EUROPEAN WORKSHOP ON EFFICIENCY AND PRODUCTIVITY (EWEPA) 2017
CONFERENCE PROGRAMME
(Version 2.0, 17 May 2017)

Registration
We will be open for registration every day of the conference from 8:00-17:00 in the foyer on the ground floor of the conference venue, Senate House, Malet Street, London, WC1E 7HU.

Student participants that have not already confirmed their student status in correspondence with Claire Walker, please remember to bring the required confirmation (official letter from your university) to the conference.

The registration desk will also be available to provide assistance each day throughout the conference.

Conference Mechanics
• All sessions, breaks, lunches and the reception will take place at Senate House.
• Internet access is available within Senate House and the Wi-Fi code required will be provided daily.
• For most parallel sessions, each paper has been allocated 30 minutes (either 3 papers in a 1.5 hour session, or 4 papers in a 2 hour session). In some rare cases it is necessary to schedule 4 papers in a 1.5 hour session. In the latter case, there are 22.5 minutes for each paper. Please time your presentations accordingly.
• The Chair of each parallel session is the last presenting author.
• In the case of a presenter not being present in a parallel session the session will continue and finish early. In this situation more time can be given to each presentation at the discretion of the Session Chair.
• Sessions in this Programme are identified using three parameters: (i) day (TU for Tuesday, WE for Wednesday and TH for Thursday); (ii) time slot (A-D), and (iii) parallel session number (1-7).

Catering
The following catering items are included in the registration fee for all participants.
• A light breakfast (tea, coffee and Danish pastries) will be served between 8:00 - 9:00 am.
• Lunches on all four days.
• Tea and coffee will be served during the breaks between the sessions.
• Drinks Reception on Monday 12th June.
• Welcome Reception on Tuesday 13th June. This includes a light buffet and drinks.

The Conference Dinner on Wednesday 14 June is an additional registration item and is NOT included in the standard registration fee and must be pre-booked. The Conference Dinner will be held at the Grand Connaught Rooms, 61-65 Great Queen Street, London, WC2B 5DA. The pre-booked tickets for the dinner will be available for collection at the EWEPA 2017 registration desk at Senate House. The conference dinner will commence at 19:30 with pre-dinner drinks served from 18:30.
CONFERENCE AT A GLANCE

Monday 12 June - Early Career Research Day (ECRD)

9:00-10:30   Session
10:30-11:00  Break
11:00-12:00 Plenary Session for ECRD
12:00-13:00  Lunch
13:00-14:30  Session
14:30-15:00  Break
15:00-16:30  Session
16:30-17:00  Break
17:00-18:00  Session
18:00-19:00  Drinks Reception

Tuesday 13 June

9:00-9:45   Opening Session and recognition of the contribution of Peter Schmidt
9:45-10:45  Plenary Session 1
10:45-11:15 Break
11:15-12:45 Parallel Sessions (B)
12:45-14:00 Lunch
14:00-15:30 Parallel Sessions (C), includes feature session “Can we ‘learn’ to be efficient?”
15:30-16:00 Break
16:00-18:00 Parallel Sessions (D)
18:00-19:30 Welcome Reception

Wednesday 14 June

9:00-10:30  Parallel Sessions (A)
10:30-11:00 Break
11:00-12:30 Plenary Session 2
12:30-14:00 Lunch
14:00-15:30 Parallel Sessions (C), includes feature session “UK Productivity Puzzle”
15:30-16:00 Break
16:00-17:30 Parallel Sessions (D)
18:30 -     Conference Dinner (additional registration item)

Thursday 15 June

9:00-10:30  Parallel Sessions (A)
10:30-11:00 Break
11:00-12:30 Plenary Session 3
12:30-14:00 Lunch
14:00-15:30 Parallel Sessions (C)
15:30-16:00 Break
16:00-17:30 Parallel Sessions (D)
17:30-18:00 Closing Session
SECTIONS ON 13-15 JUNE 2017

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**Tuesday 13 June**

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<thead>
<tr>
<th>TU-A</th>
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<th>Opening Session, Special Award to Professor Peter Schmidt</th>
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<td>TU-D</td>
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**Wednesday 14 June**

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<th>SFA 3</th>
<th>Profits &amp; Performance</th>
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<th>Banking 1</th>
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<td>Fisheries</td>
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<td>Agriculture 4</td>
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<td>DEA 6</td>
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**Thursday 15 June**

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<th>Agriculture 5</th>
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<th>Banking 2</th>
<th>Education 2</th>
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<td>Agriculture 8</td>
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<td>TH-D</td>
<td>16:00-17:30</td>
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<td>Food</td>
<td>DEA 8</td>
<td>Transportation</td>
<td>Manufacturing 3</td>
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|       | 17:30-18:00 | Closing Session |       |       |       |       |           |       |
MONDAY 12 JUNE
Early Career Research Day
8:00-9:00 Arrival and light breakfast
8:00-17:00 Registration

All sessions on this day are held in Chancellor’s Hall
The presenting author is identified by *

9:00-10:30: ESTIMATION
Session Chair: Christopher O’Donnell
Iterative nonparametric S-shape estimation
Daisuke Yagi*, Andrew L. Johnson and Hiroshi Morita
Discussant: Ole Bent Olesen
Robustness to outliers in stochastic frontier analysis: The Student’s t-half normal model vs. the normal-half normal model
Alexander Stead*, Phill Wheat and William Greene
Discussant: William Horrace
The impact of labour subsidy on total factor productivity
Pontus Mattsson*
Discussant: Christopher O’Donnell

10:30-11:00 Break

11:00-12:00: PLENARY SESSION
Heterogeneity in efficiency analyses: The good, the bad and the ugly
Jaap Bos*

12:00-13:00 Lunch

13:00-14:30: SECTORAL APPLICATIONS
Session Chair: Vania Sena
The impact of banking reforms on efficiency and competition in Ghana’s banking sector
John Dadzie* and Alessandra Ferrari
Discussant: David Tripe
Are Mexican water utilities efficient? A nonparametric answer
Ulises Genis*, Nicolas Gravel and Nicholas P. Sisto
Discussant: David Saal
Stock vs. mutual insurers: Long-term convergence or dominance?
Philipp Schaper*
Discussant: Vania Sena

14:30-15:00 Break

15:00-16:30: REGIONAL APPLICATIONS
Session Chair: Cinzia Daraio
Heterogeneous spillovers among Spanish provinces: A generalized spatial stochastic frontier model
Alberto Gude*, Inmaculada Alvarez and Luis Orea
Discussant: Anthony Glass
The inefficiency of the missing middle
Hien Pham* and Antonio Peyrache
Discussant: Niels Christian Petersen
Size and productivity: A conditional efficiency approach for the Italian pharmaceutical sector
Pierluigi Toma* and Camilla Mastromarco
Discussant: Cinzia Daraio

16:30-17:00 Break

17:00-18:00: ESTIMATION
Session Chair: Valentin Zelenyuk
Adaptive LASSO for stochastic frontier models with many efficient firms
Hyunseok Jung*
Discussant: Christopher Parmeter
Direction selection in stochastic directional distance functions
Kevin Layer*, Andrew Johnson and Robin Sickles
Discussant: Valentin Zelenyuk

DRINKS RECEPTION
18:00-19:00, Senate House
TUESDAY 13 JUNE

8:00-9:00 Arrival and light breakfast
8:00-17:00 Registration

OPENING SESSION
9:00-9:45, Beveridge Hall
Special Award in recognition of the contribution of Professor Peter Schmidt

TU-A: PLENARY SESSION 1
9:45-10:45, Beveridge Hall
Session Chair: Shawna Grosskopf

Twenty years of frontier analysis in the service of regulatory economics: Perspectives and open questions
Per Agrell*  
Discussant: Emili Grifell-Tatjé

10:45-11:15 Break

TU-B-1: AGRICULTURE 1
11:15-12:45, Beveridge Hall
Session Chair: Bob Chambers

Spatial regimes in farms' technologies
Cristina Salvioni*, Anna Gloria Billé and Roberto Benedetti

Do productivity convergence approaches converge? A meta-frontier Luenberger-Färe-Primont indicator decomposition in the French agriculture
K. Hervé Dakpo*, Yann Desjeux, Philippe Jeanneaux and Laure Latruffe*

Parsing US agricultural productivity growth: Weather, technology change, efficiency change, and inputs
Bob Chambers* and Simone Pieralli

TU-B: SFA 1
11:15-12:45, Woburn Room
Session Chair: Inmaculada Alvarez

Discrete approximation of the stochastic frontier model
Aljar Meesters and Christopher Parmeter*

Measuring spatial competition using efficiency spillovers
Anthony Glass*, Karligash Kenjegalieva and Thomas Weyman-Jones

A new stochastic frontier model with spatial effects in both noise and inefficiency terms
Luis Orea* and Inmaculada Alvarez*

TU-B-2: SFA 1
11:15-12:45, Woburn Room
Session Chair: Inmaculada Alvarez

Discrete approximation of the stochastic frontier model
Aljar Meesters and Christopher Parmeter*

Measuring spatial competition using efficiency spillovers
Anthony Glass*, Karligash Kenjegalieva and Thomas Weyman-Jones

A new stochastic frontier model with spatial effects in both noise and inefficiency terms
Luis Orea* and Inmaculada Alvarez*

TU-B-3: ENERGY 1
11:15-12:45, Montague Room
Session Chair: Endre Bjørndal

An application of stochastic frontier analysis to measure the influence of weather on electricity distribution businesses: Evidence from developing economies
Karim Anaya Stucchi* and Michael G. Pollitt

Efficiency analysis of electricity distribution by electric cooperative companies in the Philippines
Trishit Bandyopadhyay* and Fernando Roxas

Learning and adaptation under incentive regulation: A survey of Norwegian electricity distribution companies
Edda Nermoen Burheim, Elise Ivara Dahl, Endre Bjørndal* and Mette Bjørndal

TU-B-4: DEA 1
11:15-12:45, Brunswick Room
Session Chair: Joseph Atwood

Efficiency analysis with ratio measures
Ole Ben Olesen*, Niels Christian Petersen and Victor V. Podinovski

DEA models with ratio measures & potential ratio inefficiency
Ole Bent Olesen, Niels Christian Petersen* and Victor V. Podinovski

Radial efficiency metrics using worst-case reference points
Joseph Atwood*, Saleem Shaik and John Walden
TU-B-5: HEALTH 1
11:15-12:45, Bloomsbury Room
Session Chair: Nina Boogen

Spanish hospitals ranking with regard to performance and quality
Sophie Gorgemans*, Enrique Bernal-Delgado, Manuel Ridao-López and Micaela Comendeiro-Maalooe

The contribution of resident physicians to hospital productivity
Maria J. Perez-Villadoniga*, Ana M. Rodriguez-Alvarez and David Roibas

Cost efficiency of the Swiss nursing home sector
Nina Boogen*, Massimo Filippini and William Greene

TU-B-6: JUSTICE
11:15-12:45, Gordon Room
Session Chair: Maria Silva

De lege ferenda, de lege lata: Efficient management structures in legal systems
Samantha Bielen and Jaap Bos*

Network DEA, industry structure, and backlog congestion in the Italian justice sector
Antonio Peyrache and Angelo Zago*

Output-specific inputs in DEA: An application to courts of justice in Portugal
Maria Silva*

TU-B-7: PUBLIC SECTOR 1
11:15-12:45, Room G21A
Session Chair: Finn Førsund

Quality of life shift in Spanish municipalities (2001-2011)
Eduardo Gonzalez*, Ana Carcaba and Juan Ventura

Municipal efficiency, management forms for the waste collection service and the impact of environmental variables
Gemma Perez-Lopez*, Diego Prior and José Luis Zafría-Gómez

Measuring effectiveness of production in the public sector
Finn Førsund*

TU-C-1: FEATURE SESSION 1
CAN WE “LEARN” TO BE EFFICIENT?
14:00-15:30, Beveridge Hall
Session Chair: Konstantinos Triantis

The space-time continuum (or, at least, movements in space over time)
Mette Asmild* and Dorte Kronborg

Cherry picking in the fall: How banks select takeover candidates
Jaap Bos*

Informing enterprise operational assessment through a complex adaptive systems efficiency measurement approach
Konstantinos Triantis*, Glen Lyddane and Oscar Herrera-Restrepo

TU-C-2: SFA 2
14:00-15:30, Woburn Room
Session Chair: Ian Wright

Endogeneity in panel data stochastic frontier model with determinants of persistent and transient inefficiency
Hung-Pin Lai* and Subal C. Kumbhakar

A flexible estimator for dynamic panel stochastic frontier models
Hung-Jen Wang*, Yu-Fan Huang and Sui Luo

Stationary points for parametric stochastic frontier models
Ian Wright* and William Horrace

TU-C-3: ENERGY 2
14:00-15:30, Montague Room
Session Chair: Gerald Granderson

Objectives and incentives: Evidence from the privatisation of Great Britain’s power plants
Thomas Triebs* and Michael Pollitt

Estimation of cost efficiency in restoring biodiversity loss at hydropower plants in Sweden
Wondmagegn Tafesse Tirkaso*

Impact of the 1990 Clean Air Act, RECLAIM program, and ISO membership, on production cost and efficiency in the electric utility industry
Gerald Granderson* and Finn Førsund
TU-C-4: DEA 2
14:00-15:30, Brunswick Room
Session Chair: Paul Rouse

Determination of efficiency scores in a partially negative DEA problem using directional distance model
Subhadip Sarkar*

A DEA-based methodology to determine customer value
Laurens Cherchye, Bram De Rock, Bart Dierynck, Pieter Jan Kerstens* and Filip Roedhoof

A new metric for scale elasticity in data envelopment analysis
Maryam Hasannasab, Dimitris Margaritis, Israfil Roshdi and Paul Rouse*

TU-C-5: HEALTH 2
14:00-15:30: Bloomsbury Room
Session Chair: Sverre A.C. Kittelsen

Technical efficiency in the nursing home sector in Ireland – A stochastic frontier input distance function approach
Marta Zieba, Declan Dineen and Shiovan Ni Luasa*

Evaluating the cost of waiting lists: A primal approach
Ana Rodriguez-Alvarez, David Roibas* and Ana Gonzalez-Vidales

Scale and quality in Nordic hospitals
Sverre A.C. Kittelsen*

TU-C-6: AGGREGATION 1
14:00-15:30, Gordon Room
Session Chair: Valentin Zelenyuk

A family of superlative indexes under Hicks neutral technical change
Hideyuki Mizobuchi* and Valentin Zelenyuk*

Olley-Pakes decomposition with revenue and physical productivity measures
Giannis Karagiannis* and Suzanna-Maria Paleologou

Central limit theorems for aggregate efficiency
Leopold Simar and Valentin Zelenyuk*

TU-C-7: PUBLIC SECTOR 2
14:00-15:30, Room G21A
Session Chair: Pablo Arocena

A conditional directional distance function approach for measuring tax collection efficiency: Evidence from Spanish regional offices
Jose Manuel Cordero, Carlos Diaz*, Francisco Pedraja and Nickolaos Tzeremes

Efficiency measurement of Spanish municipalities: An application of conditional nonparametric frontiers
Jose Manuel Cordero, Carlos Diaz-Caro and Cristina Polo*

Explaining differences in efficiency: the case of local government literature
Francesco Aiello*, Graziella Bonnano and Luigi Capristo Bonanno

Allocating regional funds to local governments using a DEA-based resource allocation model
Pablo Arocena*, Fermín Cabasés and Pedro Pascual

15:30-16:00 Break

TU-D-1: NON-PARAMETRIC METHODS
16:00-18:00, Beveridge Hall
Session Chair: Camilla Mastromarco

Dimension reduction in nonparametric models of production
Paul W. Wilson*

Confidence intervals for efficiency scores in non-convex technologies
Luiza Badin*, Valentin Patilea and Leopold Simar

Nonparametric frontier estimation in the presence of noise: Recent developments
Jean-Pierre Florens, Leopold Simar* and Ingrid Van Keilegom

Predicting recessions in Italy: A nonparametric discrete choice models for time series
Camilla Mastromarco*, Leopold Simar and Valentin Zelenyuk
TU-D-2: MODELS 1
16:00-18:00, Woburn Room
Session Chair: Antonio Peyrache

Measuring capital value: A distance function approach
John Walden*, Rolf Färe and Shawna Grosskopf

Estimating and decomposing optimal shifts of the world technology frontier
Benjamin Hampf* and Jens Krüger

It takes two to tango: The impact of ICT and R&D on efficiency
Fabio Pieri, Ana Rincon Aznar, Francesco Venturini and Michela Vecchi*

A decentralized resource allocation industry model
Antonio Peyrache* and Prasada Rao

TU-D-3: ENERGY 3
16:00-18:00, Montague Room
Session Chair: Tooraj Jamasb

Electricity market reform performance in Sub-Saharan Africa: A parametric distance function approach
Adwoa Asantewaa*, Tooraj Jamasb and Manuel Llorca

Cost efficiency analysis of electric energy distribution sector under model uncertainty
Kamil Makieła and Jacek Osiewalski*

Regional comparisons of energy use efficiency in Indian manufacturing: An index number approach
Kankana Mukherjee*

The effect of institutions on sectoral performance: The case of electricity distribution in Indian states
Tooraj Jamasb*, Pavan Khetrapal, Manuel Llorca and Tripta Thakur

TU-D-4: APPLICATIONS 1
16:00-18:00, Brunswick Room
Session Chair: Daniel Wikström

Estimating efficiency of Italian water utilities by accounting for quality issues
Giovanna D’Inverno*, Laura Carosi, Andrea Guerrini and Giulia Romano

Temporal perception as a source of productivity measure distortion
Fabian von Schéele* and Darek Haftor

Identifying most productive networks derived using unstructured longitudinal data
Arun Bhattacharyya*

Procurement auctions for road resurfacing projects – The efficiency of regional procurement engineers
Jan-Eric Nilsson, Ivan Ridderstedt and Daniel Wikström*

TU-D-5: HEALTH 3
16:00-18:00, Bloomsbury Room
Session Chair: Gary Ferrier

Economies of scale: A meta-analysis on the scale of hospitals
Bart van Hulst* and Jos Blank

Economies of scope in health sector: The case of Portuguese hospitals
Diogo Ferreira*, Rui Marques and Alexandre Morais Nunes

Fuel poverty, health and subjective assessment: A latent class approach and application to the case of Spain
Manuel Llorca*, Tooraj Jamasb and Ana Rodríguez-Álvarez

An expanded decomposition of the Luenberger productivity Indicator with an application to the Chinese healthcare sector
Gary Ferrier*, Hervé Leleu and Zhiyang Shen

TU-D-6: AGGREGATION 2
16:00-18:00, Gordon Room
Session Chair: Kevin Fox

The fourth decomposition of aggregate total factor productivity change
Bert M. Balk*

Parametric decomposition of the input-oriented Malmquist productivity index: With Ethiopian agriculture
Anbes Tenaye Kidane*

Composite Indicators as generalized benefit-of-the-doubt weighted averages
Nicky Rogge*
Decomposing value added growth into explanatory factors
Erwin Diewert and Kevin Fox*

TU-D-7: PUBLIC SECTOR 3
16:00-18:00, Room G21A
Session Chair: Kristof De Witte

Which estimator to measure local governments’ cost efficiency? Evidence from Spanish municipalities
Isabel Narbón Perpiñá*, María Teresa Balaguer Coll, Emili Tortosa Ausina and Marko Petrovic

The impact of public funds on firms’ technical efficiency of the Italian performing arts sector
Concetta Castiglione, Davide Infante and Marta Zieba*

Overall, allocative and technical efficiency for Swedish district courts 2012–2015
Christian Andersson*, Fredrik Bonander and Jonas Månsson

Direct democracy and local government efficiency
Kristof De Witte* and Zareh Asatryan

WELCOME RECEPTION
18:00-19:30, Senate House
WEDNESDAY 14 JUNE

8:00-9:00  Arrival and light breakfast
8:00-17:00  Registration

WE-A-1: AGRICULTURE 2
9:00-10:30, Beveridge Hall
Session Chair: Jesus T. Pastor

Sustainability and efficiency of dairy sheep production systems in Castilla-La Mancha, Spain
Martiña Morantes, Rafaela Dios-Palomares, David Alcaide-Lopez-De-Pablo*, José Rivas and Antón García

The effect of cow comfort on productive efficiency: An application to Spanish dairy farms
José Antonio Pérez, David Roibás and Alan Wall*

A bounded weighted additive model to assess technical inefficiency: The case of milk production in Canada
Jesus T. Pastor*, Juan Aparicio, Magdalena Kapelko, Lidia Ortiz and Juan F. Monge

WE-A-2: SFA 3
9:00-10:30, Woburn Room
Session Chair: Thomas Weyman-Jones

Allowing for outliers in stochastic frontier models: A mixture noise distribution approach
Phill Wheat*, Alexander D. Stead and William Greene

Heteroscedastic generalized true random effects model (GTRE Het)
Oleg Badunenko, Astrid Cullmann, Subal Kumbhakar and Maria Nieswand*

Energy efficiency and stochastic frontier analysis using the Box-Cox transformation functional form
Thomas Weyman-Jones*, Júlia Mendonça Boucinha and Catarina Feteira Inácio

WE-A-3: PROFITS, PRODUCTIVITY AND BUSINESS PERFORMANCE
9:00-10:30, Montague Room
Session Chair: Jos Blank

Business models interaction: Walmart vs Kmart
Humberto Brea-Solis, Ramon Casadesus-Masanell and Emili Grifell-Tatjé*

An integrated analysis of cash flow, economic costs and economic profitability
David Saal* and Pablo Arocena

The profitability function as an alternative theoretical framework for productivity measurement: An application to the Dutch drinking water sector
Jos Blank*

WE-A-4: DEA 3
9:00-10:30, Brunswick Room
Session Chair: Victor Podinovski

A DEA-based incentive mechanism under central management
Mohsen Afsharian*, Heinz Ahn and Emmanuel Thanassoulis

A DEA-based incentives system under varying degrees of decentralisation
Mohsen Afsharian, Heinz Ahn and Emmanuel Thanassoulis*

DEA models with weight restrictions: What is the meaning of optimal weights?
Victor Podinovski*

WE-A-5: BANKING 1
9:00-10:30, Bloomsbury Room
Session Chair: Joseph Paradi

Risk preference and efficiency in Chinese banking
Ning Zhu*, Yanrui Wu, Bing Wang and Zhiqian Yu*

Achieving a sustainable cost efficient business model in banking: The case of European banks
Oleg Badunenko*, Subal Kumbhakar and Ana Lozano-Vivas*

Improving pension funds’ performance by considering an expert’s opinions and mutual funds’ information using DEA
Joseph Paradi* and Maryam Badrizadeh*
WE-A-6: ENVIRONMENT
9:00-10:30, Gordon Room
Session Chair: Jose L. Zofio

The efficiency and distributional effects of China’s carbon mitigation policies: A distance function analysis
Atakelty Hailu* and Chunbo Ma

Operational and environmental performance in wine sector: A unified efficiency DEA-based assessment
Samah Jradi*, Tatiana Bouzdine-Chameeva, Bernard Delhomme and Anicia Jeagler

Environmental productivity change in world air emissions: A new Malmquist-Luenberger index approach
Jose L. Zofio*, Juan Aparicio, Javier Barbero, Magdalena Kapelko and Jesus Pastor

WE-A-7: DEA 4
9:00-10:30, Room G21A
Session Chair: Theodoros Skevas

Evaluating mergers a-priori: The case of European air navigation service providers
Nicole Adler, Ole B. Olesen and Nicola Volta*

Measuring corporate sustainability performance
Tadesse Engida*, Xudong Rao and Alfons G.J.M. Oude Lansink

Derivation of netput shadow prices under different levels of pest pressure
Theodoros Skevas* and Teresa Serra

10:30-11:00 Break

WE-B: PLENARY SESSION 2
11:00-12:30, Beveridge Hall
Session Chair: David Saal

Efficiency analysis in competition and regulation policy
Marc Ivaldi*

Discussant: Robin Sickles

WE-C-1: FEATURE SESSION 2
THE UK PRODUCTIVITY PUZZLE
14:00-15:30, Beveridge Hall
Session Chair: Jonathan Haskel

The speakers are:
Jonathan Haskel (Imperial College London)
Diane Coyle, OBE (University of Manchester)
Rebecca Riley (National Institute of Economic and Social Research, UK)

WE-C-2: AGRICULTURE 3
14:00-15:30, Woburn Room
Session Chair: Fabian Frick

Productivity change analysis of Polish dairy farms after Poland’s accession to the EU – An output growth decomposition approach
Kamil Makiela*, Jerzy Marzec and Andrzej Pisulewski

Efficiency in U.S. farm production and the role of distribution (structure and conduct) of farm programs: Evidence from a national survey
Saleem Shaik* and Hisham El-Osta

Deregulation and productivity: Empirical evidence on dairy production
Fabian Frick* and Johannes Sauer

WE-C-3: APPLICATIONS 2
14:00-15:30, Montague Room
Session Chair: Ørjan Mydland

The efficiency analysis of the shale revolution in the global oilfield market
Binlei Gong*

The opportunity costs of financial fair play regulations in professional football – An efficiency analysis
Ronan Gallagher and Barry Quinn*

Lost economies of scope and merger gains in the Norwegian electricity industry
Ørjan Mydland*
WE-C-4: DEA 5  
14:00-15:30, Brunswick Room  
Session Chair: Wen-Chih Chen  
*Sorting items with DEASort in ABC classes*  
Alessio Ishizaka*, Rita Cavallieri and Francesco Lolli  
*A stepwise benchmarking method for finding projection points involving returns to scale properties*  
Akram Dehnokhalaji* and Narges Soltani  
*Recent updates in DEA computation*  
Wen-Chih Chen*

WE-C-5: FISHERIES  
14:00-15:30, Bloomsbury Room  
Session Chair: Antonio Alvarez  
*Hooked on quotas: Analysis of the performance of the Icelandic small vessel fleet before and after the introduction of ITQs*  
Arnar Mar Buason and Sveinn Aagnarsson*  
*An evaluation of the Norwegian fisheries management system for the conventional coastal vessels*  
Ruth Pincinato*, Frank Asche, Andreea Cojocaru and Kristin Roll  
*Decomposing revenue efficiency into price and technical efficiency. An application to fisheries*  
Antonio Alvarez*, Lorena Couce and Lourdes Trujillo

WE-C-6: WELLBEING 1  
14:00-15:30, Gordon Room  
Session Chair: Mikulas Luptacik  
*The relationship between democracy index and corruption perception index and a nation’s innovation efficacy and productivity*  
Yung-Hsiang Lu and Yi-Chen Lee*  
*The impact of human capital on technical efficiency: Evidence from Eastern European and Central Asia countries*  
Salem Gheit*  
*Measuring income inequalities beyond Gini coefficient*  
Mikulas Luptacik* and Eduard Nezinsky*

WE-C-7: MANUFACTURING 1  
14:00-15:30, Room G21A  
Session Chair: Ana Camanho  
*A green bargain? The impact of an energy saving program on productivity growth in China’s iron and steel industry*  
Thomas Geissmann*, Massimo Filippini, Valerie Karplus and Da Zhang  
*Export intensity-firm performance nexus: New evidence from basic metals industry in India*  
Anup Kumar Bhandari* and Vipin Vallyattoor  
*Manufacturing strategies and operations performance: A frontier approach*  
Ana Camanho*, Behrouz Arabi, Maria Silva and Rui Sousa

15:30-16:00 Break

WE-D-1: SOFTWARE  
16:00-17:30, Beveridge Hall  
Session Chair: Ali Emrouznejad  
*Productivity and efficiency analysis software: A survey of the options*  
Cinzia Daraio*, Kristiaan Kerstens, Thyago C. Nepomuceno* and Robin C. Sickles  
*Frontier visualization algorithms for FDH models*  
Vladimir Krivonozhko* and Andrey Lychev  
*Measuring efficiency of decision making units: Software update for advanced users*  
Ali Emrouznejad* and Emmanuel Thanassoulis

WE-D-2: AGRICULTURE 4  
16:00-17:30, Woburn Room  
Session Chair: Ioannis Skevas  
*Large and small farms excel in Brazil*  
Steven Helfand, Nicholas Rada* and Marcelo Magalhaes  
*Agricultural productivity and farm size in Malawi, Tanzania, and Uganda: A total factor productivity approach*  
Jacques Julien* and Boris E. Bravo-Ureta  
*Productivity growth in German dairy farming using a dynamic inefficiency specification: A Bayesian approach*  
Ioannis Skevas*, Grigorio Emvalomatis and Bernhard Bruemmer
WE-D-3: ENERGY 4
16:00-17:30, Montague Room
Session Chair: Nilkanth Kumar
Efficiency-based system configuration assessment: The case of micro-grids
Taylan Topcu, Konstantinos Triantis* and Matthew Robinson
Equilibrium specification of technology: Implications for energy demand and capacity utilization analysis
Sourour Baccar*
The role of energy and investment literacy for residential electricity demand and end-use efficiency
Julia E. Blasch, Nina Boogen, Massimo Filippini and Nilkanth Kumar*

WE-D-4: DEA 6
16:00-17:30, Brunswick Room
Session Chair: Mette Asmild
The good, the bad and the socially responsible: A production analysis approach to firm's performance ranking
Daniela Puggioni* and Spiro E. Stefanou
Nonparametric production analysis with unobserved heterogeneity
Laurens Cherchye, Thomas Demuynck, Bram De Rock and Marijn Verschelde*
Examining production conditions
Mette Asmild*, Tomas Balezentis and Jens Leth Hougaard

WE-D-5: EDUCATION 1
16:00-17:30, Bloomsbury Room
Session Chair: Jill Johnes
Predicting financial sustainability in a competitive higher education marketplace
Andrew McConnell* and Jill Johnes
Does the governance of the HE system affect the efficiency of universities? A comparison of German and Italian public institutions
Tommaso Agasisti and Sabine Gralka*
Efficiency and VC pay: Exploring the value conundrum
Deborah Allcock, Jill Johnes* and Swati Virmani

WE-D-6: PRODUCTIVITY CHANGE 1
16:00-17:30, Gordon Room
Session Chair: Bernhard Mahlberg
Source of industrial output growth and productivity decomposition analysis for selected Asia countries using DEA Malmquist and KLEMS data bases
Tsu-Tan Fu* and Yih-Ming Lin
Reconsidering non-neutral technical change
Jaap Bos and Ming Li*
Total factor productivity change based on partial productivities
Juan Aparicio, Bernhard Mahlberg* and Jesus T. Pastor

WE-D-7: MODELS 2
16:00-17:30, Room G21A
Session Chair: Kristiaan Kerstens
Computational complexity of shape constrained estimation
Andrew Johnson*
Parsimonious functional forms for multi-output cost functions: Output-output relationships
Arne Henningsen*
Short- and long-run plant capacity notions: Definitions and comparison
Giovanni Cesaroni, Kristiaan Kerstens* and Ignace Van de Woestyn
THURSDAY 15 JUNE

8:00-9:00 Arrival and light breakfast
8:00-17:00 Registration

TH-A-1: BAD OUTPUTS 1
9:00-10:30, Beveridge Hall
Session Chair: Rolf Färe

Bad outputs
Sushama Murty and R. Robert Russell*

Weak disposability in nonparametric production analysis: Which reference technology is appropriate?
Manh D. Pham* and Valentin Zelenyuk

Employment and pollution abatement: A nonparametric cost function approach
Shawna Grosskopf*, Rolf Färe*, Carl Pasurka and Ron Shadbegian

TH-A-2: AGRICULTURE 5
9:00-10:30, Woburn Room
Session Chair: Supawat Rungsuriyawiboon

How to minimize the production cost of marine cage lobster aquaculture in Vietnam
Au Ton Nu Hai*, The Bui Dung and Stijn Speelman

Short-run and long-run efficiency and their determinants: A study of crop production in Norway
Gudbrand Lien*, Subal C Kumbhakar and Habtamu Alem

Examining the economic performance of Chinese farms: A dynamic efficiency and adjustment cost approach
Supawat Rungsuriyawiboon* and Yanjie Zhang

TH-A-3: AGRICULTURE 6
9:00-10:30, Montague Room
Session Chair: Boris E. Bravo-Ureta

Cross-country comparison of agricultural productivity between the United States, Canada and Australia: The superlative versus the quantity-only based index
Yu Sheng*, Xinpeng Xu and Eldon Ball

Measuring scale efficiency of farms across regions - A Bayesian stochastic metafrontier approach
Stefan Wimmer* and Johannes Sauer

Technology and management gaps using stochastic frontiers with 2-round panel data: Preliminary evidence from an agricultural development project
Boris E. Bravo-Ureta*, William Greene, Mario González-Flores, Lina Salazar and Daniel Solis

TH-A-4: BANKING 2
9:00-10:30, Brunswick Room
Session Chair: David Tripe

Persistent effects in loan loss provisioning concerning Italian banks
Aristeidis Dadoukis*, Giulia Fusi and Richard Simper

The effects of regional differentials in macroeconomic conditions on cost structures of banks
Yuzhu Li* and Richard Simper

Translog cost function estimation: Banking efficiency
Toby Daglish, Oliver Robertson, David Tripe* and Laurent Weill

TH-A-5: EDUCATION 2
9:00-10:30, Bloomsbury Room
Session Chair: Jose M. Cordero

Impact evaluation through frontier methods
Daniel Santín and Gabriela Sicilia*

What is the quality of European universities? Model uncertainty, endogeneity and testing of unobserved heterogeneity
Cinzia Daraio*, Leopold Simar and Paul W. Wilson

Using fuzzy DEA to assess efficiency in education: An application to American schools
Juan Aparicio, Jose M. Cordero* and Lidia Ortiz
TH-A-6: PRODUCTIVITY CHANGE 2
9:00-10:30, Gordon Room
Session Chair: Amparo Sanchis

The productivity puzzle and credit constraints: Is there a cohort effect?
Mustapha Douch*

Misallocation and intersectoral linkages
Latchezar Popov* and Sophie Osotimehin

The effect of the cycle on within-industry productivity convergence: Evidence from the EU
M. Dolores Añón-Higón, Juan A. Máñez, Maria E. Rochina-Barrachina, Amparo Sanchis* and Juan A. Sanchis

TH-A-7: MANUFACTURING 2
9:00-10:30, Room G21A
Session Chair: Tommy Lundgren

Three-step returns to scale analysis using SFA: Russian manufacturing industry
Irina Ipatova*

Internal devaluation versus productivity: Competitiveness of manufacturing across Europe
Charles-Henri Di Maria* and Chiara Peroni

The rebound effect in Swedish heavy industry
Tommy Lundgren*, Golnaz Amjadi and Lars Persson

10:30-11:00 Break

TH-B: PLENARY SESSION 3
11:00-12:30, Beveridge Hall
Session Chair: tbc

Productivity analysis in the presence of uncertainty
Christopher O’Donnell*
Discussant: tbc

12:30-14:00 Lunch

TH-C-1: BAD OUTPUTS 2
14:00-15:30, Beveridge Hall
Session Chair: Shawna Grosskopf

How to integrate material balance issues in productive efficiency analysis: Review of models and practical use
Ludwig Lauwers* and Jef Van Meensel

Do we use fertilizer efficiently? Performance of fertilizer overuse in China’s arable agricultural production
Wei Huang* and Li Jiang

Recent developments in modeling technology with unintended outputs
Shawna Grosskopf*, Rolf Färe, Tommy Lundgren and Moriah Bostian

TH-C-2: AGRICULTURE 7
14:00-15:30, Woburn Room
Session Chair: Tomasz Czekaj

Does market information improve technical efficiency? A stochastic frontier analysis for Peruvian farmers
Joanna Kamiche-Zegarra* and Boris Bravo-Ureta

Technical efficiency and household human capital: A data envelopment analysis (DEA)
Emanuele Zucchini*

Multi-output technologies and changing market conditions: Animals’ health and dairy farms’ efficiency in Denmark
Tomasz Czekaj*, Christine Windfeld Hansen, Jakob Vesterlund Olsen and Anna Plum

TH-C-3: AGRICULTURE 8
14:00-15:30, Montague Room
Session Chair: Timo Sipiläinen

Who is harvesting our grapes? Estimating the impact of the European migrant crisis on vineyard productivity in Southern Italy
Stefan Seifert* and Marica Valente

Input-specific managerial and program inefficiency in the Malaysian dairy industry: A multi-directional efficiency analysis
Nurul Aisyah Mohd Suhaimi*, Yann de Mey and Alfons Oude Lansink

Is there a fair comparison of technical efficiency for conventional and organic dairy farms?
Timo Sipiläinen*
TH-C-4: DEA 7
14:00-15:30, Brunswick Room
Session Chair: Romain Petiot

Size efficiency reconsidered
Kenneth Løvold Rødseth*, Paal Brevik Wangsness, Finn R. Førsund and Halvor Schøyen

The assessment of corporate social responsibility of mining firms
Renata Oliveira*, Andreia Zanella and Ana Camanho

Emphasizing price effects in the US economy sectors 1987-2014
Raluca Parvulescu, Jean-Philippe Boussemart, Hervé Leleu and Karina Shitikova*

Analysis of French logistics services providers performance using data envelopment analysis
Romain Petiot* and Laurent Cavaignac*

TH-C-5: EDUCATION 3
14:00-15:30, Bloomsbury Room
Session Chair: Vania Sena

Measuring performance and productivity growth in education with PISA: The case of Latin-American countries
Sergio Perelman* and Daniel Santin

A multi-level cost model with sub-DMU specific economies of scale: An application to Dutch school boards and schools
Thomas Niaounakis* and Jos Blank

Is less really more? Academic performance of first-year students in Italy in the wake of two institutional reforms
Vania Sena*, Sergio Destefanis, Roberto Zotti and Cristian Barra

TH-C-6: PRODUCTIVITY CHANGE 3
14:00-15:30, Gordon Room
Session Chair: Bill Weber

Biased technological change in the Japanese non-life insurance industry
Takayoshi Nakaoka*, Takuya Urakami and Hiroyuki Inaba

Accounting for Intangible assets in Russia’s growth in 1995 – 2014, comparative perspective
Ksenia Bobyleva*

Technical change and von Neumann’s coefficient of uniform expansion
Rolf Färe, Daniel Primont and Bill Weber*

TH-C-7: MODELS 3
14:00-15:30, Room G21A
Session Chair: Darek Haftor

Trade friction analysis: Ranking trade barriers in a network model
Flavius Badau*

Socioemotional wealth and productivity differences between family and non-family firms: A distributional analysis
Sarah Creemers, Mark Vancauteren*, Wim Voordekkers and Ludo Peeters

IT complementarities and software programmers’ productivity: Results and insights from an online experiment
Natallia Pashkevich and Darek Haftor*

15:30-16:00 Break

TH-D-1: BAD OUTPUTS 3
16:00-17:30, Beveridge Hall
Session Chair: Moriah Bostian

The proof of the pudding is in the eating: Empirical analyses of five environmentally-adjusted efficiency models
K Hervé Dakpo*, Finn Førsund, Ludwig Lauwers* and Jef Van Meensel*

Assessing substitutability among undesirable outputs using parametric directional output distance function: A Monte Carlo analysis
Viktor Khazhyn*

Prevention or cure? Evaluating the tradeoffs between emissions abatement measures
Moriah Bostian*, Rolf Färe, Shawna Grosskopf and Tommy Lundgren

TH-D-2: AGRICULTURE 9
16:00-17:30, Woburn Room
Session Chair: Suthathip Yaisawarng

Yield gaps and technical efficiency: The case of wheat farmers in Afghanistan
Aziz Karimov* and Rajiv Kumar Sharma
The effects of model specification and assumptions about the nature of inefficiency on cost efficiency scores: A case study of Norwegian cropping farms
Habtamu Alem*, Gudbrand Lien and J. Brian Hardaker

Nerlovian profit efficiency of small-sized, owner-operated sugarcane farms in the Northeastern region of Thailand
Suthathip Yaisawarng* and Thanaporn Athipanyakul

TH-D-3: FOOD
16:00-17:30, Montague Room
Session Chair: Magdalena Kapelko

Measuring price efficiency in infant milk market
Roxani Karagiannis* and Giannis Karagiannis

Industrial concentration and technical inefficiency: A dynamic approach
Maman Setiawan*, Grigorios Emvalomatis and Alfons Oude Lansink

Measuring productivity change accounting for adjustment costs: Evidence from the food industry in the European Union
Magdalena Kapelko*

TH-D-4: DEA 8
16:00-17:30, Brunswick Room
Session Chair: Rafael Leme

A formula for efficiency based on DEA scores
Chris Tofallis*

Facilitating supplier development in construction supply chain: Data envelopment analysis approach
Abdollah Noorizadeh* and Antti Peltokorpi

Efficiency analysis for project portfolio adjustment
Guilherme Marcondes and Rafael Leme*

TH-D-5: TRANSPORTATION
16:00-17:30, Bloomsbury Room
Session Chair: Andrew Smith

Measuring the efficiency of Italian airports: How to counter unexpected shocks
Graziella Bonanno*, Tiziana D’Alfonso and Alberto Nastasi

20 Years of DEA of airports efficiency: A meta-analysis
Laurent Cavaignac* and Romain Petiot*

The relationship between costs and travel time reliability of train operating companies
Andrew Smith* and Manuel Ojeda-Cabral

TH-D-6: MANUFACTURING 3
16:00-17:30, Gordon Room
Session Chair: J.A. Sanchis-Llopis

Credit constraints and technical efficiency: Evidence from Vietnamese manufacturing firms
Chau M. Chu*, Kausik Chaudhuri and Sandra Lancheros

The role of services in enhancing the technical efficiency of Indian manufacturing firms: An analysis using the stochastic production frontier method
Sonia Mukherjee*

Markups, exports and R&D: Evidence for Spanish manufacturing
J.A. Máñez, M.E. Rochina-Barrachina and J.A. Sanchis-Llopis*

TH-D-7: WELLBEING 2
16:00-17:30, Room G21A
Session Chair: Ana Rodríguez-Álvarez

Welfare growth accounting revisited
Tarek Harchaoui* and Paul Willemsen

Regional wage frontiers in pre & post-crisis Spain
Joanna Maria Bashford Fernández*

Fuel poverty and well-being: A consumer theory and stochastic frontier approach
Ana Rodriguez-Álvarez*, Luis Orea and Tooraj Jamalub

CLOSING SESSION
17:30-18:00, Beveridge Hall