2. Economic Analysis and Competition Policy Enforcement in Europe

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The role and scope of modern economic analysis in competition policy in Europe has been changing. Characterizing this change as one towards a "more economic approach" could be misleading. Indeed, antitrust and merger analysis has been based on economics for a long time. The question for effective enforcement is not one of "more" or "less" economics, but rather what kind of economics and especially how the economic analysis is used – or indeed sometimes may be abused – in the context of guidelines or cases. The change in the practice of European competition policy is all about the way in which economic principles and economic evidence are brought to bear in the context of decision making. The assessment of decision making in light of modern economic principles that are robust and empirically tested, as well as the reliance on a number of empirical methodologies that help identify a theory of harm, is at the core of this trend. However, there are also non-significant dangers and there is a clear potential to abuse economics, not least by various special interests. As a result, the proper and professional interpretation and generation of economic evidence is essential for the credibility of the process to work towards better decision making.

In this context it is interesting to recall that there seems to be a substantial increase in the use of economics in antitrust. However, the market share of economists in antitrust has not increased accordingly. This is somewhat troubling, not only from the point of view of economics as a profession, but also for the overall quality of decision making (for instance in terms of type I and II errors). Without entering into the debate of what constitutes an "economist", which the previous observation unavoidably triggers, I believe it is fair to say that an increase reliance on economic analysis implies a need for stronger economic expertise. ³

The purpose of this chapter is to provide some input into the debate on the proper contribution of economics and economists in EU competition policy. The chapter starts by summarizing the reasons for the trend towards the increased significance of economics (and economists). It then discusses

various applications for economics, emphasizing the different roles of economics in guidelines and cases. The chapter then argues that these developments raise a number of challenges, and suggests that an effective enforcement needs to address these potential dangers and pitfalls in order to reduce the potential for abuse of economics. In the end, the increased reliance on economics and economists will only be successful if it is able to contribute towards better decision making. And that is exactly the way it ought to be.

1. THE TREND TOWARDS ECONOMICS

The emphasis on economic analysis in the decision making at DG COMP has been a steady process, which has been reinforced in the last few years. The introduction of the non-horizontal merger guidelines has been a recent indication of this process. Earlier examples include guidelines on horizontal and vertical agreements. Moreover this trend is continuing today. For instance, there is an internal review process — with the intent to publish guidelines — on the policy regarding the abuse of a dominant position, where recent advances in economics play an important factor. There are plans for guidelines in the area of non-horizontal mergers, pending the outcome of some recent cases in court. Finally, and perhaps most challengingly, is the area of state aid, where a reform process is being planned for the coming years. Again, one of the main principles will be to base decision making in the area of state aid control on a sound economic assessment, both in terms of operationalizing a more explicit analysis of the distortions of competition, as well as the use of the concept of market failures.

What are the reasons for this trend? Former Commissioner Mario Monti, an economist himself, has emphasized the importance of economic analysis and soundness during his tenure. Together with Director-General Philip Lowe, who is also an economist, a number of reforms have already taken place. As far as future developments are concerned, Commissioner Neelie Kroes has made it clear that economic reforms, and the contribution of competition policy towards these goals, are at the top of her agenda.⁵

More broadly even, the Barroso Commission is committed to improve Europe's economic performance. An important goal of the revamped Lisbon agenda is to increase European competitiveness. Competition policy – including the upcoming reforms in the area of state aid control – is at the heart of making Europe more competitive. Perhaps even more importantly, competition policy is one of the policy fields where the European Commission has significant legal powers. It is therefore essential to use the instruments of competition policy (including sector inquiries into financial

and energy markets) to the benefit of the European consumer and the European economy. This can only be done by ensuring that the rules and practices of competition policy enforcement are in line with sound economic thinking. Without going into the substance of the debate surrounding the goals set out in the proposed revamped Lisbon agenda, let me just submit that a firm grounding of competition policy and state aid control in sound economic principles not only makes sense for the European economy, its welfare and its citizens, but it will also be necessary in order to preserve its significant role. A primarily legal defence of competition decisions is ultimately unlikely to leave the considerable enforcement powers of the Competition Commissioner in tact.

Another crucial factor is the Community Courts. For example, in its conclusion on Airtours vs. Commission,⁶ the Court of First Instance concluded that the decision of the Commission "far from basing its prospective analysis on cogent evidence, is vitiated by a series of errors of assessment as to factors fundamental to any assessment of whether a collective dominant position might be created". The judgment indicated that the Courts are in favour of better economic evidence when reviewing the Commission's decision. The Court also addressed the required standard of evidence, arguing that it was the Commission who had to produce convincing economic evidence of a situation of collective dominance. On February 15th, 2005, the European Court of Justice ruled on the appeal against the judgement of the Court of First Instance annulling the decision of the European Commission prohibiting the merger of Tetra Laval/Sidal.⁷ In its press release the European Court of Justice stated that "The fact that the Commission enjoys discretion in economic matters does not mean that the Community Courts must refrain from reviewing the Commission's interpretation of information of an economic nature, especially in the context of a prospective analysis".

Finally, the use of economic analysis is useful when working closely and on a consistent basis with other jurisdictions. This is the case for DG COMP and its US sister institutions, i.e. the FTC and DoJ. More generally, reliance on economics – rather than other policy considerations – has the potential to reduce conflict between jurisdictions. Increased emphasis on economics will not, however, lead to complete convergence, in the sense of one-to-one decision making. Important differences and asymmetries exist and will continue to exist.

In sum there are a number of factors for the trend toward the use of economic analysis in EU competition policy. Moreover, there are reasons to believe that this trend will continue, even though this raises a number of challenges that need to be addressed. We will return to this point below.

2. THE INTEGRATION OF ECONOMISTS AT DG COMP

There are a large and increasing number of economists at DG COMP. Approximately 200 out of the over 700 officials working at DG COMP have an economics background, where "economics" relates to all areas of economics (including macroeconomics), as well as other related business disciplines (such as accounting). The number of officials that hold a PhD in economics is about 20, 10 of which are currently working in the office of the Chief Competition Economist.

2.1 The Office of the Chief Competition Economist ("CCE")

The office of the CCE consists of 10 specialized economists, the Chief Economist Team ("CET"), all of which hold PhDs in Industrial Organization. Approximately, half of the members are permanent EU officials, while the others are temporary agents. The CCE gets involved in selected cases and guidelines. There are two basic functions that the CCE performs¹¹:

- 1. "Support function": one member of the CET gets assigned to the case team, reporting to the CCE. In this way, the CET is closely involved with the day-to-day work of case teams, getting involved early on in the investigation, giving economic guidance and methodological assistance.
- 2. "Checks-and-balances function": the CCE provides the Commissioner and the Director-General with an independent opinion on all cases and guidelines that the CET was involved in, in particular before a final decision to the College of Commissioners.

Given this dual function, it appears reasonable to keep the position of the Chief Economist separate from the other Directorates and attach it directly to the Director-General.

One of the primary objectives of the CET is to work closely with others economists across DG COMP. The integration of economists at DG COMP is different from its US sister institutions – the DoJ and FTC – in the sense that case teams are put together in an interdisciplinary way. In other words, case teams are put together early on with both economists and lawyers. This EU model may have advantages, as it facilitates the coordination between legal and economic lines early on in cases, yet it may also have disadvantages. In particular, it is sometimes argued that the line of reporting needs to be to an economic hierarchy in order to have the proper quality controls as to facilitate high-quality economic analysis. To the extent that the case team as a whole does not report to the CCE, this may be a concern. However, the EU model

partially addresses this concern: the case team member that is also a member of the CET does report back to the CCE on the economic direction and analysis. Overall, the institutional set-up of the CCE and CET constitutes somewhat of a hybrid model in this regard, where members of the CET are full member of the case team, yet also report back to the CCE.

2.2 Economic Capacity Building

The mandate of the CCE states that "he shall act as a focus for economic debate within DG COMP, in liaison with other Commission services and in association with the academic world". The CCE is thus responsible to help capacity building with regard to economic expertise. The investment in economic expertise and capacities is central in ensuring that the full value of economics can be realized in the decision making process.

In order to contribute towards capacity building, the CET has initiated the following activities.

- 1 Economic Advisory Group on Competition Policy ("EAGCP") The EAGCP is a group of around 15 leading academic economists in the area of industrial organization. They advise DG COMP and the Commissioner on selected important policy issues.
- 2 Annual FORUM
 - An annual internal one day event where DG COMP discuss past cases with EAGCP, in particular with regard to the appropriate usage of economic analysis.
- 3 Economic Seminar Series on Competition Policy A monthly public seminar, where external academic speakers are presenting their latest work in the field of competition policy.
- 4 Brown Bag Lunch
 An internal luncheon, where DG COMP case handlers discuss economic analysis of cases in an informal setting.
- 5 EU–US bilateral meetings of economists Economists from DG COMP, the FTC and DoJ meet to discuss past case work, in particular economic methodology.

There are also a number of external links that the CET maintains and develops through speeches, participation in conferences and events. For example, there are close links to the Association of Competition Economists ("ACE") and the Centre for Economic Policy Research ("CEPR").

There are plans to further strengthen the capacity building in economics, which is essential for the timely and proper employment of economic and econometric applications to competition policy and the decision process by

antitrust agencies. One possibility is to create closer links between economists within the European Competition Network ("ECN").

3. ON THE ROLE OF ECONOMICS

The use (as well as abuse) of economic principles and analysis may vary substantially across the particular policy context. In my view, one can broadly differentiate between three areas – depending on the time horizon – where economics and economists can potentially strengthen anti-trust enforcement.

3.1 Cases - Identifying Theories of Harm

The first area is case work, which is frequently of a rather short-term nature, in particular in merger cases. Economists are used to provide analysis into an otherwise fundamentally legal process. Both theoretical and empirical approaches are typically brought to bear in the context of cases. Nevertheless, the roles of theory and empirical testing are rather different.

Economic theory is necessary to "frame" a case, which in turn is fundamental to arrive at a particular theory of harm. This typically involves information about the structure of the industry, the firms, the structure of demand and the technology, as well as a preliminary understanding of possible strategies. It will always be the first step in an economic analysis in the context of a competition case (including, in principle, a state aid case).

The extent to which economic theories are useful in this context may be called economic principles.¹² The development of new theories (such as de novo models, which are based on alternative assumptions, leading to radically different results) are likely to be less influential in the context of case proceedings for a number of reasons,¹³ including the difficulty of communicating a new theory in a rather short period of time. As a result, one is tempted to conclude that the analysis of the merit of new theories is best left to the academic journals, where a long and rigorous peer review will ensure consistency and ultimately empirical relevance.

The goal of a plausible theoretical framework in the context of a particular case is to come up with testable hypothesis concerning the theory harm. In this sense, competition policy decisions need to be based on empirical evidence. Economic theory is not meant to provide the answer by itself. There is nothing that can be true in a general. As a result, every theory needs assumptions. In the end, the effects of a merger or a pricing practice will depend on the circumstances, that is the assumptions and implications of models have to be checked against observable facts and data. Checking

which theoretical framework is consistent with which pieces of observable and available evidence, is fundamental to decision making and is known in social sciences as the *identification* problem.

An effective economic analysis in the context of a case has to be based on empirical analysis, which in turn needs to be rooted in solid economic principles. The key challenge is to identify a particular theory (or behaviour) from other alternatives. Identification thus involves the uncovering of empirical evidence that is only consistent with the claimed theory, and is inconsistent with other theories.

There are numerous ways to achieve identification. The most common approach is to check the assumptions that have gone into the theoretical framework. However, this is not always the best way to achieve identification. For example, certain assumptions may be necessary, but not sufficient, for an alleged anti-competitive practice. Another way of identifying is through the comparative statics of a theoretical framework. The basic idea is to use the prediction of economic models and compare these to observable data. 14 There are a number of well-developed methodologies available in empirical industrial organization, such as simple correlations over time and/or markets, other types of reduced form evidence, as well as more structural and semi-structural empirical evidence. Finally, there are natural experiments, which are – as the name suggests – situations where an exogenous events has happened, such as a particular regulation. The reaction by the market can then be attributed solely to this exogenous event, under the assumption that nothing else did change. In such circumstances, the reaction by the market might then be used to reject certain theories in favour of others.

Clearly, the practicality of all the methods for identification depends on the theoretical framework employed as well as on data availability and/or other political and institutional developments.

3.2 Guidelines and Block Exemptions

The second area where economic reasoning is important is guidelines, and similarly block exemptions. In contrast to cases, which are by definition rather context specific and as a result do not lend themselves easily to generalizations, guidelines give general rules that describe the frameworks that will be used under various circumstances. In this sense, guidelines are more general and more long-term.¹⁵

The challenge for economists in developing guidelines is to be able to provide relatively simple rules that are yet economically sound in a large set of circumstances. Guidelines cannot spell out the entire economic analysis that would take place in the context of a case. Yet they are useful in providing guidance as to the kind of theoretical and empirical analysis to be undertaken, and thus raise predictability and legal certainty. ¹⁶

There are a number of guidelines and block exemptions that are currently either up for review – such as in the area of state aid – or are being considered for the first time – such as the guidelines for non-horizontal mergers or abuse of a dominant position. The above mentioned challenge – i.e. simple, yet economically sound – is apparent in all these policy areas. To be clear, and we will return to this point again below, introducing more sound economic reasoning in these areas of policy should not be seen as a trade-off between rules vs. discretion. Basing policy on solid economic principles does not imply that guidelines can not be simple and predictable.

3.3 Ex Post and Ex Ante Analysis

The third area is yet even more long term in nature. There are two contributions from economics: *ex post* and *ex ante* analysis.

Ex post analysis is undertaken in order to understand how antitrust, state aid, and merger decisions have effected markets. A prominent example is the ex post studies that attempt to categorize antitrust and merger decisions in terms of a type I and II error framework. The main difficulty in this line of research is to establish the relevant counterfactual, i.e. what would have happened if some relevant alternate decision had been taken instead. This is of course a very well-known problem in social sciences, and particular in policy evaluations: just because nothing changes after the policy intervention does not mean that there is no effect, or vice versa.

Economics and econometrics can be useful to establish the relevant counterfactual. Counterfactuals can be derived from theoretical models and/or econometric analysis. The central empirical challenge is to control for other factors that might have had an influence on market outcome, in order to identify the impact of the policy decision itself. Industry and market knowledge is crucial at this point in order to understand the precise factors involved (i.e. to design the experiment: timing, factors, causality). In the end the proper empirical methodology to answer the relevant question of impact boils down to a multivariate analysis – i.e. an econometric analysis.

Another problem occurs when the policy decision is *endogenous*. By endogenous we mean that the market outcome and the policy decision are linked, which can easily happen in practice. If so, the *ex post* evidence may be biased. For example, if a policy maker subsidizes only competitive firms, then an *ex post* study that compares the performance of subsidized firms to non-subsidized firms would find that the subsidy program was indeed very successful. The example shows that the way the subsidy is allocated is important to understand the correct effectiveness of the subsidy as measured

through an *ex post* study. This is yet another important empirical issue that *ex post* studies need to address.¹⁷

Despite its inherent empirical difficulty, the importance of *ex post* evidence can not be underestimated. The know-how obtained from *ex post* evidence helps to justify or refine policies and practices. It is the only logical justification for the effectiveness of an agency's decisions, which is evermore important in times where the impact of competition policy actions is increasingly scrutinized.

The second area where economics is important is *ex ante* analysis, such as in market monitoring.¹⁸ Market monitoring is the analysis of whether or not markets function well, in principle prior to possible antitrust action. *Ex ante* analysis, such as market monitoring, is important, since whenever an agency relies exclusively on complains, firms' incentives may be negatively effected. The challenge for market monitoring is to identify instances when markets do not function, such as anticompetitive conduct or the existence of entry barriers. One contribution of economics is to help define a set of indicators that signal a high likelihood of a particular competition problem.

A related issue is that of priority setting. While market monitoring is primarily about the *likelihood* of a competition problem, priority setting is about the *magnitude* of the competition problem. Economics can be used to identify situations where the likely impact of the alleged anticompetitive conduct or barrier is small. Given scarce resources, however, an agency needs to allocate its priorities such that the expected return is highest. In other words, assuming a consumer standard, resources should be devoted to cases and activities where the expected loss to consumers is highest. Priority setting is thus about both the likelihood of an infringement and the magnitude of the loss to consumers.

The same principle applies to the instrument of sector inquiries. For example, Commissioner Kroes has recently announced¹⁹ to launch sector inquiries into energy and financial markets.

4. CHALLENGES FOR ECONOMICS AND ECONOMISTS

As was argued above, there appears to be an increased role of economics in competition policy. In this section, I would like to mention some challenges that economics and economists need to face in order to ensure that the full value added from using economics in antitrust decision making is realized.

4.1 Effective Enforcement

The first challenge is to ensure that the increased use of economic reasoning and analysis does not erode effective enforcement. Clearly, if the economic analysis is not done in a proper and professional way, it can be misused in the sense of introducing type I and II errors. Take, for example, the employment of econometric evidence. As discussed above, econometric evidence is a methodology to disentangle the individual impact of an event, when other factors are also at work. In a sense, it is the logical extension of a simple correlation, and thus in principle essential information for establishing evidence in favour or against a theory of harm.

On the other hand, econometric evidence can also be misused in a number of ways. As anyone knows who has "played" with econometric estimation, robustness is always an issue. ²⁰ In other words, the estimated effects depend on the specification and assumptions. This is, of course, neither surprising nor could anyone fundamentally object to it. Indeed, if the results would not depend on the assumptions, one should be worried! Nevertheless, a careful understanding on how the assumptions link to the results needs a certain understanding of the underlying methodology. Without such expertise, one is at the mercy of some "defunct economist's" econometric estimates. ²¹

A related issue is that there is often a substantial asymmetry in resources between outside parties and an antitrust agency. Resources do matter, in particular in providing labour-intensive empirical evidence. If the asymmetry is too large, relying extensively on economic analysis has the potential for distortions, resulting in a reduction of effective enforcement.

The proper and professional usage of economics is also relevant in the context of the so-called revamped Lisbon agenda, which is focussed on more economic growth and competitiveness. In this context, it is argued that competition policy enforcement should be closely linked to generate economic benefits. As the objective of antitrust and merger control is to ensure the proper functioning of the market to the benefit of the consumer, increased reliance on economic analysis is essential to contribute towards the Lisbon agenda.

In the area of state aid control, Commissioner Kroes has recently announced²² that more weight should be given to market failures. This is the correct emphasis if the Lisbon agenda is taken seriously, as it focuses state aid in areas where such aid contributes towards economic growth.²³ Only when market failures exist, is there a potential for state aid to increase the "economic cake". An important aspect of this "more economic approach" in the arena of state aid, is to ensure that a market failures actually exist. In theory there are many market failures and the likely existence of market failures is an empirical issue. As with econometric evidence, reliance on market failures as a rationale for state aid requires a proper and careful analysis of the economics and economic evidence. Merely paying lip service

to some vague market failure argument will not lead to effective enforcement.

4.2 Legal Certainty

The second challenge to economics and economists in competition policy is legal certainty. Predictability and legal certainty are important aspects of competition policy law. There is real economic value to transparency and predictable procedures. Running a successful businesses is all about the ability to be forward looking. Management decisions about technology, markets, competitors are complex and determine the success or failure of companies. Increased regulatory uncertainty raises costs, threatens survival and potentially reduces economic growth.

More generally, clarity and credibility are likely to increase the effectiveness of a policy. The effectiveness of an antitrust agency is not solely determined by the decisions that it takes. To a large extent, the impact of an antitrust agency can be attributed to the decisions that it does not have to take. Indeed, if competition rules were well understood, and the consequences of breaking these rules are reasonably unattractive, less antitrust action would indeed be needed. In this sense, the credibility of the antitrust agency is a significant determinant of its effectiveness.

The challenge to economics is to ensure that economic analysis does not come at the expense of legal certainty and predictability. As John Vickers recently pointed out,²⁴ legal certainty and economic principles are not substitutes but complements. In other words, given the current state of affairs, we can get more of both, in particular in the context of guidelines. By enhancing predictability and legal certainty guidelines contribute towards the effectiveness of competition policy.

A related challenge – or criticism – is that economic analysis delays proceedings, thereby raising the costs of enforcement. Notwithstanding whether the value from additional economic evidence justifies additional delay, it is debatable whether economic analysis necessarily delays things. Besides, one may seriously wonder whether legal analysis and argumentation is often less prone to "unnecessary" delay, in the sense of helping to reducing the likelihood of type I or II errors. In any case, the production time of economic evidence and analysis – including more sophisticated evidence – needs to be kept within reason.

4.3 Communication

The third challenge to economists is communication. To a certain extent this is largely responsible for the lack of market share by economists. An

effective economist in antitrust needs to be able to communicate with non-economists, in particular lawyers. This point cannot be overstated. For example, the effectiveness of the members of the CET at DG COMP depends crucially on their ability to communicate their views to others, possible with less or little training in formal economic modelling. The bottom line is communicate or be ignored, which takes on added value in the institutional set-up in Europe, and perhaps even more so under modernization.

The importance of communication goes beyond interactions between antitrust agencies and/or parties. Most importantly, economists need to be able to communicate their economic reasoning and empirical evidence to the courts. Independent of whether the courts decide to facilitate the process by which economic arguments and analysis can be exchanged – for example through court appointed experts, training of judges, or more specialized courts – it is incumbent to economists wanting to have an impact in competition policy law that they are able to explain their economic reasoning clearly to non-experts in economic modelling. The challenge to economists is thus to be understood, yet not to trivialize or even abuse.

In sum, there are a number of challenges facing economics and especially economists in order to ensure effective enforcement and minimize potential abuses. Many of these challenges can only be met through a process of economic capacity building, which is a challenge in itself.

4.4 Capacity Building – ECN

A final challenge is economic capacity building. By economic capacity building I mean the process of investing in analytical understanding of how to analyze markets in order to identify theories of harm. In order to properly use economic analysis, a certain stock of expertise is necessary.

DG COMP has invested considerable resources in economic capacity building. Besides the new position of the CCE, there are a number of complementary internal and external investments that have been undertaken. Some of these have been discussed above, such as seminars, luncheons, training, the EAGCP, external links (ACE, outside experts, consultants), as well as bilateral meetings between enforcers.

More generally, but perhaps even more significantly, the challenge of building economic capacities applies to all members of the ECN. Many of the ECN members have themselves invested in economic capacity – indeed several members have recently appointed Chief Economists. This is a welcome development and will undoubtedly help to improve the decision making, provided that the above challenges are met. Moreover, modernization requires not only that the same legal and procedural rules

apply, but it also implies that the economic analysis is performed in a consistent and transparent way all across the ECN.

As economic analysis becomes more prominent across the ECN, it is essential that economists across the ECN keep in touch and learn from each other. This is why a conference like the present one is a valuable contribution toward capacity building across the ECN.

CONCLUSIONS

This chapter has provided some thoughts on the various contributions for economists and economic analysis in competition policy. The implications of relying more heavily on economic principles and their empirical support are not automatically positive. To ensure the full benefits of modern economic analysis, a number of complementary factors are needed.

One of these factors is economic capacity building. This conference is a welcome initiative in economic capacity building within the ECN network. I hope we can build on this in the future.

NOTES

- * The views expressed are those of the author and do not necessarily reflect those of the European Commission.
- 2. Bobby Willig recalled this point at an OECD working party Panel on the "Use of Economic Evidence in Merger Control", June 10th, 2004.
- 3. The reasons for a presumably lower market share of economists, when it comes to economic arguments and evidence, are due to several factors. Some of these factors are legal and institutional and vary across member states. Others are more under the control of economists both empirical and theoretical, such as the way economic analysis is conducted, the type of analysis employed, and perhaps most importantly the way the analysis is communicated to non-experts of economic science.
- 4. For a more detailed discussion of this see Röller and Buigues (2005).
- See, for instance, the Speeches by Commissioner Kroes "Effective Competition Policy – a key Tool for Delivering the Lisbon Strategy", Brussels, 3rd February 2005, and "Building a Competitive Europe – Competition Policy and the Relaunch of the Lisbon Strategy", Milan, 7th February, 2005.
- 6. Case T-342/99, Airtours plc v. Commission, [2002] ECR II-2585.
- Decision 2004/124/EC (OJ 2004 L 43, p. 13). Judgments of the Court of Justice in Cases C-12/03 P and C-13/03 P, Commission of the European Communities v Tetra Laval BV, 15 February 2005.
- It should be noted that the courts emphasis on more and better economic analysis in DG COMP decision making has been largely in the field of merger control. So far, this can not be equally said for other areas of antitrust or state aid control.

- 10. For a formal analysis of this argument see Neven and Röller (2003).
- 11. For a more detailed discussion see Röller and Buigues (2005) for excerpts from the mandate of the Chief Competition Economist.
- Speech by John Vickers "Law and Economics: the Case for Bundling", IBA conference, Brussels, March 10th 2005.
- 13. See also the discussion in Vesterdorf (2004).
- 14. An economic model predicts the outcome of certain *endogenous* variables, such as price, quality, innovation activity, etc. When other variables change (these other variables are not explained by the model and are therefore called *exogenous* variables) the model would of course predict a different outcome. Comparative statics relate to how these *endogenous* variables change in response to changes in *exogenous* variables. An economic model can thus be used to predict how certain (namely *endogenous*) variables change over time or across markets. Or to put it the other way around, one would expect precise changes in the *endogenous* variables whenever the *exogenous* variables change in a market, assuming that the model is correct. This is the basis for identification.
- 15. To a large extent guidelines are statements of economic principles while cases are empirical applications. In this sense, cases can be used to refine and complement guidelines.
- 16. The recent Merger Guidelines are a good example of this.
- 17. For a discussion of this issue see for example Duso and Röller (2003).
- 18. Note that *ex post* analysis can also be informative for priority setting, i.e. to more effectively allocate scarce resources with an antitrust agency.
- 19. Speech by Commissioner Kroes "Taking Competition Seriously Anti-Trust Reform in Europe", Brussels, 10th March, 2005.
- 20. Robustness is perhaps an even bigger concern in the so-called structural approach, where assumptions (either tested or derived from theory) are explicitly imposed on the econometric specification.
- 21. Equally worrisome potentially is the pro-active abuse of econometric evidence (or simulation methods for that matter), which might occur when non-specialists are running econometric methods, in particular with the help of user-friendly software packages that are largely black-boxes, thereby hiding the assumptions to the user.
- 22. See various speeches cited above.
- 23. Note that market failures are not the only rationale for state aid, as there are other important objectives of state aid such as social cohesions and culture.
- Speech by John Vickers "Law and Economics: the Case for Bundling", IBA conference, Brussels, March 10th 2005.