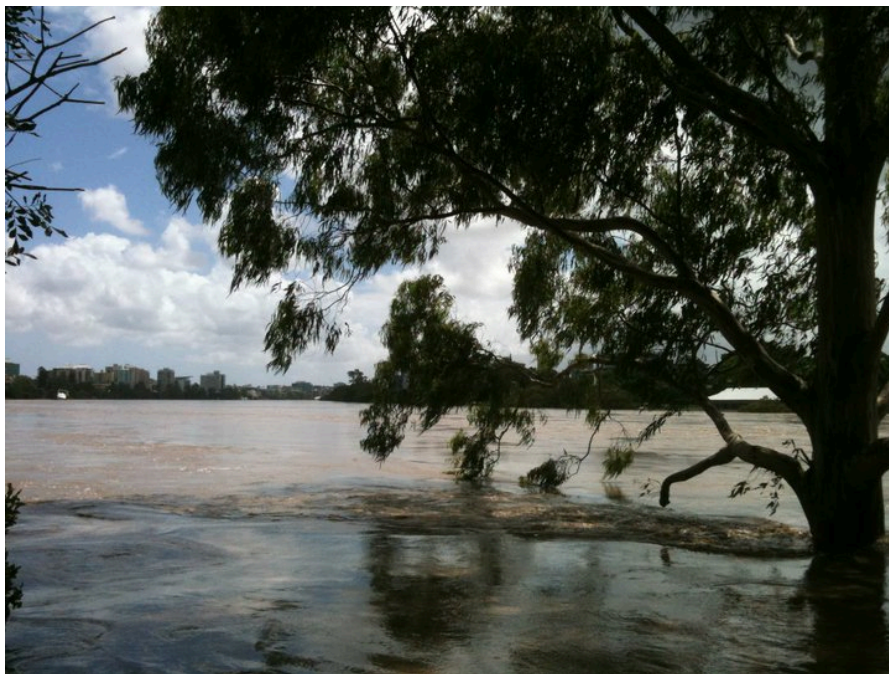


*Risk and Sustainable Management
Group*

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

ANNUAL REPORT 2010



Floodwaters, early 2011

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Foreword

As 2009 drew to a close, it seemed reasonable to expect that 2010 would see a resolution of the Australian political debate over the two environmental issues central to the work of the Risk and Sustainable Management Group: climate change and the management of the Murray–Darling Basin.

In the event, neither of these issues was resolved. The bipartisan agreement in support of an emissions trading scheme collapsed, and the policy was abandoned by the government. Following the August 2010 election, the government restated its support for a carbon price, but the main short-term focus was on the idea of a carbon tax.

Developments in water policy were equally confused. Under the *Water Act* 2007, passed by the Commonwealth Parliament with bipartisan support, the Murray Darling Basin Authority (MDBA) was required to produce a plan for the sustainable management of the Basin. The release of the Basin Plan was delayed by the election. The MDBA produced a Guide to the Proposed Basin Plan in October 2010 which met with a very hostile response, with copies of the Guide being burned at public meetings of irrigators. The Draft Plan is still under development.

The research plans of the Risk and Sustainable Management Group have responded to these developments. A workshop held shortly after the release of the MDBA Guide considered the problems with the plan and the requirements for sustainable reform

With no immediate resolution of the policy issues in sight, the Group has maintained a focus on fundamental theoretical issues of risk and uncertainty. The importance of risk has been underlined, not only by the environmental issues already discussed but by the continuing economic crisis in North America and Europe.

Acknowledgements

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.

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

Highlights of 2010

- RSMG organised a workshop on *Water Policy in the Murray-Darling Basin: Have we finally got it right?*, held shortly after the release by the Murray Darling Basin Authority of the Guide to the proposed Basin Plan.
- The RSMG model of irrigated agriculture in the Basin continued to provide a vital input to public policy and economic analysis.
- Professor Quiggin received invitations as a plenary speaker at major conferences including the 13th Annual Conference on Global Economic Analysis, held in Penang, Malaysia.
- Professor Quiggin was elected as a Fellow of the Econometric Society, the leading international society for research in econometrics and economic theory. He becomes one of only eight Fellows in Australia.
- Professor Quiggin received the SCOR/IDEI Award has been awarded this years for the best article published in the *Geneva Risk and Insurance Review* for "Bargaining Power and Efficiency in Insurance Contracts" with Robert G. Chambers.
- Professor Quiggin was appointed as Hinkley visiting professor at Johns Hopkins University for 2011 (US Fall semester).
- The Group began a collaboration with the Global Change Institute at the University of Queensland on the project, 'Adaptation to global change in irrigated landscapes in the Queensland Murray-Darling Basin: understanding the influence of technology and socio-economic drivers on land use patterns'.
- In response to the Global Financial Crisis, Professor Quiggin wrote a book aimed at a general audience, discussing economic ideas that have been refuted (or supported) by the experience of the crisis. The book, entitled *Zombie Economics: How Dead Ideas Still Walk Among Us*, was published in the United States on October 31, 2010. It was cited by Nobel Prize Winner Paul Krugman in the *New York Times* and has sold over 10 000 copies.

The Risk and Sustainable Management Group

Establishment

The Risk and Sustainable Management Group (RSMG) was formally established in May 2004, as a joint initiative of the School of Economics and the School of Political Science and International Studies at 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'.

In 2008, Professor Quiggin began a second Federation Fellowship for the project 'Climate change: adaptation and resilience in the face of uncertainty'. The Fellowship will run until the end of 2012.

Aims

The central aim of the 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 in the presence of climate change.

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.

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. Among over 1000 publications, he has published five books and more than 300 journal articles and book chapters 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, microeconomic reform, privatisation, competitive tendering and the management of the Murray–Darling Basin.



Thilak Mallawaarachchi: Senior Fellow

Thilak Mallawaarachchi, returned to the Group full-time during the year on long-term leave from the Australian Bureau of Agricultural and Resource Economics (ABARE). Thilak's work focussed on economic, environmental and social aspects of resource management and using integrated modelling tools that link scientific data with economic frameworks to facilitate learning and problem solving.

During the year Thilak led the Group in organising the Murray Darling Basin workshop, and extending the Murray-Darling water allocation model to examine adaptation patterns in irrigated farming systems facing reduced water availability in the Basin. Ongoing work involving other UQ researchers in social and geographical sciences aims to understand the global change drivers affecting land and water use..



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. He is currently enrolled in a PhD program.



Liam Wagner: Post Doctoral Research Fellow

Liam Wagner joined the Group as a Postdoctoral Research Fellow in September 2007. Dr Wagner was awarded his PhD in mathematics from the University of Queensland in May 2008. His current research interests include: maintenance of the GAMS version of the Murray–Darling Basin model; analysis of the National Emissions Trading Scheme; and modelling the impact of climate change on the Snowy Hydro Scheme.



Peggy Schrobback: Research Assistant

Peggy joined the team in November 2007 with a background in agricultural and resource project management in developing countries. Her main focus in our group is the modelling of land and water allocations to irrigated agriculture production systems in the Murray–Darling Basin using different software tools. She recently investigated the effect of increased land allocations to forestry within the Basin and its impact on downstream water availability and socio-economic resilience. Peggy is currently working on improving the simulations of the salt loads carried within the Murray and Darling River systems. Peggy is also interested in investigating the risks and uncertainties of environmental change to medium and small scale food production industries. She is involved in a project that aims to model the economic impact of changing chemical condition of our oceans on marine-based aquaculture production systems.



Sarah Chambers: Research Assistant

Sarah Chambers joined the team in January, 2008. She is a graduate of the University of Queensland, with honours in natural resource economics and political science. Her experience includes applied benefit-cost and risk analysis of sustainable agricultural practices. Her previous work includes research at CIMMYT in North America, and policy analysis at the Queensland Department of Primary industries. Her current research interests include: bio-economic modelling of environmental and economic tradeoffs in the MDB, and using the state contingent approach to compare productivity of agricultural technologies.

Nancy Wallace: Research Assistant

Nancy Wallace provides editorial and bibliographic services, document management, research administration and reporting.

Research outcomes

To meet its objectives, the work of the Group has been divided into four programs:

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

Each program encompasses a number of research projects.

Murray–Darling Basin Program

Objectives

The aim of this 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 Basin.

The Group's simulation model of land and water allocation in the Murray–Darling Basin has remained a central focus of our research. The main focus for 2010 was on research in preparation for and responding to the release of the Draft Plan for the Murray Darling Basin. As well as participating in numerous meetings, seminars and conferences, the Group organized a highly successful workshop, bringing together leading researchers in the field.

The Program produced two journal articles in 2010, along with an edited volume to be published in 2011.



Risk and Uncertainty Program

Objectives

The aim of this project is to develop fundamentally new approaches to the theory of risk and uncertainty and its 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 improve understanding of the ‘precautionary principle’. Substantial progress has been made, particularly in understanding the interaction between inductive and deductive reasoning.

Work in this project has been undertaken jointly with Professor Simon Grant of Rice University, Texas, and Jeff Kline and Professor Flavio Menezes of the University of Queensland. The project produced a journal article in the *International Journal of Industrial Organization* four conference papers and three working papers in 2009.

Project: State-contingent production

This project continues a long-standing collaboration with Professor Robert G. Chambers of the University of Maryland, College Park and Professor Chris O'Donnell of the University of Queensland. 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. The current focus is on empirical estimation on the integration of production and finance theory and on applications to comparisons of efficiency.

In 2010, the Program produced journal articles published in *Annals of Operations Research*, the *International Journal of Industrial Organisation*, and the *Journal of Productivity Analysis*.

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 central role of risk has become evident in the course of the global financial crisis. The global financial crisis reflected the failure of a number of economic ideas that had played a crucial role in policy thinking throughout the era of market liberalism that began in the 1990s. Criticism of these ideas undertaken as part of the research activity of the Group led Princeton University Press to offer Professor John Quiggin a book contract. The resulting manuscript was completed during 2009 and will be published in 2010 under the title *Zombie Economics: How Dead Ideas Still Walk among Us*.

In addition to this manuscript, the project produced two book chapters, a journal article, three working papers and four conference papers in 2009.

Project: Innovation in the information economy

This project addresses the changing nature of innovation in an economy in which the role of knowledge and information has been transformed by new technologies in computing and telecommunications, most notably the Internet. Work on the project this year yielded a substantially improved understanding of the role of transactions costs in determining the optimal pricing policy for public information. The rise of the Internet has reduced search costs, but transactions costs of purchases remain substantial. As a result, free distribution of information is socially optimal in most cases.

The Program produced two books, six book chapters and three journal articles in 2010. In addition, Professor Quiggin maintained his role as one of Australia's leading academic and political bloggers, and extended involvement in the use of social networking systems such as Facebook and Twitter to disseminate research and policy ideas.

Climate Change Program

Objectives

The aim of this program is to analyse issues related to mitigation of, and adaption to, climate change. A fundamental premise of our research is that mitigation and adaptation are not competing alternatives but are necessary complements. In the absence of effective mitigation, climate change will be so rapid and extensive that adaptation will be impossible. On the other hand, even with a substantial mitigation effort, significant climate change is inevitable, and adaption will therefore be necessary.

Project: Impacts and adaptation

This project is concerned with modelling impacts of climate change in Australia, and the possibilities for adaptation, with a particular focus on the Great Barrier Reef and the Murray–Darling Basin. The project produced a journal article and three conference papers. The Group continued work on the impact of climate change on coral reefs and aquaculture, in collaboration with Ove Hoegh-Guldberg (UQ) and Terry Hughes (JCU).

Project: Climate change: theory and policy

This project is concerned with theoretical and policy aspects of climate change, including issues such as the choice of discount rates and the design of emissions trading schemes.

Ongoing work with the UQ Global Change Institute, involving other UQ researchers in social and geographical sciences aims to understand the global change drivers affecting land and water use. This includes examining ways to achieve a more resilient agricultural production system in accommodating production-environmental tradeoffs for Basin water uses under different institutional arrangements, in particular water trading and salinity mitigation when water supplies are both uncertain and variable across the Basin.

The Program produced two journal articles, several conference papers and a variety of submissions and reports in 2010.

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 audience.

Web Site

A website has been developed at:

<http://www.uq.edu.au/rsmg>.

It provides reprints of journal articles and working papers, annual reports, information on staff activities and useful links.

Working Papers

A working paper series has been established for each of the Programs 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/rsmg/publications-rsmg>.

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

Books

- Quiggin, J. (2010), *Zombie Economics: How Dead Ideas Still Walk Among Us*, Princeton University Press, Princeton, New Jersey.

Books – edited

- Marston, G., Moss, J. and Quiggin, J. (eds) (2010), *Risk, Welfare and Work*, MUP Social Justice Series, Melbourne University Press, Carlton, Victoria.

Book chapters

- Adamson, D. (2010), 'Quarantine and Food Safety Issues in a TPPA', pp. 124–135 in Jane Kelsey (ed.), *No Ordinary Deal: Unmasking the Trans-Pacific Partnership Free Trade Agreement*, Series 21: Into a New Century, Bridget Williams Books with the New Zealand Law Foundation, Wellington, New Zealand.
- Marston, G., Moss, J. and Quiggin, J. (2010), 'Introduction: Shifting risk?', pp. vii–xvi in Greg Marston, Jeremy Moss and John Quiggin (eds), *Risk, Welfare and Work*, MUP Social Justice Series, Melbourne University Press, Carlton, Victoria.
- Quiggin, J. (2010), 'Australia and the Global Financial Crisis', pp. 99–122 in Robert Manne and David McKnight (eds), *Goodbye to All That: On the Failure of Neo-Liberalism and the Urgency of Change*, Black Inc. Agenda, Melbourne.
- Quiggin, J. (2010), 'Government as the ultimate risk manager', pp. 30–32 in *Jobs, Industry and Opportunity: Growth Strategies after the Crisis*, Policy Network (Progressive Governance), London.
- Quiggin, J. (2010), 'Lessons from the Australia–US Free Trade Agreement', pp. 98–108 in Jane Kelsey (ed.), *No Ordinary Deal: Unmasking the Trans-Pacific Partnership Free Trade Agreement*, Series 21: Into a New Century, Bridget Williams Books with the New Zealand Law Foundation, Wellington, New Zealand.
- Quiggin, J. (2010), 'Risk shifts in Australia: implications of the financial crisis', pp. 3–23 in Greg Marston, Jeremy Moss and John Quiggin (eds), *Risk, Welfare and Work*, MUP Social Justice Series, Melbourne University Press, Carlton, Victoria.
- Quiggin, J. (2010), 'Surviving the next crisis', pp. 251–266 in Mark Davis and Miriam Lyons (eds), *More Than Luck: Ideas Australia Needs Now*, Centre for Policy Development, Sydney.

Refereed journal articles

- Chambers, R. and Quiggin, J. (2010), 'Cost minimization and the stochastic discount factor', *Annals of Operations Research*, 176(1), 349–68.
- Freebairn, J. and Quiggin, J. (2010), 'Special taxation of the mining industry', *Economic Papers*, 29(4), 384–396.
- Menezes, F. and Quiggin, J. (2010), 'Markets for influence', *International Journal of Industrial Organisation*, 28, 307–10.
- O'Donnell, C., Chambers, R.G. and Quiggin, J. (2010), 'Efficiency analysis in the presence of uncertainty', *Journal of Productivity Analysis*, 33(1), 1–17.
- Quiggin, J. (2010), 'Agriculture and global climate stabilization: a public good analysis', *Agricultural Economics*, 41(S), 121–32.
- Quiggin, J. (2010), 'Bad politics makes bad policy: the case of Queensland's asset sales programme', *Economic Papers*, 29(1), 13–22.
- Quiggin, J. (2010), 'Beauty \neq Truth? Thoughts on Krugman's 'How did economists get it so wrong?', *Agenda*, 17(1), 113–8.
- Quiggin, J. (2010), 'Response to J. E. King's Response to my article 'Six Refuted Doctrines'', *Economic Papers*, 29(1), 40.
- Quiggin, J. (2010), 'Water policy after the drought', *Australian Quarterly*, 82(2), 21–25.
- Quiggin, J., Adamson, D., Chambers, S. and Schrobback, P. (2010), 'Climate change, uncertainty and adaptation: the case of irrigated agriculture in the Murray–Darling Basin in Australia', *Canadian Journal of Agricultural Economics*, 58 (4), 531–554.
- Stephens, E., Ross, I.L., Mussnug, J.H., Wagner, L.D., Borowitzka, M.A., Posten, C., Kruse, O., and Hankamer, B., (2011) Future prospects of microalgal biofuel production systems, *Trends in Plant Science*, 15(10), 554–564.
- Wagner, L.D., and McDonald, S., Finding Traitors in Secure Networks Using Byzantine Agreements (2010), *International Journal of Network Security*, 10(1), 11–17.

Non-refereed journal articles

- Mallawaarachchi, T. (2010), 'Taxes and charges on Nature's bounties', *Ecodev*, 14 (4), 5–7.

Working papers

Murray–Darling Program [ISSN: 1832-4266]

- Adamson, D. (2010), 'Climate change, irrigation and pests: examining Heliothis in the Murray–Darling Basin', Murray–Darling Program Working Paper M10-1, Risk and Sustainable Management Group, University of Queensland, Brisbane. July. (55 pages).
- Quiggin, J. (2010), 'Water policy after the drought', Murray–Darling Program Working Paper M10-2, Risk and Sustainable Management Group, University of Queensland, Brisbane. 20 June. (13 pages).
- Quiggin, J. (2010), 'Risk, uncertainty and the Guide to the Draft Basin Plan', Murray–Darling Program Working Paper M10-3, Risk and Sustainable Management Group, University of Queensland, Brisbane. 1 November (15 pages).

Risk and Uncertainty Program [ISSN: 1832-4258]

- McDonald, S. and Wagner, L. (2010), 'The computation of perfect and proper equilibrium for finite games via simulated annealing', Risk and Uncertainty Program Working Paper R10-1, Risk and Sustainable Management Group, University of Queensland, Brisbane, 21 April. (18 pages).
- Nauges, C. and O'Donnell, C. and Quiggin, J. (2010), 'Uncertainty and technical efficiency in Finnish agriculture: a state-contingent approach', Risk and Uncertainty Program Working Paper R10-2, Risk and Sustainable Management Group, University of Queensland, Brisbane. 1 June (24 pages).
- Shankar, S. and O'Donnell, C. and Quiggin, J. (2010), 'Production under uncertainty: a simulation study', Risk and Uncertainty Program Working Paper R10-3, Risk and Sustainable Management Group, University of Queensland, Brisbane. 1 September (23 pages).
- Quiggin, J. (2010), 'Economics as a social science: financial regulation after the crisis', Risk and Uncertainty Program Working Paper R10-4, Risk and Sustainable Management Group, University of Queensland, Brisbane. 1 October (7 pages).

Australian Public Policy Program
[ISSN: 1832-424X]

- Quiggin, J. (2010), 'Bad politics makes bad policy: the case of Queensland's asset sales program', Australian Public Policy Program Working Paper P10-1, Risk and Sustainable Management Group, University of Queensland, Brisbane. 13 March. (24 pages).
- Quiggin, J. and Mahadevan, R. (2010), 'The poverty burden: a measure of the difficulty of ending extreme poverty', Australian Public Policy Program Working Paper P10-2, Risk and Sustainable Management Group, University of Queensland, Brisbane. 30 March. (19 pages).
- Freebairn, J. and Quiggin, J. (2010), 'Special taxation of the mining industry', Australian Public Policy Program Working Paper P10-3, Risk and Sustainable Management Group, University of Queensland, Brisbane. 1 June (27 pages).

Climate Change Program
[ISSN: 1835-7245]

- Quiggin, J., Adamson, D., Chambers, S. and Schrobback, P. (2010), 'Climate change, uncertainty and adaptation: the case of irrigated agriculture in the Murray-Darling Basin in Australia', Climate Change Program Working Paper C10-1, Risk and Sustainable Management Group, University of Queensland, Brisbane. 1 March (37 pages).

Conference papers

- Chambers, S., Adamson, D., and Mallawaarachchi, T. (2010) ' Investigating the impact of water reliability on land use changes in the Murray Darling Basin', Paper presented at the 54th Annual Conference of the Australian Agricultural and Resource Economics Society, Adelaide, 9–12 February.
- Mallawaarachchi, T., Adamson, D., Goesch, and Sanders, (2010), 'Adapting to a water-limited environment: some observations and insights from the MDB', Paper presented at the 54th Annual Conference of the Australian Agricultural and Resource Economics Society, Adelaide, 9–12 February.
- Schrobback, P., Adamson, D. and Quiggin, J. (2010), ' Impact of ocean acidification on Australia's Sydney Rock Oyster farming: a bio-economic model', Paper presented at the 54th Annual Conference of the Australian Agricultural and Resource Economics Society, Adelaide, 9–12 February.
- Wagner, L. and Quiggin, J. (2010), ' Reassessing assistance for brown coal generators under the proposed CPRSI', Paper presented at the 54th Annual

Conference of the Australian Agricultural and Resource Economics Society, Adelaide, 9–12 February.

- Quiggin, J. (2010), 'An economist's perspective on how cities of the future can become more sustainable' to the 'Cities of the Future' workshop sponsored by Melbourne Water and the Water Services Association of Australia at the OzWater'10 Conference, Brisbane, 9 March.
- Quiggin, J. (2010), 'Intergenerational equity, risk and climate modelling', Invited Plenary paper presented at the Thirteenth Annual Conference on Global Economic Analysis on 'Trade for Sustainable and Inclusive Growth and Development', Penang, Malaysia, 11 June.
- Quiggin, J. (2010), 'Bounded rationality and the precautionary principle', Paper presented at a semi-plenary session at the Foundations and Applications of Utility, Risk and Decision Theory (FUR XIV) International Conference, Newcastle University, Newcastle, England, 16 June.
- Quiggin, J. (2010), 'Risk, discounting and intergenerational equity', Invited Plenary paper presented at the Copenhagen Conference on Risk and Time Preferences, sponsored by the Copenhagen Business School and the Center for the Economic Analysis of Risk (CEAR), Georgia State University, 21 June.
- Quiggin, J. (2010), 'Bounded rationality and the precautionary principle', Paper presented at PET10, the Annual Conference of the Association for Public Economic Theory, Bogazici University, Istanbul, Turkey, 25 June.
- Grant, S., Kline, J. and Quiggin, J. (2010), 'A matter of interpretation: bargaining over ambiguous contracts', Paper presented at the Risk, Uncertainty and Decision (RUD) 2010 conference, Paris, France, 1 July.
- Quiggin, J. (2010), 'The economics of climate change', Invited Plenary Speaker at the Second International Conference on Climate Change: Impacts and Responses, University of Queensland, Brisbane, 8–10 July.
- Quiggin, J. (2010), 'Climate change, climate variability and agriculture', Invited Plenary paper presented at the New Zealand Agricultural and Resource Economics Society (NZARES) Conference, Nelson, New Zealand, 27 August.
- Quiggin, J. (2010), 'Zombie Economics: How dead ideas still walk among us', Paper presented at the 39th Australian Conference of Economists, Sydney, 27 September.
- Quiggin, J., Mallawaarachchi, T., Adamson, D., Wagner, L., Schrobback, P., and Chambers, S. (2010), 'Economic considerations in modeling the Murray–Darling

Basin', Paper presented at the 13th International Riversymposium, Perth, 14 October.

- Wagner, L.D., and Reedman, L., (2010) "Modeling the Large Scale Deployment of Distributed Generation onto Electricity Markets" 29th USAEE/IAEE North American Conference, "Energy and the Environment: Conventional and Unconventional Solutions" October 14-16, Calgary, Canada
- Froome, C., and Wagner, L.D. (2010) "Energy Storage and its Ability to Add Stability to Intermittent Generation and Reduce Distribution Network Costs" 29th USAEE/IAEE North American Conference, "Energy and the Environment: Conventional and Unconventional Solutions" October 14-16,. Calgary, Canada
- Wagner, L.D., and Reedman, L., (2010) "Modeling the deployment of plug-in hybrid and electric vehicles and their effects on the Australian National Electricity Market." Presented at 2010 IEEE Conference on Innovative Technologies for an Efficient and Reliable Electricity Supply, Boston, U.S.A., September.

Unpublished presentations

- Quiggin, J. (2010), 'Sovereign risk and global regulation' to the Centre for Investor Education Major Market Players Meeting on Australia's Pivotal Positioning, Coolumb, Sunshine Coast, 30 August.
- Quiggin, J. (2010), 'Zombie Economics: How dead ideas still walk among us', Presentation of a Suntory and Toyota International Centres for Economics and Related Disciplines (STICERD) Public Lecture, London School of Economics, London, 25 November.
- Quiggin, J. (2010), '*Zombie Economics* (Dangerous Ideas)' at the Festival of Dangerous Ideas, Sydney, 2 October.
- Quiggin, J. (2010), 'Where is South-east Queensland going? Implications for water supply' to SEQWater, Brisbane, 19 October.
- Quiggin, J. (2010), '*Zombie Economics: How Dead Ideas Still Walk Among Us*', Presentation of the Suntory and Toyota International Centres for Economics and Related Disciplines (STICERD) Public Lecture, London School of Economics, London, 25 November.
- Adamson, D., 'Unpeeling the Analysis Myopia', Centre for Animal Science, QAFFI, 8 December 2010.
- Adamson, D., 'The Economics of Quarantine: From Apples to Zoonosis', Applied Economic Workshop, The School of Economics, 26 August 2010.

- Adamson, D., 'Climate variability and irrigation investment in the Murray-Darling Basin', AARES, February 2010.

Workshops/summits/forums

- Quiggin, J. (2010), 'Getting the message out: Applied Economics Group', School of Economics, University of Queensland, Brisbane, 4 February.
- Quiggin, J. (2010), 'Zombie Economics: How Dead Ideas Still Walk Among Us' at Macquarie University, Sydney, 3 December.
- Quiggin, J. (2010), 'Are water markets like other natural resource markets?' at a Water Markets Workshop sponsored by the Murray-Darling Basin Authority, Australian National University, Canberra, 2 February.
- Quiggin, J. (2010), 'An economist's perspective on how cities of the future can become more sustainable', Presentation to the 'Cities of the Future' workshop sponsored by Melbourne Water and the Water Services Association of Australia at the OzWater'10 Conference, Brisbane, 9 March.
- Grant, S. and Quiggin, J. (2010), 'Interactive choices under bounded rationality' Paper presented at the annual Decision: Theory, Experiments, and Applications (D-TEA) workshop, Paris, 28 June.
- Quiggin, J. (2010), 'Risk, uncertainty and the Draft Basin Plan', Presentation at a workshop on the Draft Murray-Darling Basin Plan, Crawford School of Economics and Government, Australian National University, Canberra, 14 October.
- Quiggin, J. (2010), 'The Draft Basin Plan: three key points', Presentation at a Crawford School Dialogue: 'The Murray-Darling Basin Plan: What will it mean for the future of the Murray-Darling Basin?' Crawford School of Economics and Government, Australian National University, Canberra, 15 October.
- Quiggin, J. (2010), 'Queensland got it right: steps to a sustainable economy 2020, 2050 ', Presentation at the Environment Institute of Australia and New Zealand's forum on 'Ten years to transition: conversations about risks and rewards for Queensland's economic sectors under climate change', Brisbane, 18 October.
- Mallawaarachchi, T., Adamson, D., Chambers, S., Schrobback, P. and Quiggin, J. (2010), 'Variability and uncertainty: implications for water policy impact analysis', Presentation at a workshop on 'Water policy in the Murray-Darling Basin: Have we finally got it right?' Risk and Sustainable Management Group (RSMG),, Brisbane, 21 October.

- Quiggin, J. (2010), 'Water policy in the Murray–Darling Basin: making it work', Presentation at a workshop on 'Water policy in the Murray–Darling Basin: Have we finally got it right?' sponsored by the Risk and Sustainable Management Group (RSMG),, Brisbane, 21 October.
- Mallawaarachchi, T., McClintock, A., Adamson, D., and Quiggin, J.(2010), 'Investment as an adaptation response to water scarcity', Presentation at a workshop on 'Water policy in the Murray–Darling Basin: Have we finally got it right?' sponsored by the Risk and Sustainable Management Group (RSMG), , Brisbane, 22 October.
- Quiggin, J. (2010), 'The implications of climate change for agricultural risks and their management' at a workshop on 'Risk Management in Agriculture' hosted by the OECD, Paris, 22 November.

Reports

- Mallawaarachchi, T., Adamson, D., Chambers, S. and Schrobback, P., (2010), 'Economic analysis of diversion options for the Murray–Darling Basin Plan: returns to irrigation under reduced water availability', Commissioned study for the Murray-Darling Basin Authority, Risk and Sustainable Management Group, University of Queensland, Brisbane, June.
- Quiggin, J. (2010), Report on Urban Water Demand Management to National Water Commission, November.
- CSIRO, "Intelligent Grid - A value proposition for distributed energy in Australia". CSIRO Report ET/IR 1152. (Contributing Author Liam Wagner)

Submissions to government inquiries/taskforces

- Quiggin, J. (2010), 'Urban Water Policy in Australia: Supply, Demand and Industry Structure', Submission to the Productivity Commission Urban Water Inquiry, November.
- Quiggin, J. (2010), Submission to the Senate Economics References Committee - Inquiry into augmented taxation assessments, October.
- Quiggin, J. (2010), Submission to the Senate Economics References Committee inquiry into competition in the Australian banking sector, December.
- Molyneux, L., Foster, J., and Wagner, L. "Is there a more effective way to reduce carbon emissions?", Department of Climate Change and Energy Efficiency, Commonwealth of Australia.

Community service, outreach and media

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

- Participated in a CEDA debate on 'Privatisation of Public Assets: the Debate QLD Has to Have', Brisbane, 3 February.
- Presentation on 'Environmental sustainability' to first year students at St Leo's College, University of Queensland, Brisbane, 23 February.
- Participated in a National Policy Forum on 'Climate Change: Bridging Scientific Knowledge and Public Policy' sponsored by Universities Australia and Science in Public, Parliament House, Canberra, 18 March.
- Presentation on 'Economists couldn't predict a sunset' at a 'Politics in the Pub' session, UQ Staff and Graduates Club, University of Queensland, Brisbane, 24 March.
- Presentation on 'The economics of privatisation' to a Left Renewal forum on 'Breaking the Addiction: Challenging Bligh's Privatisation Push', organised by the SEARCH Foundation, Brisbane, 10 April.
- Presentation on 'The great recession in 2010: outlook, challenges and opportunities' at the National Left Renewal Conference 'From Global Crisis to Green Future', Sydney, 29 May.
- Participated in a panel discussion on 'The sale of Queensland Rail', hosted by the School of Economics, University of Queensland, Brisbane, 7 July.
- Presentation on 'Is Australia facing an environmental crisis?: If so, why, and how can we prevent it?' to the NSW Treasury Office of State Revenue Lunchtime Discussion Group, Sydney, 28 September.
- Took part in a conference call on 'Pricing economic and political incentives' for a workshop for the EastWest Institute's Climate Consensus Policy Advisors' Group, Climate Security Initiative, EastWest Institute, Brussels, 22 October.
- Presentation on 'Prosperity and growth' to the Annual General Meeting of the Greens (Mt Cootha branch), Brisbane, 27 October.

Australian Financial Review articles

- 'Zombie idea's great debt', 14 January 2010, p. 46.
- 'Tepid conspiracy theory', 28 January 2010, p. 54.
- 'Not enough lessons learnt', 11 February 2010, p. 62,
- 'Familiar scenes in foreign story', 25 February 2010, p. 71.

- 'Science limited by truth', 11 March 2010, p. 62.
- 'Futile to resist rise in tax', 25 March 2010, p. 62.
- 'Immigration is freedom', 15 April 2010, p. 66.
- 'Plug Queensland's tax gaps', 29 April 2010, p. 62.
- 'Carbon tax needed now', 13 May 2010, p. 78.
- 'Alternative close at hand', 27 May 2010, p. 62.
- 'A climate for backflip', 10 June 2010, p. 62.
- 'Banks are the problem', 24 June 2010, p. 62.
- 'Economics in recovery', 8 July 2010, p. 62.
- 'Unity can win climate war', 22 July 2010, p. 62.
- 'Abbott's power outage', 5 August 2010, p. 62.
- 'Populist economics rules', 19 August 2010, p. 62.
- 'Get used to volatility', 2 September 2010, p. 62.
- 'Dead ideas still walking', 30 September 2010, p. 66.
- 'The \$6bn water question', 14 October 2010, p. 62.
- 'Abandon belief in war', 11 November 2010, p. 70.
- 'QR takes toll on Bligh', 25 November 2010, p. 66.
- 'Billions down the drain', 9 December 2010, p. 62.

Other media articles

- 'Five *Zombie Economic* ideas that refuse to die', *Foreign Policy*, 15 October.
- 'The GFC zombies that walk among us', <http://www.crikey.com.au/2010/11/01/halloween-horror-story-the-gfc-zombies-that-walk-among-us/>, 1 November 2010.
- 'Why austerity and 'zombie' ideas are bound to fail'. *Financial Times*, 30 November.

Media interviews

- Radio 4BC Brisbane: 'Intergenerational Report', 19 January 2010.
- ABC Radio (World Today): 'A People's Bank?', 29 January 2010.
- Adelaide Advertiser: 'Anonymous blog comments', 29 January 2010.
- Radio 5AA Adelaide: 'Anonymous blog comments', 2 February 2010.

- ABC News Radio: 'Proposed South Australian law banning anonymous blog comments', 2 February 2010.
- SYN Radio (Panorama): 'Intergenerational Report', 3 February 2010.
- *Australian Financial Review*: 'Chinese investment in food processing', 4 February 2010.
- *The Age*: 'US climate change policy', 3 March 2010.
- *Gladstone Observer*: 'Federal election timing', 5 March 2010.
- *Sydney Sun Herald*: 'Queensland Asset Sales', 19 March 2010.
- *Courier Mail*: 'Coal seam methane project', 25 March 2010.
- *Sunday Age*: 'Food bowl modernisation project in Victoria', 25 March 2010.
- *Australian Financial Review*: 'Commonwealth–State financial relations', 21 April 2010.
- Interview: *BMag*: 'Privatisation of Queensland assets', 27 April 2010.
- *Australian Financial Review*: 'Resource Rent Tax', 3 May 2010.
- ABC Radio National (Rear Vision): 'Australia's mineral resources', 17 May 2010.
- ABC Radio (JJJ): 'Murray–Darling', 17 May 2010.
- ABC Radio (Australia Talks Back): 'Mining tax', 18 May 2010.
- Public Radio (The Wire): 'Opposition budget reply', 19 May 2010.
- ABC Radio: 'Resource rent tax', 25 May 2010.
- 3RRR Community Radio (Melbourne): 'Statement on the Mining Super Profits Tax', 26 May 2010.
- ABC Radio (WA): 'Statement on the Mining Super Profits Tax', 26 May 2010.
- ABC TV (Lateline): 'Privatisation of Queensland rail', 26 May 2010.
- Radio 2CC Canberra: 'Resource rent tax', 26 May 2010.
- BNet: 'Mining industry super tax', 27 May 2010.
- ABC (Radio National): 'Resource rent tax', 27 May 2010.
- Perth Radio (6PR): 'Resource rent tax', 30 May 2010.
- ABC Radio: 'History of mining in Australia', 31 May 2010.
- *Australian Financial Review*: 'Gina Rhinehart's statement on the Resources Super Profits Tax', 31 May 2010.
- ABC (Radio National): 'Resource rent tax', 2 June 2010.

- ABC Radio (PM): 'Australia's balance of trade and mining exports', 3 June 2010.
- Radio 2 GB (Sydney): 'Rudd and Abbott', 4 June 2010.
- ABC Radio National (AM): 'Alice Springs–Darwin railway', 10 June 2010.
- ABC Radio National (AM): 'Economists' support for the Carbon Pollution Reduction Scheme (CPRS)', 20 June 2010.
- BBC: 'Mineral Resource Rent Tax', 2 July 2010.
- Radio 4KQ: 'Sale of QR Assets', 5 July 2010.
- ABC Radio (Sydney: Morning Show): 'Electricity privatisation', 9 July 2010.
- *Australian Financial Review*: 'Trade workers in the construction industry', 9 July 2010.
- UQ News Online: 'Queensland Rail privatisation', 13 July 2010.
- *The Australian*: 'Federal election campaign: higher education and immigration', 26 July 2010.
- *Business Review Weekly*: 'Australia's population target', 5 August 2010.
- ABC Radio: 'Abbott wrong on carbon taxes', 5 August 2010.
- *Australian Financial Review*: 'Older workers in Australia', 5 August 2010.
- ABC (Saturday Extra): 'The Greens in the election', 7 August 2010.
- *Australian Financial Review*: 'Charter of budget honesty', 17 August 2010.
- Nikkei Japan: 'Australian election', 20 August 2010.
- • *The Australian*: 'Why people voted Green', 20 August 2010.
- ABC (Current Affairs): 'Bob Katter, protectionism and tariffs', 20 August 2010.
- Interview: Remapping Debate: 'Comparative responses to structural unemployment and *Zombie Economics*', 31 August 2010.
- *Courier Mail*: 'Bob Katter and tariffs', 2 September 2010.
- The Wire (Current Affairs): 'The European crisis and migration to Australia', 10 September 2010.
- QUT Journalism: 'The global financial crisis and house prices', 10 September 2010.
- ABC Radio: 'The Australian economy', 13 September 2010.
- ABC (Radio Australia): 'Basel III banking regulations', 13 September 2010.
- The Wire (Current Affairs): 'Carbon tax', 16 September 2010.

- ABC (Radio National): 'Y2K: ten years after', 16 September 2010.
- The Wire (CRN Network): 'The Australian economy and the global financial crisis', 17 September 2010.
- 31 Digital Queensland Community TV (The Grey Area): 'Carbon trading and the economy', 23 September 2010.
- The Wire (National Current Affairs): 'Inquiry into the financial system', 25 October 2010.
- Marketplace, National Public Radio (US): '*Zombie Economics*', 26 October 2010.
- Sky News Business (TV): '*Zombie Economics*', 28 October 2010.
- Interview: Russ Robert (US blogger): '*Zombie Economics*', 29 October 2010.
- RadioLive (New Zealand): 'Quantitative easing', 2 November 2010.
- 3CR (Community Radio Melbourne): '*Zombie Economics*', 2 November 2010.
- ABC Radio (Brisbane): 'Interest rate increase', 2 November 2010.
- The Wire: 'Parity with the \$US', 5 November 2010.
- ABC Radio 612: 'Carbon pricing', 15 November 2010.
- France24 TV: '*Zombie Economics*', 18 November 2010.
- *The Guardian* (Podcast): '*Zombie Economics*', 25 November 2010.
- CNBC TV: '*Zombie Economics*', 26 November 2010.
- VoxEU (podcast): '*Zombie Economics*', 30 November 2010.
- Sydney Morning Herald: '*Zombie Economics*', 3 December 2010.
- *The Australian*: 'Climate change in Australia', 7 December 2010.
- *Climate Wire*: 'Climate change policy in Australia', 8 December 2010.

Research Grant: Federation Fellowship FF0776177

Climate change: adaptation and resilience in the face of uncertainty

Project Objectives

The aim of the project is to analyse options for adaptation to climate change in Australia, and in particular, the role and management of uncertainty. The focus will be on crucial, highly vulnerable natural assets, particularly the Murray–Darling Basin and the Great Barrier Reef. The central theoretical objective will be an improved understanding of the concepts of resilience and adaptive management and their application to the problems of adaptation to, and mitigation of, climate change. The project will yield policy recommendations for the design of property rights and emissions trading systems.

Progress for 2010

Research undertaken through the project has played a significant role in the formulation of the Draft Plan for the Murray Darling Basin and the new Garnaut Review.

Workshop held by Risk and Sustainable Management Group offered explanation of initial failure of Draft Basin Plan and recommendations for the future.

My election as a Fellow of the Econometric Society and as President of the Australian Agricultural and Resource Economics Society recognised my achievements in theoretical and applied economics respectively.

