

RICHARD S. ECKAUS
Curriculum Vita

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Education

B.S., 1944, Electrical Engineering, Iowa State
M.A., 1946, Economics, Washington University
Ph.D., 1954, Massachusetts Institute of Technology

Teaching and Administrative Positions

Ford Foundation International Professor of Economics Emeritus, MIT, 1996-
National Advisory Council on Environment and Technology Policy, U.S. Environmental Protection
Agency, April, 2003-2005
Visiting Scholar, Roxbury Community College, 1996-2002
Ford Foundation International Professor of Economics, MIT 1977-1996
Head, Department of Economics, MIT, 1987-1990
Chairman, Graduate Committee, Department of Economics, MIT, 1973-1987, 1990-1996
Professor of Economics, MIT, 1965-77
Associate Professor of Economics, MIT, 1962-65
Assistant and Associate Professor of Economics, Brandeis University, 1954-62
Instructor, Assistant Professor of Economics, Brandeis University, 1951-54
Instructor of Economics, Babson Institute, 1948-1950

Research Grants, Official Positions, Conference Organization

United States Naval Reserve, Lieutenant Junior Grade, 1946-1948.
Great-Cross of the Order of Prince Henry the Navigator, Government of Portugal
-National Advisory Council for Environmental Policy and Technology, 2003-2005
-Joint Program on the Science and Policy of Climate Change, MIT
-Co-organizer, conference on macroeconomic policy in China, 2004
-Consultant, World Bank, A Country Study of Bhutan, 1998
-Team Leader, A Study of Extrabudgetary Revenues and Expenditures in the People's Republic of China,
Asian Development Bank, 1997-1998
-Co-organizer, Beidaihe Senior International Seminar on Curbing Inflation, Beidaihe, China, July 8-10,
1994, Beidaihe sponsored by the State Commission for Restructuring the Economic System and the
Development Research Center of the State Council of the P. R. C.
-Principal Investigator, "Effects of Greenhouse Gas Emissions Restrictions on the Economy of China,"
Joint Program on the Science and Policy of Global Changes, 1993-present, in collaboration with INET,
Tsinghua University, Beijing, China
-Principal Investigator, "Effects of Climate Change on China's Agricultural Sector," Joint Program on the
Science and Policy of Climate Change, 1995-1997
-Principal Investigator, "Economics Effects in Developing Countries of Restrictions on Atmospheric
Radiative Forcing by Greenhouse Gas Emissions," National Science Foundation, 1991-1993
-Principal Investigator, "Environmental and Economic Trade-Offs," Center for Energy Policy Research,
Energy Laboratory, MIT, 1990-
-Consultant and Mission Director, Bank of Jamaica, Government of Jamaica, 1982-1988, 1995
-Consultant, Asian Development Bank, Economy of the Marshall Islands, 1993
-Consultant and Mission Director, Ministry of Planning and Regional Development, Government of
Portugal, Bank of Portugal, 1976-80, 1988-1993
-Mission Leader, Sino-U.S. Symposium on China's Economic Issues, Beijing, China, January 1989
-Co-Principal Investigator (with C. Blitzer), Energy Planning in Egypt, Energy Laboratory and Meta
Systems, MIT, 1987-
-Co-Principal Investigator, Research Project on Significance of Market Structure of International Banking
for Lending to Developing Countries, Center for Energy Policy Research, Energy Laboratory, MIT, 1986
-Co-Principal Investigator (with C. Blitzer), Research Project on Projecting Energy Demands in Less-

- Developed Countries, Center for Energy Policy Research, Energy Laboratory, MIT, 1984-85
 - Co-Principal Investigator (with C. Blitzer), Research Project on an Energy Policy Model for Sri Lanka, U.S. Agency for International Development, 1983-84
 - Co-Principal Investigator (with D. McFadden), Research Project on a Cross-Country Analysis of Debt Servicing Capacity, Center for Energy Policy Research, Energy Laboratory, MIT, 1982-84
 - Co-Principal Investigator (with C. Blitzer), Research Project on Energy Demands and Energy Policy in Mexico, a collaborative project with Instituto Autonomo de Mexico financed by the Oficina de Asesores de Presidente, 1981-82
 - Consultant, United Nations, Center for Science and Technology in Development, 1985
 - Consultant, World Bank, 1982, 1983, 1986, 1989, 1990, 1991
 - Consultant, AID Mission to Government of Jamaica, 1981
 - Co-Principal Investigator (with Prof. A. Mohie Eldin, Cairo University) Project on Methods of Improving Planning Methods in Egypt, a collaborative project of Cairo University and MIT, 1976-
- 1980
- Executive Committee, Technological Adaptation Program, MIT, 1976-1980
 - U.S. Agency for International Development, Department of State, Head of Mission to the Bank and Government of Portugal, 1976-77
 - Organization for Economic Cooperation and Development, Leader of Technical Assistance Mission to Government of Portugal, 1975, 1976
 - Consultant on Economic Policy in Portugal, 1972-74
 - National Academy of Science/National Academy of Engineering
Committee on Appropriate Technologies for Developing Countries, Member, 1974-75
 - Organization of American States, Research on Financial Markets in Latin America, 1971-74
 - International Bank for Reconstruction and Development, Research on Financial Markets, 1976
 - Research on Methods for Estimating the Size Distribution of Income, World Bank, 1976
 - Research on Financial Problems of Implementing Cost-Benefit Analysis and Analysis of Income Distribution Problems, 1973
 - Carnegie Commission for Higher Education, A Disaggregated Study of Returns to Education, 1969-71
 - ODEPLAN Research Project, Santiago, Chile (sponsored by CENIS), Project Consultant, 1968-71
 - Ford Foundation Faculty Fellowship, 1965-66
 - Member, Board of Economic Advisors to the Governor of Massachusetts, 1963-66
 - Guggenheim Fellowship and Social Science Research Council Grant, Research in Technological Change with special attention to the Italian metallurgical industry, 1962
 - Center for International Studies, MIT, Research Associate, 1952-62
 - Center for International Studies, Research Associate, Italy Project, 1954-55
 - Project Leader, India Project, Center for International Studies, MIT, 1961-62
 - Rockefeller Foundation, Research on the Economics of Education and Training, 1958-60

PUBLICATIONS: BOOKS

- Appropriate Technologies for Developing Countries, National Academy of Sciences, Washington, 1977
- (with J. Bhagwati, eds.), Development and Planning, Allen & Unwin, 1973
- (with P.N.Rosenstein-Rodan, eds.), Analysis of Development Problems, North-Holland Press, 1973
- Estimating the Returns to Education, Carnegie Commission on Higher Education, 1973
- Basic Economics, Little, Brown & Co., 1972
- (with R. Crandall), Contemporary Issues in Economics, Little, Brown & Co., 1972
- (with J. Bhagwati, eds.) Foreign Aid, Penguin Books, 1970
- (with K. Parikh), Planning for Growth, MIT Press, 1968

PUBLICATIONS: PAPERS

- (with E.C. Brown). Sept. 1952. Operations of the Carrybacks of World War II during the Reconversion Period. *National Tax Journal*, 5:193-206

- May 1953. The Acceleration Principle Reconsidered. *Quarterly Journal of Economics*, LXVII, 67(2): 209-230
- Sept. 1955. The Factor Proportions Problem in Economic Development. *American Economic Review*, 45(4): 539-565 and *L'Industria* (in Italian), Dec 1955 reprinted in *The Economics of Underdevelopment*, A.A. Agarwal and S.P. Singh, ed.
- May 1957. The Stability of Dynamic Models. *Review of Economics and Statistics*, 39(2): 172-182
- May 1960. The Factor Proportions Problem. *American Economic Review*, 642-648
- "L'esistenza di differenze economiche tra Nord e Sud d'Italia al tempo dell'unificazioni," *Moneta e Credito*, 1960, N. 51, pp. 3-27
- "The North-South Differential in Italian Economic Development," *The Journal of Economic History*, Vol. XX, No. 3, September 1961, pp. 285-317
- "Choice of Technology," *Economic Weekly*, Feb. 4, 1961, pp. 197-202
- (with Louis Lefebvre), "Capital Formation: A Theoretical and Empirical Analysis," *Review of Economics and Statistics*, XLIV, May 1962, No. 2, pp. 113-122
- Education and Economic Growth," *Economics of Higher Education*, eds, S. Mushkin, U.S. Office of Education, 1962, 102-127
- "Technological Change in the Less Developed Areas," *Development of the Emerging Nations*, Brookings Institution, 1962
- (with S. Chakravarty), "The Choice Elements in Intertemporal Planning." *Economic Weeking Annual*, Bombay, 1962 and *Supplemento alle Informazioni SVIMEZ*, N. 115, Guigno 1962, Anno XI (in Italian), also in *Capital Formation and Economic Development*, Vol. II, India Studies, P.N. Rosenstein-Rodan ed.
- (with S. Chakravarty), "An Approach to a Multi-Sectoral Intertemporal Planning Model," and "An Appraisal of Alternative Planning Models," in *Capital Formation and Economic Development*, 1963, 68-82
- "Economic Growth and Investment in Education," (in Italian) *La Scuola in Azione*, September 1963
- "Investment in Human Capital: A Comment," *Journal of Political Economy*, LXXI, October 1963, No. 2, May 1964, pp. 181-190
- "Economic Criteria for Education and Training," *The Review of Economics and Statistics*, Vol. XLVI, No. 2, May 1964, pp. 181-190
- "Planning in India," in *Economic Planning*, M. Millikan, ed., NBER, Columbia University Press, 1967
- "Economic Criteria for Foreign Aid for Economic Development," *Foreign Aid*, J. Bhagwati and R.S. Eckaus, eds., 1970
- "The Rationale of U.S. Aid for Economic Development," *Journal of Developing Areas*, July 1970, 447-460
- "Absorptive Capacity as a Constraint Due to Maturation Processes," in *Development and Planning*, Allen & Unwin, 1973, 79-108
- "The Chinese Economy-Discussion," *American Economic Review*, May 1973, 232-234
- "Science Policy in the Choice of Technology," in *Universities and Transnational Approaches to the Solution of World Problems*, Osborn T. Smallwood, ed., Ohio State University, 1973
- "Monopoly Power, Credit Rationing and the Variegation of Financial Structure," *The Organization of American States*, 1974, 27-50
- "The Structure of the Commercial Banking System in Mexico, 1940-1970," *Papers of the Capital Markets Development Program*, Organization of American States, Washington, DC, 1974
- "The Structure of the Financiera System in Mexico, 1940-1970," (*Estructura del sector de las Financieras en Mexico, 1940-70*) *CEMLA Boletin Mensual*, 21, May 1975, pp. 256-287
- "Rationalizations and Operating Procedures for Small Farmer Credit Programs," *AID*, Spring Review of Small Farmer Credit, February 1973
- "The Structure and Performance of Mexican Banks and Financieras, 1940-1970," *MIT Working Paper No. 142*, October 1974
- "Financial Regulation as a Means of Directing Development Policy in Latin America," December 1974, *Revista de economia latino-americana* 4, 1976, pp. 95-123
- "Financial and Other Problems of Implementing Cost-Benefit Analysis," March 1974, translated and republished in Spanish in Chile by CIEPLAN, University Catolica, in *El Trimestre Economica*, 43, July-September 1976, pp. 657-680 and in *Analiseidei Pragetti di Investimento*, Biblioteca Marsilio, Venezia, 1978
- "Contraction vs. Expansion as Policies for Stability and Growth," (presented to Joint Committee of Congress of U.S. April 21, 1977)

- "Problems of Overall Planning and Coordination in Portugal," Conferencia Internacional sobre Economia Portuguesa, Fundacao Calouste Gulbenkian, Lisboa, 1977
- (with R. Dornbusch and L. Taylor), "Analysis and Projection of Macroeconomic Conditions in Portugal," in Conferencia Internacional sobre Economia Portuguesa, Fundacao Calouste Gulbenkian, Lisboa, 1977, and L.S. Graham and H.M. Makler, ed., Contemporary Portugal, U. of Texas Press, Austin, 1980, 299-330
- (with N. Choucri), "A New View of the Egyptian Economy," Al Ahram Al Aktisadi, September, 1977
- "Long Term Economic Problems of Advanced and Developing Countries," in Hemily and Ogdas, eds., Science and Future Choice, Vol. II, 1978, pp. 225-255
- "Criteria and Orientations for Science and Technology for Development," Technology and Society, Vol. I, No. 2, 1979, pp. 123-135
- (with N. Choucri), "Interactions of Economic and Political Change," World Development, vol. VII, 1980, PP. 783-797
- (with F. Desmond McCarthy and A. Mohie Eldin), "Multisector General Equilibrium Models for Egypt," MIT Economics Department Working Paper No. 233, March 1979
- "Strategies of Development and the International Division of Work," in 2nd Conferencia Internacional sobre Economia Portuguesa, Lisbon 1980, 573-608
- "Report on the Question of the Levels of Attainment of Scientific and Technological Development Among Countries," (mimeo), 1981
- (with Y. Boutros Ghali and A. Mohie Eldin), "Pictures of Egypt's Future: A Dynamic Analysis of Sectoral Development," MIT Economics Department Working Paper No. 276, March 1981
- (with F. Desmond McCarthy and A. Mohie Eldin), "A Social Accounting Matrix for Egypt, 1976," Journal of Economic Development, Vol. 9, No. 2, Oct. 1981, 183-205
- "Determinants of Proper Industrial Technology in Kuwait," Oil and Arab Cooperation, Vol. 7, No. 3, 1981, 95-207
- "Observations on the Conditionality of Financial Institutions," World Development, Vol. 10, No. 9, September 1982, 767-780
- "Some Temporal Aspects of Development: A Survey," World Bank Staff Working Papers, No. 626, World Bank, Jan. 1984
- (with C. Blitzer), "Analysis of Energy Policy in Mexico Using A Computable General Equilibrium Model," (mimeo), 1982
- "Comment," (on C. Gwin, "Financing India's Structural Adjustment," and O. Okyar, "Turkey and the IMF") in John Williamson, ed., IMF Conditionality, Washington, 1983, pp. 563-567
- (with A. Mohie Eldin), "Consequences of Changes in Subsidy Policy: The Egyptian Case," in M. Syrquin, L. Taylor and L. Westphal, eds., Economic Structure and Performance, Academic Press, 1984, pp. 477-492
- "Egyptian Uncertainties: A Review of Employment Opportunities and Equity in Egypt," Population and Development Review, Dec., 1983
- Review of K. Dervis, J. de Melo and S. Robinson, General Equilibrium Models for Development Policy, in Journal of Development Economics, 1983
- (with D. McFadden, V. Hajivassiliou, S. O'Connell and G. Fader), "Is There Life After Debt: An Econometric Analysis of Creditworthiness of Developing Countries," Center for Energy Policy Research, MIT E-Lab Working Paper, MIT-EL 84-017WP, Oct. 1984, International Debt and the Developing Countries, Smith, G.W. and Buddington, J.T., ed., World Bank, 1985
- (with C. Blitzer), "Energy-Economy Interactions in Sri Lanka," (mimeo), June, 1985
- (with C. Blitzer), "Forecasting Energy Demand in Developing Countries," (mimeo), June, 1985
- "A Survey of the Theory of Direct Investment in Developing Countries," Industrial Bank of Kuwait,
- "How the IMF Decides On Its Conditionality," Policy Sciences, 19 (3), Nov. 1986, pp. 237-252
- (with C.R. Blitzer), "Energy-Economy Interactions in Mexico: A Multiperiod General Equilibrium Model," Journal of Development Economics, 21 (2), May 1986, 259-282
- "Appropriate Technology: The Movement Has only a Few Clothes On," Issues in Science and Technology, Vol. 3, No. 2, Winter, 1987, pp. 62-71
- "Liberalization and Development," Proceedings, Congress of International Institute of Public Finance, Paris, 1987
- "India: New Policies and Potentials," in America's New Competitors, T.F. Bradshaw, D.F. Burton, Jr., R.N. Cooper and R.D. Hormats, eds., Ballinger Publishing Co., Cambridge, MA, 1988, pp. 117-134

- (with R.F. Dernberger), "Prospects for Development Finance in India," in *Financing Asian Development*, The Asia Society, University Press of America, Boston, 1988, pp. 69-114
- "China and India: Parallels and Differences," *ibid.*, pp. 1-11 "Absorptive Capacity," *The New Palgrave, A Dictionary of Economics*, The Macmillan Press, London, 1990, Vol. 1, pp. 7-8
- "Regional Development," *ibid.*, Vol. 4, pp. 111-113
- "Paul N. Rosenstein-Rodan," *ibid.*, Vol. 4, p. 222
- "The U.S. Economy and Higher Education," in *Higher Education in A Changing Economy*, K.H. Hansen and J.W. Mayerson, eds., MacMillan, NY, 1990, 31-62
- "New Growth Theories and Development Analysis," published as "Le Nuove Teorie della Crescita e L'Analisi dello Sviluppo," in *Instituzioni e Mercato dello Sviluppo Economico*, S. Biasco, A. Roncaglia, M. Salvati, ed., Rome, 1990, pp. 45-67
- (with C. Blitzer, S. Lahiri and A. Meeraus), "The Potential for Reducing Carbon Emissions From Increased Efficiency: A General Equilibrium Methodology," May 1990 (unpublished)
- (with C. Blitzer, S. Lahiri and A. Meeraus), "An Economy-wide Energy Policy Model for Egypt," in *Economic Systems Research*, Vol. 2, 2, 1990, pp. 185-203
- "Comparing the Effects of Greenhouse Gas Emissions on Global Warming," *The Energy Journal*, 13,1, 25-35.
- "Economic Issues in Greenhouse Warming," March, 1991 (unpublished).
- (with C. Blitzer, S. Lahiri, and A. Meeraus), "The Effects on the Indian Economy of Restrictions on Carbon Dioxide and Methane Emissions," April 1992
- (with C. Blitzer, S. Lahiri, and A. Meeraus), "How Restricting Carbon Dioxide and Methane Emissions Would Affect the Indian Economy," *World Bank Working Paper*, Sept., 1992
- (with C. Blitzer, S. Lahiri, and A. Meeraus), "Comparative Economic Effects of Greenhouse Gas Emission Restrictions in Egypt and India," Sept., 1992
- "A Note on DeLong and Summers, Equipment Investment and Economic Growth," Nov., 1992
- (with C. Blitzer, S. Lahiri, and A. Meeraus), *Economic Effects of the Challenge Constraints on Emissions of Carbon Dioxide by the Indian Economy*, " Dec. 1992
- (with C. Blitzer, S. Lahiri and A. Meeraus), "A General Equilibrium Analysis of the Effects of Carbon Emissions Restrictions on Economic Growth in a Developing Country," in J. Mercenier and T. Srinivasan, *Applied General Equilibrium and Economic Development*, University of Michigan Press, 1993, pp. 255-280.
- "Some Lessons from Development Economics for Southern and Eastern Europe," in M. Baldassari and R. Mundell, eds., *Building the New Europe*, 1993, pp. 143-168, St. Martin's Press, 1993.
- (with C. Blitzer, S. Lahiri, and A. Meeraus), "Growth and Welfare Losses from Carbon Emissions Restrictions: A General Equilibrium Analysis for Egypt," *The Energy Journal*, Vol. 14, No. 1, 1993
- "Laissez Faire, Collective Control or Nationalization of the Global Commons," in Carlo Carrera, ed., *Trade, Innovation, and Environment*, Kluwer, 1994, pp. 283-300.
- "An Overview of Macroeconomic and Labor Conditions in the Mideast," September 1994.
- "The Metamorphosis of Giants: China and India in Transition," March 1994, XIII Eckstein Memorial Lecture, Center for Chinese Studies, University of Michigan
- "Potential CO₂ Emissions: Alternatives to the IPCC Projections," Joint Program on the Science and Policy of Global Change, MIT, Aug. 1994
- (with S. Lahiri and Wu Zongxin), "Trial Solutions to a Model for the Projection of Future Carbon Dioxide Emissions in China," Joint Program on the Science and Policy of Global Change, MIT, Nov. 1994
- (with C. Blitzer, S. Lahiri, and A. Meeraus), "Consequences for the Indian Economy of Restrictions on Emissions of Greenhouse Gases," Dec. 1994
- (with S. Lahiri) "A Short Note on the Effect of Climatic Variables on the Demand Pattern of Indian Households," Joint Program on the Science and Policy of Global Change, MIT, Jan., 1995
- "Is it Beautiful to be Small or is it a Burden?" April 1995, Second W. Arthur Lewis Memorial Lecture, University of the West Indies, Cave Hill Campus, Bridgetown, Barbados, *Journal of Eastern Caribbean Studies*, Vol. 22, 4, pp. 1-30, Dec. 1997.
- "Economic Reform and the Opening of the Chinese Economy to International Trade and Finance," April 1995, World Institute of Development Research, United Nations University Conference on Participation of Reforming Economies in the Global Trading and Financial System in P. Desai, "China," *Going Global*, MIT Press, 1997, pp. 415-438.
- (with Z. Yang, A. W. Ellerman and H. W. Jacoby), "The MIT Emissions Prediction and Policy Analysis (EPPA) Model," Report No. 6, MIT Joint Program on the Science and Policy of

- Global Change, May, 1996
 (with H. D. Jacoby, A. W. Ellerman, et. al., "CO₂ Emissions Limits: Economic Adjustments and the Distribution of Debt Burdens," Energy Journal, Vol. 18, 3, pp. 31-58, 1997.
- (with W. Capron, et al), "A Study of Extrabudgetary Revenues and Expenditures in the People's Republic of China," Asian Development Bank, November, 1998.
- "Bhutan: A Country Study," World Bank, December, 1998.
- "A Study of the Effects of Climate, Fertility, Weather and Other Inputs in Chinese Agriculture," (with Katherine Kit Yan Tso), Sept.1,1999
- (with R. Prinn, et al), "Integrated Global System Model for Climate Policy Analysis: I. Model Framework and Sensitivity Studies," Climatic Change, Volume 41, Nos. 3 /4, 469-546
- "Some Consequences of Fiscal Reliance on Extrabudgetary Revenues in China," China Economic Review, March 14, 2000.
- (with M. Babiker) "Rethinking the Kyoto Emissions Targets," Climatic Change, Number 4, September, 2002
- (with Supriya Lahiri and Mustafa Babiker), "The Burden Of Emissions Restrictions," New Solutions, 13(3), 283-293, 2003.
- (with Ian Sue Wing), "The Energy Intensity of U.S. Production: Sources of Long Run Change," (American Economic Review, January, 2003).
- "Should China Appreciate the Yuan," Harvard China Review, 2004.
- "Unraveling the Chinese Oil Puzzle," Center for Energy and Environmental Policy Research, MIT, Dec.,2004.
- (with Ian Sue Wing), "The Decline in U.S. Energy Intensity: Its Origins and Implications for Long Run U.S. CO₂ Emissions, SYMPOSIUM NCCR CLIMATE 2005 Interlaken March 3-4, 2005.
- "China's Exports, Subsidies to State Owned Enterprises and the WTO," China Economic Review, 17, 2006, 1-13.
- (with M. Asadoorian), "Modeling Climate Feedbacks to Electricity Demand: The Case of China," Energy Economics, May, 2006
- (with M. Babiker), "Unemployment Effects of Climate Policy," Environmental Science And Policy, May, 2006
- "Portugal: Then and Now," in Francesco Franco, ed., Challenges Ahead For the Portugese Economy, Instituto de Ciencias Sociaiais da Universidad de Lisboa, 2008.
- "An Inquiry into the Determinants of the Exports of China and India," China and the World Economy, 16, No.5, 2008, 1-16
- "A Short Chronicle of Academic Thought About Development," 2008.
- "Forced Saving in China," The China Quarterly, 217, March, 2014 pp. 180-194.
- "On and Off China's Turnpike," Economics of Transition, 22, 4, Oct.,2014, pp. 727-737.