

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

For the year ended 31 December 2012

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

Contents

OVERVIEW OF THE CENTRE (INCLUDING MISSION STATEMENT)	2
AGREED OBJECTIVES FOR 2012 CALENDAR YEAR	3
AGREED OBJECTIVES:	3
PERFORMANCE AGAINST AGREED OBJECTIVES:	3
GOVERNANCE	4
LIST OF STAFF ASSOCIATED WITH CENTRE	5
PUBLICATIONS LIST FOR 2012 CALENDAR YEAR	6
BOOK CHAPTERS	6
JOURNAL ARTICLES	6
CONFERENCE PAPERS	7
WORKING PAPERS	8
OTHER PUBLICATIONS	9
RESEARCH STUDENTS ASSOCIATED WITH CENTRE	10
RESEARCH GRANTS AND CONTRACTS AWARDED	11
SEMINARS	12
SHORT COURSES	13
CONFERENCES AND WORKSHOPS	13
SIGNIFICANT EXTERNAL SERVICE	14
VISITORS TO THE CENTRE:	15
AGREED OBJECTIVES FOR 2013 CALENDAR YEAR	16

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 2012 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 empirical applications of efficiency and productivity analysis.

Performance against agreed objectives:

In 2012 CEPA staff:

- produced fifteen journal publications; ten conference papers; eight working papers; and two book chapters.
- were involved in the supervision of four PhD students;
- hosted twelve international visitors;
- were awarded two major research contracts;
- presented three short courses and a number of seminars;
- ran two workshops,
- 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 C. Nauges, Associate Professor A.N. Rambaldi, Associate Professor V. Zelenyuk and Dr A. Peyrache.

The Advisory Committee usually meets once a 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 John Foster

Professor Knox Lovell

Associate Professor Renuka Mahadevan

Associate Professor Celine Nauges

Dr Antonio Peyrache

Professor John Quiggin

Associate Professor Alicia Rambaldi

Professor D.S. Prasada Rao

Associate Professor Valentin Zelenyuk

Postdoctoral Fellows

Dr Renuka Ganegodage

Research Associates

Dr George Battese

Professor Harry Campbell

Professor Tim Coelli

Dr Howard Doran

Publications List for 2012 Calendar Year

Book Chapters

- Rao, D.S. Prasada, (2012) The Framework for the International Comparison Program (ICP), in World Bank (ed) *Measuring the Size of the World Economy*, World Bank, Washington DC. Chapter 1. Available online
- Rao, D.S. Prasada, (2012), “Computation of Basic Heading Purchasing Power Parities (PPPs) for Comparisons within and between Regions”, in World Bank (ed) *Measuring the Size of the World Economy*, World Bank, Washington DC. Chapter 4. Available online.

Journal articles

- Avkiran N.K., and A. McCrystal (2012) Sensitivity analysis of network DEA: NSBM versus NRAM, *Applied Mathematics and Computation* 218(22): 11226-11239.
- Avkiran N.K., and D.W.L. Tripe (2012) Can mutuals compete on commercial bank terms? Sharpening the regulatory focus, *JASSA (The Finsia Journal of Applied Finance)*, issue 2 Winter, 20-25.
- Bechtel, L., G. Lordan and D.S.P. Rao (2012) Income Inequality and Mental health – Empirical Evidence from Australia. *Health Economics* 21(S1): 4-17.
- Chotikapanich, D., W.E. Griffiths, D.S.P. Rao and V. Valencia (2012) Global Income Distributions and Inequality, 1993 and 2000: Incorporating country-Level Inequality Modelled with Beta Distributions. *Review of Economics and Statistics* 94(1): 52–73
- Curi, C., Guarda, P., Lozano-Vivas, A. and V. Zelenyuk (2012) Is foreign-bank efficiency in financial centers driven by home-country characteristics? *Journal of Productivity Analysis*, online.
- Fare, R. and V. Zelenyuk (2012) Aggregation of scale elasticities across firms, *Applied Economics Letters* 19: 1593-1597.
- Hajarghasht, G., W.E. Griffiths, J. Brice, D. Chotikapanich and D.S. Prasada Rao (2012) Inference for Income Distributions Using Grouped Data. *Journal of Business and Economic Statistics* 30(4): 563-575.
- O'Donnell, C. J. and K. Nguyen (2012) An Econometric Approach to Estimating Support Prices and Measures of Productivity Change in Public Hospitals. *Journal of Productivity Analysis* DOI: 10.1007/s11123-012-0312-0.

- O'Donnell, C. J. (2012) Econometric Estimation of Distance Functions and Associated Measures of Productivity and Efficiency Change. *Journal of Productivity Analysis* DOI: 10.1007/s11123-012-0311-1.
- O'Donnell, C. J. (2012). Nonparametric Estimates of the Components of Productivity and Profitability Change in U.S. Agriculture. *American Journal of Agricultural Economics* 94(4):873-890.
- O'Donnell, C. J. (2012) An aggregate quantity framework for measuring and decomposing productivity change. *Journal of Productivity Analysis* 38(3):255-272.
- Pastor, J. T., Aparicio, J., and C.A.K. Lovell (2012) Families of Linear Efficiency Models Based on Debreu's Loss Function, *Journal of Productivity Analysis* 38(2):109-20.
- Peyrache A. (2012) Multilateral Productivity Comparisons and homotheticity. *Journal of Productivity Analysis* 40(1): 57-65
- Peyrache A., and C. Daraio (2012), Empirical tools to assess the sensitivity of directional distance functions to direction selection. *Applied Economics* 44(8): 933-943
- Son, N.H., T. Coelli and D.S.P. Rao (2012) Assessing Welfare Effects of Microfinance in Vietnam: Empirical Results from a Quasi-Experimental Survey. *Journal of Development Studies* 48(5): 619-632.

Conference papers

- Avkiran, N. (2012) Predicting bank financial distress prior to crises. *NZ Finance Colloquium*, Auckland, February.
- Avkiran, N. (2012) Robustness tests on network DEA estimates: NSBM versus NRAM. *DEA Symposium 2012*, Seikei University, Tokyo, February.
- O'Donnell, C.J. (2012) Econometric Estimates of Productivity and Efficiency Change in the Australian Northern Prawn Fishery. *National Marine Fisheries Service Workshop*, Santa Cruz, CA.
- O'Donnell, C.J. (2012) Spurious Levels of Inefficiency in Australian Agriculture. *North American Productivity Workshop VII*, Houston TX, 6-9 June.
- O'Donnell, C.J. (2012) Natural Levels of Inefficiency in Australian Agriculture. *56th Annual Conference of the Australian Agricultural and Resource Economics Society*, Fremantle WA, 8-10 February.

- O'Donnell, C.J. (2012) Econometric Estimation of Distance Functions and Associated Measures of Productivity and Efficiency Change *8th Triennial Conference of the International Association of Agricultural Economists*, Foz do Iguacu, Brazil, August 18-24.
- Peyrache, A. (2012) A state-space stochastic frontier panel data model. *North American Productivity Workshop VII*, Houston TX, 6-9 June.
- Rao, D.S.P, D. Warner, W.E. Griffiths and D. Chotikapanich (2012), “Global Inequality: Levels and Trends, 1993-2005 How sensitive are these to the choice of PPPs and Real Incomes?” *General Conference of the International Association for Research in Income and Wealth*, Boston, August.
- Rao, D.S.P. and A. Rambaldi (2012) Construction of Consistent Panels of PPPs and Real Incomes at Current and Constant Prices, *International Comparisons Workshop*, University of Pennsylvania, Philadelphia, May.
- Simar, L. and V. Zelenuk (2012) To Smooth or Not to Smooth? The Case of Discrete Variables in Nonparametric Regressions, *Australasian Meetings of the Econometric Society*, Deakin University, Melbourne 3-6 July.

Working papers

- Bontemps, C., Nauges, C., Réquillart, V., and M. Simioni (2012) Food safety regulation and firm productivity: Evidence from the French food industry. *TSE Working Papers* 12-275, Toulouse School of Economics, France.
- Filippetti A. and A. Peyrache (2012) Labour productivity and technology gap in European regions: a non-parametric approach, *Centre for Efficiency and Productivity Analysis Working Papers*, WP02/2012. University of Queensland.
- O'Donnell, C. (2012) Alternative Indexes for Multiple Comparisons of Quantities and Prices. *Centre for Efficiency and Productivity Analysis Working Papers*, WP05/2012. University of Queensland.
- Peyrache A., and A. Zago (2012) Large courts, small justice! The inefficiency and the optimal structure of the Italian justice sector, *Centre for Efficiency and Productivity Analysis Working Papers*, WP06/2012. University of Queensland.
- Peyrache A. (2012) Industry Structural inefficiency and potential gains from mergers and break-ups: an empirical approach, *Centre for Efficiency and Productivity Analysis Working Papers*, WP03/2012. University of Queensland.

Peyrache A. and A. Rambaldi (2012) A state-space stochastic frontier panel data model, *Centre for Efficiency and Productivity Analysis Working Papers*, WP01/2012. University of Queensland.

Zelenyuk, V. (2012) A Scale Elasticity Measure for Directional Distance Function and its Dual: Theory and DEA Estimation. *Centre for Efficiency and Productivity Analysis Working Papers*, WP07/2012. University of Queensland.

Zelenyuk, V. (2012) Aggregation of Scale Efficiency. *Centre for Efficiency and Productivity Analysis Working Papers*, WP04/2012. University of Queensland.

Other Publications

Avkiran, N.K. (2012) Shortcomings of the MyUniversity government website and how it can be improved. *HERDSA News* 34(3), December.

Research Students Associated with Centre

Degree		Name	Enrolled	Submitted	Awarded
Ph.D. 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	Franklin Soriano	03/03		

Research Grants and Contracts Awarded

- Title: *Improving Likelihood Estimators: Theory and Applications to Analyzing Productivity and Efficiency and Forecasting of Probability of Economic Recession*
Project: ARC Discovery Project DP130101022
Investigators: Zelenyuk, V., Park, B. and L. Simar
- Title: *Efficiency Analysis of Public Hospital Acute Admitted Services*
Uniquist Project No. CPO 001017
Client: Commonwealth Department of Health and Ageing
Investigators: O'Donnell, C. J., D.S.P. Rao, K. Nguyen and A. Peyrache.

Seminars

- Avkiran, N. *Can Australian credit unions and building societies compete with commercial banks? Expanding the regulator's toolkit*. NZ Reserve Bank, Wellington, February.
- Avkiran, N. *Measuring Bank Peer Performance from a Multiple-Stakeholder Perspective*. Massey University, Palmerston North, February.
- Avkiran, N. *Measuring Bank Peer Performance from a Multiple-Stakeholder Perspective*. Nihon University, Tokyo, February.
- O'Donnell, C. *Econometric Estimates of Productivity and Efficiency Change in the Australian Northern Prawn Fishery* University of Melbourne, 29 August
- O'Donnell, C. *Econometric Estimates of Productivity and Efficiency Change in the Australian Northern Prawn Fishery* Universidad Adolfo Ibáñez, Viña Del Mar, Chile, 16 August
- Peyrache, A. *A state-space stochastic frontier panel data model*. Einaudi Institute for Economics and Finance, Rome, 29 May.
- Peyrache, A. *Industry structural inefficiency and potential gains from mergers and break-ups: an empirical approach*. University of Verona, 15 May.
- Zelenyuk, V. *Scale Efficiency: Equivalence of Primal and Dual Measures*. Department of Econometrics, University of Auckland, New Zealand.

Short Courses

Trivedi, P. (2012) *Panel Data Methods for the Analysis of Health Data*. University of Queensland, 18-20 July.

O'Donnell, C. (2012) *Applied Productivity and Efficiency Analysis*, University of Queensland, 25-27 September.

O'Donnell, C. (2012) *Applied Productivity and Efficiency Analysis*, ACCC, Melbourne, 12-14 November.

Conferences and Workshops

Empirical Applications in Efficiency and Productivity Analysis, University of Queensland, Australia, 28 September.

Index Number Methods in Theory and Practice, University of Queensland, Australia, 22 October.

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

O'Donnell, C.J.

- Member of Australian Bureau of Statistics (ABS) Productivity Measurement Reference Group (PMRG)
- Member of Commonwealth Department of Health and Ageing (DoHA) Aged Care Benchmarking (ACB) Consultative Group
- Associate Editor, *Journal of Productivity Analysis*
- Associate Editor, *Empirical Economics*

Rao, D.S.P.

- Elected Member of the Council of the International Association for Research in Income and Wealth, 2012-2018.
- Appointed Member, Technical Advisory Group for the International Comparison Program 2011 at the World Bank, 2010-2012.
- Member of the Economics and Commerce (EC) Research Evaluation Committee for the 2012 Excellence in Research for Australia (ERA)
- Member, Expert Group for 2011 ICP Asia-Pacific, Asian Development Bank, 2012
- Associate Editor, *Journal of Productivity Analysis*
- Member of Editorial Board, *Review of Income and Wealth*

Zelenyuk, V.

- Chair of Organizing and Scientific Committee, Asia-Pacific Productivity Conference (APPC) to be held at The University of Queensland, 8-11 July, 2014..

Visitors to the Centre:

A/Professor Christine Amsler

Michigan State University

11 July – 10 August 2012

Professor W.E. Diewert

University of British Columbia and University of NSW

October 2012

Dr Andrea Filippetti

London School of Economics and Political Science

August 2012

Professor E. Grifell-Tatjé

Universitat Autònoma de Barcelona

15 October – 11 November 2012

Professor B. Park

Korea National University

November 2012

Professor B. Los

University of Groningen

July 2012

Professor Sugata Marjit

Centre for Studies in Social Sciences, Calcutta

29 April – 19 May 2012

Professor Peter Schmidt

Michigan State University

11 July – 10 August 2012

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- 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 at least two three-day short-courses on introductory and/or advanced productivity and efficiency analysis methods.



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



*Head of School
Professor Flavio M. Menezes*