

R I S K A N D S U S T A I N A B L E M A N A G E M E N T G R O U P

*Schools of Economics and Political Science, University of
Queensland*

ANNUAL REPORT 2005



School of Economics, The University of Queensland, Brisbane, Queensland 4072

• telephone: +61 7 3346 9646 • fax: +61 7 3365 7299 • email j.quiggin@uq.edu.au

Website: <http://www.uq.edu.au/economics/rsmg/index.htm>

Weblog: <http://www.johnquiggin.com/rsmg/wordpress/>

Table of Contents

Foreword	1
Acknowledgements	1
The Risk and Sustainable Management Group	2
Establishment	2
Aims	2
Highlights of 2005	3
Modelling the Murray–Darling	3
A leading research group	3
Awards and Honours	4
Staff	5
John Quiggin: Federation Fellow	5
David Adamson: Research Officer	5
Giovanni B. (Nanni) Concu: Post Doctoral Research Fellow	5
Mark Neal: Post Doctoral Research Fellow	6
Tyron Venn: Post Doctoral Research Fellow	6
Thilak Mallawaarachchi: Senior Research Fellow (20 per cent appointment)	6
Research Assistant	6
Murray–Darling Basin Program	7
Objective	7
Project: Murray–Darling Basin Model	7
Project: Specific Resources	7
Project: Institutions and Property Rights	8
Project: The Precautionary Principle	8
Risk & Uncertainty Program	9
Objectives	9
Project: Unforeseen Contingencies	9
Project: State-Contingent Production	9

Australian Public Policy Program	10
Objectives	10
Project: Risk and Public Policy	10
Project: Microeconomic Reform	10
Communication	11
Web site and weblog	11
Working papers	11
Public inquiries	11
Media	11
List of publications	12
Book chapters	12
Journal articles: refereed	12
Conference papers and presentations	13
Working papers	16
Reports and Submissions	18
Community service, outreach and media	19
Community service and outreach	19
Refereeing and Editorial Boards	19
Media Interviews	20
Newspaper articles	21
Research Grant: Federation Fellowship FF0348232	22
Title	22
Project Summary	22
Project Objectives	22
Objectives for 2005	22
Progress for 2005	23
Objectives for 2006	23
Research Grant: Discovery Project DP0342974	24
Title	24
Project Summary	24
Project Objectives	24
Objectives for 2005	24
Progress for 2005	24

Foreword

The problems of sustainable management of environmental resources are among the most pressing we face, but they are complicated by incomplete knowledge and by the uncertainty inherent in natural ecosystems and processes. The research reported here is aimed at improving our understanding of all aspects of this process, from fundamental issues regarding uncertainty to the policy problems involved in developing a sustainable system of water entitlements for the Murray–Darling Basin.

Acknowledgements

2005 has been another highly successful year. Primary credit for this must go to the enthusiasm and energy of the members of the team.

The University of Queensland has provided a very supportive environment for research. The assistance of the Schools of Economics and of Political Science and International Studies, the Faculties of Business, Economics and Law and of Social and Behavioral Sciences, the Office of Research and Postgraduate Studies and the Vice-Chancellor has been particularly valuable.

Numerous private and government bodies engaged in research have provided helpful assistance. Particular thanks go to the Murray–Darling Basin Commission for provision of data, advice and permission to use images in this report.

Above all, the Group thanks the Australian Research Council and the Australian government for the generous financial support given to the research reported here.

The Risk and Sustainable Management Group

Establishment

The Risk and Sustainable Management Group was formally established in May 2004, as a joint initiative of the School of Economics and the School of Political Science and International Studies in the University of Queensland. Funding has been provided by the Australian Research Council and the University of Queensland.

Work towards the establishment of the Group began in August 2003, when Professor John Quiggin took up an Australian Research Council Federation Fellowship to work on the project 'Sustainable reform of the Murray–Darling system: property rights, uncertainty and institutions'. The Group also encompasses Professor Quiggin's ARC Discovery Project DP0342974 'Risk and Australian Public Policy'.

Aims

The aim of the Federation Fellowship project, and the core aim of the Risk and Sustainable Management Group, is to use recent developments in the analysis of property rights and the theory of choice and production under uncertainty to provide a rigorous basis for the use of the precautionary principle in the management of complex economic–ecological systems. These developments will be applied to the design, modelling and evaluation of policies designed to promote ecologically, economically, and socially sustainable reform of the Murray–Darling system.

The aim of the Discovery Project is to formulate fundamentally new approaches to the theory of risk and uncertainty and to analyse their role in the design and management of complex projects and policy initiatives. The results will be applied to the central economic policy choices facing Australia; those connected with globalisation and microeconomic reform.

More generally, the aim of the Group is to show how the latest advances in economic theory can help to illuminate the major issues in the Australian public debate, from the role of government and the market to the assessment of standards of living, and to bridge the gap between economics and other social sciences.

To meet these objectives, the work of the Group has been divided into three programs:

- Murray–Darling Basin Program
- Risk and Uncertainty Program
- Australian Public Policy Program.

Each program encompasses a number of research projects.

Highlights of 2005

Modelling the Murray–Darling

The Group's central research task has been the construction of a model of land and water allocation in the Murray–Darling Basin, incorporating a representation of uncertainty sufficiently flexible to model farmer responses to alternative systems of property rights, climate change, and changes in the availability of water under varying seasonal conditions.

The first working version of the model was constructed in the course of 2005. Among the findings were the possibility that improving the flexibility of water markets may, in certain circumstances, lead to an increase in water use and therefore in the severity of environmental problems.

A leading research group

The Risk and Sustainable Management Group has established itself as one of the most productive and influential economics research groups in Australia, despite its small size. The Group's research output, with over fifty academic publications, including thirteen articles in leading theoretical and field journals such as *Economic Theory* and the *Australian Journal of Agricultural and Resource Economics*, bears favourable comparison with much larger research groups and even with medium-sized departments and schools of economics.

The Group's policy work has ranged from analysis of relevant economic theory to direct contributions to the policy process, such as submissions to public and parliamentary inquiries. The central focus has been the aim to develop an improved understanding of the problems of policymaking under uncertainty, and to apply that understanding to current policy problems, most notably those of the Murray–Darling River system and the people who live and work there. The Group has also undertaken applied work on a range of topics including pest management and the feasibility of indigenous forestry operations.

In addition to this policy-oriented work, the Group has made fundamental contributions to the economic analysis of production under uncertainty, in international collaborations with Professor RG Chambers of the University of Maryland College Park, and Professor Simon Grant of Rice University. New insights have been obtained into the way in which choices are made in the presence of unforeseen contingencies.

Awards and Honours

John Quiggin was selected as a Distinguished Alumnus of the Australian National University College of Business and Economics.

John Quiggin was ranked first among Australian economists listed at IDEAS, the largest bibliographic database dedicated to Economics. The work of the Group contributed to the ranking of the School of Economics second among all economic research institutions in Australia.

<http://ideas.repec.org/top/top.australia.html>

Staff

John Quiggin: Federation Fellow



John Quiggin is a Federation Fellow in Economics and Political Science at the University of Queensland. Professor Quiggin is prominent both as a research economist and as a commentator on Australian economic policy. He has published over 700 research articles, books and reports in fields including environmental economics, risk analysis, production economics, and the theory of economic growth. He has also written on policy topics including unemployment policy, micro-economic reform, privatisation, competitive tendering and the management of the Murray–Darling river system.

Professor Quiggin has been an active contributor to Australian public debate in a wide range of media. He is a regular columnist for the *Australian Financial Review*, to which he also contributes review and feature articles. He frequently comments on policy issues for radio and TV. He was one of the first Australian academics to present publications on a website (now at <http://www.uq.edu.au/economics/johnquiggin>). In 2002, he commenced publication of a weblog (now at <http://johnquiggin.com>) providing daily comments on a wide range of topics.

David Adamson: Research Officer



David Adamson takes primary responsibility for the coding and maintenance of the Excel version of the Murray–Darling Model. His areas of expertise include: cost–benefit analysis of research and development programs, impact assessment of agricultural pest management issues, quarantine risk analysis and MS Excel model development.

Giovanni B. (Nanni) Concu: Post Doctoral Research Fellow



Nanni Concu began work with the Group in October 2005. He also holds the position of External Researcher with the Università di Sassari (Italy). Nanni completed his doctorate in January 2005 at the University of Western Australia. His thesis used environmental valuation techniques (Choice Modelling and Contingent Valuation) to identify the relevant markets for public goods and determine how individuals' willingness to pay is affected by distance. He is now designing a valuation study of Queensland's *Vegetation Management Act 2004*. He is also developing a GIS platform to integrate biophysical and economic data to map the market and non-market values of vegetation in the Queensland Murray-Darling Basin.

Mark Neal: Post Doctoral Research Fellow



Mark Neal began work with the Group in October 2005. He completed his PhD at the University of Sydney, examining the economics of New Zealand dairy production through the optimisation of a whole-farm model. Advanced techniques including evolutionary algorithms and distributed computing were used in the optimisation approach. He has previously worked at the Productivity Commission. His current work includes analysing the potential costs of regulation designed to improve environmental outcomes and the optimal input choice for a range of farm systems.

Tyron Venn: Post Doctoral Research Fellow



Tyron Venn's fields of research include natural resource and environmental economics, development economics and forestry science. His research interests include the economics of forestry, market and non-market valuation of ecosystem services, socio-economic evaluation of the management of natural resources, and the property rights of indigenous Australians. In June 2005, Dr Venn resigned to take up an appointment at the University of Montana.

Thilak Mallawaarachchi: Senior Research Fellow (20 per cent appointment)



Thilak Mallawaarachchi, Ph.D., is working part-time on this project on secondment from his full-time position as a Senior Policy Officer at the Natural Resource Management Division of the Department of Agriculture, Fisheries and Forestry. His research encompasses economic, environmental and social aspects of resource management and focuses on using integrated modelling tools that link scientific data with economic frameworks to facilitate learning and problem solving. He received the Australian Agricultural and Resource Economics Society Ph.D award in 2001 for bioeconomic modelling combining mathematical programming and choice modelling.

Research Assistant

Nancy Wallace: Areas of expertise: editorial and bibliographic, document management, research administration and reporting.

Murray–Darling Basin Program

Objective

The objective of this research program is to apply new developments in economic theory to the design, modelling and evaluation of policies designed to promote ecologically, economically, and socially sustainable reform of the Murray–Darling system.

Project: Murray–Darling Basin Model

The main objective for 2005 was to incorporate uncertainty into a simulation model of land and water use for the model of land and water allocation in the Murray–Darling Basin, a deterministic version of which was developed in 2004.

This task was completed in late 2005. The first application of the model was to the design of property rights in the presence of uncertainty. The results were presented at the Australian Agricultural and Resource Economics Society Conference held in Sydney in February 2006.



Tail end recycling drain



Salinity damage



Habitat refuge in a dam

Project: Specific Resources

Although the main focus of attention has been sustainable management of irrigation water, other issues such as groundwater and tree planting and clearance are crucial, and arise in contexts extending beyond the Murray–Darling Basin.

It is proposed to address these issues using tools of choice modelling and farm-level modelling incorporating genetic algorithms. Work by Nanni Concu and Mark Neal during 2005 laid the basis for the application of these tools.

The project produced two journal articles and several working papers and conference papers during 2005.

Project: Institutions and Property Rights

In the policy component of the project, the main focus has been on the design of water rights in the presence of uncertainty. In addition to the modelling work noted above, two policy-oriented papers have been accepted for publication in the *Australian Journal of Agricultural and Resource Economics*. A number of submissions to public inquiries and newspaper articles have also been published.

Project: The Precautionary Principle

The precautionary principle, presented as a guide to environmental policy decisions in the presence of uncertainty, has been the subject of vigorous debate. However, the principle has generally not been discussed in relation to formal theories of choice under uncertainty developed as generalisations of the expected utility model. The aim of this project, is to derive a formal basis for the precautionary principle, based on an incompleteness hypothesis regarding formal models of choice under uncertainty. The incompleteness hypothesis states that estimates derived from formal models of choice under uncertainty will generally be over-optimistic and that the errors will be greater, the less well-understood is the problem in question. A working paper describing the approach was prepared in 2005.



Irrigated Pasture

Risk & Uncertainty Program

Objectives

The aim of this project is to develop fundamentally new approaches to the theory of risk and uncertainty and their role in the design and management of complex projects and policy initiatives. The results will be applied to the issues of sustainable management of the Murray–Darling Basin and to analyses of Australian public policy, as described under those programs.

Project: Unforeseen Contingencies

The main objectives of theoretical research in the project were to develop models capable of representing choice under uncertainty in the presence of unforeseen contingencies, and to apply these models to derive an improved understanding of the ‘precautionary principle’, commonly advocated as a guide to decisionmaking in relation to environmental problems where the consequences of alternative courses of action are not fully understood. Work in this project has been undertaken jointly with Professor Simon Grant of Rice University, Texas. A paper describing the main results has been prepared, and will be presented to a number of international conferences in the course of 2006.

The project produced two journal articles during 2005.

Project: State-Contingent Production

This project continues a long-standing collaboration with Professor Robert G. Chambers of the University of Maryland, College Park. The central idea is to represent production under uncertainty using the representation of uncertain outputs as state-contingent production bundles, as first proposed by Arrow and Debreu in their Nobel prize-winning general equilibrium model. This approach can be integrated with modern methods of production theory, such as the application of duality theory.

Areas of application have included drought policy, agency theory and finance theory. The current focus is on empirical estimation on the integration of production and finance theory and on applications to comparisons of efficiency.

Three journal articles arising from the project were published in 2005, with several more in press or accepted for publication.

Australian Public Policy Program

Objectives

The aim of this program is to show how the latest advances in economic theory can help to illuminate the major issues in the Australian public debate, from the role of government and the market to the assessment of standards of living. The project will also help to bridge the gap between economics and other social sciences.

Project: Risk and Public Policy

Risk plays a central role in public policy today. The aim of this project is to examine the role of risk and risk management in policy areas ranging from criteria for public investment to reform of the criminal justice system. Areas studied in 2005 included unemployment, public private partnerships and the US-Australia Free Trade Agreement.

The project produced four journal articles, a book chapter and a number of reports and submissions during 2005.

Project: Microeconomic Reform

Microeconomic reform has played a central role in Australian public policy for more than two decades. The aim of this project is to provide a critical analysis of the assumptions underlying microeconomic reform, the progress of microeconomic reform in particular sectors of the economy and the effects of microeconomic reform on productivity, employment, and living standards. Work in 2005 included a study of economic liberalism and a comparison of microeconomic reform in Australia and New Zealand.

The project produced two journal articles, and a number of reports and submissions during 2005.

Communication

An important object of the Group has been to make current research widely available as rapidly as possible. In addition to journal articles and conference papers, a variety of methods have been used to reach the broadest possible academic and journal articles.

Web site and weblog

A website has been developed at <http://www.uq.edu.au/economics/rsmg> . It provides reprints of journal articles and working papers, annual reports, information on staff activities and useful links.

A more recent development is a weblog, currently at <http://www.johnquiggin.com/rsmg/wordpress/> , providing regularly updated information on topics related to the work of the Group. As far as can be determined, RSMG is the first Australian research group to produce its own weblog.

Working papers

A working paper series has been established for each of the projects listed above, and registered with RePeC, the main online repository for working papers in economics. More than fifty working papers are now available. A complete set of papers is available at

<http://www.uq.edu.au/economics/rsmg/publications.htm>.

The Group has also been active in public presentations, conferences, research seminars and contributions to print and electronic media.

Public inquiries

It is important that research should be relevant to public policy. Members of the Group regularly make submissions to Parliamentary and other public inquiries. Although informed by research, views expressed in such submissions are those of the individual concerned.

Media

Professor Quiggin is a regular contributor to the *Australian Financial Review* and frequently writes on topics related to the work of the group. In addition, he regularly provides comments on policy issues for radio, television, magazines and online publications

List of publications

Book chapters

- Quiggin, John (2005), 'Economic liberalism: fall, revival and resistance' in Saunders, P. and Walter, J. (eds), *Ideas and Influence: Social Science and Public Policy in Australia*, UNSW Press, Sydney, pp. 21–43.

Journal articles: refereed

- Chambers Robert G. and Quiggin, John (2005), 'Incentives and standards in agency contracts', *Journal of Public Economic Theory*, 7(2), 201–228.
- Chambers Robert G. and Quiggin, John (2005), 'Output price subsidies in a stochastic world', *American Journal of Agricultural Economics*, 87(2), 501–508.
- Chambers, Robert G. and Quiggin, John (2005), 'Linear-risk-tolerant, invariant risk preferences', *Economics Letters*, 86(3), 303–09.
- Mallawaarachchi, Thilak, Morrison, Mark D. and Blamey, Russell K. (2005), 'Choice modelling to determine the significance of environmental amenity and production alternatives in the community value of peri-urban land: Sunshine Coast, Australia', *Land Use Policy*, <<http://dx.doi.org/10.1016/j.landusepol.2004.11.004>>doi:10.1016/j.landusepol.2004.11.004
- Grant, Simon and Quiggin, John (2005), 'Increasing uncertainty: a definition', *Mathematical Social Sciences*, 49(2), 117–141.
- Quiggin, John (2005), 'Public–private partnerships: options for improved risk allocation', *Policy Forum: Financing Public Infrastructure*, *Australian Economic Review*, 38(4), 445–450. <http://ssrn.com/abstract=856461>
- Quiggin, John (2005), 'The Y2K scare: causes, costs and cures', *Australian Journal of Public Administration*, 64(3), 46–55.
- Quiggin, John (2005), 'Running on empty', *Australian Universities Review*, 48(1), 2–5.
- Quiggin, John (2005), 'The Oil Shock of 2005', *Australian Review of Public Affairs*, 6(1). <http://www.australianreview.net/digest/2005/11/quiggin.html>.
- Quiggin, John (2005), 'The equity premium and the socialist case for public ownership', *Imprints: Egalitarian Theory and Practice*, 8(2), 112–124.

- Quiggin, John (2005) 'Pharmaceuticals and intellectual property: The US-Australia FTA', *Agenda*, 12 (2), 145-158.
- Quiggin, John (2006), 'Ambiguity and the value of information: an almost-objective events analysis', *Economic Theory*, in press.
- Venn, Tyron (2005), 'Financial and economic performance of long-rotation hardwood plantation investments in Queensland, Australia', *Forest Policy and Economics*, 7(3): 437-454.

Conference papers and presentations

- Adamson, David, Mallawaarachchi, Thilak and Quiggin, John (2005), 'Modelling basin level allocation of water in the Murray–Darling Basin in a world of uncertainty', Paper presented at the 49th Annual Conference of the Australian Agricultural and Resource Economics Society, Coffs Harbour, 9 February.
- Quiggin, John (2005), 'Social capital and open content', Paper presented to the 'Open Content Licencing (OCL): Cultivating the Creative Commons' Conference hosted by Queensland University of Technology, Brisbane, 18 January.
- Quiggin, John (2005), 'State-contingent technologies', Paper presented to the 49th Annual Conference of the Australian Agricultural and Resource Economics Society, Coffs Harbour, 11 February.
- Quiggin, John (2005), 'Consistent Bayesian updating with unforeseen contingencies', Paper presented at the 23rd Australasian Economic Theory Workshop, University of Auckland, Auckland NZ, 23 February.
- Quiggin, John (2005), 'Research and discovery: unforeseen contingencies and the economic analysis of uncertainty', Paper presented to the Economic Society of Australia's 34th Conference of Economists, University of Melbourne, Melbourne, 28 September.
- Quiggin, John (2005), 'Economic liberalism: fall, revival and resistance,' Academy of Social Sciences in Australia Symposium on 'Ideas and Influence: Social Science and Public Policy in Australia', Canberra, 7th November.
- Quiggin, John (2005), 'Government, market and citizen: from Adam Smith to Peter Beattie', Presentation to the Institute of Public Administration (Qld Division) 2005 IPAA Four Seasons Seminar Series, Brisbane, 9th March.
- Quiggin, John (2005), 'Policy and modelling issues for sustainable management of the Murray-Darling Basin', Presentation to the Productivity Commission, Melbourne, 17th March.

- Quiggin, John (2005), 'Consumers attitude to risk', Presentation at the Australian Competition and Consumer Commission's Roundtable on Consumers and Competition, Melbourne, 18th March.
- Quiggin, John (2005), 'Untangling the web of Commonwealth/State/Local government funding — what did your GST buy?', Presentation at the Housing Industry Association's Home and Building Expo, Brisbane, 26th May
- Quiggin, John (2005), 'Blogs, wikis and the creative commons', Presentation to the 2005 Adelaide Festival of Ideas, Adelaide, 10th July.
- Quiggin, John (2005), 'The precautionary principle and the theory of choice under uncertainty', Presentation to the Environmental Panel of a workshop on 'World of Risk: New Approaches to Global Risk Society' hosted by the School of Political Science and International Studies, University of Queensland, Brisbane, 30th September.
- Quiggin, John (2005), 'Water pricing', Presentation to The Brisbane Institute's Public Seminar on 'Governing Water in South East Queensland', Customs House, Brisbane, 18th October
- Quiggin, John (2005), 'Macroeconomic outlook: social implications and risks', Presentation for the Economists' Panel discussion at the Finance and Treasury Association's 18th Annual Congress on 'Building Corporate Sustainability', Brisbane, 20th October.
- Quiggin, John (2005), 'The Information Revolution and the post-economic society', Presentation of the Giblin lecture, University of Tasmania, Hobart, 26th October.
- Quiggin, John (2005), 'What next for Telstra?' Presentation to the Communications Research and Strategy Forum sponsored by Communication and Media Policy Institute, University of Canberra, Network Insight Institute and Smart Internet Technology CRC, University of NSW, Sydney, 21st November.
- Quiggin, John (2005), 'The (un)sustainability of trade and current account deficits', Presentation to the Economics Society of Australia (Queensland Branch) Christmas function, Brisbane, 24th November.
- Quiggin, John (2005), 'The future of oil', Presentation to the Brisbane Institute, Brisbane, 25th November.
- Quiggin, John (2005), 'Biodiversity trading: environmental saviour or disaster? Can we make biodiversity trading work?' Presentation at an event jointly sponsored by the Ecological Society of Australian and ABC Science Outreach (recorded for broadcast for Radio National), University of Queensland, Brisbane, 29th November.

- Quiggin, John (2005), 'Modelling sustainable management of the Murray–Darling Basin' Presentation to a multidisciplinary workshop on 'Policy Choices for Salinity Mitigation' jointly hosted by the Bureau of Rural Sciences and the Centre for Applied Economic Research, School of Economics, University of New South Wales, Sydney, 2nd December.
- Quiggin, John (2005), 'Employment in remote Aboriginal communities: a regional development perspective', Presentation to the Ngiya Think Tank Workshop, Jumbunna Indigenous House of Learning, University of Technology, Sydney, 4th December.

Book Reviews

- Quiggin, John (2005), 'A curious consensus', Review of Bjorn Lomborg's *Global Crises, Global Solutions*, Cambridge University Press, Australian Financial Review, 21 January, Review p. 3; p.6.
- Quiggin, John (2005), 'Healthy, wealthy and wise', Review of Michael Marmot's *The Status Syndrome: How Social Standing Affects Our Health and Longevity*, Times Books, Australian Financial Review, 25 February, Review p.5.
- Quiggin, John (2005), 'Rogue economics', Review of Steve Levitt and Stephen J. Dubner's *Freakonomics: A Rogue Economist Explores the Hidden Side of Everything*, Morrow, Australian Financial Review, 25 February, Review p.2.
- Quiggin, John (2005), 'No agreement on the Washington Consensus', Review of Jagdish Bhagwati's *In Defence of Globalisation*, Oxford University Press and Jan Tuenissen and Age Akkerman (eds) *Diversity in Development: Reconsidering the Washington Consensus*, FONDAD, The Hague, Australian Financial Review, 20 May, Review pp.10–11.
- Quiggin, John (2005), 'Working towards a simpler life', Review of Clive Hamilton and Richard Denniss' *Affluenza: When Too Much Is Never Enough*, Allen & Unwin, Australian Financial Review, 29 July, Review p.4.
- Quiggin, John (2005), 'To boldly go: contenders for science fiction's top literary prize', Review of candidates for the World Science Fiction Convention's Hugo awards, Australian Financial Review, 5 August, Review pp.4–5.
- Quiggin, John (2005), 'Dismantling the poverty trap', Review of Jeffrey Sachs' *The End of Poverty*, Penguin, Australian Financial Review, 2 September, Review p.4.
- Quiggin, John (2005), 'Riding the nanopyony express', Review of Ray Kurzweil's *The Singularity Is Near*, US: Viking, Australian Financial Review, 21 October, Review pp.4–5.

Working papers

Murray-Darling Program

[ISSN: 1832-4266]

- Adamson, David, Mallawaarachchi, Thilak and Quiggin, John (2005), 'Modelling basin level allocation of water in the Murray-Darling Basin in a world of uncertainty', Murray-Darling Program Working Papers WPM05-1, Risk and Sustainable Management Group, University of Queensland, Brisbane. 8 February. (17 pages)
- Venn, Tyron (2005), 'Commercial forestry: an economic development opportunity consistent with the property rights of Wik people to natural resources', Murray-Darling Program Working Papers WPM05-2, Risk and Sustainable Management Group, University of Queensland, Brisbane. 10 February. (22 pages)
- Quiggin, John (2005), 'The precautionary principle in environmental policy and the theory of choice under uncertainty', Murray-Darling Program Working Papers WPM05-3, Risk and Sustainable Management Group, University of Queensland, Brisbane. 27 April. (29 pages)
- Quiggin, John (2005), 'Risk and water management in the Murray-Darling Basin', Murray-Darling Program Working Papers WPM05-4, Risk and Sustainable Management Group, University of Queensland, Brisbane. 30 April (18 pages)
- Venn, Tyron and Quiggin, John (2005), 'Accommodating indigenous cultural heritage values in resource assessment: Cape York Peninsula and the Murray-Darling Basin', Murray-Darling Program Working Papers WPM05-5, Risk and Sustainable Management Group, University of Queensland, Brisbane. 18 June. (28 pages)
- Concu, Giovanni B. 'Are non-use values distance-independent? Identifying the market area using a choice modelling experiment', Murray-Darling Program Working Papers WPM05-6, Risk and Sustainable Management Group, University of Queensland, Brisbane. 6 December. (33 pages)
- Concu, Giovanni B. 'Investigating distance effects on environmental values: a choice modelling approach', Murray-Darling Program Working Papers WPM05-7, Risk and Sustainable Management Group, University of Queensland, Brisbane. 6 December. (24 pages)

Risk and Uncertainty Program

[ISSN: 1832-4258]

- Chambers, Robert G. and Quiggin, John (2005), 'The state-contingent approach to production under uncertainty', Risk and Uncertainty Program Working Paper RO5-1, Risk and Sustainable Management Group, University of Queensland, Brisbane. 27 January. (18 pages)

- Quiggin, John (2005), 'Economists and uncertainty', Risk and Uncertainty Program Working Paper RO5-2, Risk and Sustainable Management Group, University of Queensland, Brisbane. April 2005. (8 pages)
- Chambers, Robert G. and Quiggin, John (2005), 'Cost minimization and asset pricing', Risk and Uncertainty Program Working Paper RO5-3, Risk and Sustainable Management Group, University of Queensland, Brisbane. n. d. (27 pages)
- Grant, Simon and Quiggin, John (2005), 'Considered Bayesian updating with unconsidered propositions', Risk and Uncertainty Program Working Paper RO5-4, Risk and Sustainable Management Group, University of Queensland, Brisbane. 23 February (15 pages)
- Quiggin, John and Chambers, Robert G. (2005), 'Comparative risk aversion for state-dependent preferences', Risk and Uncertainty Program Working Paper RO5-5, Risk and Sustainable Management Group, University of Queensland, Brisbane. 18 June. (16 pages)
- Menezes, Flavio and Quiggin, John. (2005), 'Outcomes and strategy choices in Tullock contests', Risk and Uncertainty Program Working Paper RO5-6, Risk and Sustainable Management Group, University of Queensland, Brisbane. 18 June. (7 pages)
- Grant, Simon and Quiggin, John (2005), 'Learning and discovery', Risk and Uncertainty Program Working Paper RO5-7, Risk and Sustainable Management Group, University of Queensland, Brisbane. 24 July. (38 pages)

Australian Public Policy Program

[ISSN: 1832-424X]

- Quiggin, John (2005), 'How to kill a country? The US-Australia Free Trade Agreement, pharmaceuticals and intellectual property', Australian Public Policy Program Working Paper PO5-1, Risk and Sustainable Management Group, University of Queensland, Brisbane. 13 January. (17 pages)
- Bell, Stephen and Quiggin, John (2005), 'Unemployment, labour market insecurity and policy options', Australian Public Policy Program Working Paper PO5-2, Risk and Sustainable Management Group, University of Queensland, Brisbane. 15 January. (14 pages)
- Quiggin, John (2005), 'Economic liberalism: fall, revival and resistance', Australian Public Policy Program Working Paper PO5-3, Risk and Sustainable Management Group, University of Queensland, Brisbane. 26 April. (23 pages)
- Hazledine, Tim and Quiggin, John (2005), 'No more free beer tomorrow? Economic policy and outcomes in Australia and New Zealand 1984-2003', Australian Public Policy Program Working Paper PO5-4, Risk and Sustainable Management Group, University of Queensland, Brisbane. 26 April. (31 pages)

Reports and Submissions

- Quiggin, John (2005), 'Risk and discounting in project evaluation', Appendix to Risk in Cost-Benefit Analysis, Report 110, Bureau of Transport and Regional Economics, Canberra, pp. 67–116.
- Quiggin, John (2005), 'Internet comment on electoral matters', Submission to the Parliamentary Electoral Matters Committee Inquiry into the Conduct of the 2004 Federal Election and Matters Related Thereto, Brisbane, July.
- Gave evidence relating to 'Internet comment on electoral matters' at a hearing of the Parliamentary Electoral Matters Committee Inquiry into the Conduct of the 2004 Federal Election and Matters Related Thereto, Parliament House, Brisbane, 6th July 2005.
- Quiggin, John (2005), 'Internet comment on electoral matters', Supplementary Submission to the Parliamentary Electoral Matters Committee Inquiry into the Conduct of the 2004 Federal Election and Matters Related Thereto, Brisbane, August.
- Quiggin, John (2005), 'Paying for infrastructure', Submission to the Australian Labor Party Inquiry into the Financing and Provision of Australian Infrastructure, Brisbane, 25 October.
- Quiggin, John (2005), 'Untangling the web of Commonwealth/State/Local government funding - what did your GST buy', Infrastructure First Discussion Paper Series 1, Housing Industry Association, Canberra, May, pp. 13-24.
- Quiggin, John (2005), Interpreting Globalization: Neoliberal and Internationalist Views of Changing Patterns of the Global Trade and Financial System, United Nations Research Institute for Social Development (UNRISD) Overarching Concerns Programme Paper No. 7, October. 36 pages.

Community service, outreach and media

Entries in this section are for Professor John Quiggin, except where otherwise noted.

Community service and outreach

- Board member of the Queensland Competition Authority, January – August.
- Meeting with Tom Richman and Brisbane City councillor Maureen Hayes about a Private–Public Partnership for the Brisbane Tunnel, 27 January.
- Attended a meeting of the Housing Industry Association’s Infrastructure First Taskforce, Sydney, 7th March.
- Attended meeting with Tom Richman and Brisbane City Councillors to talk about private–public partnerships, Brisbane, 31 March.
- Member of the Infrastructure Funding and Investment Panel and Roundtable, Queensland Infrastructure Summit, Marriott Hotel, Brisbane, 15th June.
- Member of a Panel discussion on ‘Affluenza — the fat and lean’, Adelaide Festival of Ideas, Adelaide, 8 July 2005.
- Member of a Panel discussion on ‘Brain drain or intellectual traffic’, Adelaide Festival of Ideas, Adelaide, 9 July 2005. .
- Member of a Panel discussion on ‘What is to be done?’, Adelaide Festival of Ideas, Adelaide, 10 July 2005 .
- Presentation on ‘The implications for inequality of the proposed changes to Industrial Relations’ to the UQ Students’ Forum on Industrial Relations, University of Queensland, Brisbane, 6 October.

Refereeing and Editorial Boards

Editorial Boards: *Journal of Risk and Uncertainty*; *Australian Economic Papers*; *Journal of Economic and Social Policy*; *Australian Journal of Agricultural and Resource Economics*; *Economic and Labour Relations Review*

Refereeing: *Annals of Finance*; *Australian Academy of Social Sciences Occasional Paper Series (Policy Papers)*; *Australian Journal of Agricultural and Resource Economics*; *Bulletin of Economic Research*; *Econometrica*; *Economica*; *Economic Letters*; *Economics and Labour Relations Review*; *Economics and Philosophy*; *Economic Record*; *Economic Theory*; *Environmental and Resource Economics*; *Environment*

and Development Economics; Health Economics Journal; Journal of the Asia Pacific Economy; Journal of Computer-Mediated Communication; Journal of Economic and Social Policy; Journal of Risk and Uncertainty; Minds and Machines Journal; Quantitative Finance; Review of Economics and Statistics; Review of Agricultural Economics; The Economists' Voice;

Media Interviews

- Interview with Sydney Morning Herald: 'Income-related fines', 14 January.
- Interview with Radio 2UE News (Sydney): 'Income-related fines', 15 January.
- Interview with Ipswich Times : 'Income-related fines', 17 January.
- Interview with Radio 2UE (Phillip Parkes)(Sydney): 'Income-related fines', 17 January.
- Interview with Sunday Mail (Adelaide): 'Income-related fines', 19 January.
- Interview with Sunday Mail (Brisbane): 'Income-related fines', 19 January.
- Interview with ABC Radio (Riverland SA): 'Corporate social responsibility', 25 January.
- Interview with ABC Radio (Townsville): 'The Kyoto Protocol', 16 February.
- Interview with The Age: 'Industrial relations reform', 17 February.
- Interview with ABC Radio (Cairns): 'Interest rates', 1 March.
- Interview with ABC Radio (The World Today): 'Federalism', 11 March.
- Interview with Channel 10: 'Oil prices', 21 April.
- Interview with ABC Radio on 'Federal Budget 2005: Rural perspective', 11 May.
- Interview with ABC Radio (Wide Bay) on 'Federal Budget 2005', 11 May.
- Interview with ABC Radio (The World Today): 'Wages and social security benefits', 7 June.
- Interview with Community Radio (Gray Matter): 'The price of oil', 28 June.
- Interview with Singapore CNBC TV: 'The implications for business of the change of control in the Senate', 28 June.
- Interview with ABC Radio (Adelaide): 'The Adelaide Festival of Ideas', 5 July.
- Interview with Michael Gordon (The Age): 'Industrial relations', 11 August.
- Interview with SBS World News: 'Telstra', 15 September.
- Interview with Quest (newspaper): 'Water in South-East Queensland, 12 October.
- Interview with Business Review Weekly on 'Queensland's fiscal position', 21 October.
- Interview with ABC Radio (612 Brisbane Breakfast program) on 'Water trading', 24 October.
- Interview with the Courier Mail on 'The Brisbane North-South By-pass and PPPs', 26 October.
- Interview with Radio Adelaide (Breakfast program) on 'Energy and the economy', 31 October.

- Interview with Stephen Long (Inside Business, ABC TV) on 'The internet', 2 November.
- Interview with ABC Radio (Sydney) on 'Biodiversity trading', 3 November.
- Interview with Chris Griffiths (Courier Mail) on 'Industrial Relations', 3 November.

Newspaper articles

- 'Dog's bark will bite deep', Australian Financial Review, 13 January, p. 46.
- 'A licence to innovate', Australian Financial Review, 27 January, p. 46.
- 'Mirages don't win polls', Australian Financial Review, 10 February, p. 62.
- 'Top tax rate, low priority', Australian Financial Review, 24 February, p. 62.
- 'Here's fuel for thought', Australian Financial Review, 31 March, p. 62.
- 'Policy inertia hang-up', Australian Financial Review, 14 April, p. 62.
- 'Nuclear option premature', Australian Financial Review, 28 April, p. 62.
- 'Growing pains of social security', Australian Financial Review, Economic Briefing, 9 May, p. 25.
- 'More to life than tax cuts', Australian Financial Review, 12 May, p. 70.
- 'Co-operative spirit runs dry', Australian Financial Review, 26 May, p. 62.
- 'Another grandiose flop', Australian Financial Review, 9 June, p. 62.
- 'A bad case of consumption', Australian Financial Review, 23 June, p. 62.
- 'Water dilemma flows on', Australian Financial Review, 7 July, p. 62.
- 'Logging on to blogs and working with the wikis', The Advertiser, 8 July, p. 18.
- 'Property boom puts theory to test', Australian Financial Review (Economic Briefing), 11 July, p. 25.
- 'Lawsuits a straitjacket', Australian Financial Review, 21 July, p. 54.
- 'T3 will be another disaster', Australian Financial Review, 4 August, p. 63.
- 'New rationale, same old problems', Australian Financial Review (Economic Briefing), 8 August, p. 21.
- 'There's no sense in saving', Australian Financial Review, 18 August, p. 63.
- 'Let a hundred blogs bloom', Australian Financial Review, 1 September, p. 62.
- 'No win in monopoly game', Australian Financial Review, 15 September, p. 62.
- 'Bring in congestion tax', Australian Financial Review, 29 September, p. 62.
- 'Don't hide behind economy', Australian Financial Review, 13 October, p. 70.
- 'Open slather on the net', Australian Financial Review, 27 October, p. 70.
- 'The surge we didn't have', Australian Financial Review, 10 November, p. 70.
- 'Hung up over party line', Australian Financial Review, 24 November, p. 62.
- 'The monopoly game', Australian Financial Review (Economic Briefing), 28 November, p. 24.

Research Grant: Federation Fellowship FF0348232

Title

Sustainable reform of the Murray–Darling system: property rights, uncertainty and institutions

Project Summary

The project will develop tools for the modelling of uncertainty in the absence of probabilities and with imperfect knowledge about possible events. It will also formalise and assess the precautionary principle for the sustainable management of complex systems. Finally, the project will apply these tools to analyse and improve policies for the reform of property rights, institutions and land and water management in the Murray–Darling system. The project will assist in the formulation of sustainable responses to problems of drought and irrigation-related salinity in the Murray–Darling system.

Project Objectives

The aim of this project is to use recent developments in the analysis of property rights and the theory of choice and production under uncertainty to provide a rigorous basis for the use of the precautionary principle in the management of complex economic–ecological systems. These developments will be applied to the design, modelling and evaluation of policies designed to promote ecologically, economically, and socially sustainable reform of the Murray–Darling system.

Objectives for 2005

The main objectives of theoretical research in the project were to develop models capable of representing choice under uncertainty in the presence of unforeseen contingencies, and to apply these models to derive an improved understanding of the ‘precautionary principle’, commonly advocated as a guide to decisionmaking in relation to environmental problems where consequences of alternative courses of action are not fully understood. For the period covered by the report, the object was to develop a formal model of choice under uncertainty in the presence of unforeseen contingencies.

In the modelling component, the main objective for the period covered by the report was to incorporate state-contingent production into the simulation model of the Murray-Darling Basin developed in 2004.

In the policy component of the project, the main focus has been on the design of water rights in the presence of uncertainty. The aim has been to use concepts of state-contingent production to model alternative systems of property rights, and, for the period covered by the report, to relate the theoretical and modelling treatment of uncertainty to the policy goals set out in the National Water Initiative

Progress for 2005

Substantial progress has been made in relation to the general representation of unforeseen contingencies. In joint work with Professor Simon Grant, a formal representation has been developed, which will shortly be submitted for publication in an economic theory journal, and presented at international conferences in June.

The incorporation of state-contingent production in the Murray model has been undertaken and the results will be presented at the Australian Agricultural and Resource Economics Society conference in February, along with an application to the modelling of property rights in the National Water Initiative.

In addition to the modelling work described above, several articles on water policy have been completed (including joint work with Professor John Freebairn) and several have been accepted for publication in the *Australian Journal of Agricultural and Resource Economics*.

Objectives for 2006

Application of formal model of choice under uncertainty to issues including the precautionary principle.

Further development of simulation model of the Murray-Darling Basin, with applications including assessment of price responsiveness of water demand.

Continued policy work including contributions to public inquiries and media discussion of water-related issues

Research Grant: Discovery Project DP0342974

Title

Risk and Australian public policy

Project Summary

This project will develop fundamentally new approaches to the theory of risk and uncertainty and their role in the design and management of complex projects and policy initiatives. The results will be applied to the central economic policy choices facing Australia; those connected with globalisation and microeconomic reform.

This project will show how the latest advances in economic theory can help to illuminate the major issues in the Australian public debate, from the role of government and the market to the assessment of standards of living. The project will also help to bridge the gap between economics and other social sciences.

Project Objectives

- Develop fundamentally new approaches to the theory of risk and uncertainty.
- Analyse the role of risk in Australian public policy.
- Develop new techniques for the analysis of standards of living.

Objectives for 2005

- Formalise modelling of choice under uncertainty in the presence of unforeseen contingencies.
- Continue analysis of Australian public policy issues in relation to risk and uncertainty.

Progress for 2005

Substantial progress has been made in relation to the general representation of unforeseen contingencies. In joint work with Professor Simon Grant, a formal representation has been developed, which will shortly be submitted for publication in an economic theory journal, and presented at international conferences in June 2006.

Research has been undertaken on a wide range of public policy issues involving risk and uncertainty. Among topics covered in journal publications in 2005 were environmental issues related to the Murray-Darling river system (separate Federation Fellowship report submitted), the lessons of the Y2K scare and the treatment of risk in public-private partnerships.

Objectives for 2006

Apply model of choice under uncertainty in the presence of unforeseen contingencies to issues including the precautionary principle.

Continue analysis of Australian public policy issues in relation to risk and uncertainty.