

CURRICULUM VITAE - JON STRAND

September 2014

Born in Lillehammer, Norway; Norwegian national
Married, 2 children (23 and 19)

Current home address: 10409 Windsor View Drive, Potomac, MD 20854, USA

Current positions:

Professor, Department of Economics, University of Oslo (on leave).

Extended Term Consultant, Development Economics Group, Environment and Energy Team, the World Bank.

Research Fellow, CESifo, Munich.

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Languages:

Norwegian: Mother tongue.

English: Fluent in writing and speaking (main working language).

Spanish: Fluent in speaking and reading, good working knowledge of writing.

French: Good working knowledge of speaking, reading and writing.

German: Good working knowledge of speaking and reading; medium of writing.

Good mastery of Swedish and Danish.

1. Academic and work background

Degrees

Master of Economics (Cand. Oecon.), University of Oslo, 1979.

Ph.D., Economics (Dr. Philos.), University of Oslo, 1983. Thesis on implicit contract theory. Thesis committee: Dale Mortensen (Northwestern University; 1. opponent); Bjorn Thalberg (University of Lund; 2. opponent); Michael Hoel (University of Oslo).

Employment history

World Bank, Development Economics Group, Environment and Energy Team, 2009 to present.

World Bank, Core Team for the World Development Report 2010 on Development and Climate Change, 2008 – 2009.

Technical Assistance Advisor, International Monetary Fund, Fiscal Affairs Department (Tax Policy Division), 2005 – 2008.

Professor, Department of Economics, University of Oslo, since January 1992 (on leave since 2005.)

Associate Professor, Department of Economics, University of Oslo, 1984 – 1991.

Research Fellow, Department of Economics, University of Oslo, 1979 – 1983.

Research Assistant, Department of Economics, University of Oslo, 1976 – 1979.

Visitor and associate positions

Visiting scholar, Department of Economics, Stanford University, July 1982 - July 1983, summer 1985, and August 1993 - August 1994.

Visiting scholar, Department of Economics, State University of New York at Stony Brook, 1986 and 1987.

Visiting research fellow, Trade Union Institute of Economic Research, Stockholm, Sweden, fall 1986.

Visiting scholar, Department of Economics, Georgetown University, Washington D. C., December 1987 - August 1988.

Research associate, Frisch Centre for Economic Research, University of Oslo, 1989-1991. Senior researcher same place, January - June 1991. Scientific advisor, 1991-2004.

Visiting professor, IDEI/Université des Sciences Sociales, Toulouse (Toulouse School of Economics), 1992, 1999 and 2004.

Visiting researcher, Center for Information and Resources, Columbia University, fall 1995.

Visiting researcher, University of Aarhus, Denmark, 1998.

Visiting researcher, Economic Policy Research Unit, Copenhagen Business School, 1996, and 2001.

2. Scientific interests

Main current fields of research:

- a) Climate policy: emissions pricing and renewable energy production; climate policy instrument modeling (static and dynamic); mitigation and adaptation strategies; offset markets and their role in climate policy; impacts of inertia, irreversibility and uncertainty; infrastructure and climate policy.
- b) Public economics and political economy of the environment: Energy taxation; second-best taxation and “double dividend” issues; political economy of energy subsidies; optimal taxation, subsidies and regulation in aviation, shipping and road transport.
- c) Natural resources: Valuing rainforest resources; mechanisms behind forest losses in developing countries, and policies to control such losses.
- d) Environmental and public-goods valuation: Stated preference methods (contingent valuation, choice experiments and expert methods); revealed preference methods (hedonic price and travel cost methods) for valuing public goods in environmental, natural resource, health and transportation contexts; valuation of statistical life.
- e) Water: Tap and non-tap water demand analysis; impacts of improved water services; cost-benefit analysis of developing country water infrastructure projects; functioning and efficiency of water utilities in low-income countries.
- f) Cost-benefit analysis for projects involving environmental, natural resource, energy and health impacts.

3. Refereed publications

3.1 Environment, natural resources, energy, infrastructure and health

The Delphi Method as a Tool in Amazon Rainforest Valuation (with R. Carson, S. Navrud, A. Ortiz-Bobea and J. Vincent). *AERE Bulletin*, 34 no 1, 2014, pp 15-19.

Emissions Trading with Offset Markets and Free Quota Allocations (with K. E. Rosendahl). *Environmental and Resource Economics*, 2014 (published online May 9; 29 pp).

Implications of a Lowered Damage Trajectory for Mitigation in a Continuous-Time Stochastic Model. *Energy Economics*, 42, 2014 pp 41-47.

Planes, boats and taxes: Charging for international aviation and maritime emissions (with M. Keen and I. Parry). *Economic Policy*, October 2013, 701-749.

Strategic Climate Policy with Offsets and Incomplete Abatement: Carbon Taxes Versus Cap-and-Trade. *Journal of Environmental Economics and Management*, 66, 2013, 202-218.

The Fiscal Implications of Climate Change (with Ben Jones and Michael Keen). *International Tax and Public Finance*, 20 no 1, 2013, pp 29-70.

Global Emissions Effects of CDM Projects with Endogenous Project Baselines (with Knut Einar Rosendahl). *Resource and Energy Economics*, 34, 533-548, 2012.

Low-level versus high-level equilibrium in public utility services. *Journal of Public Economics*, 96, 163-172, 2012.

Air Pollution Control and Carbon Reduction Co-benefits (with J. Nygard, J. Cao, S. Csordas, S. Larssen, L. Liu and D. Zhang). Chapter 15 (pp 367-384) in A Baeumler, E. Ijjasz-Vasquez and S. Mehndiratta (eds.): *Sustainable Low-Carbon Development in China*. Washington DC: The World Bank, 2012.

International Fuel Tax Assessment: An Application to Chile (Joint with Ian Parry). *Environment and Development Economics*, 17, 2012, 127-144.

Inertia in infrastructure development: Some analytical aspects, and reasons for inefficient infrastructure choices. *Journal of Infrastructure Development*, 2, 2011, 51-70.

Taxes and Caps as Climate Policy Instruments With Domestic and Imported Fuels. In Gilbert Metcalf (ed.): *U.S. Energy Tax Policy*. Cambridge University Press, 2011, 233-268.

Carbon Offsets with Endogenous Environmental Policy. *Energy Economics*, 32, 2011, 371-378.

Carbon leakage from the Clean Development Mechanism (with Knut Einar Rosendahl). *The Energy Journal*, 32 no 4, 2011, 27-50.

Using hedonic pricing for estimating compensation payments for noise and other externalities from new roads (with Ståle Navrud). Pages 14-36 in “*The International Handbook of Non-market Valuation*”, Jeff Bennett, Editor. Cheltenham, UK: Edward Elgar Publishers, 2011.

Optimal Fossil-Fuel Taxation with Backstop Technologies and Tenure Risk. *Energy Economics*, 32, 2010, 418-422.

Energy Efficiency and Renewable Energy Supply for the G-7 Countries with Emphasis on Germany. In J. Cottrell, J. E. Milne, H. Ashiabor, L. Kreiser, and K. Deketelaere (eds.): *Critical Issues in Environmental Taxation*, Volume VI; pp 495-521. Oxford, UK: Oxford University Press. (March 2009)

The value of water connections in Central American cities: A revealed preference study (with Céline Nauges and Ian Walker). *Environment and Development Economics*, 14, 2009 (June), pp 349-370.

The impact of tap connection on water use: The case of household water consumption in Dakar, Senegal (joint with Anne Briand, Céline Nauges, and Muriel Travers). *Environment and Development Economics*, 2009, vol. 15, issue 1, pages 107-126.

Fiscal Policies to Promote Energy Efficiency and Renewable Energies in the G7. In M. Verhoeven (ed.): *Toward Sustainable fiscal Policies in the G-7 countries: Challenges and Strategies for Success*. IMF: Washington DC, 2008.

Climate Change and the Global Economy. *World Economic Outlook*, April 2008, Chapter IV, 57 pp. (with Natalia Tamirisa, Florence Jaumotte, Ben Jones, Paul Mills, Rodney Ramcharan, and Alasdair Scott.)

Paying for Climate Change. *Finance and Development*, March 2008, Vol 45, Issue 1. (With Ben Jones and Michael Keen). <http://www.imf.org/external/pubs/ft/fandd/2008/03/jones.htm>

Estimation of non-tap water demand in Central American cities (with Celine Nauges). *Resource and Energy Economics*, 29, 2007, 165-182.

Indirect taxes on international aviation (with Michael Keen). *Fiscal Studies*, 28, no 1, 2007, 1-41.

Technology treaties and fossil-fuels extraction. *The Energy Journal*, 28 no 4, 2007, 169-181.

Climate Change: Economic Impact and Policy Responses (with B. Jones, M. Keen and J. Norregaard). Appendix to *World Economic Outlook*, fall 2007, pp 53-68.

Public-good valuation and intrafamily allocation. *Environmental and Resource Economics*, 31, 2007, 527-543.

Valuation of environmental improvements in continuous time with mortality and morbidity effects. *Resource and Energy Economics*, 28, 2006, 229-241.

Impacts of macroeconomic policies on the environment, resources, and welfare in developing countries (with Gabriela Mundaca). In Ramon Lopez and Michael A. Toman (eds.): *Economic Development and Environmental Sustainability: New Policy Options*, Oxford and New York: Oxford University Press, 2006, pp 90-121.

Water markets and demand in Central American cities (with Ian Walker). *Environment and Development Economics*, 2005, 10 no 3, 313-335.

Deriving values of statistical lives from observations of speed limits and driving behavior. *Journal of Transport Economics and Policy*, 39, 2005, 93-108.

Individual and household value of mortality reductions under efficient intrahousehold bargaining. *Journal of Risk and Uncertainty*, 31, 2005, 217-236.

Stated-preference methods for valuing environmental goods. In Olav Bjerkholt and Xizhe Peng (eds.), *Frontier Environmental Economics*, 2005, chapter 7, 196-231.

Valuing reduced air pollution costs by the contingent valuation method: Shanghai as a case study (joint with Xizhe Peng and Wenhua Tian). In Olav Bjerkholt and Xizhe Peng (eds.), *Frontier Environmental Economics*, 2005, chapter 8, 232-260.

Public library valuation, nonuse values and altruistic motivation (with Svanhild Aabø). *Library and Information Science Research*, 26, 2004, 351-372.

Sequencing and the Adding-Up Property in Contingent Valuation of Endangered Species, (With Knut Veisten and Hans Fredrik Hoen.) *Environmental and Resource Economics*, 29, 2004, 419-433.

Scope insensitivity in contingent valuation of complex environmental amenities (with Knut Veisten, Hans Fredrik Hoen, and Ståle Navrud). *Journal of Environmental Management*, 73, 2004, 317-331.

Social costs and benefits of restoring the Nidaros Cathedral (with Ståle Navrud). In Ståle Navrud and Richard Ready (eds.): *Valuing Cultural Heritage*. Edward Elgar Publishing, 2002, 31-39.

The relationship between property values and railroad proximity: A study based on hedonic prices and real estate brokers' appraisals (with Mette Vågnes). *Transportation*, 28 no 2, 2001, 137-156.

Efficient environmental taxation under worker-firm bargaining. *Environmental and Resource Economics*, 1999, 13, 125-141.

Efficient environmental taxation under moral hazard. *European Journal of Political Economy*, 1999, 15, 73-88.

A political economy analysis of water pricing in Honduras' capital, Tegucigalpa. In A. Dinar (ed.): *The Political Economy of Water Pricing Reform*. New York: Oxford University Press, 2000, 237-258.

Pollution taxation and revenue recycling with monopoly unions. *Scandinavian Journal of Economics*, 1998, 100 (4), 756-780.

Developing-country resource extraction with asymmetric information and sovereign debt: a theoretical analysis. *Environment and Development Economics*, 1997, 2, 263-287.

First-best environmental taxation under moral hazard. in E. Eide and R. van den Bergh (eds.): *Law and Economics of the Environment*. Oslo: Juridisk Forlag 1996, pp. 231-242.

Environmental policy, worker moral hazard, and the double dividend issue. In C. Carraro and D. Siniscalco (eds.): *Environmental fiscal reform and unemployment*, Kluwer Academic Publishers, 1996 pp. 121-135.

Lending terms, debt concessions, and developing countries' resource extraction. *Resource and Energy Economics*, 1995, 17, 99-117.

Business fluctuations, worker moral hazard, and optimal environmental policy. In H. Dixon and N. Rankin (eds.): *The New Macroeconomics: Policy effectiveness and imperfect markets*. Cambridge: Cambridge University Press, 1995, pp. 214-233.

Environmental accidents under moral hazard and limited firm liability. *Environmental and Resource Economics*, 4, 1994, 495-509.

Implicit environmental costs in hydroelectric development: An analysis of the Norwegian Master Plan for water resources (with A. Carlsen and F. Wenstøp). *Journal of Environmental Economics and Management*, 25, 1993, 201-211.

Willingness to pay for environmental goods in Norway: A contingent valuation study with real payment (with Kalle Seip). *Environmental and Resource Economics*, 2, 1992, 91-106.

(Reprinted in K. G. Willis, K. Button and P. Nijkamp (eds.) (1999): Environmental valuation. Cheltenham. UK: Edward Elgar, vol. II, 132-147.)

Norway (with Ståle Navrud). In S. Navrud (ed.): "*Pricing the European Environment*". Oxford: Oxford University Press, 1992, pp. 108-134.

Foreign aid, capital accumulation, and developing countries' resource extraction. *Journal of Development Economics*, 38, 1992, 147-163.

Implicit costs and willingness to pay for development of water resources (with Arild Hervik and Martin Risnes). In A. Carlsen (ed.): "*Proceedings from the International UNESCO Symposium on Decision Making in Water Resources Planning*", Oslo 1986.

Valuing benefits from recreational fishing in Norway: The Gaula case. In A. Carlsen (ed.): "*Proceedings from the International UNESCO Symposium on Decision Making in Water Resources Planning*", Oslo 1986.

3.2 Other areas including labor economics, macroeconomics, and development economics

Decentralized and cooperative aid provision with short-term and long-term aid. 24 pp. *Journal of International Development*, 2010, 22, 906-919.

Tax distortions, household production, and black-market work. *European Journal of Political Economy*, 21, 2005, 851-871.

When is it optimal to have a currency union? A risk allocation approach (with Gabriela Mundaca). *Oxford Economic Papers*, 2005, 57, 398-421.

Wage bargaining versus efficiency wages: A synthesis. *Bulletin of Economic Research*, 55 no. 1, 2003, 1-20.

The decline or expansion of unions: A bargaining model with heterogeneous labor. *European Journal of Political Economy*, 19, 2003, 317-340.

Effects of progressive taxation under decentralized bargaining and heterogeneous labor. *International Tax and Public Finance*, 9, 2002, 195-210.

Wage bargaining and turnover costs with heterogeneous labor and perfect history screening. 26 pp. *European Economic Review*, 46, 2002, 1209-1227.

Wage bargaining and turnover costs with heterogeneous labor and asymmetric information. *Labour Economics*, 7, 2000, 95-116.

Employment and wages with sector-specific shocks and worker moral hazard. *Journal of Economics*, 1996, 63, 151-173.

Business cycles with worker moral hazard. *European Economic Review*, 36, 1992, 1291-1303.

Unemployment and wages under worker moral hazard with firm-specific cycles. *International Economic Review*, 32, 1991, 601-612.

Long-run union-firm contracts (with Geir Asheim). *Journal of Economics*, 53, 1991, 161-184.

Monopoly unions versus efficient bargaining: A repeated game approach. *European Journal of Political Economy*, 5, 1989, 473-486.

The short-run Phillips curve with monopoly unions. *Scandinavian Journal of Economics*, 90, 1988, 63-74.

The relationship between wages and firm size: An information theoretic analysis. *International Economic Review*, 28, 1987, 51-68.

Unemployment as a discipline device with heterogeneous labor. *American Economic Review*, 77, 1987, 489-493.

Oligopolistic fixed-price equilibria and the number of firms. *Scandinavian Journal of Economics*, 89, 1987, 497-503.

Monopoly unions versus efficient bargains with free entry. *Economics Letters*, 19, 1985, 387-390.

Work effort and search subsidies with long-run equilibrium contracts. *European Economic Review*, 29, 1985, 387-406.

3.3 Scandinavian-language publications

Valuation of Global Losses due to Lost Rainforest in the Amazon (in Norwegian). *Sosialøkonomen*, no 4 2013, pp 92-99.

Komment to “Klimakur 2020”. *Samfunnsøkonomen*, vol 64 no 3, 42-46. March 2010.

Norwegian economic policy and increased openness in international capital markets (in Norwegian, with B. Gabriela Mundaca). In B. S. Tranøy and Ø. Østerud (eds.): *Mot et globalisert Norge? (Towards a globalized Norway?)*. pp. 268-301. 2005.

Globalization and the Norwegian economy (in Norwegian), with B. Gabriela Mundaca). Report no. 38, written for “Makt- og demokratiutredningen” (The program for the study of power relations in Norwegian society), February 2002. 129 pp.

Mobility costs in the labor market: Recent theories and practical implications (in Norwegian). *Norsk Økonomisk Tidsskrift*, 2000, no. 2, 111-133.

Railroad tunnel through Gamlebyen: Economic analyses of local environmental effects. Report, Norwegian State Railroads (in Norwegian), 1996. 34 pp. (Together with Mette Vågnes.)

Principles and methods for valuation of environmental goods. *Nordisk Tidsskrift for Politisk Ekonomi*, 24, 1990, 9-25 (in Norwegian).

Imperfections in deregulated credit markets (with Bent Vale, in Norwegian). In NOU 1989 no 1: Money and credit in a time of change. pp. 367-398.

Willingness to pay for protection of rivers in connection with the Master Plan on rivers in Norway (in Norwegian, with Arild Hervik and Martin Risnes). *Sosialøkonomen*, no. 1, 1986.

An evaluation of the system for economic support to laid-off workers in Norway (in Norwegian). Published report, Ministry of Labor, Oslo, 1986, 108 pp.

Norwegian development aid policy and the Norwegian economy: Some development trends (in Norwegian). *Tidsskrift for samfunnsforskning*, 27, 1986, 175-194.

Valuation of reduced air pollution from motor vehicles in Norway (in Norwegian). Published report, State Pollution Control Authority, Oslo, 1985, 90 pp.

Catalytic converter requirement for Norwegian automobiles. Costs and benefits (in Norwegian). *Sosialøkonomen*, 1985 no. 6, 3 pp.

Valuation of fresh water fish in Norway - two examples (in Norwegian). *Vann*. 1984, 7 pp.

Valuation of reduced air pollution in the Grenland region (in Norwegian, with Aanund Hylland). Published report, Ministry of Environment, Oslo, 1983, 135 pp.

Valuation of environmental goods in theory and practice (in Norwegian). *Sosialøkonomen*, 1982 no. 6, 8 pp.

Pollution from Grong Gruber: A cost-benefit analysis (in Norwegian, with Per Sanderud). Published report, Ministry of Environment, Oslo, 1981, 74 pp.

Valuing fresh water fish as a public good in Norway (in Norwegian). Published report, Ministry of Environment, Oslo, 1981, 120 pp.

Evaluation of changes in recreational values as a consequence of acidification of fresh water bodies in Norway (In Norwegian). Published report, Ministry of Environment, Oslo, 1980, 49 pp.

Norwegian development aid and the Norwegian economy in the 1970s (in Norwegian). PRIO publication S-30/80, PRIO, Oslo. 86 pp.

4. Other scientific work

4.1 Papers under review for international journals and book publications

Political determinants of fuel subsidies (with Cees van Beers). October 2013, 33 pp. (Under review for MIT book volume.)

Infrastructure Investments under Uncertainty with the Possibility of Retrofit: Theory and Simulations (with S. Miller and S. Siddiqui.) New (third) version sent to Energy Economics, Feb 2014, 42 pp.

Inertia in infrastructure investment with “retrofit”: A continuous-time option value approach (with N. C. Framstad). New version sent to Resource and Energy Economics, January 2014, 31 pp.

Dynamic Climate Policy with Both Strategic and Non-Strategic Agents: Taxes versus Quantities (with Larry Karp and Sauleh Siddiqui). September 2013, 33 pp. Revision submitted to Environmental and Resource Economics, August 2014.

Carbon footprint from World Bank staff air travel, 2009 and 2012 (with Heinrich Bofinger). August 2014, 38 pp. (Under review.)

Valuing Global Ecosystem Services – What do European Experts Say? Applying the Delphi Method to Contingent Valuation of the Amazon Rainforest (with Stale Navrud). February 2014, 27 pp. (Under review.)

4.2 Other current work

A Delphi Exercise as a Tool in Amazon Rainforest Valuation (with R. Carson, A. Ortiz-Bobea, S. Navrud and J. Vincent). January 2014, 41 pp.

Value of Improved Information About Gross and Opportunity Forest Values: Applications to the Amazon Rainforest. Unpublished, August 2014, 14 pp.

Note on Overall Marginal Climate Damage Cost Trajectory with Several Climate Impacts. Unpublished, August 2013, 5 pp.

Optimal aviation taxes with distortive taxation and endogenous labor supply. November 2012, 15 pp.

Value of statistical life in inter-person situations: Some fundamental aspects. August 2012, 19 pp.

Public-good and private-good values of statistical lives: Results from a combined choice-experiment and contingent-valuation survey. February 2012. 60 pp.

Optimal aviation taxes with non-competitive airlines. January 2012, 30 pp.

Some basic issues in analyzing greenhouse gas mitigation strategies. May 2013, 26 pp.

4.3 Papers published in working paper series

A review of country case studies of climate change (with 5 other authors). GEF working paper, no. 7, the World Bank - Global Environmental Facility, 1994, 61 pp.

Non-Cooperative Importer and Producer Petroleum Taxation: A Geo-Political Model. IMF WP/08/35, 2008, fd23 pp.

Simple Model Frameworks for Explaining Inefficiency of CDM (With Knut Einar Rosendahl). Policy Research Working Paper, WPS4931, March 2009, 26 pp.

“Revenue management” effects related to financial flows generated by climate policy. Background paper written for the World Development Report 2010. Policy Research Working Paper, WPS5053, September 2009. 37 pp.

Green Stimulus, Economic Recovery, and Long-Run Sustainable Development (with Michael Toman). Policy Research Working Paper, WPS5163, January 2010. 30 pp.

Climate cost uncertainty, retrofit cost uncertainty, and infrastructure closedown: A framework for analysis (with Sebastian Miller). Policy Research Working Paper, WPS5208, World Bank, January 2010. 32 pp.

The Full Economic Cost of Groundwater Extraction. Policy Research Working Paper 5494, World Bank, December 2010. 18 pp.

Infrastructure Investments under Uncertainty with the Possibility of Retrofit: Theory and Simulations. World Bank Policy Research Working Paper, 5516, January 2011 (61 pp.). (Joint with S. Miller and S. Siddiqui.)

Strategic Climate Policy with Offsets and Incomplete Abatement: Carbon Taxes Versus Cap-and-Trade. World Bank Policy Research Working Paper [5675](#), June 2011. 41 pp.

Implications of a Lowered Damage Trajectory for Mitigation in a Continuous-Time Stochastic Model. World Bank Policy Research Working Paper, 5724, June 2011. 17 pp.

Market-Based Instruments for International Aviation and Shipping as a Source of Climate Finance (with Michael Keen and Ian Parry). World Bank Policy Research Working Paper, WPS5950, World Bank, January, 67 pp.

Allocative Inefficiencies Resulting from Subsidies to Agricultural Electricity Use: an Illustrative Model. World Bank Policy Research Working Paper, WPS5955, World Bank, January 2012, 19 pp.

Emissions Trading with Offset Markets and Free Quota Allocations (with K E Rosendahl). World Bank Policy Research Working Paper, WPS6281, World Bank, November 2012, 35 pp.

Political economy aspects of fuel subsidies: A conceptual framework. World Bank Policy Research Working Paper, WPS6392, March 2013, 27 pp.

Energy Intensive Infrastructure Investments with Retrofits in Continuous Time (with N. C. Framstad). World Bank Policy Research Working Paper, WPS6430, April 2013, 34 pp.

Water Hauling and Girls' School Attendance. Some New Evidence from Ghana (with C. Nauges). WPS6443, World Bank Policy Research Working Paper, May 2013, 35 pp.

Political Determinants of Fossil Fuel Pricing (with C. van Beers). WPS6470, May 2013, 51 pp.

Calculating the Carbon Footprint from Different Classes of Air Travel (with H. Bofinger). World Bank Policy Research Working Paper, WPS6471, May 2013, 40 pp.

Valuing Global Public Goods. A European Delphi Stated Preference Survey of Population Willingness to Pay for Amazon Rainforest Protection (with S. Navrud). World Bank Policy Research Working Paper, WPS6637, October 2013, 51 pp.

How Much is the Amazon Worth? The State of Knowledge Concerning the Value of Preserving Amazon Rainforests. World Bank Policy Research Working Paper, WPS6668, October 2013, 45 pp.

Dynamic Climate Policy with Both Strategic and Non-Strategic Agents: Taxes versus Quantities (with Larry Karp and Sauleh Siddiqui). World Bank Policy Research Working Paper, WPS6679, October 2013, 34 pp.

Emissions Trading with Offset Markets and Free Quota Allocations. (With K. E. Rosendahl.) *CEifo Working Paper* no 4603, January 2014. 35 pp.

4.4 Other (earlier) unpublished work in environmental and resource economics

Calculation of the social value of recreational fishing in the river Gaula (in Norwegian). Memorandum from the Department of Economics, University of Oslo, 1981, 93 pp.

Valuation of fresh water fish as a public good in Norway. Unpublished paper, Department of Economics, University of Oslo, 1981, 29 pp.

Economic valuation of damage to fresh water fish in Norway due to acid precipitation. Paper presented at the United Nations conference on acidification, Stockholm 1982. 13 pp.

A model for the determination of benefits from recreational sites under conditions of congestion. Memorandum from Department of Economics. University of Oslo, 1982, 60 pp.

Environmental protection in a shrinking economy - some reflections (in Norwegian). Lecture held at the KOMMIT environmental conference, Trondheim 1983, 15 pp.

Valuing improvements in air quality in the Grenland region: A contingent valuation study (with Aanund Hylland). Unpublished paper, Department of Economics, University of Oslo, 1984, 35 pp.

The value of a catalytic converter requirement for Norwegian automobiles: A contingent valuation study. Unpublished paper, Department of Economics, University of Oslo, 1985, 22 pp.

Overview of possible relevant projects for the calculation of benefits from measures taken against air pollution in the Oslo area (in Norwegian). Background paper for the Oslo regulatory impact study, State Pollution Control Authority, 1985, 12 pp.

The value of river preservation in Norway: A contingent valuation study (with Arild Hervik and Martin Risnes). Unpublished paper, Department of Economics, University of Oslo, 1987, 29 pp.

Institutional incentives for environmental management: General issues. Working paper, Environment Department World Bank, 1988, 155 pp

Environmental management performance in Norway: An outline with reference to water pollution

control. Working paper, Environment Department, World Bank, 1988, 27 pp.

The effects of foreign aid on developing country resource extraction: A theoretical model. Memorandum from Department of Economics, University of Oslo, 1990, 27 pp.

Willingness to pay for ecologically produced foods in Norway: A contingent valuation study (with Knut Løyland and Ståle Navrud). Working paper, SNF-Oslo (in Norwegian).

Quantifying environmental costs of alternative energy technologies: Subproject 7: Environmental costs and welfare economics. Report to the Norwegian Water Resources and Energy Board, 1991 (with Fred Wenstøp).

The Sauda project: Economic and employment effects (in Norwegian). ENCO, 1993. 57 pp.

External costs of fuel cycles - national implementation of hydropower - employment effects. ENCO, 1993, 24 pp.

External costs of fuel cycles - national implementation of gas - employment effects. ENCO, 1994, 35 pp.

Employment effects of hydropower and gas power development in Norway. Report written from the project Sustainable Economy (in Norwegian), 1993. 46 pp.

Can stricter environmental policy improve employment? An analysis of the possibility of "double dividends" through increased environmental taxation. Report written for the project Sustainable Economy (in Norwegian), 1994. 50 pp.

Three alternative approaches to stated preference elicitation for environmental goods: A general analysis with application to the valuation of reduced air pollution in Norway. 32 pp. (with B. Halvorsen, K. Sælensminde, F. Wenstøp.). Memorandum from Department of Economics, University of Oslo, 1997. 30 pp.

Ecological and economic studies of Parque National La Tigra. Consultancy report for the Inter-American Development Bank. Final version, March 1998, 64 pp. plus appendices.

Willingness to pay for environmental goods in Norway: A contingent valuation study with multiple bias testing. (With Anders Taraldset.) 41 pp.

Environmental policy under labor unions with endogenous environmental effort. 26 pp.

Environmental policy under worker moral hazard. 26 pp.

Optimal environmental taxes in a distorted economy with consumer averting behavior. 21 pp.

Optimal environmental taxes with regional mobility and compensation for environmental damage. 22 pp.

Welfare economic aspects of biologically produced fuels in Norway (in Norwegian). Note, 11 pp.

Distributive effects of water pricing in Central America: Preliminary report on estimation of metered and coping water demand in 17 Central American Cities (with Ian Walker). August 2001, 69 pp.

Environmental Kuznets curves: Empirical relationships between environmental quality and economic development. Paper delivered at the National Conference on Sustainable Development, Voksenåsen, March 6 2002, 20 pp.

Water allocation and demand in Central America: Analysis of tap and non-tap water demand in 17 Central American cities (with Ian Walker). Report for the Inter-American Development Bank, Washington D.C. June 2003, 170 pp.

Mitigation and Adaptation: A Framework for Joint Analysis. August 2008, 10 pp.

Comment on “On Modeling and Interpreting the Economics of Catastrophic Climate Change”, By Martin Weitzman. September 2008, World Bank, 7 pp.

Motor Fuels Taxation in Chile. (With Ian Parry.) 40 pp. Report to the IDB, February 2009.

The Public Economics of Climate Change (with Ben Jones and Michael Keen). January 2009, FAD/IMF. Manuscript, about 200 pp.

The role of inter-personal factors for the valuation of statistical life. March 2009, 16 pp.

Taxing (or not) International Aviation (with Michael Keen). 5 pp. RFF Policy Commentary, June 2010.

Why do Fossil Fuel Producers Subsidize Their Own Consumption? January, 2010, 14 pp.

“Virtual rebound effects” with emphasis on long-term infrastructure investments, and their interaction with absolute (ordinary) rebound effects. Presented at the workshop Energy Efficiency Policies and the Rebound Effect, Arranged by Carnegie-Mellon University, June 27-28, 2011.

Valuation of local and regional effects of forest loss in the Amazon region. Report from World Bank workshop, Brasilia, October 6-7, 2011. 23 pp.

4.5 Other (earlier) unpublished work

Structure and efficiency of reputational labor contracts. Workshop on Factor Markets, Stanford University, no. 46, 1983.

A model of bilateral search with wage bargaining. Workshop on Factor Markets, no. 47, Stanford University.

Long-run competitive price equilibria with incomplete word-of-mouth consumer information. Memorandum from Department of Economics, University of Oslo, 1985.

The structure of implicit contracts with word-of-mouth reputational enforcement. Memorandum from Department of Economics, University of Oslo, 1985.

Equilibrium wage distributions with word-of-mouth worker communication. Memorandum from Department of Economics, University of Oslo, 1986.

Efficiency wages, implicit contracts and dual labor markets: A theory of work habit formation. Memorandum from Department of Economics, University of Oslo, 1986.

Oligopoly with monopoly unions. FIEF Report no. 33, 1987.

Inflationary bias with a rational government versus rational labor unions: Repeated game solutions. Memorandum from Department of Economics, University of Oslo, 1986.

Implicit contracts versus efficiency wages under worker moral hazard: A synthesis. Memorandum from Department of Economics, University of Oslo, 1987.

Competitive credit markets with adverse selection and moral hazard: Credit rationing and multiple equilibria. Memorandum from Department of Economics, University of Oslo, 1988.

Estimating dynamic labor adjustment under rational expectations: A comparison of competitive and union models. Unpublished, 1989. (With Gabriela Mundaca.)

Bureaucratic corruption in government contract procurement: A theoretical model. Memorandum from Department of Economics, University of Oslo, 1989.

Credit market equilibrium with banks and intermediaries under adverse selection. Memorandum from Department of Economics, University of Oslo, 1990.

Employment and wages with deferred wage payments in models of worker moral hazard. Memorandum from Department of Economics, University of Oslo, 1992.

Worker friendship and union behavior: Towards a sociological theory of labor unions. Memorandum from Department of Economics, University of Oslo, 1989.

Wage bargaining with heterogeneous labor and turnover costs. Memorandum from Department of Economics, University of Oslo, 1995.

Temporary layoffs as a worker discipline device. Unpublished, 1996, 22 pp. Under revision.

Firing costs and average labor demand with efficient labor contracts. Unpublished, 1997, 12 pp. Under revision.

Wage bargaining with heterogeneous labor and turnover costs. Unpublished, 1997, 30 pp. Under revision.

Education with efficiency wages. 25 pp.

Wage and technology dispersion with wage bargaining (with Hang Yin). 27 pp.

Wage distributions under firm wage posting and directed worker search (with Hang Yin). Working paper, 11 pp.

Competitive effort determination with heterogeneous workers and team production. Note, 28 pp.

Equilibrium wage systems with moral hazard and monitoring costs. Note, 34 pp.

Book manuscript: Analytical labor economics. Textbook manuscript. Unpublished, 360 pp.

5. Consulting

5.1 International

OECD: Valuation of benefits of environmental policies in Europe.

OECD: Labor economics implications of environmental regulation and environmental taxation.

World Bank: Institutional factors behind environmental policy in developing countries, and institutional constraints on Norwegian environmental policy.

European Economic Community: Fuel cycles project: two case studies for Norway (one hydroelectric and one gas power project).

Inter-American Development Bank: Valuation and allocation of water resources in Tegucigalpa, and La Tigra National Park, Honduras.

Inter-American Development Bank: Feasibility studies for environmental management in Honduras.

Inter-American Development Bank: "Distributive effects of water pricing in Central America, findings and policy recommendations". Joint with ESA Consultores, Tegucigalpa, Honduras.

Inter-American Development Bank: "Fuel taxation in Chile". (Joint with Ian Parry, Resources for the Future).

5.2 Norway

Evaluation of economic damage to Norway, due to acid rain, for the Norwegian Ministry of Environment (ME) and the OECD.

Valuation of costs and benefits of imposing catalytic converter technology of Norwegian automobiles, for the Norwegian State Pollution Control Authority (SPCA).

Participation in concrete project evaluation, of several projects with environmental consequences, for the ME and the SPCA.

Participation in the design of impact analysis of environmental policies for Oslo, for the SPCA.

Norwegian Ministry of Development Aid: estimating the impacts of Norwegian development aid on the Norwegian economy.

Norwegian Ministry of Labor: evaluation of the Norwegian system for economic support of individuals on temporary layoff.

Norwegian Ministry of Finance: imperfections in deregulated labor and credit markets.

Economic impacts of large-scale hydroelectric development (Sauda).

Norwegian Water and Energy Administration: development of methods for evaluating environmental consequences of different forms of energy use, and calculating implicit environmental costs of hydroelectric developments.

Norwegian State Railroads (NSB): evaluation of tunnel alternatives through the city of Oslo.

Norwegian Directorate of Roads: hedonic-price effects of road noise on property prices in Norway.

Note that my work related to catalytic converter technology, and to temporary layoff support, had direct impact on Norwegian legislation in the respective areas.

6. Conference participation, teaching, supervision, refereeing, administrative work, etc.

Participated and given presentations at a large number of international conferences, including in Norway and Scandinavia. I have given invited seminars and lectures at numerous U.S., English, French and Scandinavian universities, and several Norwegian institutions.

My teaching at the University of Oslo has included environmental and resource economics, macroeconomics, microeconomics, labor economics, information economics and game theory, and health economics, and at undergraduate, master and Ph. D. levels. I have given Ph.D. courses in environmental economics at the University of Uppsala, Sweden. I have built up the current graduate course in labor economics in the department.

I have supervised 10 doctoral candidates from the University of Oslo, and several candidates from the Norwegian School of Economics and Business Administration (Bergen), The Norwegian Technical University (Trondheim), and the Norwegian University of Life Sciences (Ås).

I have been on numerous evaluation committees for academic positions at universities in Scandinavia, and for professorial promotions.

Associate Editor, Resource and Energy Economics, since spring 2012.

Assistant Editor, Water Resources Research, 2002-2004.

Member of Steering Committee and Founding Member, Green Budget Europe, Berlin.

Refereeing includes (among others) American Economic Review, Review of Economic Studies, Journal of Political Economy, Quarterly Journal of Economics, the Economic Journal, Journal of Labor Economics, Labour Economics, Scandinavian Journal of Economics, Journal of Environmental Economics and Management, Land Economics, Environmental and Resource Economics, Environment and Development Economics, Journal of Development Economics, Bulletin of Economic Research, Journal of Economics, Journal of Institutional and Theoretical Economics, International Economic Review, Economica, European Economic Review, Journal of Public Economics, Journal of Money, Credit and Banking, European Journal of Political Economy, Manchester School, International Tax and Public Finance, Oxford Economic Papers, Energy Economics, Energy Policy, the Energy Journal, Climatic Change, Science, and Nature Climate Change.

Evaluation of research projects and programmes in several countries including the U.S. (NSF), Norway (the Norwegian Science Foundation), Sweden (the SJFR and Riksbankens Jubileumsfond), Denmark, Austria, and the United Kingdom.

I took the first initiative to start, and have later been active in developing, the current doctoral program in economics the University of Oslo, and later in all of Norway. I headed the program committee during 1986-1995. I have also been heavily involved in building up a common Nordic doctoral program in economics.

Manager of the Leif Johansen Award Programme, and the Oslo Summer School in Economics (Ph D level courses), 1993-2005.