



Economic evidence and econometrics in competition law

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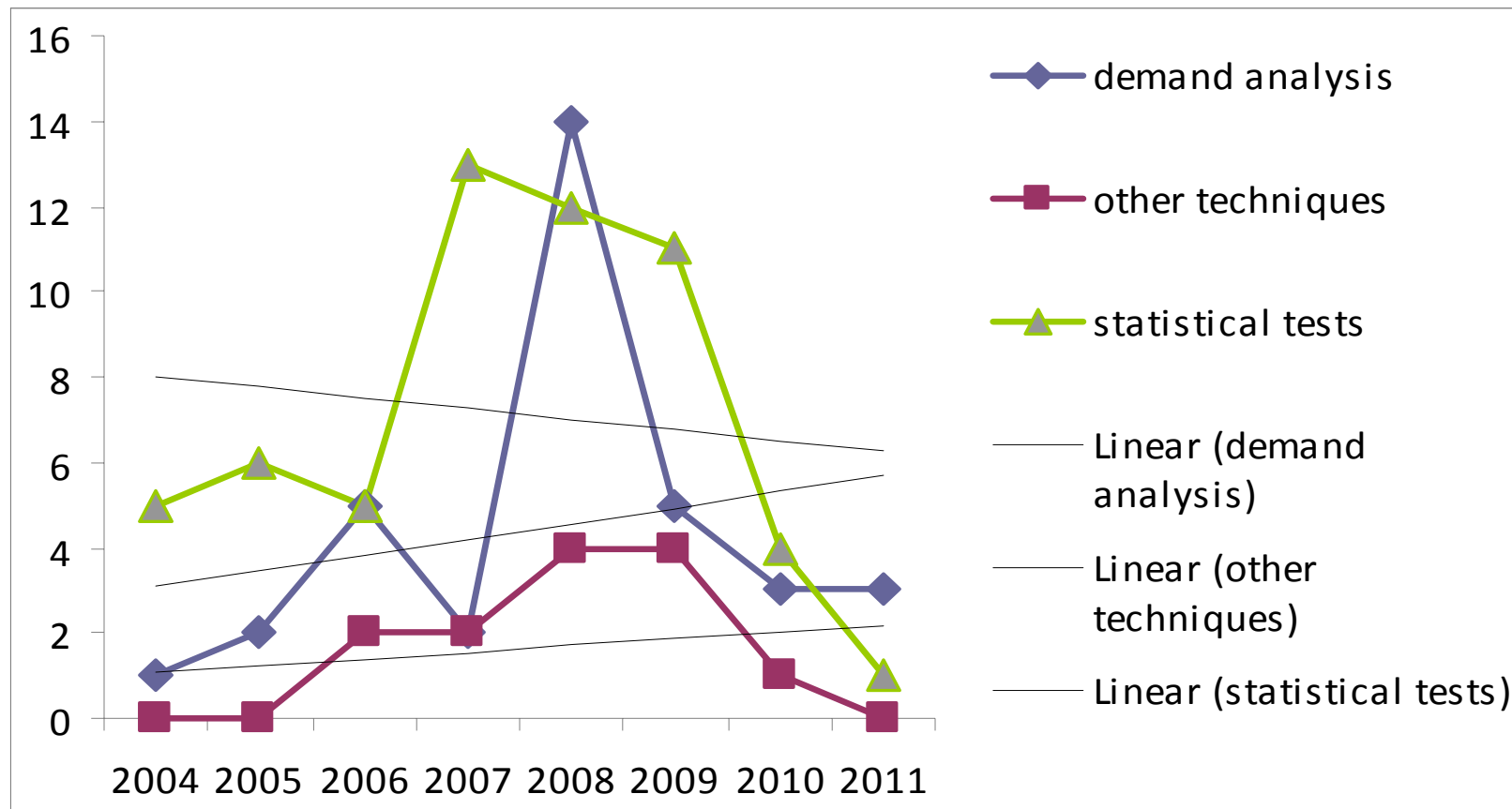
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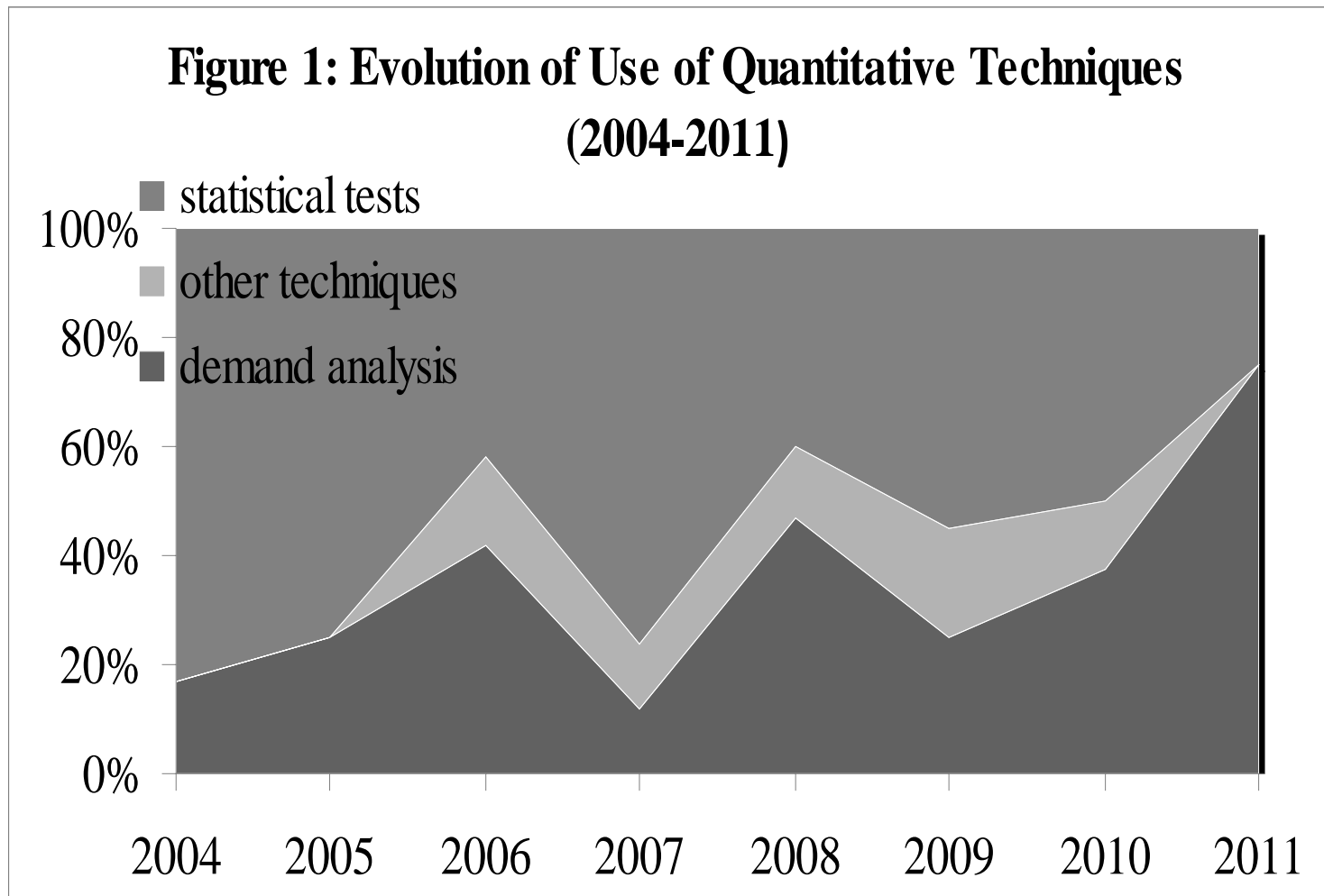
Structure

- The emergence of a “regulatory science” of economics
- Points of access of economic evidence
- Assessment of economic evidence

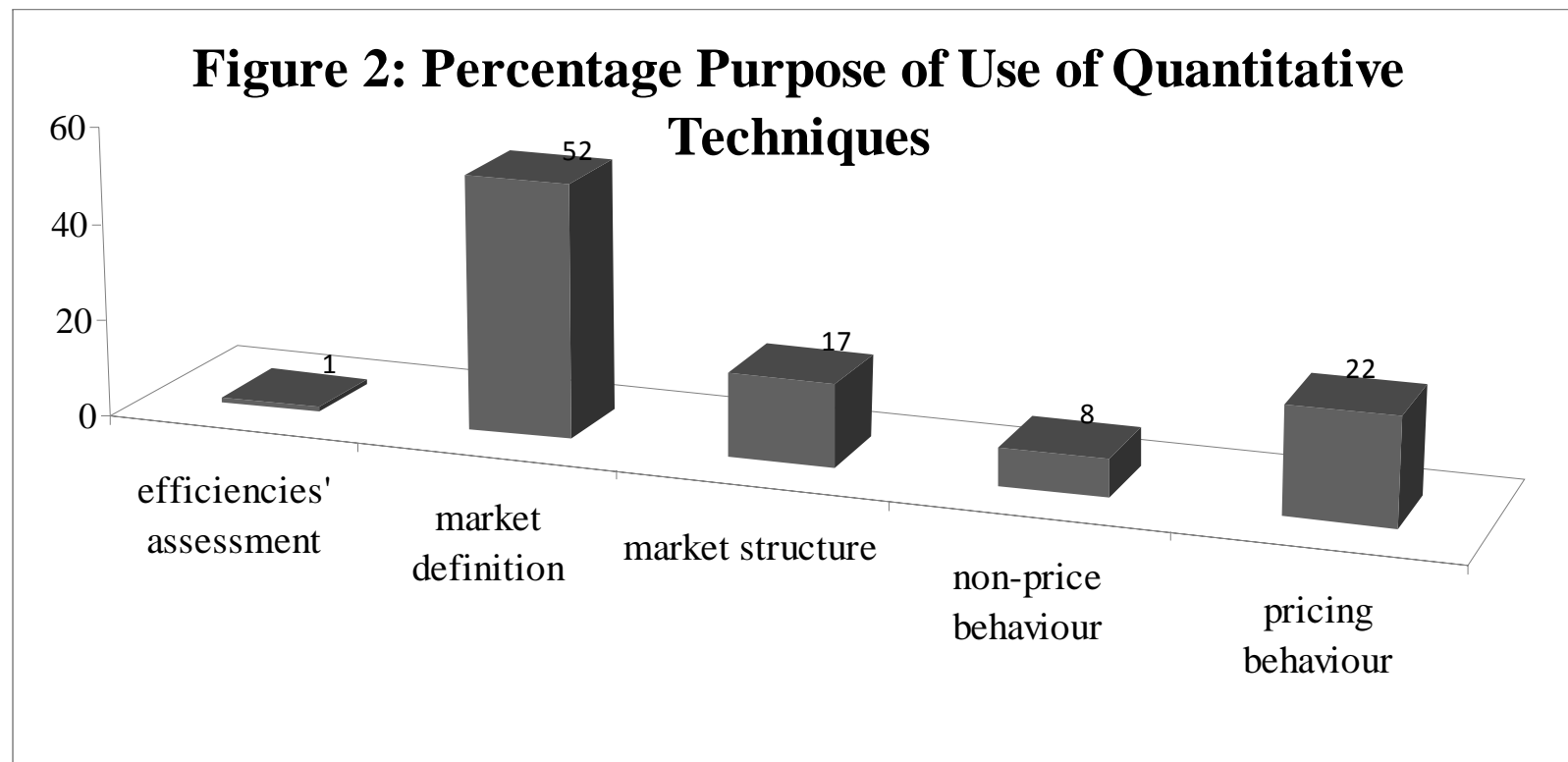
Use of econometrics in EU competition law



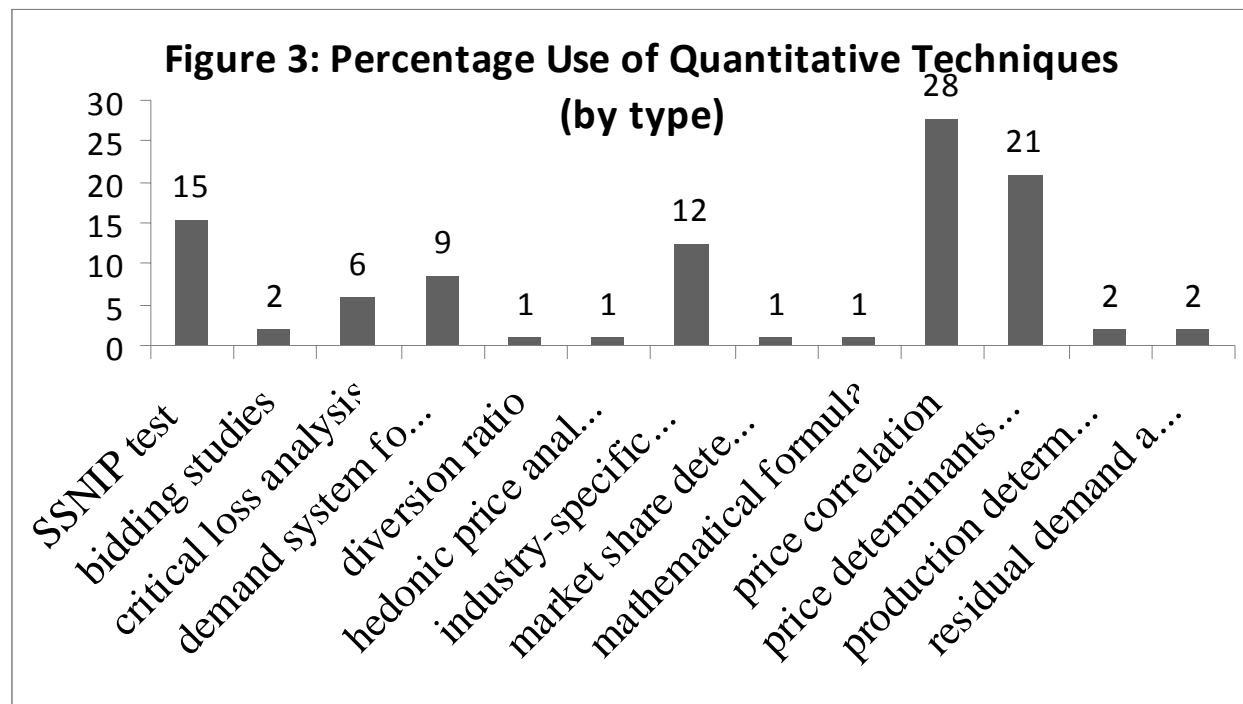
Evolution of use of quantitative techniques



Percentage Purpose of Use of Quantitative Techniques



Percentage of use of quantitative techniques



- **MERGERS**

- Market Definition
- Anticompetitive harm
 - Unilateral effects

- **ANTITRUST**

- Abuse of a dominant position
 - Market Definition
 - Abuse (pricing abuses: rarely)
- Cartels
 - Evidence of concertation
 - Fines

- **DAMAGES**



The “regulatory science” of antitrust economics

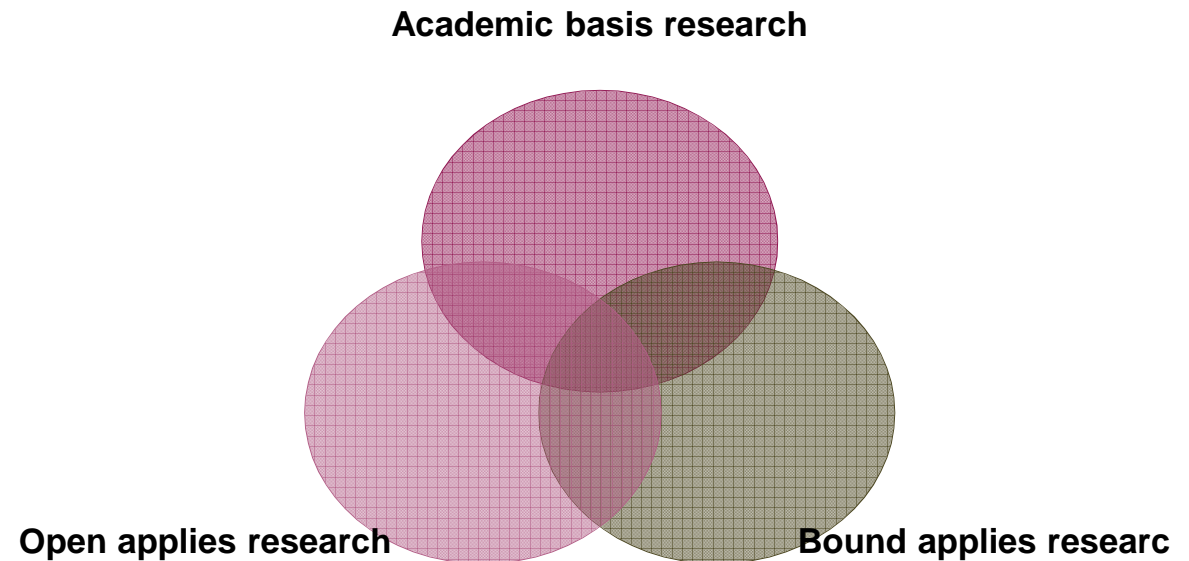
- Regulatory science is actively developed in response to practical contingencies and produced by social groups engaged in particular activities – “extra-theoretical factors that are not driven by the “inner dialectic” of the thought “
- The law today not only interprets the social impacts of science” but also “constructs” the very environment in which scientific discourse comes to have “meaning, utility, and force
- Economic research completed “in the context of application” is conducted and interpreted to answer legal questions
- The content of scientific knowledge is shaped in a complex social process, which includes the legal sub-system as well as the economic scientific discourse
- Regulatory decision-making exercises an important influence on the definitions of “good science”, therefore affecting at the same time the content and the direction of economic discourse

Forensic economists: a hybrid community

Forensic economists are situated across the pole that goes from “bound-applied research” to “open-applied research”, as some of them are also active academics, while academic economists concentrate at the pole of “academic basic research”, with some being occasional consultants and thus included in the “open-applied research”

VS

Academic economists



Academic basic research: scientist were hired to perform limited non-research duties, and obtained outside support for (presumably) theoretical research of their own choice.

Open-applied research: scientists were hired to perform limited non-research duties and obtained outside support for (presumably) practical research of their own choice.

Bound-applied research; scientists were hired to work full-time on problems related to the purposes of their employing organizations

“In so far as academic and non-academic employers and employees attach markedly different values to specific components in the economist’s knowledge and skills, the scope for dominance by a reputational elite is correspondingly undetermined”

A.W.B. Coats, *The Sociology and Professionalization of Economics* (Routledge, 1993)

A forensic economist has to strike “uneasy bargains” with lawyers and that “the scientific authority of neo-classical analysis must be balanced against the political, bureaucratic authority of the lawyers within the anti-trust agency”

W. Davies, Economic advice as a vocation: symbioses of scientific and political authority, (2011) 62(2) *The British Journal of Sociology*, pp. 304-323

Points of access to economic expertise

- Different options for the incorporation of economic analysis into legal discourse.
 - Delegation to an expert
 - Assessment by the judge
- Different institutional frameworks that could mitigate the information/epistemic asymmetry problem raised by economic expertise in courts
 - Common law jurisdictions (e.g. United Kingdom, United States)
 - Civil law jurisdictions (e.g. France, Germany)
- Recent reforms in civil litigation have taken two different directions:
 - Integration of the function of the expert and that of expert adjudication
 - Emphasis on the monitoring task of the judges in managing the experts

- **Legal evidence:** “any facts considered by the tribunal as data to persuade them to reach a reasoned belief on a probandum. The term is sometimes used to refer to evidential data or autoptic preferences and sometimes to refer to other facts taken as established for purposes of argument”
- “**Scientific evidence** means, [...] the more or less observable outcomes of scientific tests such as experiments, statistical analyses and surveys” [...] means hint, sign, indication of or a reason to believe (the negation of) a scientific hypothesis [...] (something that furnishes) proof of or good or cogent reason to believe (the negation of) a hypothesis”
- There might be some **conflict between the broad view of evidence in the legal context** and the **narrow view** that one might have in the context of social sciences, in our case, **econometrics**
- The decision-maker may decide that she will hear as evidence *only* information that has already been accepted with good reason because it relies on some metaphysical assumptions widely accepted by the wider community or because it relies on an appropriate testing *method* which generates generally valid inferences.

Is it possible to make a causal claim in law based on econometric evidence?

- Econometrics differs from statistics in several ways
 - Economic theory provides the blueprint for the specific set ups that will generate probabilities: the *a priori* dimension of econometrics
 - Econometrics focuses on establishing causation, while statistics is content with correlation
 - Economic theory drives the selection of observations (through a data generation process that goes from sample population on whose characteristics observations are based to observations, that is data that the researcher has constructed with the help of a **theory** forming part of the data universe, “in which all the pertinent data variables reside”), as well as the interpretation of the specific theory that will be used (the **theory universe**) and which will interact with the **data universe** through the **bridge principles**
 - The theory universe comprises theoretical objects that describe **toys in a toy economy**
 - Generalization of hypotheses made to the real world
 - *Ceteris paribus* clauses
 - Laws hold only probabilistically and the inferences are not to what happens but to the probability that it happens

Substantive assessment of economic expertise

- Exclusionary vs Discursive ethos in assessing economic evidence
- The exclusionary ethos of Daubert (1993): admissibility standards
 - “General gatekeeping obligation” of the judges
 - Four non-exclusive factors that could be taken into account for this enquiry:
 - It is important to determine whether a theory or technique is “scientific knowledge”. Popperian logic of falsification.
 - Whether the theory or technique has been subjected to peer review and publication (the later not being a *sine qua non* criterion of admissibility)
 - In the case of a particular scientific technique, the court ordinarily should consider the known or potential rate of error
 - “General” or “widespread” acceptance in the relevant scientific community.

The standard of proof as a probabilistic enquiry

- The standard of proof may be conceptualized as essentially a probabilistic enquiry
 - ‘reasonable probability’ or ‘probability’. E.g. Case T-329/01, *Archer Daniels Midland Co. v. Commission* [2006] ECR II-3255, paras 176 & 178
 - Standards of proof (Oliver Budzinski & Arndt Christiansen, 2006)
 - “(a) beyond reasonable doubt (certainty);
 - (b) balance of probabilities (i.e. more likely than not, preponderance of evidence) (probability $\pi > 0,5$) [harm to consumers must be more likely than no harm];
 - (c) considerable or appreciable effects (i.e. a more than negligible probability; e.g. $\pi > 0.25$);
 - (d) plausibility (i.e. not against logic and experience);
 - (e) possibility (i.e. a positive probability; $\pi > 0$)”.

The standard of proof as a relative plausibility enquiry

- Legal proof is a form of **inference to the best explanation** that examines the comparative plausibility of the parties' stories
- “regulatory science” – “ordinary science” standards of validity (S. Jasanoff, 1995)
- Choosing among competing explanations depends on the **relative plausibility of each narrative/story**, as measured by reference to a number of criteria:
 - the **degree of coverage** (that is “the greater the portion of the evidence a story is able to account for the higher its plausibility”),
 - the **completeness/consilience of the story** (it explains more facts and has less gaps),
 - the **coherence of the narrative** (that is “the added quality of the individual elements integrating well together to yield a smooth and convincing narrative of events”),
 - its **probative force** (that is the positive support it receives from the evidence).
- Plausibility refers to the **relative “strength of the explanation”, as determined by the “inferential interests of the decision-maker”, the context of other evidence or other contrary explanations.**

**WEIGHT OF
ECONOMETRIC
EVIDENCE**

TABLE 5 - OPINION SCORE SCALE

Opinion Score	Interpretation
1	The technique was discarded
2	Strong objections were raised on aspects of the technique and the technique had no significant impact on conclusions
3	The technique was taken into consideration as evidence, albeit with reservations
4	The technique was taken seriously into consideration as evidence, however it was not solely relied upon to reach a conclusion
5	The technique was very convincing and constituted a solid basis for a conclusion

Source: Authors' definitions.

As you can see from the last row of the table the model's fit is quite good (50%). Both coefficients are positive, but the only one significant now is the coefficient on the *demand analysis* indicating that, everything else held constant, the use of demand analysis techniques compare to statistical tests would increase the EC's opinion by 1.2 points, or some 38% on average

TABLE 4 - ECONOMETRIC ANALYSIS OF EU CC OPINION ON DIFFERENT QUANTITATIVE TECHNIQUES

	(1)	(2)	(3)	(4)	(5)
Estimation method	OLS	OLS	OLS	OLS	OLS
Dependent variable	opinion score	opinion score	opinion score	opinion score	opinion score
Demand Analysis	0.249 (0.243)	0.166 (0.265)	0.303 (0.240)	-0.168 (0.251)	1.232* (0.710)
Other Techniques	0.493* (0.293)	0.442 (0.294)	0.906* (0.487)	0.487 (0.552)	0.578 (0.739)
Year Dummies	no	yes	yes	yes	yes
Purpose Dummies	no	no	yes	yes	yes
Case Dummies	no	no	no	yes	yes
Technique Dummies	no	no	no	no	yes
Observations	105	105	105	105	105
R-squared	0.022	0.165	0.300	0.410	0.502

Source: Authors' calculations based on all publicly available versions of European Commission decisions on merger, antitrust and cartel cases, concluded by the Commission from 01/01/2004 to 11/10/2011.

Notes: Robust standard errors are reported in parenthesis below coefficients: *significant at 10%; **significant at 5%; ***significant at 1%.

Some interesting references

- I. Lianos, 'Judging' Economists: Economic Expertise in Competition Law Litigation - A European View (September 4, 2009). University College of London Centre for Law and Economics Working Paper No. 01-09. Available at SSRN: <http://ssrn.com/abstract=1468502>
- I. Lianos & C. Genakos, Econometric Evidence in EU Competition Law: an Empirical and Theoretical analysis, CLES Research paper, 06/12, available at <http://www.ucl.ac.uk/cles/research-paper-series/research-papers/cles-6-2012>