

# CURRICULUM VITAE

## Leonard Waverman

### PERSONAL DATA

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Date of Birth: 18 October 1941  
Place of Birth: Toronto, Canada

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London Business School  
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### EDUCATION

Massachusetts Institute of Technology  
Doctoral Dissertation

Ph.D. 1969  
"National Policy and Natural Gas: The Costs  
a Border"

University of Toronto

M.A. (Economics) 1965

University of Toronto

B. Comm. 1964

### PERSONAL EXPERIENCE

#### Academic

June 2002 - Present	Senior Affiliated Research Fellow, Columbia Institute for Tele-Information, Columbia University
April 2002 – Present	Director, Centre For The Network Economy, London Business School
December 2001 – Present	Director, "The Social/Economic impact of Information and Communication Technology ", The Leverhulme Trust grant to LBS
December 2001 - Present	Director, E-Society Research Programme Economic and Social Research Council
August 2000- Present	Professor of Economics, London Business School
August 1999 – July 2000	Research Professor London Business School
April 1997 - July 1999	Visiting Professor, London Business School
January 1997 – April 1997	Visiting Fellow, Brookings Institution
June 1989 - December 1996	Director, Centre for International Studies, University of Toronto
September '95 - December '95	Professeur <i>Invité</i> Department of Economics
April 1993 – June 1993	ESSEC, Paris

April 1993 – December 1995	Research Associate, ENSAE-CREST, <i>Laboratoire d'Economie Industrielle Centre de Recherche en Economie et Statistique, Paris.</i>
November - December 1995 and May 1992	Professeur <i>invité</i> , Faculté de Gestion, Université de Paris I.
January - June 1991	Visiting Professor, INSEAD, Fontainebleau, France
February - June 1989	Professeur <i>invité</i> , Faculté d'Economie Appliquée, Université d'Aix-Marseille III
June 1981 – July 1984	Director, Policy and Economic Analysis Program, Institute for Policy Analysis, University of Toronto.
1976 – present	Professor of Economics, Department of Economics, University of Toronto
October – December 1976	Visiting Scholar, Department of Economics, Stanford University.
1968 – 1976	Associate Professor, Department of Economics, University of Toronto
1968 – Present	Research Associate, Institute for Policy Analysis, University of Toronto
1968 – 1972	Assistant Professor of Economics, University of Toronto.

## PROFESSIONAL

June 2002 - Present	Non-Executive Board member, GEMA (The UK Electricity and Gas Markets Authority)
January 2002 - Present	Advisory Board, Deutsches Institut für Wirtschaftsforschung, Berlin
July 2001 – Present	Special Advisor, NERA
June 2000 – Present	Non-Executive Board member, Boltblue Inc.
December 1997 – January 2000	Board of Directors, LECG Ltd
September 1996 – December 2000	Chair, Government of Canada Advisory Committee on Telecommunications Statistics and Economic Analysis.
December 1995 – April 1996	Member, Advisory Committee on Competition in Ontario's Electricity System, Ministry of Environment and Energy, Province of Ontario.
1994 – 2001	Principal, Law and Economics Consulting Group (L.E.C.G.), Berkeley, California.
1994 – 2001	Co-Director, Global Forum on Competition and Trade Policy, (partner institution of the section on Business Law of the International Bar Association).
December 1991 – Present	Member, Canadian Competition Law and Policy Committee of the Canadian Council for International Business, Member of the Industry Advisory Committee to the OECD and the International Chamber of Commerce.

December 1991 – December 1996	Director, PROFMEX, the Consortium for Research on Mexico.
January 1991 – December 1995	Advisory Board, North American Economics and Finance Association.
January 1990 – December 1996	Editor, <i>The Energy Journal</i> and Member of Executive Council, International Association of Energy Economics.
February 1989 – June 1994	Board Member, Ontario Telephone Service Commission and Member of National Association of Regulatory Utility Commissioners.
June 1981	Program Co-Chairman, Third Annual International Conference, International Association of Energy Economists.
June 1979 – May 1982	Executive Council, International Association of energy Economists.
January 1979 – March 1990	Editorial Board, <i>Energy Economics</i> .
May 1978 – May 1980	Board Member, Ontario Energy Board (part –time) and Member of National Association of Regulations by Utility Commissioners.
1976 – 1980	Associate Editor, <i>Canadian Journal of Economics</i>

## **FIELDS OF SPECIAL TEACHING INTEREST**

Economics of Telecommunications, Energy and Resource Economics, Economics of E - Competition, Industrial Organization and Public Policy, International Trade, Public Utility and Public Enterprise Economics, Micro Theory.

Courses taught: Telecommunications Economics, Strategic Trade Policy, Economics of E-Competition, Energy and Natural Resource Economics, International Economics, Economic Regulation, Microeconomics.

## **AWARDS AND HONOURS**

“Chevalier dans L’Ordre des Palmes Academiques”, 1995 Government of France.

Who’s Who in Canada 1990 -

Who’s Who in Competition Policy 1996 -

Member, Institute of Directors, London 1998 –

Member, Reform Club, London 2002 -

## **PUBLICATIONS**

### **Books**

*“Global Speak: The Restructuring of the International Telecom Marketplace”*,  
Cambridge University Press, forthcoming 2003

*“Who Pays for Universal Service: When Telephone Subsidies Become Transparent”*, with  
R. Crandall, Brookings Institution, June 2001.

***“Managing European Deregulation: Conflicting Priorities”***, with L. Bergman, C. Doyle, J. Gual, L. Hultkranz, D. Neven, and H. Roeller, C.E.P.R. London, September, 1998

***“Competition Policy In A Global Economy”***, edited with W. Comanor and A. Goto, Routledge Press, 1996.

***“Talk is Cheap: The Promise of Regulatory Reform in North America”***, with R. Crandall, Brookings Institution, March 1996.

***“Competition Policy In An Interdependent World Economy”***, with Erhard Kantzenbach, Hans-Eckart Scharrer (eds.), Nomos Verlagsgesellschaft, Baden-Baden, 1993.

***“Developments in Europe and their Spillovers to North America”***, with Bernard Heitger (eds.), Routledge Press, April 1993.

***“Modeling North American Free Trade”***, World Economy; (Guest Editor), January 1992.

***“Costs and Productivity in Automobile Production: The Challenge of Japanese Efficiency”***, with Melvyn Fuss, Cambridge University Press, April 1992.

***“Corporate Globalization Through Mergers and Acquisitions”***, (ed.), University of Calgary Press, for Investment Canada, 1991.

***“Negotiating and Implementing a North American Free Trade Agreement”***, (ed.), Centre for International Studies and The Fraser Institute, December 1991.

***“The Dynamics of North American Trade and Investment, Canada, Mexico and the United States”***, with Clark W. Reynolds and Gerardo Bueno (eds.), Stanford University Press, 1991.

***“Comparative Advantage in North America: Theory and Policy”***. In a Special Issue of *North American Review of Economics and Finance*, Vol. 1 No. 2, Fall 1990, with Clark W. Reynolds, (eds.)

***“Petro-Canada, An Analysis of Control, Accountability and Financial Viability”***, with P. Halpern and A. Plourde, Economic Council of Canada, March 1988.

***“Canadian Financial Institutions: Changing the Regulatory Environment”***, with J. Ziegel and D.W. Conklin (eds.), Ontario Economic Council, 1985.

***“Adapting to Changing Energy Prices: Proceedings of the Third IAEE International Conference”***, with C. Watkins (ed.), O.G.H., Cambridge, MA, 1984.

***“Enterprise, Structure and Corporate Concentration”***, with S. Berkowitz and Y. Kotowitz, Study No. 17, Royal Commission on Corporate Concentration, Ottawa, 1977.

***“The Energy Question: An International Failure of Policy”***, (*Volume I, The World, Volume II, North America*), University of Toronto Press, Toronto, 1974.

**“Natural Gas and National Policy: A Linear Programming Model of North American Natural Gas Flows”**, University of Toronto Press, Toronto, 1973.

**“A Statistical Analysis of the Canadian Telecommunications Industry - Demand - Production & Investment”**, with M.D.G. Copeland, A.R. Dobell, T.H. Liu, and L.B. Taylor, Queen's Printer, Ottawa, Summer 1971.

## Monographs

**“Corporate Control and Industry Structure in Global Communications”** Guest Editor with Francisc Trillas, *Telecommunications Policy*, April 2002

**“The Transformation of International Telecommunications”** with Martin Cave, guest editor, *Telecommunications Policy*, November 1998

**“International Competition Policy Issues”**, *International Business Lawyer*, guest editor, November 1995.

**“Canada-China Trade and Economic Relations: Building a Strategic Partnership”**, with A. Alexandroff, W. Cai, S. Magun, M. Smith, Centre for International Studies and Centre for Trade Policy and Law, *Joint Policy Paper*, November 1994.

***The Pricing of International Telecommunications Services***, with Dimitri Ypsilanti, OECD, 1994.

***The Optimal Structure of the European Satellite Operations Industry***, with Damien Neven and Hendrik Roller, European Space Agency, Brussels, 1992.

**“The Process of Telecommunications Regulation in Canada”**, *Economic Council of Canada, Working Paper No. 28*, January 1982, 324p.

**“The Regulation of Telecommunication in Canada”**, with M. Fuss, *Economic Council of Canada Technical Report*, No. 9, March 1981, 168p.

***Empirical Analysis of Dynamic Adjustment Models of the Demand for Energy in the U.S. Manufacturing Industries***, 1947-74, with E. Berndt and M. Fuss, *Electric Power Research Institute Research Report*, Palo Alto, California, 1979, 179pages.

***Energy and the Cost Structure of Canadian Manufacturing Industries***, with M. Denny and M. Fuss, Institute for Policy Analysis, University of Toronto, *Technical Report No. 12*, Toronto, Canada, August 1979, 202p.

***Dynamic Models of the Industrial Demand for Energy***, with E. Berndt and M. Fuss, *Electric Power Research Report EA-580*, Palo Alto, California, November 1977, 137p.

## Articles in Refereed Journals, Refereed Articles in Books

"Asymmetric Regulation for Multi-media Markets", with Mark Schankerman, *Information Economics and Policy*, forthcoming 2003

"Econometric Cost Functions", with Melvyn Fuss, in Martin Cave, S. Majumdar and I. Vogelsang, eds. *Handbook of Telecommunications Economics*, Kluwer, 2002

"Telecommunications Infrastructure and Economic Development: A Simultaneous Approach" with H Roeller, *A.E.R.* September, 2001

"The Implosion of the International Accounting Rate Mechanism and What it Means for Global Telecommunications", with Martin Cave, *Telecommunications Policy*, November 1998.

"European Telecommunications – On the Verge of Liberalization", with Esen Sirel, *J. Econ. Persp.*, November 1997.

"Regulation of the Public Sector Electricity in Canada", with A. Yatchew, in R. Gilbert and E. Kahn (eds.) *International Comparisons of Electricity Regulation*, Cambridge University Press, 1996.

"International Mergers and State Aid: What Should Competition Do About Industrial Policy?" with A. Neil Campbell and J. William Rowley, in Gustav-Adolf Horn and Harald Trabold (eds.), *Konjunkturpolitik (Applied Economics Quarterly)*, September 1994.

"Sunk in Space: The Economics of the European Satellite Industry and Prospects for Liberalization", with Damien Neven and Lars-Hendrik Roller, *Economic Policy*, October 1993.

"Costs, Productivity and Import Substitution Programs in the Automobile Industries of Argentina, Korea and Mexico", G. Helleiner (ed.), *The New Trade Theories and Industrialization in the Developing Countries*, Oxford University Press, 1992.

"Japan's Challenge to Canadian Manufacturing Industries: Productivity Growth and Levels", with M. Denny, M. Fuss, J. Bernstein and S. Nakamura, *Economic Studies Quarterly*, 1992.

"Has the Manufacturing Slowdown of the 1970's been Reversed: New Evidence for Canada, the USA and Japan", with M. Denny and M. Fuss, *C.J.E.*, 1992.

"Econometric Modeling of Energy Demand: When are Substitutes Good Substitutes", *Energy Demand: Evidence and Expectations*, D. Hawdon (ed.), Academic Press, 1991.

"Productivity Growth in the Automobile Industry: A Comparison of Canada, Japan and the United States", with M. Fuss, *Productivity Growth in Japan and the United States*, N.B.E.R. Studies in Income and Wealth, University of Chicago Press, 1990.

"Canadian Competition Law: 100 Years of Experimentation", *Competition Policy in Europe and North America: Economic Issues and Institutions*, Vol. 43 in the series *Fundamentals of Pure and Applied Economics*, J. Lesourne and H. Sonnenschein (eds.), Harwood Academic Publishers, 1990.

"Costs and Productivity in Automobile Production: A Comparison of Canada, Germany, Japan and the United States", with M. Fuss, *The Journal of the Japanese and International Economies*, 1990.

"The Regulation of Inter-exchange Telecommunications Services in the USA", *The Future of Telecommunications and Computers*, R. Crandall and K. Flamm (eds.), Brookings Institution, 1989.

"The Impact of \$(US)15 Oil: Good News and/or Bad News?", *Canadian Public Policy*, March 1987.

"The Canada U.S. Auto Pact: Protectionism vs. Free Trade", *Perspectives on a U.S.-Canadian Free Trade Agreement*, R.M. Stern, P.H. Trezise and J. Whalley (eds.), Brookings, 1987.

"Canadian Export Pricing for Natural Gas: Price Discrimination or Competition", with C. Watkins, *Canadian Public Policy*, 1985.

"Energy Conservation Policies: Value or Waste", *The International Oil Market Ten Years After the 1973 Crisis*, A. Ayoub (ed.), Les Presses de L'Université Laval, Quebec, 1984.

"Estimating the Effects of Diffusion of Technological Innovations in Telecommunications: The Production Structure of Bell Canada", with M. Denny, M. Fuss and C. Everson, *C.J.E.*, February 1981.

"The Distribution of Resource Rents: For Whom the Firm Tolls," *Journal of Business Administration*, Vol. 12, No. 2, Spring 1981, reprinted Peter N. Nemetz (ed.), *Energy Crisis: Policy Response*, IRPP, Montreal, 1981.

"Substitution Possibilities for Energy: Evidence from U.S. and Canadian Manufacturing Industries", with M. Denny and M. Fuss, *Modelling and Measuring Natural Resource Substitution*, E. Berndt and B. Field (eds.), M.I.T. Press, 1981.

"Demand for Energy in Manufacturing: Applications for Dynamic Models of Factor Demand to U.S. and Canadian Dis-aggregated Data", with M. Denny and M. Fuss, *Symposium on Modelling of Large Scale Energy Systems*, Pergamon Press, Oxford, U.K., 1981.

"The Measurement and Interpretation of Total Factor Productivity in Regulated Industries, with an Application to Canadian Telecommunications", with M. Deny and M. Fuss, *Productivity Measurement in Regulated Industries*, T. Cowing and R. Stevenson (eds.), Academic Press, 1981.

"Regulation and the Multiproduct Firm: The Case of Telecommunications in Canada", with M. Fuss, *Studies in Regulation*, G. Fromm (ed.), M.I.T. Press, 1981.

"An Application of Optimal Control Theory to the Estimation of the Demand for Energy in Canadian Manufacturing Industries", with M. Denny and M. Fuss, *Proceedings of the Ninth IFIP Conference on Optimization Techniques*, Springer-Verlag, Berlin, 1980.

"Flexible Design for Large Scale Corporate Data Base", with S.D. Berkowitz, P.J. Carrington and J. Corman, *Social Networks*, Vol. 2, 1980.

"The Determination of Enterprise Groupings Through Combined Ownership and Directorship Ties", with S.D. Berkowitz, P.J. Carrington and Y. Kotowitz, *Social Networks*, Vol. 2, No. 4, 1979.

"Economic Structure and Market Power in Canada", with S.D. Berkowitz, Y. Kotowitz and P. J. Carrington, International Conference on Mathematical Approaches to the Study of Social Power, Werner Reimers Stiftung, Bad Homburg, BRD, March 1978, *Social Wirtschaftswissenschaftlich Schriften* 14, 1979.

"The New Competition Policy and Regulated Industry in Canada", Chapter 15, *Canadian Competition Policy, Essays in Law and Economics*, J.R.S. Prichard, W.T. Stanbury and T.A. Wilson (eds.), Butterworths, Toronto, 1979.

"The Regulated Utility under Uncertainty", with R. Chapman, *Journal of Public Economics* 11, 1979.

"Factor Markets in General Disequilibrium: Dynamic Models of the Industrial Demand for Energy", with E. Berndt and M. Fuss, *Workshops on Energy Supply and Demand*, International Energy Agency, Organization for Economic Co-operation and Development, Paris, France, 1978, pp. 222-239.

"Energy Conservation: Policies for the Transport Sector", with D. Dewees, *Canadian Public Policy*, Spring 1977.

"The Demand for British Trunk Telephone Services: Quasi Optimality Reconsidered", *Industrial Organization Review*, Vol. 5, No. 1, 1977.

"Estimating the Demand for Energy: Heat Without Light", Conference on the Economics of Oil and Gas Self Sufficiency, Department of Economics, University of Calgary, 1976, published in *Energy Policy*, March 1977.

"Residential, Commercial and Industrial Demand for Energy in Canada: Simulations with Three Alternative Models", with M. Fuss and R. Hyndman, *Proceedings of the Workshop on Energy Demand*, (ed.), IASSA (Vienna, 1976), pp. 345-405. (Revised version) Chapter 9, *International Studies of the Demand for Energy, Contributions to Economic Analysis*, Vol. 120, W.D. Nordhaus (ed.), North-Holland Publishing Company, 1977, pp. 151-179.

"Peak Load Pricing Under Regulatory Constraint: A Proof of Inefficiency", *Journal of Political Economy*, July 1975.

"The Demand for Gasoline in Canada, 1956-1972", with D. Dewees and R. Hyndman, *Energy Policy*, June 1975.

"The Federal Communications Commission and the Regulation of the Intercity Telecommunications", *Promoting Competition in Regulated Industries*, A. Phillips (ed.), Brookings Institution, Washington, D.C., 1975.



"The Two Price System for Energy: Subsidies Forgotten", *Canadian Public Policy*, Vol. 1., No. 1, December 1974.

"Resources Allocation and the Regulated Firm: A Comment", with A.B. Atkinson, *Bell Journal of Economics and Management Science*, Spring 1973.

"The Dual in Linear Programming and the Preventive Tariff", *American Economic Review*, September 1972.

"Natural Gas and National Policy: The Costs of a Border", *Canadian Journal of Economics*, August 1972.

"A Partial Econometric Model of the Canadian Telecommunications Industry", with A.R. Dobell, L.B. Taylor, T.H. Liu and M.D.G. Copeland, *Bell Journal of Economics and Management Science*, Spring 1972.

"The Technical Economies of Integration: Message Switching and Data Processing", with D.D. Cowan, *Bell Journal of Economics and Management Science*, Fall 1971.

"Sales Revenue Maximization", *Journal of Industrial Economics*, November 1968.

#### **Published Articles – Other**

"Harmonised Introduction of Third Generation Mobiles in the EU" with Esen Sirel, *Communications Law Newsletter*, July 2000

"Broadcasting Policy Hits the Internet", *Global Internet Project*, [www.gip.org](http://www.gip.org), June 2000

"The Race for 3G – A Briefing" with Esen Sirel, *Business Strategy Review*, June 2000

"The Transformation of International Telecommunications", with Martin Cave, *Business Strategy Review*, March 1999 reprinted in *Trends and Trends Review*, (Belgium), April 1999

"Policies for Ensuring Liberalisation in European Telecommunications", with Jorde Gual, *Business Strategy Review*, October 1998

"Innovation versus Regulation – Telecommunications at a Crossroads", *Business Strategy Review*, February 1998.

"The Extent of Competition in US and Canadian Telecommunications", (with R. Crandall) in T.Wilson (ed. ), *The Future of Telecommunications*, Kluwer 1998

"Economics" (with M. Flynn and M. Fuss) in M.J. Frieman and M.L. Berenblut, *The Litigator's Guide to Expert Witnesses*, Canada Law Book, Toronto, 1997.

"The Impact of Telecommunications Infrastructure on Economic Development: A First Look at the Data", with L.H. Röller, in *Implications of Knowledge-Based Growth for Micro-Economic Policies*, P. Howitt (ed.), Ottawa, March 1995.

"The Trilateral Equation: Canada's Role in a North American Free Trade Area", in E.L. Echevarri-Carroll (ed), *NAFTA and Trade Liberalisation in the Americas*, Bureau of Business Research, The University of Texas at Austin, 1995.

"A Critical Analysis of Porter's Framework on the Competitive Advantage of Nature" in A.M. Rugman, J. Van den Broeck and A. Verbacke, *Beyond the Diamond, Research in Global Strategic Management*, Volume 5, JAI Press, 1995.

"Efficiency Principles for Telecommunications Pricing: Fairness for All", with M. Fuss in S. Globerman, W.T. Stanbury and T. Wilson (eds.) *Future of Telecommunications Policy in Canada*, 1995.

"Post-NAFTA: Can the United States, Canada and Mexico Deepen Their Economic Relationship?", in S. Weintraub (ed.), *Integrating the Americas: Shaping Future Trade Policy*, Transaction Publishers, New Brunswick, U.S.A., 1994. Also in J. Daudelin and E.J. Dosman (eds.) *Beyond Mexico*, Carleton University Press and Canadian Foundation for the Americas, Ontario, Canada, 1995.

"Competition Policy In a Globalised World: Conflicts Across Borders", in *Europe and Global Independence*, (eds.) Leonce Bekemans and Loukas Tsoukalis, Bruges: College of Europe 1993.

"The Changing Infrastructure of North America and Its Impact on Canada's Relations with Latin America", in J. Haar and E.J. Dosman (eds.) *A Dynamic Partnership: Canada's Changing Role in the Americas*, North South Centre, University of Miami, 1993.

"Canada and the Enterprise for the Americas Initiative: A Case of Reluctant Regionalism", *Business Economics*, April 1992.

"Strategic Trade Policy & 1992", in B. Burgenmeier & J.L. Mucchielli (eds.) *Multinationals & Europe 1992: Strategies for the Future*, Routledge 1991.

"A Canadian Vision of North America", *Continental Accord: Free Trade in North America*, S. Globerman (ed.), Fraser Institute, May 1991.

"Foreign Direct Investment Canada, USA, Mexico: The Impacts of Liberalization", *Economic Integration in Europe and North America*, Gilles Bertin and A. Raynauld (ed.), Sixth France-Canada Round Table of Economists, September 1991.

"Canada - USA Transborder Investment: Will Further Liberalization Take Place", *The Canada USA Free Trade Agreement: How Is It Working?* C. Doran (ed.), Johns Hopkins University Press, 1991.

"Foreign Ownership and Corporate Strategy", with Alan M. Rugman, *Corporate Globalization Through Mergers and Acquisitions*, L. Waverman (ed.), 1991.

"The State of Competition in U.S. Telecommunications" with B. Egan, in B. Cole (ed.), *The Impacts of Divestiture in U.S. Telecommunications*, Columbia University Press, 1990.

"Canadian Business in A Global Trading Environment", in A. Rugman (ed.) *Research in Global Strategic Management*, Volume 1, 1990

"Trade in Energy Products", with A. Plourde, *Energy Markets in the 1990's*, G.C. Watkins (ed.), Fraser Institute, 1989.

"The Free Trade Agreement and the Automobile Industry", *Proceedings of the National Conference on the Canada-U.S. Free Trade Agreement*, M. Gold (ed.), 1988.

"Energy Scarcity, Security, Development and Trade: The Energy Chapter of the Canada-U.S.A. Free Trade Agreement", a paper prepared for **Energy Options**, mimeo available from the Department of Energy, Mines and Resources, Ottawa.

"Energy Pricing and Fiscal Policies", Report of the Rapporteur, **Energy Options** Conference on Pricing and Taxation, November 15-17, 1987.

"Export Prices for Canadian Natural Gas: Exploitation vs. Benign Discrimination", with G.C. Watkins, *Proceedings of the Sixth Annual I.A.E.E. North American Meetings*, J. Wayant (ed.), October 1987.

"Canadian Energy Policy After 1985: Lessons from the Present", *Canada's Energy Policy, 1985 and Beyond*, E.A. Carmichael and C.M. Herrera (eds.), C.D. Howe Institute, Toronto, 1984.

"Investments in Energy Supply Industries and the Economy of the OECD, 1970-1990", *Adapting to Higher Prices*, G.C. Watkins and L. Waverman (eds.), op. cit.

"Pricing Principles for Postal Service", *Perspectives on Postal Service Issues*, H. Sherman (ed.), American Enterprise Institute, Washington, D.C., 1981.

"The Visible Hand: The Pricing of Canadian Oil and Natural Gas Resources", *Energy Policies for the 1980s, An Economic Analysis*, Vol. 1, Ontario Economic Council, Toronto, 1980.

"Canadian Energy Future", *Canada: The Third Option*, S. Berkowitz and R. Logan (eds.), McGraw-Hill, Toronto, 1979.

"Markets for Regulation", with M. Trebilcock and R. Priehard, *Government Regulation*, Ontario Economic Council, Toronto, 1978.

"Life Cycles Costs for Nuclear vs. Coal Powered Generator Stations", with S. Banerjee. Paper prepared for the Royal Commission on **Electric Power Planning**, Toronto, December 1977.

"The Demand Model of the National Energy Outlook: A Critique", **Review of Federal Energy Administration, National Energy Outlook**, H. H. Landsberg (ed.), Resources for the Future, Washington, D.C., 1977.

"The Regulation of Telecommunications: Pandora's Telephone Box", *Challenge*, November/December 1976.

"Energy Economics", *Conference on Canada's Energy Future*, University of Toronto, Faculty of Applied Science and Engineering, 1976.

"The Demand for Electricity in Ontario to 1985", with M. Fuss and R. Hyndman. Paper presented to the *Select Committee of the Legislature Investigating Ontario Hydro*, University of Toronto, mimeo 1976.

"Canadian-American Energy Relations: The Reluctant Bride", *The Energy Question*, E. Erickson and L. Waverman (eds.).

"The Economics of Integration: Telecommunications and Data Processing", Appendix C, with D.D. Cowan, Department of Communications, *Policy Considerations with Respect to Computer Utilities*, Queen's Printer, Ottawa, Summer 1971.

"On the Productivity of Productivity Measures", Private Planning Association of Canada, *The Council, The Economy and the Potentials of the Seventies*, Montreal, Winter 1971.

"Fiscal Instruments and Pollution: An Evaluation of Canadian Legislation", *Canadian Tax Journal*, November-December 1970.

"Pollution and Economic Growth", The Ontario Federation of Labour, *Communications*, August 1970.

"Some Fiscal Aspect of Controlling Industrial Water Pollution", with R. Bird, *Economic Thinking and Pollution Problems*, D. Auld (ed.), University of Toronto Press, Spring 1971.

"Pollution: A Problem in Economics", *Current Economic Problems and Politics*, L. Smith and L. Officer (eds.), McGraw-Hill, June 1970.

## Reviews

*Canadian Journal of Economics, Canadian Banker, Canadian Historical Review, Queen's Quarterly, Journal of Public Economics*

## Referee For

*American Economic Review, Rand Journal, Journal of Public Economics, Journal of Political Economy, Canadian Journal of Economics, Journal of Law and Economics, Canadian Public Policy.*

## Conference Papers

Available on Request