

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

For the year ended 31 December 2016

Annual Report for (insert Centre name here) For the Year ended 31 December 2016

1) Agreed objectives for the 2016 calendar year and how these objectives were achieved or progressed.

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, and thus advance and promote the research in the field of efficiency and productivity.

The revenues obtained through such activities are then typically used to fund the public good type activities for the local productivity and efficiency research community, through (co-) funding visits of external top scholars to visit CEPA, organizing and (co-)funding workshops and conferences, etc.

The principal aims and objectives of the Centre are to undertake theoretical and applied research, develop useful end-user-driven intensive courses and workshops and to develop computer software for use by private and public sector organizations. Specific goals 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 assessments of the effects of microeconomic reform and deregulation on productivity and efficiency;
- to provide technical advice to private and public sector 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 2016:

- 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.
- Run the CEPA International Workshop
- Deliver at least two short-courses on introductory and/or advanced productivity and efficiency analysis methods.

The Centre has very successfully reached its 2016 objectives, as is summarized below. In a nutshell, it might be also worth noting that due to the work of scholars united by the Centre, the RePEc now upgraded the rank of the School of Economics of UQ to the top-2 (from top-3) in the world in the field of Efficiency & Productivity—above Harvard, Stanford, Yale, etc. (These ranking facts are as of 30 June 2017, see: <https://ideas.repec.org/top/top.eff.html>).

2) Outputs (including publications, workshops, industry events)

From Valentin Zelenyuk (Director of CEPA, A/Professor UQ)

Journal Articles:

“Nonparametric Least Squares Methods for Stochastic Frontier Models,” (2016) with Leopold Simar and Ingrid Van Keilegom, forthcoming in *Journal of Productivity Analysis* (doi: 10.1007/s11123-016-0474-2)

“Nonparametric Estimation of Dynamic Discrete Choice Models for Time Series Data” with Byeong U. Park and Léopold Simar, *Computational Statistics and Data Analysis* 108, pp.97-120 (doi: 10.1016/j.csda.2016.10.024)

“Cost decompositions and the efficient subset” (2016) with Rolf Färe, Hirofumi Fukuyama, Shawna Grosskopf; *OMEGA: The International Journal of Management Science* 62, pp.123-130 (doi:10.1016/j.omega.2015.09.004)

“Performance of Hospital Services in Ontario: DEA with Truncated Regression Approach,” (2016) with Hedayet Chowdhury; *OMEGA: The International Journal of Management Science* 63, pp.111-122 (doi:10.1016/j.omega.2015.10.007)

“Generalized nonparametric smoothing with mixed discrete and continuous data” (2016) with Degui Li and Leopold Simar, *Computational Statistics and Data Analysis* 100, pp.424-444, (10.1016/j.csda.2014.06.003).

Organization and delivery of Intensive Course

CEPA Intensive Course on Performance Analysis: Theory & Practice, by Associate Professor Zelenyuk (Australia): 20-22 July 2016 (by V. Zelenyuk)

Organization of Intensive Course

CEPA Intensive Course on Bootstrap and Performance Analysis: Theory & Practice, by Professor Wilson (USA): 13-14 August 2016

Organization of Workshop

Annual CEPA International Workshop: 20 - 21 Oct 2016

([http://uq.edu.au/economics/cepa/docs/Program for International Productivity Workshop 2016.pdf](http://uq.edu.au/economics/cepa/docs/Program%20for%20International%20Productivity%20Workshop%202016.pdf))

From Chris O'Donnell (Professor, UQ)

Journal Articles:

O'Donnell, C.J. (2016). “Using information about technologies, markets and firm behaviour to decompose a proper productivity index”. *Journal of Econometrics* 190(2):328-340.

Book Chapters

O'Donnell, C. J. (2016). “Nonparametric Estimates of the Components of Productivity and Profitability Change in U.S. Agriculture”. In Zhu, J. (ed.) *Data Envelopment Analysis: A Handbook of Empirical Studies and Applications* Boston, Springer

From Prasada D.S. Rao (Professor, UQ)

Journal Articles:

Carrington, Roger, O'Donnell, Chris and Rao, D. S. Prasada (2016) Australian university productivity growth and public funding revisited. *Studies in Higher Education*, 1-22. doi:10.1080/03075079.2016.1259306

Rao, D. S. Prasada and Hajargasht, Gholamreza (2016) Stochastic approach to computation of purchasing power parities in the International Comparison Program (ICP). *Journal of Econometrics*, 191 2: 414-425. doi:10.1016/j.jeconom.2015.12.012

Rohde, Nicholas, Tang, K. K., Osberg, Lars and Rao, Prasada (2016) The effect of economic insecurity on mental health: recent evidence from Australian panel data. *Social Science and Medicine*, 151 250-258. doi:10.1016/j.socscimed.2015.12.014

Wu, Dongjie and Rao, Prasada (2016) Urbanization and income inequality in China: an empirical investigation at provincial level. *Social Indicator Research*, 131 1: 189-214. doi:10.1007/s11205-016-1229-1.

Book chapter:

Rao, D.S. Prasada (2016). Welfare comparisons with heterogeneous prices, consumption and preferences. In Matthew D. Adler and Marc Fleurbaey (Ed.), *The Oxford handbook of well-being and public policy* (pp. 785-820) New York, NY, United States: Oxford University Press.

From Knox Lovell (Honorary Professor, UQ/CEPA)

Co-Editor of a book:

Advances in Efficiency and Productivity (with J. Aparicio and J. T. Pastor). New York: Springer (2016).

Journal Articles:

“Productivity Measurement in Radial DEA Models with a Single Constant Input,” (with G. Karagiannis), *European Journal of Operational Research* 251:1 (2016), 323-28.

“What Determines Students’ Study Practices in Higher Education? An Instrumental Variable Approach,” (with M. Alauddin, A. Ashman and S. Nghiem), *Economic Analysis and Policy* 51 (2016), 46-54.

“Recent Developments in Productivity Analysis,” *Pacific Economic Review* 21 (2016), 417-44.

Book chapter:

“Exact Relationships between Fisher Indexes and Theoretical Indexes” (with E. Grifell-Tatjé), Chapter 5 in J. Aparicio, C. A. K. Lovell and J. T. Pastor, eds., *Advances in Efficiency and Productivity*. Springer International Series in Operations Research & Management Science, Vol. 249. (2016).

From Antonio Peyrache (Senior Lecturer, UQ)

Journal Articles:

Filippetti, Andrea and Peyrache, Antonio (2016) Productivity growth and catching up: a technology gap explanation. *International Review of Applied Economics*, 1-21.
doi:10.1080/02692171.2016.1249831

Peyrache, Antonio and Zago, Angelo (2016) Large courts, small justice!: the inefficiency and the optimal structure of the Italian justice sector. *Omega*, 64 42-56.
doi:10.1016/j.omega.2015.11.002

From Alicia Rambaldi (Associate Professor, UQ)

Journal Articles:

Fletcher, C.S., Rambaldi, A.N., Lipkin, F. and McAllister R.R.J. (2016), "Economic, equitable, and affordable adaptations to protect coastal settlements against storm surge inundation," *Reg. Environ. Change*, 16, 4, 1023-1034. doi:10.1007/s10113-015-0814-1

Accepted in 2016 (DOI is 2016):

Plant, L., A. N. Rambaldi, N. Sipe (2017), "Evaluating Revealed Preferences for Street Tree Cover Targets: A Business Case for Collaborative Investment in Leafier Streetscapes in Brisbane, Australia." *Ecological Economics*, 134, 238-249.
<http://dx.doi.org/10.1016/j.ecolecon.2016.12.026>.

Organization of Workshop:

Advances in Econometric Methods Workshop (14-15 July)

Keynote: Prof. Rosa L. Matzkin

Advances In Statistics And Econometrics Workshop

From John Quiggin (Professor, UQ)

“Antipodean agricultural and resource economics at 60: risk and uncertainty,” *Australian Journal of Agricultural and Resource Economics* Volume 60, Issue 4, October 2016, Pages: 535–549, John C. Quiggin and Jock R. Anderson

3) Research grants, consultancies and other contracts that were awarded.

From Valentin Zelenyuk (Director of CEPA, A/Professor UQ)

Grants Applied in 2016:

ARC Future Fellowship 2016 (nominated by BEL & DVCR, applied, not successful)

ARC Future Fellowship 2017 (nominated by BEL & DVCR, applied in 2016, awarded in 2017)

From Prasada D.S. Rao (Professor, UQ)

Grants Received in 2016:

How reliable are purchasing power parities from the World Bank? (2017–2019) ARC Discovery Projects

Inequality of Opportunity in Australia (2017–2019) ARC Discovery Projects

From Alicia Rambaldi (Associate Professor, UQ)

Grants Awarded in 2016

How reliable are Purchasing Power Parities from the World Bank? (2017-2019). Chief Investigators: DS Prasada Rao, A.N Rambaldi, Gholamreza Hajargasht (Swinburne University).

Funding: Australian Research Council (ARC) Discovery Project

Website: <http://www.uqied.economics.uq.edu.au>

Grants Applied in 2016 (awarded in 2017)

Predicting the Value and Use of Urban Land (July 2017- July 2020). Funding: Australian

Research Council (ARC) Linkage Grant. Investigators: A N. Rambaldi, Madeleine Tan. Partner

Organisation: Department of Treasury and Finance Victoria

From Chris O'Donnell (Professor, UQ)

Grants Awarded in 2016

Research on Agricultural Productivity Measurement and Monitoring Systems; Asian Productivity Organisation; USD47,500; Chief Investigators O'Donnell, Peyrache.

From Antonio Peyrache (Senior Lecturer, UQ)

Grants Awarded in 2016

Research on Agricultural Productivity Measurement and Monitoring Systems; Asian Productivity Organisation; USD47,500; Chief Investigators O'Donnell, Peyrache.

4) Other relevant information

From Valentin Zelenyuk (Director of CEPA)

Presentations

Invited Seminar at the University of Technology Sydney: “Non-Parametric Approach to Dynamic Time Series Discrete Choice Models” based on work with B. U. Park and L. Simar, CEPA WP09/2013. October 2016

Invited Seminar at the University of Monash (Department of Econometrics and Business Statistics): “Non-Parametric Approach to Dynamic Time Series Discrete Choice Models” based on work with B. U. Park and L. Simar, CEPA WP09/2013. October 2016

Keynote Speech at the Annual Workshop of the Taiwan Efficiency and Productivity Association (TEPA), 12 July 2016: “Importance of Aggregation in Productivity and Efficiency Analysis”

Invited Seminar at the Universite Catholique de Louvain, Belgium: “Non-Parametric Approach to Dynamic Time Series Discrete Choice Models” based on work with B. U. Park and L. Simar, CEPA WP09/2013. 13 May 2016

Invited Speaker at Workshop in Productivity and Efficiency Analysis, University of Macau, 20 April 2016: “Nonparametric Least Squares Methods for Stochastic Frontier Models” based on work with Leopold Simar and Ingrid Van Keilegom.

Invited Speaker at Hong Kong Baptist University, Hong Kong, China: “Nonparametric Least Squares Methods for Stochastic Frontier Models” based on work with Leopold Simar and Ingrid Van Keilegom. February 2016,

Guest Lecture at the Hong Kong Baptist University, Hong Kong, China: “How to do your research: From A to Z”, February 2016

Significant External Service

Associate Editor for Journal of Productivity Analysis.

Guest Co-Editor for Special Issue (APPC2014) in Journal of Productivity Analysis.

An Editor for Data Envelopment Analysis Journal.

From Chris O'Donnell

Conference and Workshop Presentations

O'Donnell, C.J. (2016). Another explanation of labour productivity change. Invited keynote paper presented at the Taipei Productivity and Efficiency Workshop, Taipei, Taiwan, 12 July, 2016.

O'Donnell, C.J. (2016). Linear programming, least squares and maximum likelihood estimators of total factor productivity change. Invited paper presented at the Asia-Pacific Productivity Conference, Tianjin, China, 7-10 July.

O'Donnell, C.J. (2016). Another explanation of labour productivity change. Invited paper presented at the 3rd Conference of the Society for Economic Measurement, Thessaloniki, Greece, 6 July, 2016.

Holden, S.T. and C.J. O'Donnell (2016). Productivity analysis in the presence of uncertainty: A state-contingent stochastic production frontier approach. Paper presented at the 3rd Conference of the International Association for Applied Econometrics, Milan, Italy, 22-25 June, 2016.

O'Donnell, C.J. (2016). Another explanation of labour productivity change. Paper presented at the IX North American Productivity Workshop, Quebec City, Canada, 15-18 June, 2016.

O'Donnell, C.J. (2016). Linear programming estimators of total factor productivity change. Paper presented at the Efficiency and Productivity Workshop, Auckland, New Zealand, 15 March.

Significant External Service

Co-Editor, Journal of Productivity Analysis

Associate Editor, Empirical Economics

From Kimberly Zieschang (Adjunct Professor at UQ, CEPA)

Rethinking Insurance – Paper presented at the July 2016 Western Economic Association meetings in Portland, Oregon. Discussant comments are being taken into account before journal submission.

Producing Liquidity – Paper, which was presented at the 2015 Society of Economic Measurement meetings in Paris, was revised and updated for presentation at University of Birmingham Conference on Financial Services Indices, Liquidity and Economic Activity, London, May 24-25, 2017; to be submitted for publication in a special issue of the *Journal of Financial Stability*.

The Productivity of Financial Service Providers –Presented at the 2016 Society for Economic Measurement meeting in Thessaloniki.

Chapter 6 of the Oxford Handbook of Productivity Measurement, on “Hard to Measure Sectors” completed and included with the manuscript editors have submitted to Oxford University Press.

“Held the pen” on the response that was sent to the Productivity Commission from the UQ School of Economics/CEPA.

5) Agreed objectives for the 2017(upcoming) calendar year.

Agreed objectives for 2017 are similar to those that were in 2016, namely:

- 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 one or more intensive short-courses on productivity and efficiency analysis methods.
- Run one or more 2-3 day workshops on productivity and efficiency topics.



Valentin Zelenyuk

Research Centre Director **Date 30/06/2017**



Rodney Strachan

Head of School **Date 05/07/2017**