

Performance Measurement Using Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA)

The aim of these two courses is to enable participants to understand how Data Envelopment Analysis (DEA) and Econometric Methods including Stochastic Frontier Analysis (SFA) can be used to derive measures of efficiency and productivity change over time in complex multi-output multi-input contexts in the production of goods and services.

Course on Performance Measurement using Data Envelopment Analysis (DEA)

Date: 23 and 24 February 2015

Apart from the classical DEA models under constant and variable returns to scale, the course will cover models for assessing productivity change over time, for incorporating value judgements in DEA, for target setting and exploiting economies of scale, for dealing with cases where some of the variables obey constant and others varying returns to scale etc. The course will use various areas of application drawn from the interests of the participants to illustrate the models. The PIM DEA software will be used for hands on-sessions by participants.

Course on Econometric Methods and Stochastic Frontier Analysis (SFA)

Date: 25 and 26 February 2015

Participants will be introduced to the key underlying concepts of econometric methods in the context of efficiency and productivity analysis and to the types of information on performance that can be derived. Participants will also be introduced to the limitations of each approach and given advice how to use the methods appropriately, avoiding pitfalls. The course will cover Production and Cost functions, Corrected OLS regression (COLS), Modified OLS regression (MOLS), Stochastic Frontier Analysis (SFA) and panel data methods for efficiency and productivity analysis. Lectures will normally be followed by hands on sessions using sample data worked on with appropriate software.

Presenters:

Professor Emmanuel Thanassoulis



Emmanuel is Professor in Management Sciences at Aston Business School and is on the Editorial Board of the *European Journal of Operational Research*. He is a world authority on **Data Envelopment Analysis (DEA)** with over 60 refereed publications in the area including the highly influential book *Introduction to the Theory and Application of Data Envelopment Analysis: A foundation text with integrated software* (Springer) and 'DEA—The Mathematical Programming Approach to Efficiency Analysis', in *The Measurement of Productive Efficiency and Productivity Growth* (Oxford University Press). He has co-developed highly acclaimed DEA Software and has acted as consultant on efficiency and productivity analysis to a variety of organisations, including **Sibelga (Belgian gas and electricity distribution operator)**, **Transco**, **Ofwat**, **the UK Department for Communities and Local Government** and **HM Treasury**.

Dr Ali Emrouznejad



Ali is a Reader in Operations and Information Management Group at Aston Business School, UK. His areas of research interest include **performance measurement and management, efficiency and productivity analysis** as well as data mining. Dr Emrouznejad is editor of *Annals of Operations Research*, Associate Editor of *Socio-Economic Planning Sciences*, Associate Editor of *IMA journal of Management Mathematics*, Senior Editor of *Data Envelopment Analysis* journal, and member of editorial boards or guest editor in several other scientific journals. He has published over 70 papers in top ranked journals, he has also published several DEA books including "Performance Measurement with Fuzzy DEA" and "Managing Service Productivity". He is also co-founder of Performance Improvement Management Software (PIM-DEA), see <http://www.DEAzone.com>.

Dr Dimitris Giraleas



Dimitris is Lecturer in Business Statistics in Aston Business School, Birmingham, teaching Statistics for Business, **Data Envelopment analysis and Advance Performance Measurement** in the Postgraduate level. Prior to joining academia, Dimitris was a business and economics consultant with more than 10 years of experience. His main areas of expertise are Performance Management, Economic Regulation and Econometric and Mathematical Modelling.

Details: <http://www.DEAzone.com/aston-course>

Course on Performance Measurement using Data Envelopment Analysis (DEA)

Day 1- Morning

- Understand principles behind the non-parametric performance measurement
- An illustrative assessment by DEA.

Day 1- Afternoon

- Basic DEA models for measuring efficiency in multi-input multi-output situations.
- Advanced DEA models including Malmquist productivity indices and the use of DEA software.

Day 2- Morning

- Assessment under variable returns to scale, scale efficiency, most productive scale size and target setting.
- Incorporating value judgement in DEA.

Day 2- Afternoon

- Illustrative applications of DEA drawn from the delegates' work experience.
- Advanced features of PIM-DEA software.

Course on Econometric Methods and Stochastic Frontier Analysis (SFA)

Day 1- Morning

- Introduction to econometric models for the modelling of production and cost functions.
- Introduction to STATA – Hands-on exercise using simple data sets.

Day 1- Afternoon

- Deterministic approaches for efficiency measurement: Corrected OLS (COLS) and Modified OLS (MOLS)
- Hands-on case study: The use of COLS for measuring efficiency.

Day 2- Morning

- Introduction to Stochastic Frontier Analysis (SFA)
- Utilising data over time: An introduction to panel data models for efficiency and productivity measurement

Day 2- Afternoon

- Hands-on case study: The use of SFA for measuring efficiency
- Illustrative applications of DEA drawn from the delegates' work experience and open discussion

Who should participate?

Those interested in assessing performance of organisational units, for instance, banking, health services, education, regulation, and governance.

How is the programme delivered?

The teaching is based on lectures, small group working and hands-on use of software.

Further and information on course content:

If you require more information on course content please contact Prof Emmanuel Thanassoulis (e.thanassoulis@aston.ac.uk).

Fees:

The fee is £300 for students and £550 for others per delegate per day. The fee includes, coffee/teas, lunch and dinner during the course.

Accommodation:

Accommodation is not included; there is accommodation in campus or nearby. For information please contact Becky Gill at (r.a.gill@aston.ac.uk).

Reserving a place:

Please contact Tanya Lomas (t.lomas@aston.ac.uk). Payment is required in full prior to the commencement of the course and can be made by credit card, cheque raised on a UK bank account or we can invoice your employer.