

Annual Report for The Centre for Efficiency and Productivity Analysis (CEPA)

For the year ended 31 December 2010

Annual Report for The Centre for Efficiency and Productivity Analysis (CEPA)

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Overview of the Centre (including Mission Statement)

The main purpose of the Centre is to provide a focal point for research, consultancy and training in efficiency and productivity analysis in Australia and the Asia/Pacific Region.

The principal aims and objectives of the Centre are to undertake theoretical and applied research, develop useful end-user-driven short courses and workshops and to develop computer software for use by private and public sector organizations. Specific objectives are:

- to assess and develop methods for the measurement of productivity, efficiency and economic performance;
- to apply these methods to assess the performance of firms, industries and sectors within the domestic and international economies;
- to conduct research directed towards explaining and interpreting patterns of productivity and economic growth across nations;
- to conduct ex post assessment of the effects of microeconomic reform and deregulation on productivity and efficiency;
- to provide technical advice to private and public sector and international organizations on efficiency and productivity measurement; and
- to offer short courses and workshops to researchers, managers and policy analysts from various sectors of industry and government.

Agreed objectives for 2010 Calendar Year

Agreed objectives:

- Continue to produce high quality journal publications.
- Continue to provide high quality supervision to our PhD students and encourage them to produce journal publications from their research.
- Continue to attract high profile visitors and good quality PhD students to work on projects undertaken by CEPA staff.
- Continue to seek external research funding through consultancies and grants.
- Deliver a three-day short-course on introductory and/or advanced productivity and efficiency analysis methods.
- Conduct a one-day workshop on efficiency and productivity analysis in a particular industry sector (e.g. health).

Performance against agreed objectives:

In 2010 CEPA staff:

- produced 8 journal publications; 12 conference papers; 15 working papers; 1 book chapter; and several other publications;
- were involved in the supervision of 12 PhD students;
- hosted 10 international visitors;
- worked on 3 funded research projects;
- presented 5 short courses and a number of seminars;
- conducted two workshops (including a workshop on efficiency and productivity in the health sector); and
- served in journal editorial roles and made various other contributions to the profession.

Governance

The governance of the Centre is through the CEPA Advisory Committee consisting of Professor C.J. O'Donnell (Director), Professor C.A.K. Lovell, Professor D.S.P. Rao, Associate Professor A.N. Rambaldi, Associate Professor V. Zelenyuk, Dr G. Lordan, Dr T. Mallawaarachchi and Dr A. Peyrache.

The Advisory Committee meets at least once each year. Members of the Committee meet informally on a more regular basis to prepare tenders for consulting projects and interim and final reports for research projects.

The Director consults with the Head of the School of Economics on all substantive matters relating to the Centre.

List of Staff Associated with Centre

Director

Professor Chris O'Donnell

Other Staff

Dr Mohammad Alauddin

Associate Professor Necmi Avkiran

Associate Professor Phil Bodman

Professor Harry Campbell

Professor Tim Coelli

Professor John Foster

Dr Grace Lordan

Professor Knox Lovell

Associate Professor Renuka Mahadevan

Dr Thilak Mallawaarachichi

Professor John Quiggin

Associate Professor Alicia Rambaldi

Professor D.S. Prasada Rao

Associate Professor Valentin Zelenyuk

Postdoctoral Fellows

Dr Renuka Ganegodage

Dr Antonio Peyrache

Research Associates

Dr George Battese

Dr Howard Doran

Publications List for 2010 Calendar Year

Book Chapters

Rambaldi, A.N., Rao, D.S. Prasada and Ganegodage, K. R. (2010). "Modelling Spatially Correlated Error Structures in the Time-Space Extrapolation of Purchasing Power Parities", in Luigi Biggeri and Guido Ferrari (eds.), Price Index Numbers in Time and Space. Series: Contributions to Statistics. Part II, 63-96. Springer-Verlag. Heidelberg, Germany.

Journal articles

- Chotikapanich, Duangkamon, Griffiths, William E., Rao, D.S. Prasada and Valencia, Vicar (2011). Global Income distributions and inequality, 1993 and 2000: Incorporating country-level inequality modelled with beta distributions. *The Review of Economics and Statistics*, in Press. Available online 2010.
- Griffiths, W. E., Newton, L. S. and O'Donnell, C. J. (2010). "Predictive Densities for Models with Stochastic Regressors and Inequality Constraints: Forecasting Local-Area Wheat Yield." *International Journal of Forecasting* 26(2): 397-412.
- Hajargasht, Gholamreza and Rao, D.S. Prasada (2010). Stochastic approach to index numbers for multilateral price comparisons and their standard errors. *Review of Income and Wealth*, 56 Suppl 1: S32-S58.
- Headey, Derek, Alauddin, Mohammad and Rao, D.S. Prasada (2010). Explaining agricultural productivity growth: an international perspective. *Agricultural Economics*, 41 1: 1-14.
- Hoang, Viet-Ngu and Rao, D.S. Prasada (2010). Measuring and decomposing sustainable efficiency in agricultural production: A cumulative exergy balance approach. *Ecological Economics*, 69 9: 1765-1776.
- O'Donnell, C. J. (2010). "Measuring and Decomposing Agricultural Productivity and Profitability Change." *Australian Journal of Agricultural and Resource Economics* ,54(4): 527-560.
- O'Donnell, C. J., Chambers, R. G. and Quiggin, J. (2010). "Efficiency Analysis in the Presence of Uncertainty." *Journal of Productivity Analysis*, 33(1): 1-17.
- Rao, D.S. P., Rambaldi, A.N. and Doran, H.E. (2010). "Extrapolation of purchasing power parities using multiple benchmarks and auxiliary information: A new approach." *Review of Income and Wealth*, 56 Suppl 1: S59-S98.

Conference papers

- Campbell, H.A., and Kennedy, J. (2010) "Bioeconomic Modeling and Management of the Southern Bluefin Tuna Fishery. In: *Proceedings of the Fifteenth Biennial Conference of the International Institute of Fisheries Economics and Trade*, Montpellier, pp. 12..
- Campbell, H.A., Kennedy, J. and Reid, C. (2010). "Bioeconomic Modeling and Management of the Western and Central Pacific Ocean Tuna Stocks". In: *Global Tuna Demand, Fisheries Dynamics and Fisheries Management in the Eastern Pacific Ocean*, Inter-American Tropical Tuna Commission and National Marine Fisheries Service Workshop, La Jolla May 13-14, pp. 62.
- Hajarghasht, G., Rao, D.S. Prasada, and Shankar, S., "A Minimum Distance and the Generalised EKS Approaches to Multilateral Comparisons of Prices and Real Incomes", *International Comparisons of Prices, Income and Productivity Conference*, April 8-9, 2010, University of Oxford, UK.
- Lovell, C.A.K., Inaugural Lecture, MMOBE-DEMO Programme, Departament d'Economia de l'Empresa, Universitat Autònoma de Barcelona, Spain.
- O'Donnell, C. J. (2010). "Analysing Productivity and Efficiency Change in an Aggregate Quantity Framework". *Pre-Conference Workshop, Asia Pacific Productivity Conference*, Taipei, Taiwan, 20 July.
- O'Donnell, C. J. (2010). "The Components of Profitability, Productivity and Efficiency Change". *DEEDI Economists' Conference*, Brisbane, 29-30 November.
- O'Donnell, C. J. (2010). "DEA Methodology for Measuring and Decomposing Profitability, Productivity and Efficiency Change". *International DEA Symposium - Pushing the Envelope!*, University of Queensland, Australia, 27-29 September.
- O'Donnell, C. J. (2010). "Econometric Estimation of Distance Functions and Associated Measures of Productivity and Efficiency Change". *Asia Pacific Productivity Conference*, Taipei, Taiwan, 21-23 July.
- O'Donnell, C. J. (2010). "Nonparametric Estimates of the Components of Productivity and Profitability Change in U.S. Agriculture". *1st Valencian Workshop on Efficiency and Productivity*, Universidad Politecnica de Valencia, 7-8 October.
- O'Donnell, C. J. (2010). "Nonparametric Estimates of the Components of Productivity and Profitability Change in U.S. Agriculture". *North American Productivity Workshop*, Rice University, Houston, 2-5 June.
- O'Donnell, C. J. and Nguyen, K. (2010). "An Econometric Approach to Estimating the Components of Productivity Change in Public Hospitals". *International Workshop on*

Efficiency and Productivity in Honour of Professor Knox Lovell, Elche, Spain, 4-5 October.

O'Donnell, C. J. and Nguyen, K. (2010). "Econometric Methodology for Estimating the Components of Productivity Change in Public Hospitals". *Workshop on Efficiency and Productivity in the Health Sector*, University of Queensland, Australia, 30 September.

Rambaldi, A.N. and Rao, D.S.P. (2010). "The effect of hedonic modeling and index weights on hedonic imputation indexes. In: *31st General Conference of The International Association for Research in Income and Wealth, St. Gallen, Switzerland*, (1-24). 22-28 August.

Rao, D.S.P, Rambaldi A.N. and Doran H.E. (2010). "An econometric approach to the construction of complete panels of purchasing power parities: analytical properties and empirical results," In: *the Econometric Society World Congress, Shanghai*, 17-21 August, 2010.

Rohde, N., Rao, D.S. Prasada and Tang, K.K., "Measuring Income Insecurity: Analysis of Income Data from the United States, Britain and Germany", *31st General conference of the International Association for Research in Income and Wealth, 22-28 August, 2010*. St. Gallen, Switzerland.

Working papers

- Avkiran, N., (2010). A tool for scrutinizing bank bailouts based on multi-period peer benchmarking. WP13/2010. Now appears in Pacific-Basin Finance Journal Volume 19, Issue 5, November 2011, Pages 447-469
- Avkiran, N., (2010). Sensitivity analysis of network DEA illustrated in branch banking. *Centre for Efficiency and Productivity Analysis Working Papers WP12/2010*, School of Economics, University of Queensland.
- Brea, H., Grifell-Tatjé, E. and Lovell, C.A.K. (2010). Testing the Product Test. *Centre for Efficiency and Productivity Analysis Working Papers WP07/2010*, School of Economics, University of Queensland.
- Chowdhury, H., Laporte, A. Wodchis, W. and Zelenyuk, V., (2010). Efficiency and Technological Change in Health Care Services in Ontario. *Centre for Efficiency and Productivity Analysis Working Papers WP08/2010*, School of Economics, University of Queensland.
- Diewert, W.E., (2010). Decompositions of Profitability Change using Cost Functions. *Centre for Efficiency and Productivity Analysis Working Papers WP09/2010*, School of Economics, University of Queensland.
- Filippetti A., and Peyrache A. (2010). The globalization of technological capabilities of countries: a dual approach using composite indicators & data envelopment analysis, *Centre for Efficiency and Productivity Analysis Working Papers WP10/2010*, School of Economics, University of Queensland.
- Ganegodage, K. R. and Rambaldi A.N. (2010). Is the State University System in Sri Lanka a "White Elephant? Macroeconomics Research Group Discussion Paper Series. School of Economics, The University of Queensland, No 3810.
- O'Donnell, C. J. (2010). DPIN Version 1.0: A Program for Decomposing Productivity Index Numbers. *Centre for Efficiency and Productivity Analysis Working Papers WP01/2010*, School of Economics, University of Queensland.
- O'Donnell, C.J. (2010). Nonparametric Estimates of The Components of Productivity and Profitability Change In U.S. Agriculture. *Centre for Efficiency and Productivity Analysis Working Papers WP02/2010*, School of Economics, University of Queensland.
- O'Donnell, C.J., Quiggin, J. and Shankar, S. (2010). Production Under Uncertainty: A Simulation Study. *Centre for Efficiency and Productivity Analysis Working Papers WP05/2010*, School of Economics, University of Queensland.
- O'Donnell, C.J. and Shankar, S. (2010). Estimating State-allocable Production Technologies When there are two States of Nature and State Allocations of Inputs are Unobserved. *Centre for Efficiency and Productivity Analysis Working Papers WP04/2010*, School of Economics, University of Queensland.

Park, B.U., Simar, L. and Zelenyuk, V. (2010). Local Maximum Likelihood Techniques with Categorical Data, *Centre for Efficiency and Productivity Analysis Working Papers WP14/2010*, School of Economics, University of Queensland.

Peyrache, A. (2010). Where is the primal total factor productivity index? *Centre for Efficiency and Productivity Analysis Working Papers WP06/2010*, School of Economics, University of Queensland.

Peyrache, A. (2010). Multilateral productivity comparisons and homotheticity, *Centre for Efficiency and Productivity Analysis Working Papers WP11/2010*, School of Economics, University of Queensland.

Zelenyuk, V. (2010). Aggregation of Economic Growth Rates and of its Sources. *Centre for Efficiency and Productivity Analysis Working Papers WP03/2010*, School of Economics, University of Queensland.

Other Publications

Rambaldi, A.N. and Smith, S. (2010). “An Econometric Analysis of the Determinants of SEQ Housing Prices,” Final Report. Local Government Association of Queensland.

Research Students Associated with Centre

Degree		Name	Enrolled	Submitted	Awarded
Ph.D. completed	F/T	Kim Nguyen	07/06	03/10	10/10
Ph.D. completed	F/T	Nicholas Rhode	03/06	01/10	06/10
PhD. ongoing	F/T	Shabbir Ahmad	06/09		
Ph.D. ongoing	P/T	Briege Allan-Greer	03/03		
Ph.D. ongoing	P/T	Roger Carrington	06/06		
Ph.D. ongoing	P/T	Barry Golding	03/03	11/10	
Ph.D. ongoing	F/T	Vincent Hoang	02/07	02/10	
Ph.D. ongoing	F/T	Andrew Hodge	02/07		
PhD. ongoing	F/T	Adeline Ofori-Bah	02/08		
PhD. ongoing	F/T	Sriram Shankar	02/07	09/10	
Ph.D. ongoing	P/T	Franklin Soriano	03/03		
PhD. ongoing	F/T	Hieu Phan Sy	02/07		

Research Grants and Contracts Awarded

- Title: *An Econometric Analysis of SEQ Housing Prices* (2010), Local Government Association of Queensland.
Consultant for AEC Group, Brisbane: Rambaldi, A.N.
- Title: *Fiscal Federalism and Economic Growth*
Investigators: Bodman, P. (PI) and Campbell, H.A.
Funding: ARC Discovery Grant, \$162,426.(2008-2010)
- Title: *Hospital Efficiency Measurement Methodologies* (2010), for the NSW Treasury.
Uniquet Project No. 16753.
Investigators: O'Donnell, C. J. and Nguyen, K.

Seminars

O'Donnell, C. J. (2010). *The Components of Profitability, Productivity and Efficiency Change*. Department of Primary Industries, Victoria. 29 October.

O'Donnell, C. J. (2010). *The Drivers of U.S. Agricultural Productivity Change: 1960-2004*. University of Sydney. 13 May.

O'Donnell, C. J. (2010). *Econometric Estimation of Distance Functions and Associated Measures of Productivity and Efficiency Change*. University of Adelaide. 3 September.

O'Donnell, C. J. (2010). *Measuring and Decomposing Agricultural Productivity and Profitability Change*. University of Wollongong. 6 May.

O'Donnell, C. J. (2010). *Nonparametric Estimates of the Components of Productivity and Profitability Change in U.S. Agriculture*. UC Davis. 1 June.

Rambaldi, A. (2010). *Towards a New Generation of PWT Using an Econometric Approach*, Department of Econometrics. Monash University. 16 April.

Short Courses

Campbell, H.A. (2010). *Benefit-Cost Analysis: economic and financial appraisal using spreadsheets*. Marsden Jacob Associates, Melbourne. November. 1 day (15 participants).

O'Donnell, C. J. and Peyrache, A. (2010). *Efficiency and Productivity Analysis*. University of New South Wales Australian Defence Force Academy. 3-5 May (40 attendees)

O'Donnell, C. J. (2010). *Efficiency and Productivity Analysis*. Brisbane. 15-17 December. 2 days (8 attendees)

O'Donnell, C. J., Rao, D.S. P., Zelenyuk, V., and Shankar, S. (2010). *Advanced Methods in Efficiency and Productivity Analysis*. University of Queensland. 27-29 September (40 attendees)

Conferences and Workshops

Workshop on Efficiency and Productivity in the Health Sector, University of Queensland, Australia, 30 September (60 attendees)

Efficiency and Productivity Workshop. University of Queensland. 13 December (25 attendees)

Significant External Service

Lovell, C.A.K.

- Member of Scientific Advisory Committee, European Workshop on Efficiency and Productivity Analysis
- Member of Advisory Committee, North American Productivity Workshop
- Member of Organizing Committee, Asia Pacific Productivity Workshop
- Awarded the degree of Doctor Honoris Causa by the University Miguel Hernandez, Spain

O'Donnell, C.J.

- Member of Australian Bureau of Statistics (ABS) Productivity Measurement Reference Group (PMRG)
- Associate Editor, *Journal of Productivity Analysis*
- ARC Ozreader
- Member, Local Organising Committee, 2012 Conference of the International J.A. Schumpeter Society

Rao, D.S.P.

- Elected member of CRIW of the NBER in 2010. CRIW membership is exclusive and election is based on contributions in the areas of index numbers, productivity measurement, etc.
- Elected to the Council of the International Association for Research in Income and Wealth, 2010-2012.
- Appointed Member, Technical Advisory Group for the International Comparison Program 2011 at the World Bank, 2010-2012.

Visitors to the Centre:

Professor Erik Dietzenbacher

Groningen University
28-29 June 2010

Professor Bart Los

Groningen University
28-29 June 2010

Professor Bill Greene

NY University Business School
4-10 July 2010

Professor Bob Chambers

University of Maryland
19-23 July 2010

Dr Celine Nauges

Toulouse School of Economics, France
1 August 2010-31 January 2011

Dr Valentin Zelenyuk

Kyiv School of Economics
24 September-1 October 2010

Professor Finn Forsund

University of Oslo
25 September-15 October 2010

Professor Erwin Diewert

University of British Columbia
1 to 13 November 2010

Professor Andrew Harvey

University of Cambridge
21 to 28 November 2010

Professor Bert Balk

Erasmus University
6 to 8 December 2010

Agreed objectives for 2011 Calendar Year

- Continue to produce high quality journal publications.
- Continue to provide high quality supervision to our PhD students and encourage them to produce journal publications from their research.
- Continue to attract high profile visitors and good quality PhD students to work on projects undertaken by CEPA staff.
- Continue to seek external research funding through consultancies and grants.
- Deliver a three-day short-course on introductory and/or advanced productivity and efficiency analysis methods.
- Conduct a one-day workshop on efficiency and productivity analysis in a particular sector (e.g. regulated industries).



*Centre Director
Professor C.J. O'Donnell*



*Head of School
Professor Flavio M. Menezes*