power,” *American Economic Review Papers and Proceedings*, **80**(May 1990).

“Carrot and Yardstick Regulation: Enhancing Market Performance with Output Prizes,” (with Mark Bagnoli), *Journal of Regulatory Economics*, **3**(June 1991).

“The Dominant-Firm Advantage in Multi-Product Industries: Evidence from the U.S. Airlines,” *Quarterly Journal of Economics*, **106**(November 1991).

“Selling Costs and Switching Costs: Explaining Retail Gasoline Margins,” *RAND Journal of Economics*, **22**(Autumn 1991).

“The Evolution of U.S. Airline Competition,” *Journal of Economic Perspectives*, **7**(Spring 1992).

“Competition and Price Dispersion in the U.S. Airline Industry,” (with Nancy Rose), *Journal of Political Economy*, **103**(August 1994).

“Antitrust Policy in Aftermarkets,” (with Jeffrey MacKie-Mason and Janet Netz), *Antitrust Law Journal*, **63**(Winter 1995).

“Bankruptcy and Pricing Behavior in U.S. Airline Markets” (with Nancy Rose), *American Economic Review Papers and Proceedings*, **85**(May 1995).

“Dynamic Pricing in Retail Gasoline Markets” (with Andrea Shepard), *RAND Journal of Economics*, **27**(Autumn 1996).

“Settling for Coupons: Discount Contracts as Compensation and Punishment in Antitrust Lawsuits,” *Journal of Law and Economics*, **39**(October 1996).

“Market Power in California Electric Markets” (with James Bushnell, Edward Kahn, and Steven Stoff), *Utilities Policy*, **5**(3/4, 1996).

“Do Gasoline Prices Respond Asymmetrically to Crude Oil Price Changes?” (with Colin Cameron and Richard Gilbert), *Quarterly Journal of Economics*, **112** (February 1997).

“Why Do All the Flights Leave at 8 a.m.? Competition and Brand Differentiation in Airline Scheduling” (with Janet Netz), *International Journal of Industrial Organization*, **17**(July 1999).

“An Empirical Analysis of the Potential for Market Power in California’s Electricity Industry” (with James Bushnell), *Journal of Industrial Economics*, **47**(September 1999).

“Market Power in Electricity Markets: Beyond Concentration Measures” (with James Bushnell and Christopher Knittel), *Energy Journal*, **20**(4,1999).

“Is Cost Cutting Evidence of X-Inefficiency?” (with Joseph Farrell), *American Economic Review Papers and Proceedings*, **90**(May 2000).

“Exercising Market Power in Proprietary Aftermarkets,” (with Jeffrey MacKie-Mason and Janet Netz), *Journal of Economics and Management Strategy*, **9**(Summer 2000).

“The Competitive Effect of Transmission Lines in a Deregulated Electricity Generation Market” (with James Bushnell and Steven Stoft), *RAND Journal of Economics*, **31**(Summer 2000).

“Economics and Electronic Commerce” (with Garth Saloner), *Journal of Economic Perspectives*, **15**(Winter 2001).

“The Trouble With Electricity Markets: Understanding California’s Restructuring Disaster,” *Journal of Economic Perspectives*, **16**(Winter 2002).

“Sticky Prices, Inventories, and Market Power in Wholesale Gasoline Markets,” (with Andrea Shepard), *RAND Journal of Economics*, **33**(Spring 2002).

“Measuring Market Inefficiencies in California’s Deregulated Wholesale Electricity Market” (with James Bushnell and Frank Wolak), *American Economic Review*, **92**(December 2002).

“The Impact of Bankruptcy on Airline Service Levels” (with Nancy Rose), *American Economic Review Papers and Proceedings*, **94**(May 2003).

“The Long-Run Efficiency of Real-Time Electricity Pricing,” *Energy Journal*,**26**(3) (2005).

“On the Efficiency of Competitive Electricity Markets With Time-Invariant Retail Prices,” (with Stephen Holland), *RAND Journal of Economics*, **36**(Autumn 2005).

“Customer Risk from Real-Time Retail Electricity Pricing: Bill Volatility and Hedgability”, *Energy Journal*,**28**(2) (2007).

“Wealth Transfers Among Large Customers from Implementing Real-Time Retail Electricity Pricing,” *Energy Journal*,**28**(2) (2007).

“Do Investors Forecast Fat Firms? Diagnosing Profit Dissipation from the Stock Market Values of Gold Mining Firms,” (with Joe Farrell), *RAND Journal of Economics*, forthcoming.

“Inefficiencies and Market Power in Financial Arbitrage: A Study of California’s Electricity Markets,” (with James Bushnell, Christopher Knittel, and Catherine Wolfram), *Journal of Industrial Economics*, forthcoming.

Other Publications:

“High Air Fares: Don’t Blame Deregulation,” *Washington Post*, August 25, 1987.

“USAir Merger Promises Higher Fares, Less Competition,” *Hartford Courant*, January 12, 1988.

“Losses in Airline Demand and Value Following Accidents,” (with Martin Zimmerman) in Moses and Savage, eds., *Transportation Safety in an Age of Deregulation*, Oxford: Oxford University Press, 1989.

“Dissipating the Airline Deregulation Dividend: The Decline of Competition at Hub Airports,” *Regulation*, Fall 1990 (and reply letter in Winter 1991 issue).

“Prospects for Competitive European Air Travel,” in W.J. Adams, ed. *Singular Europe: Econ-*

omy and Polity of the European Community After 1992, Ann Arbor: University of Michigan Press, 1992.

“USAir in 1986,” (with Andrea Shepard), Stanford Graduate School of Business Strategic Management Case S-SM-4, January 1993.

“The Economics of Customer Lock-In and Market Power in the Service Business,” (with Jeffrey MacKie-Mason and Janet Netz) in Patrick T. Harker, ed. *The Service Productivity and Quality Challenge*, Kluwer Academic Press, 1994.

“Uncle Sam at the Gas Pump: Causes and Consequences of Regulating Gasoline Distribution,” (with Richard Gilbert), *Regulation*, Spring 1993.

“A Guide to the Blue Book,” (principal authors Carl Blumstein and James Bushnell), *Electricity Journal*, September 1994.

“Repeat-Buyer Programs in Network Industries,” in Werner Sichel ed., *Networks, Infrastructure, and The New Task for Regulation*, University of Michigan Press, 1996.

“Airline Deregulation” (with Nancy Rose), entry in *The New Palgrave Dictionary of Law and Economics*, New York: Grove’s Dictionaries, 1998.

“Rapid Communication and Price Fixing: The Airline Tariff Publishing Company Case,” in John E. Kwoka and Lawrence J. White, eds., *The Antitrust Revolution: The Role of Economics*, Oxford University Press, 3rd edition, 1998. (Revised version in 4th edition, 2004.)

“A Cheaper Way to Clean Gasoline” (with Steven Stoft) in *San Francisco Chronicle*, March 16, 1999.

Comments on Kole and Lehn’s “Workforce Integration and the Dissipation of Value in Mergers: The Case of USAir’s Acquisition of Piedmont Aviation,” in *Mergers and Productivity*, Steven Kaplan, ed., University of Chicago Press, 2000.

“California ‘Lessons’ Derive from Mischaracterization of Our Work,” (with James Bushnell) letter in *The Electricity Journal*, March 2000.

“Electricity Restructuring: Deregulation or Reregulation?,” (with James Bushnell), *Regulation*, **23**(2, 2000).

“Understanding Competitive Pricing and Market Power in Wholesale Electricity Markets,” *The Electricity Journal*, July 2000.

“California Consumers Haven’t Seen Benefits of Deregulating the Electrical Industry Yet – What Went Wrong?” (with James Bushnell), *San Jose Mercury News*, August 27, 2000.

“Electricity Pricing Should Clue Consumers to Judicious Use,” *Los Angeles Times*, January 17, 2001.

“Government Aid to Airlines is Just Excess Baggage for Taxpayers,” *Los Angeles Times*, August 27, 2002.

“Power Politics Hurts Consumers,” *Financial Times*, August 19, 2003.

“What’s Wrong with Regulating Gasoline Prices?,” *Sacramento Bee*, September 12, 2003.

“Solar Initiative Has a Dark Side,” *San Jose Mercury News*, August 20, 2004.

“Mere drops in the world’s oil barrel,” *San Jose Mercury News*, June 2, 2005.

“Time-Varying Retail Electricity Prices: Theory and Practice,” in Griffin and Puller, eds., *Electricity Deregulation: Choices and Challenges*, Chicago: University of Chicago Press, 2005.

Educational Software:

“The Competitive Strategy Game,” Version 3.22, October 1998. A computer simulation of competition among firms for use in undergraduate and graduate courses in economics and business. (Since Version 1.0 was released in 1994, the game has been used in undergraduate, MBA, and/or Ph.D. courses at more than 50 universities in 15 countries including U.C. Davis, U.C. Berkeley, U.C. Irvine, Stanford University, University of Michigan, Purdue University, M.I.T., University of Chicago, Yale University, and London Business School.) See <http://faculty.haas.berkeley.edu/borenste/csgdescr.html>

“The OPEC Game,” (with Jim Bushnell). A simulation of the world oil market in which student teams, each taking the position of one country in OPEC, make strategic decisions about oil production. Since its creation in 2001, the OPEC game has been used in three different courses at Berkeley and at Yale, Stanford, and UNC-Greensboro.

“The Electricity Strategy Game,” (with Jim Bushnell). A simulation of a wholesale electricity market in which student teams decide how much to bid for portfolios of electricity generators and then how to bid that power into a wholesale market.

Working Papers:

“Principal-Agent Incentives, Excess Caution, and Market Inefficiency: Evidence from Utility Regulation,” (with Meghan Busse and Ryan Kellogg), July 2007

“The Value (and Cost) of Time-Varying Electricity Production from Solar Photovoltaic Cells,” May 2007

“How Airline Markets Work...Or Do They?” (with Nancy Rose), February 2007

“U.S. Domestic Airline Pricing, 1995-2004,” Competition Policy Center Working Paper CPC05-48, University of California, Berkeley, January 2005.

“Retail Policies and Competition in the Gasoline Industry,” (with James Bushnell) Center for the Study of Energy Markets Working Paper #144, University of California Energy Institute, May 2005.

“Market Power in California’s Gasoline Market,” (with James Bushnell and Matthew Lewis) Center for the Study of Energy Markets Working Paper #132, University of California Energy Institute, May 2004.

“Competition and Productive Efficiency” (with Joe Farrell), September 1998.

“Price Incentives for Fuel Switching: Did Price Differences Slow the Phase-Out of Leaded Gasoline?”, POWER Working Paper PWP-010, University of California Energy Institute, April 1993.

Work in Progress:

“Adaptation versus Coordination: How does economic activity vary within and across time-zones?”

“Could Mandatory Time-of-Use Rates Undermine California’s Solar Photovoltaic Subsidies? Did They?”

“Strategic Incompatibility: The Evolution of Round-Trip Restrictions in the U.S. Airline In-

dustry”

“A Firm’s-eye View of Market Entry and Exit Decisions in the Airline Industry”

“Measuring Airline Hub Dominance Effects with Real-time Price Information” (with Nancy Rose)

“Diagnosing Airline Peak-Load Pricing with Real-time Price Information” (with Nancy Rose)

“Why Do Nonstop Flights Cost Less/More Than Changing Planes?” (with Nancy Rose)

“The Effect of Social and Institutional Ties on Airline Prices” (with Joel Podolny and Fiona Scott Morton)

“Why Do Firms Cut Costs?” (with Joe Farrell)

Recent Academic Presentations:

- 2002-03 University of British Columbia, University of Arizona, UC Berkeley, Berkeley-Stanford IOfest '02
- 2003-04 National Bureau of Economic Research, UC Santa Barbara, Cal Tech, Wharton, International Industrial Organization Conference
- 2004-05 University of Michigan, UC Irvine, University of Florida, American Economics Association, UC Berkeley, UCEI Ninth Annual POWER Conference
- 2005-06 National Bureau of Economic Research, UC Berkeley, Berkeley-Stanford IOfest '05
- 2006-07 University of Michigan, University of Toronto, Northwestern University, UC Berkeley, UC Davis, Resources for the Future
- 2007-08 National Bureau of Economic Research

Recent Policy Presentations:

- 2002-03 California Energy Commission, Electric Power Research Institute, Sacramento Economics Roundtable, California Foundation for the Economy and the Environment, Oil Insurance Ltd., Haas Advisory Board Meeting
- 2003-04 Cornerstone conference on Market Manipulation, Haas Alumni Lunch, Oakland Rotary Club, Center for the Study of Electricity Markets, Foundation for American Communications, SF Public Utilities Commission, Northern California Power Agency, Pacific Gas & Electric Law Department, Haas Private Equity Conference, California Energy Commission, World Affairs Council, Power Association of Northern California, Electricity Consumers Research Council, American Society of Appraisers
- 2004-05 Rossmoor Democratic Club, Western Energy Institute, UC Berkeley Wellman Lunch, California Energy Commission, Haas Alumni Association of the South Bay, Discover Cal functions in LA and Irvine, Environmental Defense symposium, Power Systems Engineering Research Center, Public Utilities Research Center (Univ of Florida), National Association of Energy Service Companies, CleanTech Energy Investors
- 2005-06 Silicon Valley Leadership Group, Energy Producers and Users Group, Haas Katrina teach-in, LA County Bar Association, Association of Bay Area Governments, California Manufacturing and Technology Association, Delta Phi Epsilon fraternity, California Republican Assembly Caucus, League of Women Voters, Haas Alumni Association of San Francisco

2006-07 Sacramento Economics Roundtable, Lawrence Berkeley National Lab Physics Department, Berkeley Breakfast Club, Berkeley Rotary Club, CSEM electricity policy conference, UCLA Anderson forecasting conference, UC Berkeley Homecoming, Communications Institute National Energy Symposium, UC Office of the President's Agriculture Advisory Committee, UC Berkeley Foundation Trustee's meeting, American Institute of Chemical Engineer's annual meetings, UC Santa Barbara Emerging Energy Technologies conference, ACG/Haas private equity conference, California Institute for Energy and the Environment, UC Berkeley Energy Symposium, Commonwealth Club, MSRI climate change symposium

Selected Professional Activities:

Testified before U.S. House of Representatives, Subcommittee on Aviation on proposals for market allocation of airport landing and takeoff slots at 'slot-constrained' airports (9/85).

Member of National Academy of Sciences panel examining the impacts of regulatory reform (10/88).

Co-organizer and participant in Department of Transportation seminar on airline policy, including D.O.T. Secretary Skinner and Assistant Secretary Shane, (2/91).

Participant in Department of Transportation briefing on airline policy for D.O.T. Secretary Card and Assistant Secretary Shane, (8/92).

Co-organizer and Chair of National Bureau of Economic Research conference on "Cooperation, Coordination, and Collusion Among Firms," (5/93).

Testified before California joint legislative committee on electricity rates and the restructuring of the California electricity industry (10/94).

Organizer of the winter meeting of the National Bureau of Economic Research Program in Industrial Organization (2/95).

Testified before the California Little Hoover Commission on regulation of the California electricity industry (3/96).

Co-organizer (with James Bushnell) of first POWER research conference on electricity restructuring (3/96).

Co-organizer (with Ben Hermalin) of IOfest '96 — the first joint Berkeley-Stanford conference in industrial organization (4/96).

Testified before the Minnesota state legislature on airfares at Minneapolis/St. Paul Airport (6/96).

Testified before the California state legislature on market power in the California gasoline markets and the implementation of state-mandated reformulated gasoline (10/96).

Co-organizer (with James Bushnell) of second POWER research conference on electricity restructuring (3/97).

Co-organizer (with Ben Hermalin) of IOfest '97 — the third annual joint Berkeley-Stanford conference in industrial organization (10/97).

Co-organizer (with James Bushnell) of third POWER research conference on electricity restructuring (3/98).

Testified before a committee of the Transportation Research Board on competition in the U.S. Airline Industry (1/99)

Testified before the California state legislature on oversight and market power in the California electricity markets (3/99).

Co-organizer (with James Bushnell) of fourth POWER research conference on electricity restructuring (3/99).

Testified before the California state legislature on California gasoline prices and markets (4/99 and 6/99).

Organizer of IOfest '99 — the fifth annual joint Berkeley-Stanford conference in industrial organization (10/99).

Co-organizer (with James Bushnell) of fifth POWER research conference on electricity restructuring (3/00).

Testified before the California state legislature on legislative proposals to mitigate gasoline price spikes (3/00 and 4/00).

Testified before the California state legislature on proposals to lower electricity prices and increase supplies (8/00).

Testified before the California state legislature on California electricity crisis (2/01).

Co-organizer (with James Bushnell) of sixth POWER research conference on electricity restructuring (3/01).

Testified before the California state legislature on market manipulation in the California electricity market (5/01).

Testified before the U.S. Senate Committee on Governmental Affairs on the California electricity crisis (6/01).

Organizer of IOfest '01 — the seventh annual joint Berkeley-Stanford conference in industrial organization (10/01).

Co-organizer (with James Bushnell) of seventh POWER research conference on electricity restructuring (3/02).

Testified before the California state legislature on implementing real-time electricity pricing (6/02).

Co-organizer (with James Bushnell) of eighth POWER research conference on electricity restructuring (3/03).

Organizer of IOfest '03 — the ninth annual joint Berkeley-Stanford conference in industrial organization (10/03).

Testified before the California state legislature on California gasoline prices (12/03).

Co-organizer (with Alan Sorensen) of the winter meeting of the National Bureau of Economic Research program in Industrial Organization (2/04).

Co-organizer (with James Bushnell) of ninth POWER research conference on electricity restructuring (3/04).

Co-organizer (with James Bushnell) of tenth POWER research conference on electricity restructuring (3/05).

Co-organizer (with Catherine Wolfram) of IOfest '05 — the eleventh annual joint Berkeley-Stanford conference in industrial organization (10/05).

Testified before the U.S. Senate Judiciary Committee on competition in the oil refining sector

(3/06).

Co-organizer (with James Bushnell) of eleventh POWER research conference on electricity restructuring (3/06).

Organizer of inaugural CSEM oil/gasoline conference (12/06).

Co-organizer (with James Bushnell and Catherine Wolfram) of twelfth POWER research conference on electricity restructuring (3/07).

Executive Education Teaching:

“Fundamentals of Electricity Markets,” 2-day course taught with James Bushnell (1/03, 1/04, 9/04, 1/05, 1/06, 1/07)

“Advanced Topics in Electricity Markets,” 1-day course taught with James Bushnell (3/07)

“Economic Fundamental of Energy and the Environment,” 1.5 day course taught with James Bushnell (4/07)