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

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Overview of the Centre (including Mission Statement)

The Centre is an integral part of the School of Economics of The University of Queensland, who is also the main donor of the Centre and its activities (through employing some of the staff involved in CEPA, co-funding its visitors, handling finances, etc.).

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 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 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.

Due to the work of scholars united by the Centre, the RePEc ranks the School of Economics of UQ in the top-3 (and the Centre itself in the top 11) in the world in the field of Efficiency & Productivity, above Harvard, Yale, etc. (This ranking facts are as of 23 December 2016, and similar ranking was in 2015; for further details see: https://ideas.repec.org/top/top.eff.html).
Agreed objectives for 2015 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.
- Run the CEPA International Workshop
- Deliver at least two short-courses on introductory and/or advanced productivity and efficiency analysis methods.

Performance against agreed objectives:

In 2015, researchers associated with CEPA

- published over 17 journal publications,
- produced over 13 working papers.
- made over 13 conference/workshop presentations,
- gave over 16 seminar presentations
- were involved in the supervision of 9 PhD, Honours and Masters students;
- hosted 9 international visitors;
- applied for external research funding through the ARC (unsuccessfully)
- ran the Two-day Workshop, with the first day focusing on Productivity and Efficiency and the second day focussing on Non-parametric Econometrics
- presented and/or organised two intensive courses;
- 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.A.K. Lovell, Associate Professor C. Nauges, Professor C.J. O’Donnell (Director till 3 November 2015), Dr A. Peyrache, Associate Professor A.N. Rambaldi, Professor D.S.P. Rao, and Associate Professor V. Zelenyuk (Director since 4 November 2015).

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 CEPA

**Director (since 4 November 2015)**
Associate Professor Valentin Zelenyuk

**Advisory Board**
Professor Knox Lovell
Associate Professor Celine Nauges
Professor Chris O’Donnell (Director till 3 November 2015)
Dr Antonio Peyrache
Associate Professor Alicia Rambaldi
Professor D.S. Prasada Rao
Associate Professor Valentin Zelenyuk

**Associated Researchers**
Associate Professor Mohammad Alauddin
Associate Professor Necmi Avkiran
Associate Professor Phil Bodman
Professor Harry Campbell
Dr. David Kai Du
Professor John Foster
Dr Renuka Ganegodage
Associate Professor Renuka Mahadevan
Professor John Quiggin
Emeritus Professor Clement Tisdell
Professor Kimberly Zieschang
Publications List for 2015 Calendar Year

Books


Selected Journal Articles by CEPA Researchers


Zelenyuk, V. “Non-Parametric Approach to Dynamic Time Series Discrete Choice Models” with Byeong U. Park and Léopold Simar. 11th International Conference of WEAI, January 8-11, 2015 hosted by Victoria University of Wellington and Massey University, Wellington


**Working Papers of CEPA**

CEPA WP01/2015: Rolf Färe, Hirotumi Fukuyama, Shawna Grosskopf, Valentin Zelenyuk, “Cost Decompositions and the Efficient Subset”

CEPA WP02/2015: Hien Thu Pham, Shino Takayama, “Revisiting the Missing Middle: Production and Corruption”


CEPA WP04/2015: Claudia Curi, Ana Lozano-Vivas, Valentin Zelenyuk, “Foreign bank diversification and efficiency prior to and during the financial crisis: Does one business model fit all?”

CEPA WP05/2015: Kelly D.T.Trinh, Valentin Zelenyuk, “Bootstrap-based testing for network DEA: Some Theory and Applications”


CEPA WP07/2015: Hideyuki Mizobuchi, “Productivity Indexes under Hicks Neutral Technical Change”

CEPA WP08/2015: Natalya Zelenyuk, Valentin Zelenyuk, “Productivity Drivers of Efficiency in Banking: Importance of Model Specifications”

CEPA WP09/2015: Hideyuki Mizobuchi, “Multiple Directions for Measuring Biased Technical Change”

CEPA WP10/2015: Hien Thu Pham, Antonio Peyrache, “Industry Inefficiency Measures: A Unifying Approximation Proposition”


**Other Working Papers**

Other Scholarly Work

doi:10.1002/9781118845028.ch23


Research Students Associated with CEPA

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<tr>
<th>Degree</th>
<th>Name</th>
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<td>PhD. ongoing</td>
<td>F/T Thanh Nguyen</td>
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<tr>
<td>PhD. ongoing</td>
<td>F/T Kelly Trinh</td>
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<td>F/T Rhys Downham</td>
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<td>F/T Duc Manh Pham</td>
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<tr>
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<td>F/T Yan Meng</td>
<td>2014</td>
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Selected Seminars and Other Presentations by CEPA Researchers

Lovell, C.A.K.  INRA (Institut National de la Recherche Agronomique), Clermont-Ferrand, France, “Imperfect Optimisation”

Lovell, C.A.K. Universidad Miguel Hernandez, Elche, Spain, “Productivity Measurement in Radial DEA Models with Multiple Constant Inputs”


Lovell, C.A.K. International Workshop on New Developments of DEA & SFA, Nankai University, Tianjin, China, “Recent Developments in Productivity Analysis”

Lovell, C.A.K. Taiwan Efficiency & Productivity Conference, Taipei, Taiwan, “Productivity and Financial Performance”


O’Donnell, C.J. Using Information About Technologies, Markets and Firm Behaviour to Decompose a Proper Productivity Index, Department of Agricultural and Resource Economics, University of Connecticut, 3 April, 2015

O’Donnell, C.J. Using Information About Technologies, Markets and Firm Behaviour to Decompose a Proper Productivity Index, Department of Economics, University of Connecticut, 14 April, 2015

O’Donnell, C.J. Using Information About Technologies, Markets and Firm Behaviour to Decompose a Proper Productivity Index, Isenberg School of Management, University of Massachusetts, Amherst, 17 April, 2015

O’Donnell, C.J. Using Information About Technologies, Markets and Firm Behaviour to Decompose a Proper Productivity Index, Department of Economics, Union College, Schenectady, NY, 6 May, 2015


O’Donnell, C.J. Using Information About Technologies, Markets and Firm Behaviour to Decompose a Proper Productivity Index, Department of Economics, Binghamton University, 8 May, 2015

O’Donnell, C.J. Using Information About Technologies, Markets and Firm Behaviour to Decompose a Proper Productivity Index, Monash University, 4 September, 2015


Zelenyuk, V. “Regional and Ownership Drivers of Bank Efficiency: Importance of Model Specifications” Department of Econometrics of University of Auckland, New Zealand, March 2015.

**New Grants obtained by CEPA Researchers**

2015-2016. 18115BNE LGAQ Econometric Analysis of the Determinants of SEQ Housing Prices. Local Government Association of QLD via AEC Group Pty Ltd. 24,750 (by A/Professor Alicia Rambaldi)

“Towards improvements in productivity and efficiency” from Australian Institute for Business and Economics (AIBE) of the University of Queensland, 2015. (by A/Professor Valentin Zelenyuk)
Intensive Courses

Title: Productivity and Efficiency Analysis: Theory and Practice
Dates: 22 - 24 July 2015
Place: UQ
Delivered by: Associate Professor Valentin Zelenyuk
Organizer: Associate Professor Valentin Zelenyuk

In this three-day intensive course on efficiency and productivity analysis, Day 1 was dedicated to an introduction to the subject and was especially useful for those who have no or little background in the area. During this first day, students developed a general understanding of the main concepts used in the research area of productivity and efficiency analysis. This Day 1 was a stepping-stone to the following two days of the course, where these concepts were covered in more detail to give students better understanding for better use in both empirical and theoretical research. Day 2 covered topics of primal and dual characterizations (main results and relationships to efficiency analysis), dual characterizations (main results and relationship to efficiency analysis), DEA and FDH - static and dynamic cases. Day 3 covered topics of measurement of scale (theory and practice), aggregation in efficiency and productivity analysis and slack-based measures. The course consisted of nine lectures and three computer lab tutorials.

The course aimed at and attracted about 20 participants: graduate students, researchers, economists, statisticians and consultants from private and public sector organizations, regulatory authorities, regulated firms, infrastructure industries (e.g., electricity, gas, railways), service industries (e.g., education, health), and industries with branch structures (e.g., banks, credit unions, franchises, retail chains).

Title: Applied Nonparametric Econometrics
Dates: 28 - 30 September 2015
Place: UQ
Delivered by: Associate Professor Chris Parmeter
Organizer: Associate Professor Valentin Zelenyuk

The course aimed at and attracted about 15 participants: graduate students, researchers, economists, statisticians and consultants from private and public sector organizations, regulatory authorities, regulated firms, infrastructure industries, service industries, and industries with branch structures.

This course exposed students to the current practice of applied nonparametric methods. These methods are designed to overcome misspecification issues that dominate applied economic research. Using nonparametric methods can shed light on new issues that were previously hidden due to ad hoc model specifications imposed in the analysis. This class provided hands on instruction to students in state-of-the-art nonparametric methods designed specifically to assist students with empirical issues that arise in the application of these techniques. The basic concepts of smoothing were covered, complemented with numerous examples and illustrations through the open source software R. This combination of class instruction and computer tutorials assisted students in developing a sound foundation to apply nonparametric methods in their own research agendas. This course was based on the book recently co-authored by the lecturer, Henderson and Parmeter (2015, Cambridge University Press). The course consisted of nine lectures and three computer lab tutorials.

Title: Index Number Methods for International Comparisons
Dates: 7 – 15 July 2015
Place: UQ
Delivered by: Institute for Statistics, Beijing Normal University, Beijing
Delivered by: Professor Prasada Rao
Organizer: Professor Prasada Rao

The course aimed at English speaking audience in China: graduate students, researchers, economists, statisticians and consultants from private and public sector organizations, regulatory authorities, regulated firms, infrastructure industries, service industries, and industries with branch structures.
Conferences and Workshops Organized by CEPA Researchers

2-Day Workshop on Advances in Economic Measurement

Title: Advances in Economic Measurement
Dates: 1-2 October 2015
Place: UQ
Organizer: Associate Professor Valentin Zelenyuk

Co-sponsored by AIBE (via grant of V. Zelenyuk).

This workshop gathered together about 40 participants: leading economic scholars, professional economists, early career researchers and graduate students interested in learning new methods and techniques for the economic measurement of efficiency and productivity. Keynote and invited expert speakers presented on recent theoretical innovations, as well as various interesting applications for economic measurement.

The title of the first day of the Workshop was Advances in Efficiency and Productivity Analysis & Applications and it featured presentations of CEPA expert speakers (Knox Lovell, Chris O’Donnell, Alicia Rambaldi, Antonio Peyrache, Valentin Zelenyuk).

The title of the second day of the Workshop was Advances in Non-Parametric Econometrics & Applications, with a focus on banking and finance.

The Workshop featured two Keynote speakers:

- Professor Jiti Gao, Monash University
- Associate Professor Chris Parmeter, University of Miami

and two Invited speakers:

- Associate Professor Xibin Zhang, Monash University.
- Dr. Xiaohui Zhang, Murdoch University
**Significant External Service by CEPA Researchers**

**Lovell, C.A.K.**
- Organising Committee, Asia Pacific Productivity Conference (for APPC 2016 in China)

**O’Donnell, C.J.**
- Co-Editor, *Journal of Productivity Analysis*
- Co-Editor, *JPA*
- Associate Editor, *Empirical Economics*

**Peyrache, A.**
- Co-editor of a special issue of the *Journal of Productivity Analysis* containing selected papers from the 2014 Asia-Pacific Productivity Conference.

**Rambaldi, A.**
- Editorial Board, *Review of Income and Wealth*

**Rao, D.S.P.**
- Member, Council of Society for Economic Measurement
- Member, Council of the International Association for Research in Income and Wealth
- Associate Editor, *Journal of Productivity Analysis*
- Co-Editor, *Review of Income and Wealth*
- Guest Editor of a Special Issue on International Comparisons of Prices and Real Expenditures for *Social Indicator Research*.
- Member of the Interim Technical Advisory Group for the International Comparison Program (ICP), World Bank, 2015 - 2016

**Zelenyuk, V.**
- Director of CEPA (since 4 November 2015)
- Associate Editor, *Journal of Productivity Analysis*
- Co-editor of a special issue of the *Journal of Productivity Analysis* containing selected papers from the 2014 Asia-Pacific Productivity Conference.
- Chair of the Research Committee/Research Director for the School of Economics of UQ (till 31 December 2015)
Visitors to the Centre:

**Hideyuki Mizobuchi**  
Ryukoku University, Japan  
1/4/15 to 31/3/16

**Professor Rajiv Banker**  
Temple University  
1/12/15 to 7/12/15

**Bert Balk**  
Erasmus University  
24/11/15 to 4/12/15

**Erwin Diewert**  
University of British Columbia and UNSW  
19/10/15 to 31/10/2015.

**Israfil Roshdi**  
University of Auckland  
29/10/15 to 30/10/15

**Byeong Uk Park**  
Seoul National University  
29/09/15 to 11/10/15

**Chris Parmeter**  
University of Miami  
20/09/15 to 3/10/15

**Chen Jie**  
Nanjing Institute of Technology  
15/11/14 to 15/7/15

**Joseph Allendorf**  
University of Bonn  
1/3/15 to 31/7/15
Agreed objectives for 2016 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 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.

Centref Director
A/Professor Valentin Zelenyuk

Head of School
Professor Rodney Strachan