# Best practices on the submission of economic evidence and data collection

**EU competition policy increasingly relies on empirical economic evidence. Earlier this year, DG Competition published guidance on best practices for the submission of economic evidence, as part of its effort to enhance transparency and predictability in antitrust proceedings. Two of its authors—Damien Neven, Chief Economist, and Raphaël De Coninck, Economist, DG Competition—explain the main features of this guidance**

Over the last few years, European competition policy has been characterised by an increased analysis of effects—eg, to identify the consequences of mergers, agreements or single-firm conduct. As a result of more focused objectives, increased scrutiny by the courts and technological developments, the estimation of the direction and magnitude of these effects has now become an integral part of DG Competition's assessment, in particular regarding theories of harm and efficiencies.[1]

Analysing accurate and reliable quantitative data is often the most efficient and immediate way to validate or refute contradictory claims and opinions put forward by parties with opposite interests. Clearly, there is no such thing as the ideal economic model or the perfect econometric model: all models involve simplifying assumptions and most are based on imperfect data. Yet, in many circumstances, those simplifications and imperfections do not have a material impact on the quantitative or qualitative results of the analysis.[2]

Nevertheless, apparently sound but contradictory analysis is sometimes generated and submitted by opposing parties.[3] Although scepticism towards economic analysis often arises in this situation, such a view stems from an understandable but incorrect belief that the professional application of rigorous methods should produce unambiguous and consistent results.[4] When alternative studies produce contradictory conclusions, their relative merits should be carefully investigated; the right approach cannot be to discard them as if they were incorrect or unscientific. Indeed, those apparent contradictions may result from differences in the data, differences in the approach to economic modelling or in the assumptions used to interpret the data, differences in the empirical

techniques and methodologies, or may be the result of unintentional mistakes. Understanding the sources of such differences often provides important insights, thus reducing the likelihood of type I (false conviction) or type II (false acquittal) errors. For experts on either side to be accountable, economic analysis needs to be framed in such a way that decision-makers can evaluate its quality and relevance.

Furthermore, the time and resources of the various parties involved in antitrust enforcement and merger control are necessarily limited. In particular, DG Competition is required, as an administrative authority, to take a decision within an appropriate or statutory time limit. This fact underscores the importance of ensuring that economic analysis meets certain minimum standards at the outset, and of facilitating the efficient gathering and exchange of relevant evidence, in particular any underlying quantitative data. Similarly, it is important for the decision-maker to base its decisions on all reliable and relevant evidence available during the administrative procedure, whether quantitative or qualitative.

Against this background, DG Competition has published a 'Best Practices' document on the submission of economic evidence as part of its effort to enhance transparency and predictability in antitrust proceedings.[5] First, the Best Practices provide recommendations regarding the content and presentation of economic or econometric analysis, in order 'to facilitate its assessment and the replication of any empirical results by DG Competition and/or other parties'.[6]

Second, they provide guidance to respond to the Commission's requests for quantitative data 'to ensure that timely and relevant input for the investigation can be provided' (Best Practices, para 5). This article briefly reviews these two sections of the Best Practices document, and concludes by highlighting some practical recommendations regarding the interaction among economic experts.

## Criteria for assessing the quality of economic analysis

It is worth distinguishing between two dimensions in the evaluation of economic analysis. First, the decision-maker needs to assess the intrinsic quality of the economic evidence from a technical perspective—ie, whether it has been generated and presented to adequate professional standards. As detailed in the Best Practices:

> this involves, in particular, an evaluation of whether the hypothesis to be tested is formulated without ambiguity and clearly related to facts, whether the assumptions of the economic model are consistent with the institutional features and other relevant facts of the industry, whether economic models are well established in the relevant literature, whether the empirical methods and the data are appropriate, whether the results are properly interpreted and robust and whether counterarguments have been given adequate consideration. (para 3)

Second, the decision-maker needs to determine how much weight to assign to the economic analysis. This depends importantly on its relevance with respect to the main issues at stake. For example, is the evidence a direct test of the theory of harm? Or does it merely provide useful circumstantial evidence? Other considerations include the potential for error when relying on certain types of evidence, and the congruence and consistency of the economic analysis with other evidentiary elements (such as customer responses and documentary evidence) (para 4).

The Best Practices present recommendations concerning the main elements of economic analysis—namely the formulation of the relevant question, the data, the methodology, the presentation of the results and the robustness of the analysis. The following briefly summarises these main elements.

### Relevant question
The first step in any economic analysis—theoretical or empirical—should be the formulation of a research question that is relevant to the case at hand, so as to avoid the risk of what are known as 'type III errors'[7]—ie, when one produces the right answer to the wrong question.[8]

The Best Practices indicate that the question studied must be formulated unambiguously and be properly motivated, 'taking into account the nature of the competition case, the institutional features of the markets and industries under consideration and the relevant economic theory' (para 17). The hypothesis to be tested (or null hypothesis) must be clearly spelled out as well as the alternative hypothesis or hypotheses under consideration (para 18). Experts should also explicitly discuss the link between the hypothesis tested and the theory of harm. Although the empirical analysis will often provide only indirect evidence on the theory of harm, it may nonetheless be very useful if properly qualified (para 19).

### Data
The quality of empirical analysis depends on the relevance and reliability of the underlying data (para 20). In this respect, the Best Practices recognise that:

> not all facts can be observed or measured with high accuracy and most datasets are incomplete or otherwise imperfect. Hence, parties and/or DG Competition should become familiar with the facts and data and acknowledge its limitations explicitly. (para 22)

This means that experts should not only provide all the underlying data of their analysis, but they should also report how the data was gathered, and thoroughly describe data sources, the sample selection process, and the measurement of the variables. Experts should carefully document data handling and data management, provide software code employed to generate the final dataset, and describe the variables contained in the final dataset (para 22).

They should also explain anomalies in the data and efforts made to correct them. Although 'failure to observe and validate all key assumptions or deficiencies in the data should not prevent an economic analysis to be given weight', one must exert caution in its interpretation (para 23). The Best Practices also point out that statistical techniques may help deal with some common data imperfections (para 23).

### Methodology
Economists, statisticians and econometricians have developed many alternative methodologies to investigate economic questions empirically. Each of those methodologies has strengths and limitations. Therefore, experts should motivate the choice of empirical methodology, and discuss choices in light of (a) their data limitations; (b) the features of the market under investigation; and (c) the economic issues under consideration (the relevant question) (para 27). They should make the strengths and weaknesses of the

methodology explicit (para 24), and explain how the methodology exploits the variation in the data to discriminate between various hypotheses.[9]

While motivating their choice of methodology, experts should also discuss possible alternative methodologies. Time and data constraints permitting, experts should consider carrying out empirical analyses based on different methodologies to determine the robustness of their results to alternative tests or models (para 31).

### Results

The Best Practices indicate that:

> parties should explain the details of their models, and share any documentation needed to allow timely replication (e.g. the programming code used to run the analysis). (para 32)

The document also warns that the Commission will not give much weight to expert reports which do not allow for replication and, in particular, those that do not include the code and data in electronic form.

Experts should report their results in a clear and understandable fashion. In particular, the results of empirical analysis should be reported in the standard format used in academic papers—eg, while reporting the results of a regression analysis, both the estimated coefficients and their standard errors should be reported for all explanatory variables (paras 34 and 36). Although the expert is not expected to comment on, or restate, every piece of information that a table contains, the table cannot 'speak for itself', meaning that the expert must provide an interpretation of the data in it (para 33). The expert should discuss not only the statistical significance of their results, but also their practical relevance (para 35). They should also discuss their results in light of the relevant economic theory (para 36).

### Robustness

The Best Practices indicate that experts should check whether the empirical results are sensitive to changes in the data, the choice of empirical method, and the precise modelling assumptions (para 38). In the case of econometric or simulation models, experts should always provide a sensitivity analysis with respect to the key variables. This means that all results from the sensitivity analysis conducted should be reported—and not only those in favour of the argument (para 38). In addition, experts are expected to compare the results of their empirical work with previous results in the relevant literature (para 40), and should indicate whether their results can be generalised (para 39).

## Responding to data requests

In recent years, two trends—one technical, the other substantive—have led to an increased role for quantitative analysis in antitrust investigation and merger control. First, there has been a significant increase in the quantitative data maintained by firms. Second, substantive antitrust and merger analysis has gradually evolved away from structural presumptions towards a more economically thorough analysis of likely competitive effects. Quantitative data allows DG Competition to carry out a variety of empirical analyses—eg, to establish a counterfactual, define a market or assess potential pro- or anti-competitive effects of a merger. DG Competition's ability to reach the correct decision hinges on its ability to obtain accurate data, with sufficient time to analyse it (para 48).

However, DG Competition is aware of the costs and delays that the antitrust or merger review process may impose on transactions, agreements or practices that are wholly or largely beneficial to consumers. The purpose of the Best Practices is to provide recommendations to reduce the burden on the involved parties posed by the production and processing of quantitative data, while at the same time ensuring and enhancing the effectiveness of DG Competition's substantive review.

In determining the adequate amount of data to request, DG Competition needs to balance the usefulness of each request against its opportunity cost given the legal or procedural deadline (para 52). It generally seeks data that is readily available to the parties involved—ie, data that is routinely collected and maintained for a reasonable period as part of the firm's normal business operations. In order to limit the burden on the parties, DG Competition may want to consider what would be the proper sample to characterise a population in order to obtain a representative sample, or whether third-party data is required and available to conduct any meaningful analysis (para 53).

The Best Practices document sets out unambiguously that respondents to data requests must ensure that their data submissions are complete, correct and timely (Section 3.3), and that this process relies on cooperation in good faith from the parties (paras 68 and 69). In particular, transparency regarding data collection and formatting is essential (paras 76–79). The data-collection process is also improved by early consultation and dialogue between DG Competition and the parties. For example, early consultations with DG Competition are useful in identifying what type of data is

available, and in certain cases, discussing in advance the scope and format of the data request, and consulting on a draft data request and data samples (paras 70–75).

## A few practical recommendations regarding the interaction among economic experts

Throughout the sections on economic submissions and data requests, the Best Practices contain a number of recommendations concerning the interaction among DG Competition economists, and the parties' and third parties' economic experts. This section further elaborates on some of the practices that are key to ensuring an effective and efficient interaction among economic experts.

First, in the early stages of an investigation, it is often useful to discuss with the parties and their economic consultants data issues and theories that are being considered regarding the competitive effects of the merger, practice or agreement (although at an early stage, discussions of theories are likely to be relatively general). This conversation should begin as a dialogue between DG Competition economists and the parties' economic experts. This discussion should include the types of empirical analyses that might prove useful in testing the anti-competitive and/or efficiencies theories. In particular, the parties' experts can suggest potential analyses which may be easier for DG Competition economists to conduct, given its access to data from third parties. DG Competition, in turn may propose analyses it believes might be useful for the parties to conduct (para 43). Similarly, and as stated above, an open dialogue is also key to an efficient data-gathering process (paras 70–75).

Second, in exercising their professional autonomy, economic experts should seek to communicate with the clients' lawyers as regards the need for data and the

usefulness or limitations of empirical analysis. It is also important that the economic experts and not their clients formulate the presentation of evidence and the work undertaken.[10] Economic experts should avoid being coerced into reaching conclusions that they cannot support; they can sustain and promote their credibility by not misrepresenting the accuracy or explanatory power of their data and methodology, and by seeking to address rather than minimise uncertainty (para 41). In fact, questions about the freedom of inquiry accorded to economic experts, as well as the scope and depth of their investigations, may reveal some of the limitations to the analysis being submitted.

Third, economic experts should be careful not to misleadingly appear as witnesses of fact when they rely on facts that are provided by third parties and which they do not have the means to audit and verify. Hence, their sources of information should be carefully acknowledged, and the facts properly documented and described without ambiguity (para 42). In addition, experts are expected to respond to requests for clarification on their economic submissions, as well as requests for meetings to discuss, among other things, data issues, economic theory and modelling approaches.

Last but not least, when economic submissions rely on quantitative data, the experts should provide the data and codes in a timely manner, in an appropriate format, and in accordance with the criteria set out in the Best Practices (para 44). Since the Best Practices are also meant to apply to DG Competition (para 6), this means that DG Competition commits to provide the underlying data and codes of its own economic analysis, or that of third parties on which a decision relies. Where necessary to protect the confidentiality of other parties' data, access to the data and codes will be granted subject to strict confidentiality obligations and secure procedures (eg, the data room procedures at DG Competition premises) (para 45).

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[1] See, for example, Röller, L-H. (2005), 'Economic Analysis and Competition Policy Enforcement in Europe', in (P.A.G. van Bergeik and E. Kloosterhuis (eds) (2005), *Modelling European Mergers: Theory, Competition Policy and Case Studies*, Edward Elgar Publishing, and Neven, D.J. (2006), 'Competition Economics and Antitrust in Europe', *Economic Policy*, October.

[2] Consequently, 'lack of unachievable perfection should not prevent an economic study from being given weight'. Scheffman, D. and Coleman, M. (2005), 'FTC Perspectives on the Use of Econometric Analysis in Antitrust Cases', in J.D. Harkrider and D. Rubinfeld (eds) (2005), *Econometrics*, ABA Section of *Antitrust Law*, p. 118. Mere allusions to those simplifying assumptions and data limitations are generally not sufficient to disprove the results of a scientifically valid economic or econometric study which matches to the facts of the industry. Rather, the party which seeks to rebut that analysis should be able to establish that the relevant findings are indeed not robust to changes in the contested assumptions or the underlying data

[3] Manski, C.F. (1995), *Identification Problems in the Social Sciences*, Harvard University Press.

[4] See 'Final Report of Economic Evidence Task Force', Antitrust Section, American Bar Association (ABA), August 1st 2006.

[5] European Commission (2010), 'Best Practices for the Submission of Economic Evidence and Data Collection in Cases Concerning the Application of Articles 101 and 102 TFEU and in Merger Control', DG Competition, published for consultation on January 6th at http://ec.europa.eu/competition/consultations/2010_best_practices/, together with the Hearing Officer's guidance and DG Competition's best practices in antitrust proceedings.

[6] See in particular para 15 of the Best Practices, which states that: 'The goal of these recommendations is to ensure that every economic or econometric analysis submitted for consideration in a case states fully the economic reasoning and the observations on which it relies as well as to explain the relevance of its findings for the case at hand and the robustness of the results. This should allow DG Competition and all interested parties to scrutinise the economic evidence submitted during the proceedings so as to avoid that empirical results that are not robust be disguised as such and key assumptions in theoretical reasoning be presented as innocuous.'

[7] As opposed to type I errors (or false convictions) and type II errors (or false acquittals).

[8] Kennedy, P. (2003), *A Guide to Econometrics*, Blackwell Publishing, p. 391.

[9] Best Practices, para 26. Although the chosen methodology may only partially discriminate between various hypotheses, the Best Practices indicate that 'At the very least, an economic model or argument must generate predictions that are consistent with a significant number of relevant facts.'

[10] More generally, substantial contributions provided by economic experts embedded in reports, letters to the Commission or even a notification should be adequately identified, and the identity of the individual authors of an economic report should normally be revealed.

If you have any questions regarding the issues raised in this article, please contact the editor,
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