

**MARGARET SLADE  
CURRICULUM VITAE**

**Current Position**

Professor Emeritus  
Vancouver School of Economics  
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The University of British Columbia  
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Citizenship: USA and Canada

**Education**

BA. In Mathematics, Vassar College, Poughkeepsie, NY  
MA. in Mathematics, University of California, Berkeley, CA  
Ph.D. in Economics, The George Washington University, Washington, DC

**Previous Employment**

Summer program in Mathematics Research Department of Bell Laboratories, Murray Hill, NJ  
Mathematician, Shell Development Co., Emeryville, CA  
Mathematician, D.S.I.R., Wellington, New Zealand  
Mathematician, Office of Earthquake Research, US. Geological Survey, Menlo Park, CA  
Mathematician, Office of Resource Analysis, US. Geological Survey, Reston, VA  
Economist, Bureau of Economics, US. Federal Trade Commission  
Assistant, Associate, and Full Professor, University of British Columbia  
Professor, University of Warwick

**Awards and Distinctions**

Fellow, Canadian Economics Association, 2014  
Distinguished Fellow, American Economic Association, 2020  
Fellow, Econometric Society 2020  
Corresponding Fellow, British Academy 2023  
Fellow, Spatial Econometrics Association 2023  
Honorary Doctorate, Helsinki School of Economics, 2001  
Honorary Doctorate, University of Basel, 2021  
President of the European Association for Research in Industrial Economics, 2001-2003  
Inaugural Leverhulme Professorship in Industrial Economics, University of Warwick, 2002-2007  
Distinguished Service Award, Industrial Organization Society, 2020  
Killam Research Prize

**Invited Positions**

Professor, Université d'Aix - Marseille II, France  
Professor, Université de Paris I, Sorbonne, France  
Professor, EHESS, Marseille, France

CES Visiting Scholar, University of Munich, Germany  
Benjamin Meeker Distinguished Professor, University of Bristol, UK  
CRNS Visiting Scholar, Marseille, France  
Invited Lectures, Finnish Doctoral Program in Economics, Helsinki, Finland  
Visiting Scholar, Georgia Institute of Technology, Atlanta, GA

### **Committee and Board Memberships:**

Royal Economic Society  
Council Member, 2004 - 2008  
ESRC Standard Research Grants Board 2004 – 2008  
ESRC Large Grants Board, 2008  
ESRC Spatial Research Centre Assessment Panel 2007  
Association of Environmental and Resource Economists (AERE)  
Nominating Committee, 1987  
Canadian Correspondent, 1990-1991  
Program committee, World Congress, 2002  
AERE Publication of Enduring Quality Selection Committee, 2003 and 2004  
Econometric Society (ES)  
Program Committee, 2003, 2004, and 2008  
European Association for Research in Industrial Economics (EARIE)  
Executive Committee, 1990-1996, 2003-present  
Program Committee, 1995, 1997, 1999, 2001, 2002, 2003, 2007, 2008, 2011  
Plenary Speaker, 2000  
President, 2001-2003  
Industrial Organization Society  
Committee to select a Distinguished Fellow, 2004 and 2005  
Keynote Speaker, 2005  
European Association of Environmental and Resource Economists (EAERE)  
Program Committee, 2011, 2013  
World Congress Environmental and Resource Economists  
Program Committee 2014, 2018  
Trustee, University of British Columbia's Charitable Entity in the UK, 2002-2006  
Advisory Search Committee, Professors of Economics, Ecole Polytechnique, Paris, 2005  
Advisory Committee on Promotions, London School of Economics, 2005-2015  
Advisory Committee on Hiring, University of Oslo, 2006  
Recognition of Distinction Divisional Board, Oxford University, 2007-2008  
Scientific Advisory Committee, International Journal of IO, 2006-2013  
Jury, Institut Universitaire de France, Paris, 2009  
External Reviewer, School of Economics, Georgia Tech, 2010  
Research Advisory Council, JP Morgan Commodities Center,  
University of Colorado, Denver, 2015- present

### **Editorial positions:**

Journal of Industrial Economics, 1988-2000  
Canadian Journal of Economics, 1988-1994, 2011-2016  
Journal of Environmental Economics and Management, 1988-89  
International Journal of Industrial Organization, 1990-2006  
Resources Policy, 1989-2008  
The Energy Journal, 1991-present  
Review of Industrial Organization, 1991-2003  
Managerial and Decision Economics, 1999-present  
Encyclopedia of Energy, 2001-2003  
Spatial Economic Analysis, 2005-present

### Keynote and Plenary Addresses:

Conference on Industrial Organization and the Food Processing Industry, Toulouse, June 2000  
EARIE. Conference, Lausanne, Switzerland, September, 2000  
WZB Conference on Antitrust Issues in International Markets, Berlin, December 2000  
Presidential Address, EARIE Meeting, Helsinki, Finland, August 2003  
ADRES Conference, Paris, France, January 2004  
CEPR Conference on Applied Industrial Organization, Hydra, Greece, May 2004  
(EC)<sup>2</sup> Conference on The Econometrics of Industrial Organization, Marseille, France,  
December 2004  
International Industrial Organization Conference (IIOC), Atlanta, GA, April 2005  
Seminar on Studies of Quantitative Methods Applied to Antitrust and Regulation, Brasilia,  
Brazil, April 2005  
Australian Conference of Economists, Perth, September 2006  
Portuguese Economic Society Conference, Aveiro, Portugal, July 2011  
UECE Meetings in Game Theory and Applications, Lisbon, November 2013

### Consultancies:

US Federal Trade Commission  
US Central Intelligence Agency  
Canadian Restrictive Trade Practices Commission  
Bureau of Competition Policy of Canada  
US. National Academy of Science  
East-West Center, Honolulu, Hawaii  
World Bank  
US Department of Justice, Antitrust Division  
Shell Oil Company  
Amerigas Propane, Inc.  
American Antitrust Institute  
ToxEcology Environmental Consulting Ltd.  
Interbrew Central European Holdings  
UK Office of Fair Trading  
EU Directorate-General for Competition  
UK Competition Commission

### Expert Testimony

Competition Tribunal, *Director of Investigation and Research v. Tele-Direct  
(Publications) and Tele-Direct (Services)*, testified for the Crown, 1995

### Research Grants:

SSHRCC Grant "Empirical Studies in Capacity Utilization," 2020-2025.  
CIDE Grant (with Vadim Marmer and Paul Schrimpf) 2018  
Competition Policy Research Grant: "Mergers, Efficiencies, and Market Power in North American Brewing,"  
2014-2018  
SSHRCC Grant "Applications of Distance-Metric Spatial Models," 2008-2011  
UK ESRC Grant "Spatial Aspects of Industrial Organization," 2005-2008, Rated Outstanding  
UK ESRC Grant "Commodity Market Behavior," 2003-2005, Rated Outstanding  
Hampton Foundation Grant, "Mineral-Commodity Price Formation," 2000-2002  
SSHRCC Grant "Empirical Studies of Firms with Market Power," 2000-2003  
SSHRCC Grant, "Strategic Pricing in Imperfectly Competitive Markets," 1997-2000  
SSHRCC Grant, "Incentives, Strategic Behavior, and Organizational Form," 1993-1997  
SSHRCC Grant, "Empirical Models of Price Formation and Competition," 1990-1993  
Numerous UBC small grants

## PUBLICATIONS RECORD

NAME: SLADE, Margaret E.

### **Papers Published in Refereed Journals:**

- “Many Losers and a Few Winners: The impact of Covid-19 on Canadian Industries and regions,” Canadian Journal of Economics, (2022) 55(S1) 282-307.
- “Vertical Mergers: A Survey of Ex-Post Evidence and Ex Ante Evaluation Methods,” Review of Industrial Organization, (2021) 58: 493-511.
- “Presumptions in Vertical Mergers: The Role of Evidence,” with Francine Lafontaine, Review of Industrial Organization, (2021) 59: 255-272.
- “Second Thoughts on Double Marginalization,” with John Kwoka, Antitrust, 34(2) 51-56.
- “Vertical Restraints Imposed by Buyers: The Secretan Copper Cartel 1887-1889” Antitrust Law Journal, 2020, Vol. 83, No. 1, pp. 75-97.
- “Investment and Uncertainty with Time to Build: Evidence from US Copper Mining,” (with Vadim Marmer) Journal of Economic Dynamics and Control, 2019, Vol. 95, pp. 233-254.
- “Brewed in North America: Mergers, Marginal Costs, and Efficiency” (with Paul Grieco and Joris Pinkse), International Journal of Industrial Organization, 2018, Vol. 99, pp. 24-65.
- “Empirical Models of Firms and Industries” (with Victor Aguirregabiria), Canadian Journal of Economics, 2017, Vol. 50, No. 5, pp. 1445-1488.
- “Spillovers in Space: Does Geography Matter?” (with Sergey Lychagin, Joris Pinkse, and John Van Reenen), Journal of Industrial Economics, 2016, Vol. 64, No. 2, pp. 295-335. See policy column at VoxEU, <http://www.voxeu.org/index.php?q=node/5711>
- “The Rise and Fall of an Industry: Entry in U.S. Copper, 1835-1986,” Resource and Energy Economics, 2015, Vol. 42, pp. 141-169.
- “Transaction Cost Economics and Vertical Market Restrictions: Evidence” (with Francine Lafontaine), Antitrust Bulletin, 2010, Vol. 55, No. 3, pp. 587-611.
- “The Future of Spatial Econometrics,” (with Joris Pinkse), Journal of Regional Science, 2010, Vol. 50, No. 1, pp. 103-117.
- “Whither Hotelling: Tests of Theory of Exhaustible Resources,” (with Henry Thille), Annual Review of Resource Economics, 2009, Vol. 1, pp. 239-260.
- “Semi-Structural Models of Advertising Competition,” (with Joris Pinkse) Journal of Applied Econometrics, 2007, Vol. 22, No. 7, pp. 1227-1246.
- “Vertical Integration and Firm Boundaries: The Evidence,” (with Francine Lafontaine) Journal of Economic Literature, Vol. 45, no. 3, September 2007, pp. 631-687.
- “A Central Limit Theorem for Endogenous Locations and Complex Spatial Interactions,” (with Joris Pinkse and Lihong Shen) Journal of Econometrics, Vol. 140, No. 1, September 2007, pp. 215-225.

- "Dynamic Spatial Probit with Fixed Effects using One-Step GMM: An Application to Mine Operating Decisions," (with Joris Pinkse and Lihong Shen) Spatial Economic Analysis, Vol. 1, No. 1, June 2006, pp. 53-90.
- "Commodity Spot Prices: An Exploratory Assessment of Market Structure and Forward Trading Effects," (with Henry Thille) Economica, Vol 73, No. 2, May 2006, pp. 229-256.
- "The Role of Economic Space in Decision Making," Annales d'Economie et de Statistique, Vol. 77, No. 1, January/March 2005, pp. 1-21. ADRES Lecture, Paris, January 2004.
- "Mergers, Brand Competition, and the Price of a Pint," (with Joris Pinkse) European Economic Review, Vol. 48, June 2004, pp. 617-643.
- "Market Power and Joint Dominance in UK Brewing," Journal of Industrial Economics, Vol. 52, No. 1, March 2004, pp. 133-163.
- "Competing Models of Firm Profitability," International Journal of Industrial Organization, Vol. 22, No. 3, March 2004, pp. 289-308. Presidential address to the European Association for Research in Industrial Economics (EARIE), Helsinki, 2003.
- "Spatial Price Competition: A Semiparametric Approach" (with Joris Pinkse and Craig Brett), Econometrica, Vol. 70, No. 3, May 2002, pp. 1111-1155.
- "Managing Projects Flexibly: An Application of Real-Option Theory to Mining Investments," Journal of Environmental Economics and Management, Vol. 41, No. 2, March 2001, pp. 193-233.
- "Forward Trading and Adjustment Costs in Cournot Markets," (with Henry Thille) Cahiers d'Economie Politique, 37: 2000, pp. 177-195.
- "Sticky Prices in a Dynamic Oligopoly: An Investigation of (s,S) Thresholds", International Journal of Industrial Organization, Vol. 17, No. 4, May 1999, pp. 477-511.
- "The Leverage Theory of Tying Revisited: Evidence from Newspaper Advertising," Southern Economic Journal, Vol. 65, No. 2, October 1998, pp. 204-222.
- "Contracting in Space: An Application of Spatial Statistics to Discrete-Choice Models" (with Joris Pinkse) Journal of Econometrics, Vol. 85, No. 1, July 1998, pp. 125-154.
- "Beer and the Tie: Did Divestiture of Brewer-Owned Public Houses Lead to Higher Beer Prices?" Economic Journal, Vol. 108, May 1998, pp. 565-602.
- Reprinted in Franchise Contracting and Organization, F. Lafontaine (ed.) Edward Elgar, (2005).
- Reprinted in Recent Developments in Monopoly and Competition Policy, G. Norman (ed.) Edward Elgar (2008).
- "Strategic Motives for Vertical Separation: Evidence from Retail Gasoline" Journal of Law, Economics, and Organization, Vol. 14, No. 1, April 1998, pp. 84-113.
- "Optimal Pricing with Costly Adjustment and Persistent Effects: Empirical Evidence from Retail-Grocery Prices" Review of Economic Studies, Vol. 65, No. 1, Jan 1998, pp. 87-107.
- "Hotelling Confronts CAPM: A Test of the Theory of Exhaustible Resources" (with Henry Thille), Canadian Journal of Economics, Vol. 30, No. 3, August 1997, pp. 685-708.
- "Retail Contracting: Theory and Evidence" (with Francine Lafontaine) Journal of Industrial Economics, Vol. 45, No. 1, March, 1997, 1-25.

- "Valuing Risk and Flexibility: A Comparison of Methods," (with Nathalie Moyen and Raman Uppal) Resources Policy, Vol. 22, No 1/2, March/June 1996, pp. 63-79.
- "Retail Contracting and Costly Monitoring: Theory and Practice," (with F. Lafontaine) European Economic Review, Papers and Proceedings, Vol. 40, April 1996, pp. 923-932.
- Reprinted in Franchise Contracting and Organization, F. Lafontaine (ed.) Edward Elgar (2005).
- "Multitask Agency and Organizational Form: An Empirical Exploration," International Economic Review, Vol. 37, No. 2, May 1996, pp. 465-486.
- Reprinted in Franchise Contracting and Organization, F. Lafontaine (ed.) Edward Elgar (2005).
- "Uniform-Compliance Costs for Mineral Commodities: Who Gains and Who Loses?" Land Economics, Vol. 72, No. 1, February 1996, pp. 17-33.
- "Product Rivalry with Multiple Strategic Weapons: An Empirical Analysis of Price and Advertising Competition," Journal of Economics and Management Strategy, Vol. 4, No. 3, Fall 1995, pp. 445-476.
- Reprinted in The Economics of Advertising, K.W. Bagwell (ed.), Cheltenham: Edward Elgar (2001).
- Reprinted in Empirical Industrial Organization, P. Joskow and M. Waterson (eds.) Edward Elgar (2004).
- "Empirical Games: The Oligopoly Case," Canadian Journal of Economics, Vol. 28, No. 1, February 1995, pp. 368-402.
- "What Does An Oligopoly Maximize?" Journal of Industrial Economics, Vol. 57, No. 2, March 1994, pp. 45-62.
- "Vancouver's Gasoline-Price Wars: An Empirical Exercise in Uncovering Supergame Strategies," Review of Economic Studies, Vol. 59, No. 2, April 1992, pp. 257-276.
- Reprinted in Cartels, S.W. Salant and M.C. Levenstein (ed.) Edward Elgar (2007).
- Reprinted in Pricing Tactics, Strategies, and Outcomes, M. Waldman and J.P. Johnson (eds.) Edward Elgar, (2007).
- "Market Structure, Marketing Method, and Price Instability", Quarterly Journal of Economics, Vol. 106, November 1991, pp. 1309-1340.
- "Strategic Pricing with Customer Rationing: The Case of Primary Metals" Canadian Journal of Economics, Vol. 24, No. 1, February 1991, pp. 70-100.
- "Cheating on Collusive Agreements," International Journal of Industrial Organization, Vol. 8, No. 4, December 1990, pp. 519-544.
- "Strategic-Pricing Models and Interpretation of Price-War Data," European Economic Review, Papers and Proceedings, Vol. 34, May 1990, pp. 524-537.
- Reprinted in Cartels, S.W. Salant and M.C. Levenstein (ed.) Edward Elgar (2007).
- "The Fictitious Payoff Function: Two Applications to Dynamic Games," Annales d'Economie et de Statistique, Vol. 15/16, July/December, 1989, pp. 193-216 .
- "The Two Pricing Systems for Nonferrous Metals," Resources Policy, Vol. September 1989, pp. 209-220.

- "Price Wars in Price-Setting Supergames," Economica, Vol. 56, No. 223, August 1989, pp. 295-310.
- "Modeling Stochastic and Cyclical Components of Technical Change: An Application of the Kalman Filter", Journal of Econometrics, Vol. 41, No. 3, July 1989, pp. 363-383.
- "Grade Selection Under Uncertainty: Least-Cost Last and Other Anomalies", Journal of Environmental Economics and Management, Vol. 15, No. 2, June 1988, pp. 189-205.
- "Interfirm Rivalry in a Repeated Game: An Empirical Test of Tacit Collusion", Journal of Industrial Economics, Vol. 35, No. 4, June 1987, pp. 499-516.
- Reprinted in The Empirical Renaissance in Industrial Economics, T. Bresnahan and R. Schmalensee (eds.) Oxford: Basil Blackwell, (1987), pp. 129-146.
- Reprinted in Applied Industrial Economics, L. Phlips (ed.) Cambridge University Press (1998).
- Reprinted in Empirical Industrial Organization, P. Joskow and M. Waterson (eds.) Edward Elgar (2004).
- "Conjectures, Firm Characteristics, and Market Structure: An Empirical Analysis", International Journal of Industrial Organization, Vol. 4, No. 4, December 1986, pp. 347-370.
- "Total-Factor-Productivity Measurement when Equilibrium is Temporary: A Monte-Carlo Assessment", Journal of Econometrics, Vol. 33, No 1/2, October 1986, pp. 75-95.
- "Static Profitability as a Measure of Deviations from the Competitive Norm", Managerial and Decision Economics, Vol. 7, No. 2, June 1986, pp. 113-118.
- "Taxation of Exhaustible Resources at Various Stages of Production", Canadian Journal of Economics, Vol. 19, No. 2, May 1986, pp. 281-297.
- "Exogeneity Tests of Market Boundaries Applied to Petroleum Products", Journal of Industrial Economics, Vol. 34, No. 3, March 1986, pp. 291-303.
- "Prices of Metals: A Review Article", Journal of Conservation and Recycling, Vol. 9, No. 2, Spring 1986, pp. 183-188.
- "Measures of Market Power in Extractive Industries: The Legacy of *US. v. General Dynamics*", The Antitrust Bulletin, Vol. 31, No. 1, Spring 1986, pp. 91-111.
- "Noninformative Trends in Natural-Resource Commodity Prices: U-Shaped Price Paths Exonerated", Journal of Environmental Economics and Management, Vol. 12, No. 2, June 1985, pp. 181-192.
- "Tax Policy and the Supply of Exhaustible Resources: Theory and Practice", Land Economics, Vol. 60, No. 2, May 1984, pp. 133-147.
- "Mineral Taxation in a Stages-of-Production Framework," Recherches Economiques de Louvain, Vol. 49, No. 4, December 1983, pp. 323-338.
- "Cycles in Natural-Resource Commodity Prices: An Analysis of the Frequency Domain", Journal of Environmental Economics and Management, Vol. 9, No. 2, June 1982, pp. 138-148.
- "Trends in Natural-Resource Commodity Prices: An Analysis of the Time Domain", Journal of Environmental Economics and Management, Vol. 9, No. 2, June 1982, pp. 122-137.
- "Recent Advances in Econometric Estimation of Materials Substitution", Resources Policy, Vol. 7, No. 2, June 1981, pp. 103-109.

"Price Changes and Metals Markets: Modeling Short and Long Run Copper Aluminum Substitution", Materials and Society, Vol. 4, No. 3, November 1980, pp. 397-411.

"The Effects of Higher Energy Prices and Declining Ore Quality: Copper-Aluminum Substitution and Recycling in the US," Resources Policy, Vol. 6, No. 3, September 1980, pp. 223-239.

"An Econometric Model of the US. Secondary Copper Industry: Disposal Versus Recycling," Journal of Environmental Economics and Management, Vol. 7, No. 2, June 1980, pp. 123-141.

### **Papers Published in Books, Conference Volumes, and Nonrefereed Journals:**

"Second Thoughts on Double Marginalization," (with John Kwoka) Antitrust, Vol. 34, No. 2, Spring 2020.

"Franchising and Exclusive Distribution: Adaptation and Antitrust," (with Francine Lafontaine) Chapter 16, in Oxford Handbook of International Antitrust, R. Blair and D. Sokol (eds.) Oxford University Press, 2015, pp. 387-412.

"Incentive and Strategic Contracting: Implications for the Franchise Decision," (with Francine Lafontaine) in Game Theory and Business Applications, Second Edition, K. Chatterjee and W. Samuelson (eds.) Kluwer Academic Press, 2014, 62 pages.

"Contracting Between Firms: Evidence" (with Francine Lafontaine) Chapter 24 in Handbook of Organizational Economics, R. Gibbons and J. Roberts (eds.) Princeton University Press, 2012, pp. 958-1013.

"Competition Policy Towards Brewing: Rational Response to Market Power or Unwarranted Interference in Well Functioning Markets?" Chapter 10 in The Economics of Beer," Johan Swinnen (ed.) Oxford University Press, 2011, pp. 173-195.

"Merger-Simulations of Unilateral Effects: What Can We Learn from the UK Brewing Industry?" in Cases in European Competition Policy: The Economic Analysis, B. Lyons (ed.) Cambridge University Press, 2009, pp. 312-346.

"The Effects of Vertical Restraints: An Evidence Based Approach," in The Pros and Cons of Vertical Restraints, Sten Nyberg (ed.) Stockholm: Swedish Competition Authority, 2008, pp. 12-39.

"Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy," (with Francine Lafontaine), in Handbook of Antitrust Economics, Paolo Buccirossi (ed.) MIT Press, 2008, pp. 391-414.

"Incentive Contracting and the Franchising Decision," (with Francine Lafontaine), in Game Theory and Business Applications, K. Chatterjee and W. Samuelson (eds.) Kluwer Academic Press, 2001, pp. 133-188.

"Regulating Manufacturers and Their Exclusive Retailers," in Foundations of Competition Policy, Morten Berg and Einar Hope (eds.), London: Routledge, 2000, pp. 133-149.

"Markets and Organization, Introduction to Part II" in Economics Beyond the Millennium, L.-A. Gerard-Varet and A. Kirman (eds.) Oxford University Press, 1998, pp. 109-113.

"Women's Contributions to Industrial Organization: Part I," (with Esther Gal-Or) American Economic Association CSWEP Newsletter, Spring 1996, pp. 1-4.

"Women's Contributions to Industrial Organization: Part II," (with Esther Gal-Or) American Economic Association CSWEP Newsletter, Fall 1996, pp. 9-13.



- "Buying Energy and Nonfuel Minerals: Final, Derived, and Speculative Demand," (with C. Kolstad and R. Weiner) Chapter 20 in the Handbook of Natural Resource and Energy Economics, Vol. III, J. Sweeney (ed.) Amsterdam, North-Holland, 1993, pp. 935-1009.
- "Prices of Metals: History and Current Problems," in The Concise Encyclopedia of Materials Economics, Policy, and Management, M. Bever (ed.) Pergamon Press, 1993, pp. 254-260.
- "Strategic Behavior and Collusion," (with A. Jacquemin) Chapter 8 in The New Industrial Economics: Recent Developments in Industrial Organization and Game Theory, M. La Manna and G. Norman (eds.), Edward Elgar, 1992, pp. 47-65.
- "The Two Pricing Systems for Nonferrous Metals," in Marketing of Nonferrous Metals, M.L. Jackson and P.R. Richardson (eds.) Centre for Resource Studies, Queen's University, 1989, pp. 26-45.
- "Cartels, Collusion, and Horizontal Merger", (with A. Jacquemin) Chapter 7 in the Handbook of Industrial Organization, Vol. I, R. Schmalensee and R. Willig (eds.) Amsterdam, North-Holland, 1989, pp. 415-473.
- "Value-Added Total-Factor-Productivity Measurement: A Monte-Carlo Assessment", in Measurement in Economics, W. Eichhorn (ed.) Springer-Verlag, 1988, 809-830.
- "Natural Resources, Population, and Economic Well Being", in Population Growth and Economic Development, D.J. Johnson and R.D. Lee (eds.) University of Wisconsin Press, 1987, 331-372.
- "Expo 86: An Economic Impact Analysis", (with C. Blackorby and R. Picard) in R. Allen and G. Rosenbluth (eds.) Restraining the Economy, Vancouver: New Star, 1986, pp. 254-278.
- "The Macroeconomic Consequences of Expo 86", (with C. Blackorby and R. Picard) in R. Anderson and E. Wachtel (eds.) The Expo Story, Vancouver: Harbour, 1986, pp. 231-254.
- "The Effects of Taxes, Subsidies, and Price Controls on Exhaustible-Resource Production", (with T.R. Lewis) in Progress in Natural-Resource Economics, A.D. Scott (ed.) Oxford University Press, 1985, pp. 203-227.
- "Metal Price History", in Encyclopedia of Materials Science and Engineering, M.B. Bever (ed.) Pergamon Press, 1985, pp. 3943-3948.
- Reprinted in the Concise Encyclopedia of Mineral Resources, Oxford: Pergamon Press 1986.
- "Empirical Tests of Economic Rent in the Copper Industry", in Advances in the Economics of Energy and Resources, Vol. IV, J. Moroney (ed.) J.A.I. Press, Greenwich, Conn. 1982, pp. 223-239.
- "An Inter-Country Comparison of Housing-Market Trends in the 70's" (with D.T. Scheffman) in The Determination and Control of House Prices, Papers and Proceedings of a seminar organized by the Building Societies Association, London, January 1981, pp. 64-85.
- "Long-Run Price Movements of Mineral Commodities: A Statistical Analysis", in Modeling and Simulation, Vol. 12, Part III, W.G. Vost and M.H. Mickle (eds.) University of Pittsburgh Press, 1981, 89-94.

### **Books:**

Pricing of Metals, Centre for Resource Studies Monograph, Queens University, 1988, 135 pages. Reprinted in Metal-Market Trading, Economic and Social Commission on Asia and the Pacific.

An Econometric Model of the United States Copper and Aluminum Industries, New York, Garland Publishing, Inc., 1984, 390 pages. To be reissued by Routledge, 2018.

**Papers Published Outside of Economics:**

"Estimating Lengths and Orders of Delays in System Dynamics Models", in Elements of the Systems Dynamics Method, J. Randers (ed.) M.I.T. Press, 1979, pp. 162-183.

"A Computer-Assisted Graphical Method for Identification and Correlation of Igneous Rock Chemistries", (with T.L. Wright), Geology, Vol. 6, January 1978, pp. 16-20.

"Numerical Analysis of Lava Lake Cooling Models: Part I, Description of the Method", (with D.L. Peck and H.R. Shaw) American Journal of Science, Vol. 277, April 1977, pp. 384-414.

"Numerical Analysis of Lava Lake Cooling Models: Part II, Application to Alea Lave Lake, Hawaii", (with D.L. Peck and H.R. Shaw) American Journal of Science, Vol. 277, April 1977, pp. 415-437.