

QUANTITATIVE TECHNIQUES FOR REGULATION:

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Textbooks

Coelli, T., Rao, P and G. Battese (1998), *An Introduction to Efficiency and Productivity Analysis*, Springer. (second edition 2005)

Ganley, J. and J. Cubbin (1992), *Public Sector Efficiency Measurement*, North-Holland.

Kumbhakar, S. and C. Knox Lovell (2000), *Stochastic Frontier Analysis*, Cambridge.

Applications:

CEPA (2003), “Background to Work on Assessing efficiency for the 2005 Distribution Price Control Review”, Report for Ofgem.

LECG (2005), “Future Efficient Costs of Royal Mail’s Regulated Mail Activities”, Report for Postcomm.

NERA (2004), “BT Efficiency: Network Study”, Report for Ofcom.

DTe (2000), “Guidelines for the Regulation of the Electricity Sector in the Netherlands”.

Other references:

Parker, D., Dassler T., and D. Saal (forthcoming), Performance Benchmarking in Utility Regulation: Principles and the UK Experience. *Handbook of Economic Regulation*.

For a comparison between RA and DEA see:

Cubbin and Tzatziki (1998), “Techniques for Analysing Company Performance”, *Business Strategy Review*, Vol 9 (4), pp 37-46.

For a critique of benchmarking see:

NERA (1999), “Regulatory Benchmarking: A Way Forward or a Dead-End” *Energy Regulation Brief*.

The DEA technique was developed by:

Farrell (1957), "The Measurement of Productive Efficiency", *Journal of Royal Statistical Society, Series A* (120), pp 253-281.

Charnes A., Cooper, W, and E. Rhodes (1978), "Measuring the Efficiency Decision Making Units", *European Journal of Operational Research*, vol 2, pp. 429-444.

Bowlin, W, Charnes A., Cooper, W, and H. Sherman (1985), "Data Envelopment Analysis and Regression Approaches to Efficiency Estimation and Evaluation", *Annals of Operation Research*, vol 2, pp. 113-138.

The SFA technique was proposed independently by:

Meeusen and van der Broeck (1977), "Efficiency Estimation from Cobb-Douglas Production Functions with Composed Error", *International Economic Review*, 18, 435-444.

Aigner, D., C. Lovell and P. Schmidt (1977), "Formulation and Estimation of Stochastic Frontier Production Function Models", *Journal of Econometrics*, 6, 21-37.