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**EDUCATION:**

OXFORD UNIVERSITY  
 D. Phil. 1973 (Ph.D)  
 B. Phil. 1972

BROWN UNIVERSITY  
 A.B. (Summa Cum Laude), 1968

**THESIS:** "A Theoretical and Empirical Study of Vintage Investment and Production in Great Britain,"  
 Oxford University, 1973.

**FELLOWSHIPS, HONORS AND AWARDS:**

Phi Beta Kappa  
 Marshall Scholar at Oxford, 1970-1972  
 Scholarship at Nuffield College, Oxford, 1971-1972  
 Fellow, Econometric Society, 1979  
 Frisch Medal of the Econometric Society, 1980  
 Fisher-Schultz Lecture for the Econometric Society, 1982  
 John Bates Clark Award of the American Economic Association, 1985  
 Smith Lectures, Brigham Young University 1986  
 Jacob Marschak Lecture for the Econometric Society, 1988  
 Hooker Lectures, Macmaster University 1989  
 Fellow, National Academy of Social Insurance, 1990  
 American Academy of Arts and Sciences, 1991  
 Fellow, Journal of Econometrics, 1998  
 Shann Memorial Lecture for the Australian Economics Society, 2003  
 Cenmap International Fellow, University College London, 2004  
 Honorary Professor, Xiamen University, 2005  
 Biennial Medal of the Modeling and Simulation Society of Australia and New Zealand, 2005  
 Fellow, Modeling and Simulation Society of Australia and New Zealand, 2005  
 Condliffe Memorial Lecture, University of Canterbury, NZ, 2005  
 Invited Lecture, Far East Meetings of Econometric Society, Beijing 2006  
 Keynote Speaker, ACCC Conference, Australia, 2006  
 Keynote Speaker, Panel Data Conference, Xiamen China, 2007  
 Keynote Speaker, Antitrust Conference, Northwestern Univ., 2008  
 Honorary Fellow, Nuffield College, Oxford University, 2008  
 Journal of Applied Econometrics Lectures, 2009  
 Leigh Lecture, Washington State University, 2009  
 MIT UEA Teaching Award, 2009

**EMPLOYMENT:**

1992- **MASSACHUSETTS INSTITUTE OF TECHNOLOGY**  
John and Jennie S. MacDonald Professor

1979- Professor, Department of Economics  
 1976-79 Associate Professor, Department of Economics  
 1973-76 Assistant Professor, Department of Economics  
 1972-73 Visiting Scholar, Department of Economics

**VISITING APPOINTMENTS:**

1986-87 Visiting Professor, Harvard Business School  
 1982-83 Visiting Professor, Harvard University Department of Economics  
 Visiting Positions: University of Washington, Australian National University, Ecole Normale Supérieure, Oxford University, University of Sydney, Wuhan University, Beijing University, University of Western Australia, University College London, Uppsala University, Xiamen University, Sorbonne

U.S. ARMY, ANCHORAGE, ALASKA  
 1968-70 Corps of Engineers

**PROFESSIONAL ACTIVITIES:**

Associate Editor, Bell Journal of Economics, 1974-1983  
 Associate Editor, Rand Journal of Economics, 1984-1988  
 Associate Editor, Econometrica, 1978-1987  
 Reviewer, Mathematical Reviews, 1978-1980  
 American Editor, Review of Economic Studies, 1979-82  
 Associate Editor, Journal of Public Economics, 1982-1998  
 Associate Editor, Journal of Applied Econometrics, 1985-1993  
 Advisory Editor, Economics Research Network and Social Science Research , 1998-  
 Advisory Editor, Journal of Sports Economics, 1999-  
 Advisory Editor, Journal of Competition Law & Economics, 2004-  
 Advisory Editor, Journal of Applied Economics, 2005-  
 Member of MIT Center for Energy and Environmental Policy Research, 1973-1995  
 Research Associate, National Bureau of Economic Research, 1979-  
 Member, American Statistical Association Committee on Energy Statistics, 1981-1984  
 Special Witness (Master) for the Honorable John R. Bartels, U.S. District Court for the Eastern District of New York in Carter vs. Newsday, Inc., 1981-82  
 Member of Governor's Advisory Council (Massachusetts) for Revenue and Taxation, 1984-1992  
 Member, Committee on National Statistics, 1985-1990  
 Member, National Academy of Social Insurance, 1990-  
 Member, Committee to Revise U.S. Trade Statistics 1990-1992  
 Director, MIT Telecommunications Economics Research Program, 1988-  
 Board of Directors, Theseus Institute, France Telecom University, 1988-1995  
 Member, Conference on Income and Wealth, National Bureau of Economic Research, 1992-  
 Member, Committee on the Future of Boston, 1998  
 Member, GAO Expert Panel to advise USDA on Econometric Models of Cattle Prices, 2001-2  
 Advisor, China Ministry of Information on Telecommunications Regulation, 2002-2006  
 Member, FTC Panel on Merger Evaluation, 2005

**PUBLICATIONS:****I. Econometrics**

- "Minimum Mean Square Estimators and Robust Regression," *Oxford Bulletin of Statistics*, April 1974.
- "Minimum Distance and Maximum Likelihood Estimation of Structural Models in Econometrics," delivered at the *European Econometric Congress, Grenoble: August 1974*.
- "Full-Information Instrumental Variable Estimation of Simultaneous Equation Models," *Annals of Economic and Social Measurement*, vol. 3, 641-652, October 1974.
- "Estimation and Inference in Nonlinear Structural Models," *Annals of Economic and Social Measurement*, 653-665, October 1975. (with E. Berndt, R.E. Hall, and B.H. Hall)
- "An Instrumental Variable Approach to Full-Information Estimators in Linear and Certain Nonlinear Econometric Models," *Econometrica*, Vol. 43(4), 727-738, 1975.
- "Simultaneous Equations with Errors in Variables," *Journal of Econometrics* 5, 1977.
- "Social Experimentation, Truncated Distributions, and Efficient Estimation," *Econometrica*, Vol. 45(4), 919-938, 1977. (with D. Wise)
- "A Conditional Probit Model for Qualitative Choice," with D. Wise, *Econometrica*, Vol. 46(2), 403-426, 1978.
- "Specification Tests in Econometrics," *Econometrica*, vol. 46(6), 1273-1291, 1978.
- "Non-Random Missing Data," with A.M. Spence, *MIT Working Paper 200*, May 1977.
- "Attrition Bias in Experimental and Panel Data: The Gary Income Maintenance Experiment," with D. Wise, *Econometrica*, vol. 47(2), 455-473, 1979.
- "Missing Data and Self Selection in Large Panels," *Annales de l'INSEE*, April 1978. (with Z. Griliches and B.H. Hall)
- "Stratification on Endogenous Variables and Estimation," in *The Analysis of Discrete Economic Data*, ed. C. Manski and D. McFadden, MIT Press, 1981. (with D. Wise)
- "Les modèles probit de choix qualitatifs," ("Alternative Conditional Probit Specifications for qualitative Choice.") (English Version), September 1977; EPRI report on discrete choice models, *Cahiers du Seminar d'Econometrie*, 1980.
- "The Econometrics of Labor Supply on Convex Budget Sets," *Economics Letters*, vol. 3(2), 171-174, 1979.
- "Panel Data and Unobservable Individual Effects," *Econometrica*, vol. 49(6), 1377-1398, 1981. (with W. Taylor)
- "Comparing Specification Tests and Classical Tests," *Economics Letters*, 1981.
- "The Effect of Time on Economic Experiments," invited paper at Fifth World Econometrics Conference, August 1980; in *Advances in Econometrics*, ed. W. Hildebrand, Cambridge University Press, 1982.
- "Sample Design Considerations for the Vermont TOD Use Survey," with John Trimble, *Journal of Public Use Data*, 9, 1981.
- "Identification in Simultaneous Equations Systems with Covariance Restrictions: An Instrumental Variables Interpretation," with W. Taylor, *Econometrica*, Vol. 51(5), 15-27-1549, 1983.

- "Stochastic Problems in the Simulation of Labor Supply," in *Tax Simulation Models*, ed. M. Feldstein, University of Chicago Press, 1983.
- "The Design and Analysis of Social and Economic Experiments," invited paper for 43rd International Statistical Institute Meeting, 1981; *Review of the ISI*.
- "Specification and Estimation of Simultaneous Equation Models," in *Handbook of Econometrics*, ed. Z. Griliches and M. Intriligator, vol. 1, 1983.
- "Full-Information Estimators," in Kotz-Johnson, *Encyclopedia of Statistical Science*, vol. 3, 1983
- "Instrumental Variable Estimation," in Kotz-Johnson, *Encyclopedia of Statistical Science*, vol. 4, 1984
- "Specification Tests for the Multinomial Logit Model," with D. McFadden, *Econometrica*, vol. 52(5), 1219-1240. 1984.
- "Econometric Models for Count Data with an Application to the Patents R&D Relationship," *Econometrica*, vol. 52(4), 909-938. 1984.(with Z. Griliches and B. Hall)
- "The Econometrics of Nonlinear Budget Sets," Fisher-Shultz lecture for the Econometric Society, Dublin: 1982; *Econometrica*, vol. 53(6) 1255-1282, 1985.
- "The J-Test as a Hausman Specification Test," with H. Pesaran, *Economic Letters*, 1983.
- "Seasonal Adjustment with Measurement Error Present," with M. Watson, *Journal of the American Statistical Association*, 1985.
- "Efficient Estimation and Identification of Simultaneous Equation Models with Covariance Restrictions," with W. Newey and W. Taylor, *Econometrica*, 55, 1987.
- "Technical Problems in Social Experimentation: Cost Versus Ease of Analysis," with D. Wise, in *Social Experimentation*, ed. J. Hausman and D. Wise, 1985.
- "Errors in Variables in Panel Data," with Z. Griliches, *Journal of Econometrics*, 1986.
- "Specifying and Testing Econometric Models for Rank-Ordered Data," with P. Ruud; *Journal of Econometrics*, vol. 34(1-2), 83-104. 1987.
- "Semiparametric Identification and Estimation of Polynomial Errors in Variables Models," with W. Newey, J. Powell and H. Ichimura, *Journal of Econometrics*, 1991.
- "Flexible Parametric Estimation of Duration and Competing Risk Models," with A. Han, *Journal of Applied Econometrics*, 1990.
- "Consistent Estimation of Nonlinear Errors in Variables Models with Few Measurements," with W. Newey and J. Powell, 1987.
- "Optimal Revision and Seasonal Adjustment of Updated Data: Application to Housing Starts," with M. Watson, *Journal of the American Statistical Association Proceedings*, 1991.
- "Seasonal Adjustment of Trade Data," with R. Judson and M. Watson, ed. R. Baldwin, *Behind the Numbers: U.S. Trade in the World Economy*, 1992.
- "Nonlinear Errors in Variables: Estimation of Some Engel Curves," Jacob Marschak Lecture of the Econometric Society, Canberra 1988, *Journal of Econometrics*, vol. 65(1), 205-233. 1995.

"Nonparametric Estimation of Exact Consumers Surplus and Deadweight Loss," with W. Newey, *Econometrica*, vol. 63(6), 1445-1476, 1995.

"Misclassification of a Dependent Variable in Qualitative Response Models," with F. Scott-Morton and J. Abrevaya, *Journal of Econometrics*, 1998.

"Semiparametric Estimation in the Presence of Mismeasured Dependent Variables," with J. Abrevaya, *Annales D'Economie et de Statistique*, 55-56, 1999.

"A New Specification Test for the Validity of Instrumental Variables," *Econometrica*, vol. 70(1), 163-189. 2002. (with J. Hahn)

"Microeconometrics," *Journal of Econometrics*, vol. 100(1), 33-35. 2000.

"Instrumental Variables Estimation for Dynamic Panel Models with Fixed Effects", with J. Hahn and G. Kuersteiner, mimeo May 2001, *Journal of Econometrics*, 2006

"Mismeasured Variables in Econometric Analysis: Problems from the Right and Problems from the Left", *Journal of Economic Perspectives Vol. 15(4)*, 57-67. 2001.

"Estimation with Weak Instruments: Accuracy of Higher Order Bias and MSE Approximations," with J. Hahn and G. Kuersteiner, *Econometrics Journal vol. 7(1)*, 272-306. 2004. (Chosen as one of best papers in journal over the previous 10 years, 2008)

"Notes on Bias in Estimators for Simultaneous Equation Models", with J. Hahn, *Economic Letters*, 2002

"Triangular Structural Model Specification and Estimation with Application to Causality", *Journal of Econometrics*, Vol. 112(1), 107-113, 2003

"Weak Instruments: Diagnosis and Cures in Empirical Econometrics", with J. Hahn, *American Economic Review*, Vol. 93(2), 118-125, 2003.

"Instrumental Variable Estimation with Valid and Invalid Instruments", with J. Hahn, August 2003, *Annales d'Economie et de Statistique*, 2006.

"Difference in Difference Meets Generalized Least Squares: Higher Order Properties of Hypotheses Tests", with G. Kuersteiner, *Journal of Econometrics*, 2008.

"Response Error in a Transformation Model: Estimation of Wage Equations," with Jason Abrevaya, *Econometrics Journal*, Vol. 7(2), 366-388. 2004

"Asymptotic Properties of the Hahn-Hausman Test for Weak Instruments", with J. Stock and M. Yogo, *Economic Letters*, vol. 89(3), 333-342. 2005.

"Many Weak Instruments and Microeconomic Practice," with C. Hansen and W. Newey *Journal of Business and Economic Statistics*, 26, 398-422, 2008.

"A Semi-Parametric Duration Model with Heterogeneity that Does Not Need to be Estimated," with T. Woutersen, Econometric Society World Meetings, London, 2005, Nov 2004.

"Estimating the Derivative Function with Counterfactuals in Duration Models with Heterogeneity," with T. Woutersen, September 2005.

"Using a Laplace Approximation to Estimate the Random Coefficients Logit Model by Non-linear Last Squares", with M. Harding, December 2005, *International Economic Review*, 2007.

"Duration Models," forthcoming in the *New Palgrave*, with T. Woutersen, March 2006.

"Hausman Tests," forthcoming in the International Encyclopedia of the Social Sciences, with H. White, June 2006.

"IV estimation with Heteroskedasticity and Many Instruments," with W. Newey, T. Woutersen, J. Chao, and N. Swanson, March 2008.

"Testing for Causal Effects in a Generalized Regression Model with Endogenous Regressors," with J. Abrevaya and S. Khan, March 2007, revised 2009.

"A Reduced Bias GMM-like Estimator with Reduced Estimator Dispersion," with K. Menzel, R. Lewis, and W. Newey, September 2007, forthcoming Journal of Econometrics

"Asymptotic Distribution of JIVE in a Heteroskedastic IV Regression with Many Instruments," with J. Chao, W. Newey, N. Swanson, and T. Woutersen, June 2008 mimeo

"A Bayesian Mixed Logit-Probit Model for Multinomial Choice," with M. Burda & M. Harding, Journal of Econometrics. 2009

## **II. Public Finance and Regulation**

"The Evaluation of Results from Truncated Samples," with D. Wise, Annals of Economic and Social Measurement, vol. 5, 421-446, April 1976.

"Discontinuous Budget Constraints and Estimation: The Demand for Housing," with D. Wise, Review of Economic Studies, vol. 7(146), 75-96. January 1980.

"The Effect of Taxation on Labor Supply: Evaluating the Gary Negative Income Tax Experiment," with G. Burtless, Journal of Political Economy, vol. 86(6), 1103-1130. 1978.

"AFDC Participation -- Permanent or Transitory?," in Papers from the European Econometrics Meetings, ed. E. Charatsis, North Holland: 1981.

"The Effect of Wages, Taxes, and Fixed Costs on Women's Labor Force Participation," Journal of Public Economics, vol. 14(2), 161-194. October 1980.

"The Effect of Taxes on Labor Supply," in How Taxes Affect Economic Behavior, ed. H. Aaron and J. Pechman, Brookings: 1981.

"Income and Payroll Tax Policy and Labor Supply," in The Supply Side Effects of Economic Policy, ed. G. Burtless, St. Louis: 1981.

"Individual Retirement Decisions Under an Employer-Provided Pension Plan and Social Security," with G. Burtless, Journal of Public Economics, 1982.

"Individual Retirement and Savings Decisions," with P. Diamond, Journal of Public Economics, 1984.

"Retirement and Unemployment Behavior of Older Men," in H. Aaron and G. Burtless, Retirement and Economic Behavior, Brookings: 1984.

"Tax Policy and Unemployment Insurance Effects on Labor Supply," in Removing Obstacles to Economic Growth, ed. M. Wachter, 1984.

"Family Labor Supply with Taxes," with P. Ruud, American Economic Review, 1984.

"Social Security, Health Status and Retirement," with D. Wise, in Pensions, Labor, and Individual Choice, ed. D.

Wise, 1985.

"The Effect of Taxes on Labor Supply," in Handbook on Public Economics, ed. A. Auerbach and M. Feldstein, 1985.

"Choice Under Uncertainty: The Decision to Apply for Disability Insurance," with J. Halpern, Journal of Public Economics, vol. 31(2) 131-161. 1986.

"Household Behavior and the Tax Reform Act of 1986," with J. Poterba, Journal of Economic Perspectives, 1987, also published in French in Annales D'Economie et de Statistique, 1988.

"Involuntary Early Retirement and Consumption," with L. Paquette, ed. G. Burtless, Economics of Health and Aging, 1987.

"Income Taxation and Social Insurance in China," in Sino-U.S. Scholars on Hot Issues in China's Economy, 1990.

"On Contingent Valuation Measurement of Nonuse Values," with P. Diamond, in Contingent Valuation: A Critical Appraisal, ed. J. Hausman, 1993.

"Does Contingent Valuation Measure Preferences? Experimental Evidence," with P. Diamond, G. Leonard, M. Denning, in Contingent Valuation: A Critical Appraisal, ed. J. Hausman, 1993.

"Contingent Valuation: Is Some Number Better than No Number?" with P. Diamond, December 1993, Journal of Economic Perspectives, 8(4), 45-64. 1994.

"A Utility-Consistent Combined Discrete Choice and Count Data Model: Assessing Recreational Use Losses Due to Natural Resource Damage," with G. Leonard and D. McFadden, Journal of Public Economics, 56(1), 1-30. 1995.

"Contingent Valuation Measurement of Nonuse Values," with P. Diamond, ed. R.B. Stewart, Natural Resource Damages: A Legal, Economic, and Policy Analysis, 1995.

"A Cost of Regulation: Delay in the Introduction of New Telecommunications Services," with T. Tardiff, 1995, ed. A. Dumort and J. Dryden, The Economics of the Information Society, 1997.

"Valuation and the Effect of Regulation on New Services in Telecommunications," Brookings Papers on Economic Activity: Microeconomics, 1997, 1-38.

"Taxation by Telecommunications Regulation," Tax Policy and the Economy, 12(1), 29-48. 1998.

"Taxation by Telecommunications Regulation: The Economics of the E-Rate", AEI Press, 1998.

"Economic Welfare and Telecommunications Welfare: The E-Rate Policy for Universal Service Subsidies," with H. Shelanski, Yale Journal on Regulation, 16, 1999.

"Efficiency Effects on the U.S. Economy from Wireless Taxation", National Tax Journal, 53, 733-742. September 2000.

"Residential Demand for Broadband Telecommunications and Consumer Access to Unaffiliated Internet Content Providers", with H. Singer and J.G. Sidak, Yale Journal on Regulation, 18(1) 129-173, 2001.

"Regulating the U.S. Railroads: The Effects of Sunk Costs and Asymmetric Risk," with S. Myers, Journal of Regulatory Economics, 22(3), 287-310. 2002.

"Regulated Costs and Prices in Telecommunications," in G. Madden ed. International Handbook of Telecommunications, 2003.

Will New Regulation Derail the Railroads?, Competitive Enterprise Institute, October 2001

"Sources of Bias and Solutions to Bias in the CPI", NBER Discussion paper 9298, Oct. 2002, Journal of Economic Perspectives, vol. 17(1), 23-44. 2003.

"CPI Bias from Supercenters: Does the BLS Know that Wal-Mart Exists?," with E. Leibtag, presented at conference on Index Numbers, Vancouver, June 2004, NBER Discussion Paper w10712, August 2004. Forthcoming in, W.E Diewert, J.S. Greenlees, and C.R. Hulten eds., Price Index Concepts and Measurement, 2009.

"Did Mandatory Unbundling Achieve Its Purpose? Empirical Evidence from Five Countries," with G. Sidak, Journal of Competitive Law and Economics, vol. 1(1), 173-245. 2005.

"Telecommunications Regulation: Current Approaches with the End in Sight," (with G. Sidak) NBER conference on regulation, September 2005, forthcoming in N. Rose. ed.

"Commentary on International Taxation: Tax Policy when Corporate Profits are a Return to Labor Rather than Capital," with Roger Gordon, March 2007

"The Walmart Effect on CPI Construction," with E. Leibtag, January 2007 mimeo

"Are Regulators Forward-Looking? Copper Prices and Telecommunications Networks," with G. Sidak and T. Tardiff, November 2007, FCC Communications Journal, 2009.

### **III. Applied Micro Models**

"Project Independence Report: A Review of U.S. Energy Needs up to 1985," Bell Journal of Economics, vol. 6(2), 517-551. Autumn 1975.

"Individual Discount Rates and the Purchase and Utilization of Energy Using Durables," Bell Journal of Economics, vol. 10(1), 33-54. Spring 1979.

"Voluntary Participation in the Arizona Time of Day Electricity Experiment," with D. Aigner, in EPRI Report, Modeling and Analysis of Electricity Demand by Time of Day, 1979; Bell Journal of Economics, 1980.

"A Two-level Electricity Demand Model: Evaluation of the Connecticut Time-of-Day Pricing Test," in EPRI Report, Modeling and Analysis of Electricity Demand by Time of Day, 1979; Journal of Econometrics, vol. 10(3), 263-289. 1979.

"Assessing the Potential Demand for Electric Cars," with S. Beggs and S. Cardell, Journal of Econometrics, vol. 17(1) 1-19. 1981.

"Assessment and Validation of Energy Models," in Validation and Assessment of Energy Models, ed. S. Gass, Washington: Department of Commerce, 1981.

"Exact Consumer Surplus and Deadweight Loss," American Economic Review, 71(4)m 662-676, 1981.

"Appliance Purchase and Usage Adaptation to a Permanent Time of Day Electricity Rate Schedule," with J. Trimble, Journal of Econometrics, vol. 26(1-2), 115-139. 1984.

"Evaluating the Costs and Benefits of Appliance Efficiency Standards," with P. Joskow, American Economic Review, 72(2), 220-225. 1982.

"Information Costs, Competition and Collective Ratemaking in the Motor Carrier Industry," American University

*Law Review*, 32 *Am. U.L. Rev.* 377 Winter 1983.

"An Overview of IFFS," in Intermediate Future Forecasting System, ed. S. Gass et al., Washington: 1983.

"Choice of Conservation Actions in the AHS," in Energy Simulation Models, ed. R. Crow, 1983.

"Patents and R&D: Searching for a Lag Structure," with B. Hall and Z. Griliches, in Actes du Colloque Econometrie de la Recherche, Paris: 1983.

"The Demand for Optional Local Measured Telephone Service," in H. Trebing ed., Adjusting to Regulatory, Pricing and Marketing Realities, East Lansing: 1983.

"Patents and R&D: Is There a Lag?," with B. Hall and Z. Griliches, 1985; *International Economic Review*, vol. 27(2), 265-283. 1986.

"Price Discrimination and Patent Policy," with J. MacKie-Mason, *Rand Journal of Economics*, vol. 19(2), 253-265. 1988.

"Residential End-Use Load Shape Estimation from Whole-House Metered Data," with I. Schick, P. Vsoro, and M. Ruane, IEEE Transactions on Power Systems, 1988.

"Competition in Telecommunications for Large Users in New York," with H. Ware and T. Tardiff, Telecommunications in a Competitive Environment, 1989.

"Innovation and International Trade Policy," with J. MacKie-Mason, Oxford Review of Economic Policy, 1988.

"The Evolution of the Central Office Switch Industry," with W. E. Kohlberg, in ed. S. Bradley and J. Hausman, Future Competition in Telecommunications, 1989.

"Future Competition in Telecommunications," 1987; ed. S. Bradley and J. Hausman, Future Competition in Telecommunications, 1989.

"Joint Ventures, Strategic Alliances and Collaboration in Telecommunications," Regulation, 1991.

"An Ordered Probit Model of Intra-day Securities Trading," with A. Lo and C. MacKinlay, *Journal of Financial Economics*, 1992.

"A Proposed Method for Analyzing Competition Among Differentiated Products," with G. Leonard and J.D. Zona, Antitrust Law Journal, 60, 1992.

"Global Competition and Telecommunications," in Bradley, et al., ed., Globalization, Technology and Competition, 1993.

"The Bell Operating Companies and AT&T Venture Abroad and British Telecom and Others Come to the US," in Bradley, et al., ed., Globalization, Technology and Competition, 1993.

"The Effects of the Breakup of AT&T on Telephone Penetration in the US," with T. Tardiff and A. Belinfante, *American Economic Review*, vol 63(2), 178-184. 1993.

"Competitive Analysis with Differentiated Products," with G. Leonard and D. Zona, *Annales, D'Economie et de Statistique*, 34, 159-180. 1994.

"Proliferation of Networks in Telecommunications," ed. D. Alexander and W. Sichel, Networks, Infrastructure, and the New Task for Regulation, University of Michigan Press, 1996.

"Valuation of New Goods Under Perfect and Imperfect Competition," ed. T. Bresnahan and R. Gordon, The Economics of New Goods, University of Chicago Press, 1997.

- "Competition in Long Distance and Equipment Markets: Effects of the MFJ," *Journal of Managerial and Decision Economics*, vol. 16(4), 365-383. 1995.
- "State Regulation of Cellular Prices," *Wireless Communications Forum*, volume III, April 1995.
- "Efficient Local Exchange Competition," with T. Tardiff, *Antitrust Bulletin*, 1995.
- "Superstars in the National Basketball Association: Economic Value and Policy," with G. Leonard, *Journal of Labor Economics*, 15(4), 586-624. , 1997.
- "Valuation of New Services in Telecommunications," with T. Tardiff, *The Economics of the Information Society*, ed. A. Dumort and J. Dryden, Office for Official Publications of the European Communities, Luxembourg, 1997.
- "Market Definition Under Price Discrimination," with G. Leonard and C. Velluro, *Antitrust Law Journal*, vol. 64, 367-386. 1996.
- "Characteristics of Demand for Pharmaceutical Products: An Examination of Four Cephalosporins," with S. Fisher Ellison, I. Cockburn and Z. Griliches, *Rand Journal of Economics*, 28(3), 426-446. , 1997.
- "Telecommunications: Building the Infrastructure for Value Creation," S. Bradley and R. Nolan, eds. *Sense and Respond*, 1998.
- "Achieving Competition: Antitrust Policy and Consumer Welfare," with G. Leonard, *World Economic Affairs*, Vol.. 1(2), 34-38., 1997.
- "The CPI Commission and New Goods," *The American Economic Review*, May 1997.
- "Economic Analysis of Differentiated Products Mergers Using Real World Data," with G. Leonard, *George Mason Law Review*, 5(3), 326-346. 1997.
- "Cellular Telephone, New Products and the CPI," *Journal of Business and Economics Statistics*, vol 17(2), 188-194. 1999.
- "Regulation by TSLRIC: Economic Effects on Investment and Innovation," *Multimedia Und Recht*, 1999; also in J.G. Sidak, C. Engel, and G. Knieps eds., *Competition and Regulation in Telecommunications*, Boston: Kluwer Academic Publishers, 2000.
- "Efficiencies from the Consumer Viewpoint," with G. Leonard, *George Mason Law Review*, vol. 7(3), 1999.
- "The Effect of Sunk Costs in Telecommunication Regulation," in J. Alleman and E. Noam, eds, *The New Investment Theory of Real Options and its Implications for Telecommunications Economics*, 2002.
- "A Consumer-Welfare Approach to the Mandatory Unbundling of Telecommunications Networks," with J. Gregory Sidak, *Yale Law Journal*, vol. 109(3), 417-505. 1999.
- "Competition in U.S. Telecommunications Services Four Years After the 1996 Act, with R. Crandall, in S. Peltzman and C. Winston, eds., *Deregulation of Network Industries*, 2000.
- "Cable Modems and DSL: Broadband Internet Access for Residential Customers," with J. Gregory Sidak, and Hal J. Singer, *American Economic Review*, vol. 91(2), 302-307. 2001
- "The Competitive Effects of a New Product Introduction: A Case Study," with G. Leonard, *Journal of Industrial Economics*, vol. 50(3), 237-263. 2002.
- "Mobile Telephone," in M. Cave et. al. eds, *Handbook of Telecommunications Economics*, North Holland, 2002.

- “Competition and Regulation for Internet-related Services”, in Korea Institute for Industrial Economics and Trade, Industrial Competitiveness and Competition Policy in the Era of Telecommunication Convergence. 2001. (also translated into Korean in a book)
- “From 2G to 3G: Wireless Competition for Internet-Related Services,” presented at Brookings Conference, October 2001, R. Crandall and J. Alleman ed., Broadband, Brookings, 2002.
- “Competition and Regulation for Internet-related Services: Results of Asymmetric Regulation”, presented at Columbia Univ. conference, October 2001, R. Crandall and J. Alleman ed., Broadband, Brookings, 2002
- “United States: Lessons from the New Millennium,” with R. Crandall, in A. Brown et. al. eds., Telecommunications Reform in the Asia-Pacific Region, 2004
- “Does Bell Company Entry into Long-Distance Telecommunications Benefit Consumers?,” with G. Leonard and J.G. Sidak, Antitrust Law Journal, 70(2), 463-484, 2002.
- "On Exclusive Membership in Competing Joint Ventures," with G. Leonard and J. Tirole, Rand Journal of Economics, vol. 34(1), 43-62. 2003.
- “Why do the Poor and the Less-Educated Pay More for Long-Distance Calls?,” with J.G. Sidak, Topics in Economics Analysis and Policy vol. 3(1) 1210. 2004.
- “Estimation of Patent Licensing Value Using a Flexible Demand Specification”, with G. Leonard, Journal of Econometrics, vol. 139(2), 242-258. 2007.
- “Cellular, 3G, Broadband and WiFi”, Shann Memorial Lecture, University of Western Australia, March 2003, published in R. Cooper R and G. Madden (eds.) (2004) Frontiers of Broadband, Electronic and Mobile Commerce, Physica-Verlag.
- “Using Merger Simulation Models: Testing the Underlying Assumptions,” with G. Leonard, International Journal of Industrial Organization, vol. 23(9-10), 693-698. 2005
- “Competitive Analysis Using a Flexible Demand Specification,” with G. Leonard, Journal of Competition Law and Economics, vol. 1(2), 279-301. 2005.
- “Consumer Benefits from Increased Competition in Shopping Outlets: Measuring the Effect of Wal-Mart,” with E. Leibtag, presented at EC2 conference, Marseille, Dec. 2004, Journal of Applied Econometrics 2007.
- “Measurement of the Change in Economic Efficiency from New Product Introduction,” with E Berndt, P. Chwelos, and I. Cockburn, August 2005, MIT mimeo, presented At EARIE conference, Porto, September 2005
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