

# **QUANTITATIVE TECHNIQUES FOR COMPETITION:**

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## **Textbooks**

Berndt, E. (1996), *The Practice of Econometrics: Classic and Contemporary*, Addison-Wesley.

Carlton, D. and J. Perloff (2005), *Modern Industrial Organization*, Addison Wesley.

Motta, M (2004), *Competition Policy: Theory and Practice*, Cambridge University Press.

## **Other general references:**

Baker, J. and D. Rubinfeld (1999), “Empirical Methods in Antitrust: Review and Critique” *American Law and Economics Review*, Fall, pp. 386-435 (downloadable).

Bishop, S and M. Walker (1999), *The Economics of EC Competition Law: Concepts, Applications and Measurement*, London: Sweet & Maxwell.

Hofer, Smith and Wu (2005), “Quantitative Techniques in Competition Policy Analysis”, *Global Competition Review* (downloadable from the NERA website).

Houston (2005), “The Role of Quantitative Analysis in Competitive Assessments”, NERA Economic Consulting (downloadable from the NERA website).

Ivaldi, Jullien, Rey, Seabright and Tirole (2003), “The Economics of Unilateral Effects”, IDEI Interim Report for DG Competition of the European Commission (downloadable from IDEI, Toulouse, website).

LECG (1999), “Quantitative Techniques in Competition Analysis”, OFT Research Paper, 17 (downloadable from the OFT website).

Lexecon (2005), “An Introduction to Quantitative Techniques in Competition Analysis”, (downloadable from Lexecon or CRAI website).

## **Price tests:**

### References:

For examples of hedonic price-analysis:

Lutz, 2004, Pricing in Segmented Markets, Arbitrage and the Law of One Price: Evidence from the European Car Market, *Review of international economics*

Goldberg, P., Verboven, F., 2005. Market integration and convergence to the law of one price: evidence from the European car market, *Journal of International Economics*

For the main idea see:

Stigler, G. and R.A. Sherwin (1985), "The Extent of the Market", *Journal of Law and Economics*, vol 28, pp. 555-85.

For the granger-causality in price correlations:

Slade, M.E. (1986), "Exogeneity Tests of Market Boundaries Applied to Petroleum Products", *Journal of Industrial Economics*, vol 34, pp. 291-302.

For a critique of price tests in delineating markets:

Werden, G.J. and L.M. Froeb (1993) "The Effects of Mergers in Differentiated Products Industries: Logit Demand and Merger Policy", *Journal of Law, Economics, and Organisation*, vol. 10, pp. 407-26.

For a reply to those arguments see:

Sherwin (1993)

### Case References:

BP/E.ON (Aral) (see Lexecon 2005)

Nestle/Perrier (see Lexecon 2005 and Motta 2004)

Nutreco Holding NV/Hydro Seafood GSP (see Lexecon 2005)

## **Demand analysis:**

### References:

For a more advanced treatment of the estimations of the demand in electricity markets:

Berndt (1996) (see above) pp. 306-360.

## **Residual demand analysis:**

Motta (2004) (see above) pp. 124-134.

Scheffman and Spiller (1987)

Baker and Bresnahan (1985).

Baker and Bresnahan (1988)

Carlton and Perloff (2005) (see above)

Werden, G.J. and L.M. Froeb (1993), “The Effects of Mergers in Differentiated Products Industries: Logit Demand and Merger Policy”, *Journal of Law, Economics and Organisation*, vol 10, pp. 407-26.

Werden and Froeb (1993)

## **Critical Loss Analysis:**

### References:

This analysis was first suggested by:

Harris, B. and J. Simon, “Focusing Market Definition: How Much Substitution is Necessary?” *Research in Law and Economics*, vol. 12 pp. 207-226.

For some of the more recent critiques see:

O’Brien, D. and A. Wickelgren (2003), “A Critical Analysis of Critical Loss Analysis”, working paper FTC.

Katz, M. and C. Shapiro (2003), “Critical Loss: Let’s Tell the Whole Story” *Antitrust Magazine*.

### Case References:

Tenet Healthcare

## **Price/Concentration Analysis:**

### References:

One detailed paper applying price/concentration analysis:

GAO (2004), "Effects of Mergers and Price Concentration in the U.S. Petroleum Industry", United States General Accounting Office discussion paper.

For a critique of the technique see:

Baker, J.B. and T.F. Bresnahan (1992), "Empirical Methods of Identifying and Measuring Market Power," *Antitrust Law Journal*, 61, 3-16.

## **Diversion Ratio:**

References:

For an in-depth treatment of the diversion ratio, see:

Werden (1996), "Simulating the Effects of Differentiated Products Mergers".

See as well:

CRA (1996), "New Developments in Merger Analysis, Part2: Not All Developments are High Tech", Competition Memo.

## **Bidding studies:**

References:

Porter and Zona (1993) "Detection of Bid Rigging in Procurement Auctions", *Journal of Political Economy*, vol. 101 pp. 518-38.

Case References:

Boeing/ McDonnell Douglas  
Price Waterhouse/Coopers and Lybrand

## **Merger simulation:**

For a critique of the multinomial logit model see:

Hausman and Leonard (1997), "Economics Analysis of Differentiated Products Mergers Using Real World Data", *George Mason Law Review* vol. 5, pp. 321-46.

## **Market definition and implementing SSNIP test:**

Motta (2004) (see above) pp. 106-115.

NERA (2001), “The Role of Market Definition in Monopoly and Dominance Inquiries”, OFT Discussion Paper, 2 (downloadable from the OFT website).

## **Mergers (Unilateral Effects):**

Ivaldi, Jullien, Rey, Seabright and Tirole (2003), “The Economics of Unilateral Effects”, IDEI Interim Report for DG Competition of the European Commission (downloadable from IDEI, Toulouse, website).

## **Mergers (Coordinated Effects):**

Europe Economics (2001), “Study on Assessment Criteria for Distinguishing between Competitive and Dominant Oligopolies in Merger Control”, Report for the European Commission Enterprise Directorate General (downloadable from the Commission website).

Grout and Sonderegger (2005), “Predicting Cartels”, OFT Economics Discussion Papers (downloadable from OFT website).