EUROPEAN
COMMISSION

Strasbourg, 11.6.2013
SWD(2013) 205

COMMISSION STAFF WORKING DOCUMENT

PRACTICAL GUIDE

QUANTIFYING HARM IN ACTIONS FOR DAMAGES BASED ON BREACHES OF
ARTICLE 101 OR 102 OF THE TREATY ON THE FUNCTIONING OF THE
EUROPEAN UNION

Accompanying the

COMMUNICATION FROM THE COMMISSION

on quantifying harm in actions for damages based on breaches of Article 101 or 102 of
the Treaty on the Functioning of the European Union

{C(2013) 3440}

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Part 1 — Context and general approach to quantifying harm in competition cases

I. LEGAL CONTEXT

A. *The right to compensation*

1. Everyone who has suffered harm because of an infringement of Article 101 or 102 of the Treaty on the Functioning of the European Union (TFEU) has a right to be compensated for that harm. The Court of Justice of the EU held that this right is guaranteed by primary EU law.[1] Compensation means placing the injured party in the position it would have been in had there been no infringement. Therefore, compensation includes reparation not only for actual loss suffered (*damnum emergens*), but also for loss of profit (*lucrum cessans*) and the payment of interest.[2] Actual loss means a reduction in a person's assets; loss of profit means that an increase in those assets, which would have occurred without the infringement, did not happen.[3]

2. Civil actions for compensation are generally adjudicated by national courts.[4] In so far as there are no EU rules governing the matter, it is for the domestic legal system of each Member State to lay down detailed rules on the exercise of the right to compensation guaranteed by EU law. Such rules, however, must not render excessively difficult or practically impossible the exercise of rights conferred on individuals by EU law (principle of effectiveness), and must not be less favourable than those governing damages actions for breaches of similar rights conferred by domestic law (principle of equivalence).[5]

B. *National rules on quantification and this Practical Guide*

3. In an action for compensation of harm suffered because of an infringement of Article 101 or 102 TFEU, national courts have to determine whether the claimant suffered a harm because of the infringement, and, if that is the case, the amount to be awarded to the claimant as compensation for that harm.[6] This determination – assessing and

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[1] Case C-453/99 *Courage* [2001] ECR I-6297, 26; joined cases C-295/04 to C-298/04 *Manfredi* [2006] ECR I-6619, 60; case C-360/09 *Pfleiderer*, [2011] ECR I-5161, 36 and case C-199/11, *European Community v. Otis NV and others*, [2012], not yet reported. These cases concern Article 101 TFEU (ex Article 81 EC Treaty); the same principles apply however also to Article 102 TFEU (ex Article 82 EC Treaty) – case C-360/09 *Pfleiderer*, [2011] ECR I-5161, 36.

[2] Joined cases C-295/04 to C-298/04 *Manfredi* [2006] ECR I-6619, 95.

[3] Opinion of Advocate General Capotorti in case 238/78 *Ireks-Arkady GmbH* v *Council and Commission* [1979] ECR 2955, 9.

[4] The international jurisdiction of the national court is often determined by Council Regulation (EC) No 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, OJ L 12, 16.1.2001, p. 1..This Regulation has been recently replaced by Regulation (EU) No 1215/2012 of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, OJ L 351, 20.12.2012, p. 1, which for the most part will enter into force on 10 January 2015.The substantive law applicable in a given individual case will often be determined by EU Regulations, in particular Article 6 of Regulation 864/2007 on the law applicable to non-contractual obligations, OJ L 199, 31.7.2007, p.40. The applicable procedural rules will usually be those in force in the country of the court hearing the action (*lex fori*). Actions for damages can also be decided by arbitration tribunals and by courts of non-EU states.

[5] Case C-453/99 *Courage* [2001] ECR I-6297, 29; joined cases C-295/04 to C-298/04 *Manfredi* [2006] ECR I-6619, 62.

[6] This Practical Guide is only concerned with the assessment of harm in the context of claims for financial (monetary) compensation. While the present paper does not specifically cover the

proving the quantum of damages – is often difficult.[7] Normally, this determination is only necessary once the national court has made a finding concerning the other legal requirements for a damages claim, in particular a finding of an infringement and the causal link between this infringement and the harm suffered by the claimant.[8]

4.   The legal framework in which courts deal with the quantification of harm is defined by EU and national law, including rules on:

- the heads of damages to be compensated and general rules of liability governing claims for compensation;

- requirements such as causality or proximity that link the illegal act and the harm. The Court of Justice has clarified in this respect that in so far as there are no rules at EU level on this matter, it is for national law to prescribe the rules on the application of the concept of 'causal relationship', provided that the principles of equivalence and effectiveness are observed;[9]

- the procedural framework in which claims for damages are adjudicated. National rules typically provide for an allocation of the burden of proof and of the respective responsibilities of the parties to make factual submissions to the court;[10]

- the appropriate standard of proof, which may vary between different stages of the proceedings, and may also be different for questions of liability for damages and those of the quantum of damages;

- to what extent and how courts are empowered to quantify the harm suffered on the basis of approximate best estimates or equitable considerations; and

- the admissibility and the role of evidence in civil litigation and its evaluation (and in particular of expert evidence).

5.   Within their respective legal frameworks, legislators and courts have often adopted pragmatic approaches in determining the amount of damages to be awarded, for instance, by establishing presumptions. The burden of proof may shift, for example once a party has provided a certain amount of facts and evidence. Also, the law of the Member States may provide that the illicit profit made by the infringing undertaking(s) plays a role — either directly or indirectly — in estimating the harm suffered by injured parties.[11]

6.   The purpose of this Practical Guide is to place at the disposal of courts and parties to damages actions economic and practical insights that may be of use when national rules and practices are applied. To this end, the Practical Guide gives insights into the harm caused by anticompetitive practices prohibited by the Treaty and

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determination of the award in other civil law remedies, its insights may also be used in making such determination, in particular with regard to actions for restitution.

[7]   See in more detail paragraphs 11 *ff.* in Section II below.

[8]   Art. 16 of Reg. 1/2003. This paper does not specifically deal with the question whether a certain practice infringes Articles 101 or 102 TFEU.

[9]   Joined cases C-295/04 to C-298/04 *Manfredi* [2006] ECR I-6619, 61, 64; case C-453/99 *Courage* [2001] ECR I- 6297, 29.

[10]   See, for an example of distribution of this burden in competition cases, *Kammergericht Berlin* (Higher Regional Court, Berlin), decision of 1 October 2009, case No 2 U 10/03 Kart *(Vitaminpreise)*.

[11]   See paragraph 146 in Part 3 below.

information on the main methods and techniques available to quantify such harm.[12] Such guidance may help the claimant make factual submissions to the court concerning the amount of damages claimed and may assist the defendant in pleading his position vis-à-vis these submissions by the claimant. The guidance may also help parties in finding a consensual resolution of their disputes, be it within or outside the context of judicial proceedings or alternative dispute resolution mechanisms.

7.   This Practical Guide is purely informative, does not bind national courts and does not alter the legal rules applicable in the Member States to damages actions based on infringements of Article 101 or 102 TFEU.[13]

8.   In particular, whether the use of any and, if so, which of the methods and techniques described in this Practical Guide are considered appropriate in a given case depends on national law applied in accordance with the above-mentioned EU law principles of effectiveness and equivalence. Relevant considerations in this respect are likely to include

– whether a certain method or technique meets the standard required under national law;

– whether sufficient data are available to the party charged with the burden of proof to apply the method or technique; and

– whether the burden and costs involved are proportionate to the value of the damages claim at stake.

Excessive difficulties in exercising the right to damages guaranteed by EU law and therefore concerns in view of the principle of effectiveness could arise, for instance, through disproportionate costs or through overly demanding requirements regarding the degree of certainty and precision of a quantification of the harm suffered.[14]

9.   Nothing in this Practical Guide should be understood as arguing against the use of more pragmatic approaches, or as raising or lowering the standard of proof or the level of detail of the factual submissions required from the parties in the legal systems of the Member States. Indeed, it may well be sufficient for the parties to provide facts and evidence on the quantum of damages that are less detailed than the methods and techniques discussed in this Practical Guide.

10. It should also be noted that the economic insights into the harm caused by antitrust infringements and methods and techniques to quantify such harm can evolve over time along with theoretical and empirical research and the judicial practice in this area. The present paper should therefore not be seen as exhaustive.

II.   GENERAL APPROACH TO QUANTIFYING HARM IN COMPETITION CASES

11. Compensation for harm suffered aims to place the injured party in the position in which it would have been had the infringement of Article 101 or 102 TFEU not occurred: the actual position of the injured party has to be compared with the

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[12]   The Commission has found useful assistance in preparing this Practical Guide in various studies it commissioned as well as in the comments received from external experts; see http://ec.europa.eu/competition/antitrust/actionsdamages/index.html.

[13]   Neither does it affect the rights and obligations of Member States and natural or legal persons under EU law.

[14]   See also paragraphs 16 and 17 below.

position in which this party would have been but for the infringement. This assessment is sometimes called 'but-for analysis'.

12.   The central question in antitrust damages quantification is hence to determine what is likely to have happened without the infringement. This hypothetical situation cannot be observed directly and some form of estimation is necessary to construct a reference scenario with which the actual situation can be compared. This reference scenario is referred to as the 'non-infringement scenario' or the 'counterfactual scenario'.

13.   In a specific case, the starting point for determining if the infringement has in fact harmed the claimant and, if so, the quantum of that harm, are the specificities of the case at hand and the evidence at the disposal of the court (including decisions by competition authorities). The concrete (alleged) infringement in question and how it could affect a particular market stand at the beginning of any determination of the quantum of harm caused by that infringement.

14.   National courts can, in a particular case, use pieces of direct evidence relevant for the quantification of harm, such as documents produced by an infringing undertaking regarding agreed price increases and their implementation or assessing the development of its market position. Oral evidence given by witnesses can be used as well. The availability of such evidence may play an important role when a court decides whether any, and if so which, of the methods and techniques set out below can be used by a party to meet the required standard of proof under applicable law.

15.   The type of harm for which the claimant seeks compensation determines which kind of economic variables (such as prices, sales volumes, profits, costs or market shares) need to be considered. For example, in a cartel leading to higher prices for customers of the cartelists, a non-infringement price will need to be estimated in order to establish a reference point for comparing it with the price actually paid by these customers. In an abuse of dominance case leading to the market foreclosure of competitors, the profits lost by these competitors may be measured by comparing their actual turnover and profit margins with the turnover and profit margins they were likely to have generated without the infringement.

16.   It is impossible to know with certainty how a market would have exactly evolved in the absence of the infringement of Article 101 or 102 TFEU. Prices, sales volumes, and profit margins depend on a range of factors and complex, often strategic interactions between market participants that are not easily estimated. Estimation of the hypothetical non-infringement scenario will thus by definition rely on a number of assumptions.[15] In practice, the unavailability or inaccessibility of data will often add to this intrinsic limitation.

17.   For these reasons, quantification of harm in competition cases is, by its very nature, subject to considerable limits as to the degree of certainty and precision that can be

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[15]   The limits and implications of such assessment of a hypothetical situation have been recognised by the Court of Justice (in the context of quantifying loss of earnings in an action for damages against the European Community in the agricultural sector): 'the loss of earnings is the result not of a simple mathematical calculation but of an evaluation and assessment of complex economic data. The Court is thus called upon to evaluate economic activities which are of a largely hypothetical nature. Like a national court, it therefore has a broad discretion as to both the figures and the statistical data to be chosen and also, above all, as to the way in which they are to be used to calculate and evaluate the damage', see joined cases C-104/89 and C-37/90 *Mulder and others* v *Council and Commission* [2000] ECR I-203, 79.

expected. There cannot be a single 'true' value of the harm suffered that could be determined, but only best estimates relying on assumptions and approximations.[16] Applicable national legal rules and their interpretation should reflect these inherent limits in the quantification of harm in damages actions for breaches of Articles 101 and 102 TFEU in accordance with the EU law principle of effectiveness so that the exercise of the right to damages guaranteed by the Treaty is not made practically impossible or excessively difficult.

18.   This Practical Guide outlines a number of methods and techniques that have been developed in economics and legal practice to establish a suitable reference scenario and to estimate the value of the economic variable of interest (for example, in a price cartel the likely price that would have been charged for the product had the infringement not occurred).[17] The methods and techniques are based on different approaches and vary in terms of the underlying assumptions and the variety and detail of data needed. They also differ in the extent to which they control for factors other than the infringement that may have affected the situation of the claimant. As a result, these methods and techniques may be more or less difficult, time-consuming and cost-intensive to apply.

19.   Once a value for the relevant economic variable (such as prices, profit margins, or sales volumes) in the hypothetical non-infringement scenario has been estimated, a comparison with the actual circumstances (e.g. the price actually paid by the injured party) is necessary to quantify the harm caused by the infringement of Article 101 or 102 TFEU.

20.   Addition of interest will also need to be considered. The award of interest is an essential component of compensation. As the Court of Justice has emphasised, full compensation for the harm suffered must include the reparation of the adverse effects resulting from the lapse of time since the occurrence of the harm caused by the infringement.[18] These effects are monetary devaluation[19] and the lost opportunity for the injured party to have the capital at its disposal.[20] National law may account for these effects in the form of statutory interest or other forms of interest, as long as they are in accordance with the above-mentioned principles of effectiveness and equivalence.

III.   STRUCTURE OF THE PRACTICAL GUIDE

21.   The basis of a claim for damages is the submission that an infringement of Article 101 or 102 TFEU adversely affected the situation of the claimant. Broadly

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[16]   For an example of the reconstruction of a counterfactual by a national court and the issues arising from the underlying assumptions see for instance *Competition Appeal Tribunal,* decision of 28 March 2013, case No 1166/5/7/10 (*Albion Water Limited v Dŵr Cymru Cyfyngedig*).

[17]   See Part 2 below.

[18]   Case C-271/91 *Marshall* [1993] ECR I-4367, 31; joined cases C-295/04 to C-298/04 *Manfredi* [2006] ECR I-6619, 97; European Commission, White Paper on damages actions for breach of the EC antitrust rules (COM(2008) 165), section 2.5 and the accompanying Commission Staff Working Paper (SEC(2008) 404), paragraph 187.

[19]   Case C-308/87 *Grifoni II* [1994] ECR I-341, 40; Opinion of Advocate General Tesauro in Case C-308/87 *Grifoni II* [1994] ECR I-341, 25; joined cases C-104/89 and C-37/90 *Mulder and others* v *Council and Commission* [2000] ECR I-203, 51. In the context of loss of purchasing power, see joined cases T-17/89, T-21/89 and T-25/89 *Brazzelli Lualdi* [1992] ECR II-293, 40.

[20]   Opinion of Advocate General Saggio in joined cases C-104/89 and C-37/90 *Mulder and others* v *Council and Commission* [2000] ECR I-203, 105.

speaking, two principal categories of harmful effects of such infringements can be distinguished:

    (a)   Infringements can result in a raise in the prices paid by customers of infringing undertakings.[21] Among the infringements having such effect are cartel infringements of Article 101 TFEU, such as price fixing, market sharing or output limitation cartels. Also, exploitative abuses within the meaning of Article 102 TFEU can have the same effect.

            Increased prices mean that the customers who purchase the affected product or service[22] pay an overcharge. Moreover, a rise in prices may also lead to less demand and may entail a loss of profits for customers who use the product for their own commercial activities.[23]

    (b)   Undertakings can also infringe Articles 101 and 102 TFEU by illegal practices which exclude competitors from a market or reduce their market share.[24] Typical examples are abuses of a dominant position through margin squeeze, predatory pricing or tying, or certain vertical exclusivity agreements between suppliers and distributors that infringe competition law.[25] Such practices have a significant effect on competitors, who suffer harm as they forego business opportunities and profit in this market. Where foreclosure of competitors is successful and competitive pressure in a market diminishes, customers will be harmed too, typically by a rise in prices.

22.   Infringements of Articles 101 and 102 TFEU can also have further harmful effects, for example adverse impacts on product quality and innovation. The Practical Guide focuses on the two principal categories of harm and the categories of injured parties[26] described in paragraph 21. The methods and techniques described in the Practical Guide may, nonetheless, also be relevant in damages actions concerning other types of harm and other injured parties.

23.   Part 3 of the Practical Guide addresses specifically the quantification of the kind of harm referred to in paragraph 21(a). This part includes a description of the basic effects on the market of price increases resulting from an infringement and illustrates how these types of harm (in particular the harm resulting from the payment of an overcharge and the harm associated with a reduction in demand) can be quantified.

24.   Part 4 of the Practical Guide addresses specifically the quantification of the kind of harm referred to in paragraph 21(b). This part includes a description of the possible effects of the exclusion of competitors from a market and illustrates through examples how these types of harm (namely the loss of profit of the excluded competitor and the harm to customers) can be quantified.

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[21]   Where the infringement affects the buying activity of the infringing undertakings, the corresponding effect will be the decrease in the purchase prices that these undertakings have to pay to their suppliers. See paragraph 134 in Part 3, Section 1 for more details.

[22]   For ease of presentation, in the following reference will only be made to 'products' affected by an infringement, which should however be understood as also referring to the 'services' affected.

[23]   See paragraphs 128 *ff.* in Part 3, Section I for more details.

[24]   Case C-209/10 *Post Danmark*, not yet reported, , 22, 23 and 24.

[25]   Vertical agreements are those concluded between undertakings from different levels of the supply chain.

[26]   The Practical Guide does not specifically address the situation of persons other than those mentioned in points (a) and (b) of paragraph 21, although other persons (such as suppliers of the infringers or customers of law-abiding competitors of the infringers) may also be harmed by infringements leading to price overcharges or the exclusion of competitors; see also footnote 107.

25. The main methods and techniques available to quantify the harm resulting from infringements of Article 101 or 102 TFEU are common to all kinds of harm caused by such infringements. Part 2 of the Practical Guide therefore provides a general overview of these methods and techniques, and it gives more information on the basic assumptions on which these methods rely and explains their application in practice.

Part 2 — Methods and Techniques

I. OVERVIEW

26.   Various methods are available to construct a non-infringement scenario for the purposes of quantifying the harm in damages actions in competition cases.

27.   The methods most widely used by parties and courts estimate what would have happened without the infringement by looking at the time periods before or after the infringement or at other markets that have not been affected by the infringement. Such comparator-based methods take the data (prices, sales volumes, profit margins or other economic variables) observed in the unaffected period or on the unaffected markets as an indication of the hypothetical scenario without the infringement. The implementation of these methods is sometimes refined by the use of econometric techniques, which combine economic theory with statistical or quantitative methods to identify and measure economic relationships between variables. Various comparator-based methods and techniques to implement these methods are described in Section II below (paras. 32 to 95).

28.   Methods other than comparator-based are addressed in Section III below (paras 96 to 121). One of these methods uses economic models fitted to the actual market to simulate the likely market outcome that would have occurred without the infringement. These models draw on economic theory to explain the likely functioning of a market in view of its main features (e.g. the number of competitors, the way they compete with each other, the degree of product differentiation, entry barriers). Further methods include the cost-based method, which uses production costs for the affected product and a mark-up for a 'reasonable' profit margin to estimate the hypothetical non-infringement scenario or finance-based approaches that take the financial performance of the claimant or the defendant as a starting point.

29.   Each of these methods and techniques has particular features, strengths and weaknesses that may make them more or less suitable to estimate the harm suffered in a given set of circumstances. In particular, they differ in the degree to which they rely on data that are the outcome of actual market interactions or on assumptions based on economic theory and in the extent to which they control for factors other than the infringement that may have affected the claimant for damages. Moreover, the methods and techniques differ in the degree to which they are simple to use and in the kind and amount of data required.

30.   While these methods seek to construct how the market in question would have evolved absent the infringement, more direct evidence available to the parties and to the court (for instance, internal documents of the infringing undertakings on agreed price increases) may also provide, under applicable national legal rules, useful information for assessing quantum of damages in a given case.[27]

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[27]   See for an example of such an approach *Oberlandesgericht Karlsruhe* (Higher Regional Court, Karlsruhe), decision of 11 June 2010, case No 6 U 118/05, where specifically agreed price increases of the infringing undertakings of a cartel were used, under applicable legal rules on the distribution of fact pleading and the establishment of *prima facie* evidence, to determine the damages award. This part of the decision was confirmed on appeal by the *Bundesgerichtshof* (Federal Court of Justice), decision of 28 June 2011, case no KZR 75/10.

31.   Section IV below sets out considerations on the choice of method, which will usually depend on the specific features of that case and on the requirements under applicable law.

II.   COMPARATOR-BASED METHODS

32.   In order to appreciate how comparator-based methods work in practice, it is useful to consider a (entirely fictitious) example of a damages action based on a hypothetical cartel infringing Article 101 TFEU.[28]

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The flour cartel

Assume that all of the milling companies in a particular Member State have been found, by the national competition authority, to have fixed among themselves the prices for the grinding of cereals and the production of flour.

A bakery that regularly purchased flour in recent years brings a damages claim against one of the milling companies. The bakery submits that the infringement has led to an illegal rise in prices for the flour it purchased from that milling company. The bakery asks for compensation for this price overcharge it paid over the past years.

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33.   The key question regarding the quantification of harm in the aforementioned example is to find out what price the claimant bakery would have paid for flour had there been no infringement. If a comparator-based method is used to do so, these methods compare the price in the infringement scenario with a non-infringement scenario that is established on the basis of price data observed either:

- on the same market at a time before and/or after the infringement (1); or

- on a different but similar geographic market (2); or

- on a different but similar product market (3).

It is also possible to combine a comparison over time with a comparison across different geographic or product markets (4).

34.   In the example of the flour cartel, the application of the methods focuses on prices. It is, however, likewise possible to use these methods to estimate other economic variables such as market shares, profit margins, rate of return on capital, value of assets, or the level of costs of an undertaking. Which economic variable can be usefully considered for the purposes of damages quantification depends on the circumstances of the case at hand.

35.   The data used in such a comparison across markets or over time can be data that relate to the entire market (i.e. the average of the price for flour charged to all bakeries operating in a neighbouring geographic market) or data that relate to certain specific market participants only (i.e. the price charged for flour to certain customer groups such as wholesale purchasers operating in a neighbouring market).

36.   It could also be appropriate, in particular in cases concerning exclusionary practices, to compare data relating to only one market participant. An example for such a comparison between individual companies, i.e. the injured party and a sufficiently similar comparator firm, may be the comparison between the profits achieved by a company trying to enter a new market where it faced exclusionary practices in breach of the EU competition rules and the profits that a comparable new entrant achieved

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[28]   This example is further developed at paragraph 147.

on a different but similar geographic market without being affected by anticompetitive practices. Sections A.1 to 4 below cover the comparison with aggregated market data and firm-level data alike.[29]

37. The strength of all comparator-based methods lies in the fact that they use real-life data that are observed on the same or a similar market.[30] The comparator-based methods rely on the premise that the comparator scenario can be considered representative of the likely non-infringement scenario and that the difference between the infringement data and the data chosen as a comparator is due to the infringement. Important market characteristics which can play a role in considering whether two markets are sufficiently similar are the degrees of competition and concentration on those markets, cost and demand characteristics and barriers to entry. Whether the level of similarity between infringement and comparator markets or time periods is considered sufficient in order for the results of such comparison to be used in quantifying harm depends on national legal systems.[31] Where significant differences exist between the time periods or markets considered, various techniques are available to account for such differences.[32]

A. *Methods for establishing a non-infringement scenario*

(1) Comparison over time on the same market

38. One frequently used method consists in comparing the actual situation during the period when the infringement produced effects with the situation on the same market before the infringement produced effects or after they ceased.[33] For instance, where an undertaking abused its dominant position by foreclosing a competitor from the market during 2004 and 2005, the method could look at e.g. the competitor's profits during the infringement period and its profits in 2002 and 2003 when there was not yet an infringement.[34] Another example would be a price fixing cartel (such as the flour cartel example mentioned above) that lasted from 2005 to 2007 where the method could compare the price paid by the cartel customers during the infringement

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[29] The comparison with firm-level data of another company could, theoretically, be made not only for companies that operate in another geographic or product market as discussed in Sections 2-4 below, but also for data of companies operating in the same product and geographic market as the injured party. In practice, such intra-market comparisons do not play a significant role, possibly because within the same market it can be difficult to find a sufficiently comparable other company that was not affected by the infringement. The following sections therefore do not further discuss such comparisons within a market.

[30] This aspect is emphasised, for instance, by the *Bundesgerichtshof* (Federal Court of Justice, Germany), decision of 19 June 2007, case No KRB 12/07 (*Paper Wholesale Cartel*).

[31] See for more detail paragraph 94. For an example of issues that may arise when assessing comparability of data see for instance *Tribunal Administratif de Paris (*Administrative Court of Paris), decision of 27 Mars 2009, (*SNCF v Bouygues*).

[32] See for more detail paragraphs 59-95 in Section B below.

[33] See, for example, *Corte d'Appello di Milano* (Court of Appeal, Milan), decision of 11 July 2003, (*Bluvacanze*) and *Corte d'Appello di Milano* (Court of Appeal, Milan), decision of 3 February 2000, case No I, 308 (*Inaz Paghe* v *Associazione Nazionale Consulenti del Lavoro*) (in both cases, comparison before, during and after); *Landgericht Dortmund* (Regional Court, Dortmund), decision of 1 April 2004, case No 13 O 55/02 Kart (*Vitaminpreise*) (during and after comparison); *Landesgericht für Zivilrechtssachen Graz* (Regional Civil Court of Graz), decision of 17 August 2007, case No 17 R 91/07 p (*Driving school*) (accepting a comparison during and after).

[34] For more detailed examples of the method's application in cases of exclusionary practices, see Part 4 below.

period with the price paid by customers in a period after the infringement, e.g. in 2008 and 2009.[35]

39.   There are, in principle, three different points of reference that can be used for the comparison over time:[36]

- an unaffected *pre*-infringement period (comparison 'before and during' — in the flour cartel example: comparison of the prices paid for flour in the same market *before* the infringement had effects with those affected by the infringement);

- an unaffected *post*-infringement period (comparison 'during and after' — in the flour cartel example: comparison of the prices affected by the infringement with prices paid in the same market *after* the infringement ended); and

- both an unaffected *pre- and post*-infringement period (comparison 'before, during and after').

40.   Making an informed choice of reference period and type of data will usually require good knowledge of the industry in question and will have to take the specific case at hand as a starting point. The choice will also be influenced by the availability of data and the requirements of applicable rules regarding the standard and burden of proof.

41.   An advantage of all methods comparing, over time, data from the *same* geographic and product market is that market characteristics such as the degree of competition, market structure, costs and demand characteristics may be more comparable than in a comparison with different product or geographic markets.

42.   However, also in comparisons over time it happens that some differences between the two data sets are not only due to the infringement. In such cases, it may be appropriate to make adjustments to the data observed in the comparator period to account for differences with the infringement period[37] or to choose a different comparator period or market. For instance, in the case of a long-lasting infringement, the assumption that e.g. prices of 10 years ago would have remained unchanged over time absent the infringement is probably overly strong and may lead to opting e.g. for a comparison with the pre-infringement period *and* the post-infringement period. In cases of long infringement periods, it may also be appropriate to address practical issues of comparability of data that result from changes in the way that data have been recorded by companies (e.g. changes in accounting practices or changes in the data organisation software).

43.   Where data are available, the choice between a comparison 'before and during', 'during and after' or 'before, during and after' can be determined by a range of factors. It is highly unlikely to find any reference period where market circumstances exactly represent what would have happened in the infringement period had the infringement not occurred. It is only possible to identify a sufficiently similar time period that allows a likely non-infringement scenario to be reasonably approximated. Factors to be considered in this context may include uncertainties as to which time periods were actually not affected by the infringement. Some infringements start, or

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[35]   For more detailed examples of the method's application in cases of infringements that lead to a price overcharge, see Part 3 below.

[36]   The comparison over time method is also referred to as the 'before-after method' or 'benchmark method'.

[37]   On such adjustments and, in particular, the possibility to use regression analysis, see paragraphs 59-95 in Section B below.

cease, gradually; and often doubts exist regarding the exact beginning of an infringement and, in particular, the effects it produces. Indeed, decisions of competition authorities regularly mention evidence suggesting that the infringement may have started earlier than the period established as the infringement period for the purposes of the decision.[38] Econometric analysis of observed data can be a way to identify when the infringement's effects started or ceased.

44.   The ending of an infringement and its effects may be more easily established than its beginning, but here too uncertainties could arise as to whether the period immediately after the infringement's end is unaffected by the anticompetitive behaviour.[39] For example, when there is some delay until market conditions return to a non-infringement level, using data from the period immediately after the infringement could lead to an underestimation of the effect of the infringement. It may also occur that prices are, for a short period after the end of a cartel, particularly low as companies might temporarily engage in aggressive pricing strategies until the 'normal', i.e. non-infringement, equilibrium on the market is reached.

45.   Specifically in oligopolistic markets another issue may arise, namely that the participants in a cartel can use the knowledge gained through the operation of the cartel to coordinate their behaviour afterwards without infringing Article 101. In such a situation, post-infringement prices are likely to be higher than without the infringement and can only serve to make a lower-bound estimate of the harm suffered. The pre-infringement period may be a more suitable reference point where central market characteristics changed radically towards the end of the infringement period due to exogenous factors (e.g. a steep increase in raw material costs or an increase in demand for the product).[40]

46.   Nonetheless, even when there are doubts as to whether or not a certain period before or after the infringement was affected by the infringement, this period could, in principle, still serve as a reference period in order to obtain a safe estimate of the harm that will at least have been suffered ("lower-bound" estimate or "minimum damage").[41]

47.   In certain circumstances, the non-infringement scenario may be appropriately estimated on the basis of two reference periods (before and after the infringement), for example, by using the average from these periods or by using other techniques to reflect a trend in the development of market circumstances during the infringement.[42] Pre-infringement data could also be used as the reference period up to a certain point

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[38]   It is possible that a competition authority limits the finding of an infringement to a certain period, while in fact the infringement may have had a longer duration.

[39]   See the decision of the *Oberlandesgericht Karlsruhe* (Higher Regional Court, Karlsruhe) of 11 June 2010 in case No 6 U 118/05, for an example where a national court ruled that the prices charged in the five months after the infringement ended were still influenced by the cartel.

[40]   For the short period of the infringement after such a change, post-infringement data can be the more appropriate comparator as they may better reflect the market characteristics after the change. However, where the change in market characteristics was caused by the infringement itself (e.g. where due to anticompetitive foreclosure several competitors exited the market), the post-infringement period is obviously not a suitable comparator to estimate the situation that would have existed without the infringement.

[41]   If during the infringement exogenous factors lead to a decrease in prices (e.g. a sharp fall in input costs of the infringer), the inference of a lower bound could be rebutted.

[42]   For example, interpolation or regression analysis. For these different techniques to implement comparator-based methods, see paragraphs 59-95 in Section B below.

during the infringement when a significant change in market circumstances occurred, and post-infringement data as the reference period for the time thereafter.

48.   Also the choice of data can contribute to building a sufficiently similar basis for the comparison: there can be situations where aggregated data such as industry price averages (or averages for certain groups of firms) are sufficiently representative,[43] whilst in other situations it would be more appropriate to use only data from pre- or post-infringement transactions by the injured company or average data that relate to similar companies. For example, where the injured party belongs to a specific group of market players such as wholesale customers (as opposed to end customers), pre- or post-infringement prices charged to wholesale customers may be an appropriate reference point.

(2)   Comparison with data from other geographic markets

49.   Another comparator-based method consists in looking at data observed in a different geographic market[44] for the purpose of estimating a non-infringement scenario.[45] These may be data observed across the entire geographic comparator market or data observed in relation to certain market participants only. For instance, in the example of a flour cartel mentioned above at paragraph 32, the prices paid by the claimant bakery during the infringement period could be compared with the prices paid on average by similar bakeries, in a different geographic market untouched by the infringement. The same type of comparison can be undertaken with regard to any other economic variable, e.g. the market shares, profit margins, rate of return on capital, value of assets, or level of costs of an undertaking. A comparison with the commercial performance of firms active on another geographic market that is unaffected by the infringement[46] will be particularly relevant in cases of exclusionary behaviour.

50.   The more a geographic market is similar (except for the infringement effects) to the market affected by the infringement, the more it is likely to be suitable as a comparator market. This means that the products traded in the two geographic markets compared should be the same or, at least, sufficiently similar. Also the

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[43]   For further detail on the use of averages in implementing comparator-based approaches, see paragraph 70 in Part 2, Section II below.

[44]   For the concepts of relevant (geographic and product) market, see Commission Notice on the definition of the relevant market for the purposes of Community competition law, OJ C 372, 9.12.1997, p. 5.

[45]   This method is also referred to as 'yardstick method' or 'cross-sectional method'. These terms are also used to refer to the comparator-based method that looks at data observed in different but similar product markets, see paragraphs 54-55 in Section 3 below.

    For examples of the use of the comparator-based method looking at different geographic markets see, for instance, *Cour d'Appel de Paris* (Court of Appeal, Paris), decision of 23 June 2003 (*Lescarcelle-De Memoris* v *OGF*); *Juzgado Mercantil numero 5 de Madrid* (Commercial Court, Madrid), decision of 11 November 2005, case No 85/2005 (*Conduit-Europe, S.A.* v *Telefónica de España S.A.*), confirmed by *Audiencia Provincial de Madrid* (Court of Appeal, Madrid), decision of 25 May 2006, case No 73/2006; *Bundesgerichtshof* (Federal Court of Justice, Germany), decision of 19 June 2007, case No KBR 12/07 (*Paper Wholesale Cartel*) (in the context of assessing the illicit gain by cartelists for the purpose of calculating a fine).

[46]   The comparator firm might, in principle, also be a firm active on the infringement market provided that its performance was not significantly influenced by the exclusionary behaviour. Even if the comparator firm was not directly affected by the infringement, it may still have been indirectly affected, e.g. by gaining market shares from a foreclosed competitor. The risk of being directly or indirectly influenced by the infringement is lower if the comparison is carried out in relation to a similar firm active on another geographic market. Characteristics that could be relevant when considering the sufficient similarity of firms include their size, cost structure, customers and features of the product they sell.

competitive characteristics of the geographic comparator market should be similar to the characteristics of the affected market except for the infringement. This may well be a market that is not perfectly competitive.

51.   The method of using geographic comparator markets for deriving a non-infringement scenario is, in practice, mainly used when the infringement concerns geographic markets that are local, regional or national in scope.[47] Where the infringement market and the geographic comparator market are neighbouring areas, possibly within one country, there may be an increased likelihood that they are sufficiently similar for the purpose of a comparison.[48]

52.   The comparator market does not always need to be sufficiently similar in its entirety. Where, for instance, the prices paid by one customer group (e.g. wholesalers) or the profits earned by one competitor company (e.g. a new entrant) in the comparator market are used as a reference, it is important that the market position of this customer group or this competitor is sufficiently similar to that of the injured party on the infringement market.

53.   The choice of a geographic comparator market may also be influenced by uncertainties about the geographic scope of an infringement. Geographic markets on which the same or a similar infringement occurred are, in principle, not good candidates for being used as comparator markets. Also neighbouring markets on which no similar infringement occurred may still have been influenced by the anticompetitive practices on the infringement market (e.g. because prices on the neighbouring market were raised in view of the increased prices on the infringement market and lesser competitive pressure emanating from this market). A comparison with such markets will not show the full extent of the harm suffered, but they may, nonetheless, constitute a useful basis to establish a lower-bound estimate of the harm caused on the infringement market. This means that a party to an action for damages could, in principle, safely choose to rely on the comparison with a geographic market that was influenced by the same or a similar infringement, in particular where such influence is likely to have been rather small.

(3)   Comparison with data from other product markets

54.   Similar to the comparison across geographic markets is the approach to look at a different product market[49] with similar market characteristics.[50] For example, in a case of exclusionary behaviour partially foreclosing a company selling one product, the profit margin earned by that company in the infringement market could be compared with the profit margin for another product that is traded (by a similar or the same company) in a distinct but similar product market.

55.   The considerations discussed in the context of geographic comparator markets are, *mutatis mutandis*, also likely to be relevant for the choice of a suitable comparator product market. They will often relate to the degree of similarity between the two product markets. In particular, the comparator product should be carefully chosen

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[47]   It might, however, also be used when the relevant market is wider than national provided that a sufficiently similar comparator market can be identified.

[48]   See, however, paragraph 53 below.

[49]   For the concepts of the relevant (geographic and product) market, see Commission Notice on the definition of the relevant market for the purposes of Community competition law, OJ C 372, 9.12.1997, p. 5.

[50]   This method is sometimes also referred to as 'yardstick method' or 'cross-sectional method' (as is the the comparator-based method looking at different geographic markets).

with a view to the nature of the products compared, the way they are traded and the characteristics of the market e.g. in terms of number of competitors, their cost structure and the buying power of customers.[51] Uncertainties as to whether a potential comparator product market was affected by the infringement or a similar infringement of Article 101 or 102 TFEU can also play a role.

(4) **Combining comparisons over time and across markets**

56. Where sufficient data are available, it may be possible to combine comparisons over time and comparisons across markets. This approach is sometimes called the 'difference in differences' method because it looks at the development of the relevant economic variable (e.g. the price for flour) in the infringement market during a certain period (difference over time on the infringement market) and compares it to the development of the same variable during the same time period on an unaffected comparator market (difference over time on the non-infringement market).[52] The comparison shows the difference between these two differences over time. This gives an estimate of the change in the variable produced by the infringement and excludes all those factors that affected both the infringement and the comparator market in the same way. The method is thus a way to isolate the effects of the infringement from other influences on the relevant variable common to both markets.

57. A simple example derived from the flour cartel mentioned above may illustrate the method: assume that a before, during and after comparison reveals an increase in price of €40 per 100 kg bag of flour in the Member State where the cartel occurred between 2005 and 2008. Looking at an unaffected geographic market over the same period may show that prices for flour rose by €10 per 100 kg bag due to increased costs for an input product (cereals). Assuming that the increased input costs also concerned the infringement market, a comparison of the different development of prices on the infringement and the comparator market would indicate the price difference caused by the flour cartel. In the example, this would be €30 per unit.

58. The strength of the 'difference in differences' method is therefore that it can subtract out changes unrelated to the infringement that occurred during the same time period as the infringement.[53] It rests, however, to a large extent on the assumption that these other changes affected both markets similarly.[54] The considerations regarding the application of the comparison over time and across market methods, in particular the need for sufficient similarity of the markets in question, are also relevant for the difference in differences method. From a practical point of view, this method usually requires a range of data from different markets and periods of time that may not always be easy to obtain; lesser amounts of data may, however, still allow lower-bound or approximate estimates to be derived.[55]

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[51] Similarity of market characteristics may be more likely if the two products compared are traded in the same geographic market. However, the circumstances may also be sufficiently similar where the same or similar products from different geographic markets are compared.

[52] This can be a geographic or a product comparator market.

[53] Compared to a simple comparison across markets, the 'difference in differences' method also has the advantage of filtering out fixed differences between markets (such as differences due to constantly lower input costs in one of the markets).

[54] If, for example, price increases unrelated to the infringement were higher in the affected market than in the comparator market during the infringement period, application of the difference in differences method using simple averages would overestimate the amount of damages. An econometric implementation of the difference in differences technique may help control for such factors.

[55] See, for an example of a national court establishing a lower bound in the course of estimating the quantum of damages (although not using the difference-in-differences method, but the comparison over

B. *Implementing the method in practice: techniques for estimating the price or other economic variable in the non-infringement scenario*

59.   Once a suitable comparator-based method for establishing a non-infringement scenario has been chosen, various techniques are available to implement this method in practice. These techniques differ mainly in the degree to which they rely on individual or average data (e.g. price observations), and in the degree to which the data observed in the comparator market[56] or period are subject to further adjustment. As a consequence, these techniques differ in the amount of data they require in order to be carried out.

60.   One possibility in implementing comparator-based methods is to use comparator data directly in the form they are observed and to estimate on this basis a value for the economic variable under consideration in the non-infringement scenario (e.g., in the above example, the price of flour). Where more than one data observation is available (e.g. the price of flour in a range of transactions on a geographic comparator market), they can be combined through a calculation of averages into one or more values for the non-infringement scenario. Such average value(s) for the non-infringement scenarios could then be compared to the average value(s) actually observed during the infringement, e.g. the prices really paid for flour (see in more detail in Section (1) below).

61.   Where certain factors (such as an increase in raw material prices) have influenced only the comparator or only the infringement market or period, it should be considered, depending on the standard of proof required and depending on applicable rules regarding causality, whether adjustments need to be made to the observed data in order to account for such influences. These could be simple adjustments to the data in cases where the influencing factor and the magnitude of its effects can be relatively easily ascertained and accounted for (see Section (1) below). More sophisticated adjustments of observed comparator data can be obtained on the basis of econometric techniques, in particular through the use of regression analysis, which is described in Section (2) below. Whether it is for the defendant or the claimant to plead, substantiate and prove such adjustments is a matter of applicable law.[57]

62.   In a given case, the choice between these different techniques depends on the specific circumstances of the case and applicable legal rules, taking account of the different advantages and disadvantages of these techniques, for instance with regard to their accuracy and precision and the data requirements they entail (see Section (3) below).

(1)   Simple techniques: individual data observations, averages, interpolation and simple adjustments

63.   Depending on the requirements under applicable national law and on the circumstances of the case, especially the degree of similarity between the infringement market and the comparator market or period, the data observed may be

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time method), *Kammergericht Berlin* (Higher Regional Court, Berlin), decision of 1 October 2009, case No 2 U 10/03 Kart.

[56]   As mentioned in paragraph 35 above, the data used in such comparison across markets or over time can be data that relate to the entire market or data that relate to certain specific market participants only.

[57]   See, for instance, *Kammergericht Berlin* (Higher Regional Court, Berlin), decision of 1 October 2009, case No 2 U 10/03 Kart., as an example of the distribution of fact pleading obligations in the quantification of harm.

compared directly, i.e. without further adjustments, with the data observed in the infringement market.[58]

64. The amount of data observed for the variable of interest (e.g., in the flour cartel example, the price for flour) in the comparator markets or comparator time periods may range from only one or very few data observations (i.e. the price observed in a small number of transactions) to a large number of data observations. In bidding markets, for example, auctions may occur very infrequently and at the time of the damages estimation only the price observed in the one tender after the infringement may be available. A similar situation could occur in industries where long-term contracts are common. It may be appropriate to use damages estimations based on single data observations where these are sufficiently representative for the period of interest.

65. Where looking at comparator markets or time periods produces a greater number of data observations, e.g. the prices paid by the injured party in a series of post-infringement transactions, or the prices paid by a number of customers in another geographic market, these data observations can be used either individually or in the form of averages.[59]

66. The use of various forms of averages or other forms of data aggregation can be appropriate, provided that like with like is compared. For example, where a wholesaler claims damages for having purchased a product in January, May, July and October 2009 from the participants in a price cartel and where the chosen method is comparison with another geographic market, the monthly average prices paid in that market by the *same type of customer* (wholesaler) during the *same months* may be the appropriate reference point (i.e. comparing January data with January data, May data with May data, and so forth). Comparing data from the same months will, for instance, account for seasonal differences over a year and thus make the comparison more reliable. If, however, little monthly price variation exists, the average price on the comparator market for the entire year of 2009 may be considered an appropriate indicator. It may also be the case that yearly data or other average data (e.g. aggregated industry data) are simply the only information available. Legal systems in the Member States may generally allow parties to rely on average data whilst granting the defendant the opportunity to show that significant differences exist, and they may require the use of more disaggregated data where available.

67. Another simple technique for deriving a comparator value from a range of data observations is linear interpolation. Where a comparison over time has produced price series from before and after the infringement, the 'non-infringement' or 'counterfactual' price during the infringement period can be estimated by drawing a line between the pre-infringement price and the post-infringement price, as shown in the illustration below. From this line, a comparator value can be read for each

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[58] For instance, time-based comparison could be based on the simple observation of prices before and during the infringement. For an example of the legal implications of such method see *Corte Suprema di Cassazione* (Supreme Court of Cassation, Italy), decision of 2 February 2007, case No 2305 (*Fondiaria SAI SpA* v *Nigriello*).

[59] For the purposes of this Practical Guide, the term 'average' is used as referring to the mean, i.e. the average calculated by dividing the sum of observations by the number of observations. There may, however, be situations where it may be more appropriate to use other descriptive statistics (i.e. the median or the mode). For example, where in a market of 25 companies, 21 charge a price of €50 and four a price of €75, the modal price of €50 (the price most observed in the sample) may be the more meaningful representation of the market price than the mean of €54 (in this example, the modal price equals the median price, which is the price charged by the middle-ranked company).

relevant point in time during the infringement period. Compared with the calculation of a single average value for price during the entire infringement period, interpolation therefore allows to some degree to account for trends in price developments over time that are not due to the infringement. Reading comparator data from the interpolated line will, therefore, produce more accurate results than using an average value for the period, e.g. in cases where damages are claimed that result from transactions (or other events) which occurred only towards the beginning or the end of the infringement period.[60] The following illustration gives a simple example of linear interpolation (the dotted line shows the interpolated non-infringement price, the full line the actually observed prices):
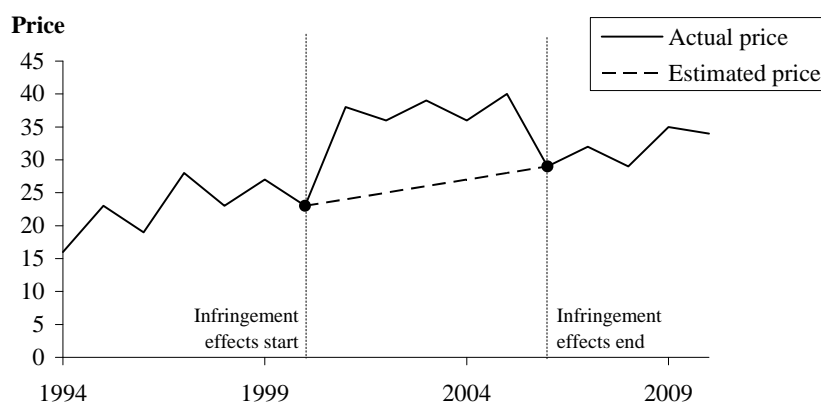
Linear extrapolation works similarly to interpolation except that the line is continued from either only pre- or only post-infringement data.[61]

68.   There may be situations where it is quite straightforward to identify a differentiating factor between an infringement market (or period) and a comparator market (or period) and to make the corresponding adjustment to the value of the observed comparator data. For example, certain seasonal effects occurring on a market or effects stemming from changes in input prices or exchange rates may have a pattern and a magnitude that can in some cases be rather easily understood from internal business records of a party or from other sources, such as expert statements. In these cases, for example, the straight line obtained in a simple linear interpolation should be adjusted to reflect such patterns.[62]

(2)   Regression analysis

a.   Concept and purpose of regression analysis

69.   Regression analysis is a statistical techniques which helps to investigate patterns in the relationship between economic variables and to measure to what extent a certain

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[60]   Interpolation likewise has advantages over using averages where the number of transactions (or other events) is unevenly distributed during the infringement period.

[61]   Extrapolation thus extends a trend existing in a time series either before or after the infringement. For example, if in the three years before a cartel prices were €12, €13.20, and €14.52 respectively (reflecting a 10 % increase each year), a simple technique would be to estimate that prices during the two-year duration of a cartel were €15.97 and €17.57 respectively; a more accurate estimation of the underlying trend could be obtained through using regression analysis.

[62]   Such adjustment, could, data permitting, be done in a more sophisticated way by using regression analysis as explained in the following section.

variable of interest[63] (e.g., in the flour cartel example, the price for flour[64]) is influenced by the infringement as well as by other variables that are not affected by the infringement[65] (e.g. raw material costs, variations in customer demand, product characteristics, the level of market concentration)[66]. Regression analysis therefore makes it possible to assess whether, and by how much, observable factors other than the infringement have contributed to the difference between the value of the variable of interest observed on the infringement market during the infringement period and the value observed in a comparator market or during a comparator time period. Regression analysis is thus a way to account for alternative causes for the difference between the compared data sets. All comparator-based methods are, in principle, capable of being implemented through regression analysis provided that sufficient data observations are available.[67]

70.   In a regression analysis, a number of data observations for the variable of interest and the likely influencing variables are examined by means of statistical techniques. The relationship identified is usually described in the form of an equation (referred to as a 'regression equation' or 'regression model'). This equation makes it possible to estimate the effects of influencing variables on the variable of interest and to isolate them from the effects of the infringement. Regression analysis estimates how closely the relevant variables are correlated[68] with each other, which may in some instances be suggestive of a causal influence of one variable on the other.[69]

71.   There are two main approaches to carrying out a regression analysis for damages estimation, depending on whether only data from non-infringement periods (markets) are used to build the regression equation or whether, in addition to non-infringement data, also data from within the infringement period (market) are used. If only data from non-infringement periods are used to estimate the regression, the regression equation would be used to 'forecast' the effect on the variable of interest during the infringement period on the basis of the pattern identified outside this period ('forecasting approach').[70] Where, in addition, also data from the infringement period (market) are used to estimate the regression, the effect of the infringement would be

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63   Also referred to as an 'explained variable' or 'dependent variable'.

64   Possible other variables of interest for which regression analysis may be applied include, for instance, sales volumes, market shares or profit margins (e.g. those of an excluded competitor who claims damages for loss of profits through a reduction of sales or a decrease in its margins), costs of production (which may also be relevant in the context of a loss of profits estimation).

65   Also referred to as 'explanatory variable(s)' or 'influencing variable(s)'.

66   Other factors influencing the variable of interest may, for example, include customer and order sizes, the technology used for production, the size and cost structure of the firms offering the product, or advertising expenditure.

67   A sufficient number of data observations is, however, required to apply statistical methods in a meaningful manner. Such sets of data observations could be obtained (in comparisons over time) from time series of observations, or (in comparisons at one point in time) from a range of comparator markets or from a range of firms or a range of transactions, or a combination of both (observations over time from a range of markets, firms or transactions).

68   In multivariate regression analysis (see in more detail below), the correlation established is a conditional correlation, i.e. one where the effect of other variables is controlled for.

69   Provided this is consistent with a coherent economic framework and with other pieces of qualitative and quantitative evidence.

70   This 'forecasting approach' is sometimes also referred to as a 'residual model approach'. This approach is illustrated in the graph in paragraph 79 below.

accounted for in the regression equation through a separate indicator variable (called 'dummy variable').[71]

72. Whether it is more appropriate to apply the forecasting or the dummy variable approach will depend on the circumstances of the case: In particular, while the forecasting method has the advantage of allowing the choice of a regression model that is only based on data observations from the non-infringement period (and hence, untainted by the effects of the infringement), using data from both periods/markets may allow a more precise and accurate estimation of the parameters of interest, in particular if the available non-infringement data are limited or do not allow the dynamics of the industry at hand to be fully captured. In practice, both methods can often be combined, e.g. by selecting the model on the basis of the pre-infringement period and estimating a dummy-variable regression using data from both periods (and allowing, if appropriate, the effects of the other influencing variables to vary in the infringement and non-infringement periods).

b. *Examples and illustrations*

73. A simple example that, for illustrative purposes, looks only at one potential influencing variable may show the basic steps in regression analysis. Assume that, in the above-mentioned example of a flour cartel, the prices paid by bakeries during the cartel period to the milling companies are compared with the prices paid by bakeries to the milling companies in the pre-infringement period, and that this comparison shows a price increase during the infringement period of 20 %. Assume further that there are indications that this increase is not exclusively due to the cartel but that during the infringement period costs for an important input material (e.g. cereals) also increased significantly. It is therefore not clear how much of the increase in price for flour is due to the infringement and how much is due to the increased input costs (the rise in cereals prices).

74. One option to address this uncertainty could be to use data from another period or market where input costs (price for cereals) were more similar and no infringement existed, but there may be situations where this is not possible.[72] Regression analysis can offer a tool to account for the variation in input costs, by showing the statistical relationship between input costs and price for flour. To this end, a range of data observations on input costs (cereal prices) and on prices for flour during the period not affected by the infringement could be examined.[73] Through applying statistical techniques to these data observations, it is possible to establish a pattern of how the prices for cereals influenced the price for flour in a period where the flour prices were not influenced by the infringement. It is then possible to deduce a statistical relationship between the price for flour and the price for cereals from this period. By applying the insight on this relationship to the prices for flour from the infringement period, it is possible to eliminate the part of the increase of prices for flour not imputable to the infringement, but to the change in input costs. This allows to 'forecast' prices for flour without the cartel overcharge but including the price increase caused by higher input costs.

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[71] Such a 'dummy variable' measures whether there has been an upward shift in the variable of interest during the infringement period.

[72] For instance, because reliable data from other periods (or markets) are not available or because in such other periods (or markets) market characteristics differed significantly.

[73] On the possibility of whether or not to also consider data from the infringement period (market), see paragraph 82 below.

75.   The following graph gives a simple illustration of how such a statistical relationship is deduced. The chart shows several data observations of the input costs (cereals prices) and the corresponding price for flour at the same point in time during a non-infringement period. For instance, when at one particular moment the price for cereals was 60, the price for flour was 128. It is possible to calculate the coordinates of the line that best fits all data observations in order to represent the statistical relationship (correlation) between the price for cereals and the price for flour. This relationship is expressed in the graph below as a line and can be, and usually is, also expressed as an equation.[74] The steepness of this line shows what increase in the price for flour is associated with a certain increase in the price for cereals. In the example shown in the graph, the identified relationship indicates that e.g. a rise in the price for cereals from 50 to 60 relates to a rise in price for flour from 120 to 130. As an increase in input costs (cereals) by €10 is associated with a flour price increase of €10, the statistical relationship thus shows that an increase in this input cost is fully passed on.
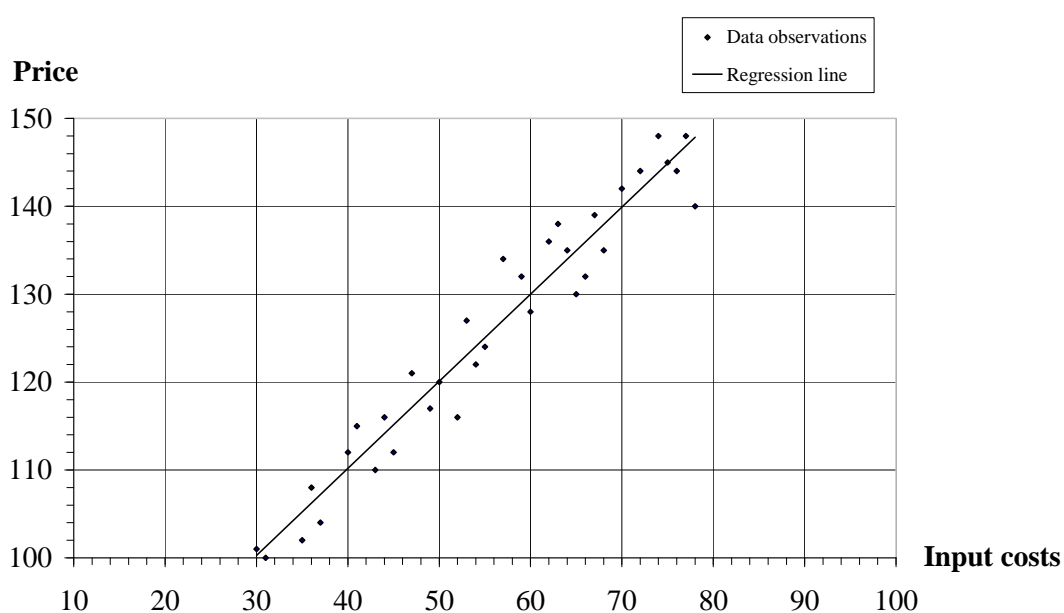
76.   Knowing the pattern of how the input cost (cereals prices) influenced prices for flour outside the infringement period makes it possible to estimate ('forecast') how much the observed higher values of these costs (cereals prices) during the infringement period influenced prices for flour. Excluding these effects from the price comparison allows the price overcharge caused by the infringement to be estimated on a more reliable basis than without the regression analysis. In the above example, if during the infringement period the price for flour was 140 instead of 120 during the non-infringement period, but the input cost (cereals prices) increased from 50 to 60, the likely price for flour without the cartel would not be 120 but 130.

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[74]   Estimating a regression of price (as the variable of interest) over input costs (as the influencing variable) provides the coordinates of this line. In this example, the ordinary least squares (OLS) technique is used to calculate the coordinates of a straight line that is located at a minimal distance ('least squares') from the set of data points on the graph. The OLS technique is a common statistical method to estimate the parameters of a linear regression model.

77.   Whilst the example described so far concerned only the influence of a *single* other variable (cereals price as input cost) on the variable of interest (flour price), regression analysis in competition practice usually has to account for *several* other factors influencing the variable of interest (*multiple* regression analysis[75]). In this situation, data need to be observed for all additional relevant influencing variables and a regression equation needs to be deduced from these data that reflects their relationship to the variable of interest. For instance, in the above-mentioned flour cartel example, it may be the case that during the infringement period the milling companies not only had to pay higher prices for cereals, but were also subject to an increase in energy and labour costs and introduced a more efficient milling and packaging technology, all of which may have had an impact on the price of the flour they sold to bakeries during the cartel period. To identify the statistical pattern of how these factors influenced the flour price, series of data observations for each of these influencing variables need to be analysed.

78.   When undertaking a regression analysis, it is important to consider all variables that are relevant in the specific case. Suppose that either the defendant or the claimant uses, in a comparison of the flour prices charged by a mill before and during an infringement, a multiple regression analysis to control for the potential influence on the flour price of the above-mentioned factors (i.e. the cereal prices, energy and labour costs and milling and packaging technology). If, however, a significant demand change took place during the cartel (e.g. higher demand by bakeries for flour due to an increased demand by end customers for bread and cake) and if the influence of this event on the price for flour is not accounted for in the regression equation, the estimate of the infringement effect is likely to be biased, despite the otherwise comprehensive regression analysis.[76] It is for the applicable national law to determine, in accordance with the principle of effectiveness, the party on which the burden falls to invoke and prove facts, such as the above-mentioned change in demand or the completeness of the variables considered in a regression analysis.

79.   The basis of each damages quantification using regression analysis is thus the statistical relationship between the variable of interest (e.g. price) and the relevant explanatory variable(s) expressed in a regression equation. When the forecasting approach is used,[77] the estimation of a regression equation using data from the non-infringement period constitutes the first step. In a second step, using this regression equation and the observed values of these relevant variables during the infringement period, the price injured parties are likely to have paid without the infringement can then be estimated. In a third step, the difference between this likely non-infringement price and the price actually paid by the injured parties gives an estimate of the overcharge resulting from the infringement. The graph below illustrates the second

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[75]   Also referred to as 'multivariate regression analysis' as opposed to 'single variable ('univariate') regression analysis' as used in the above example.

[76]   It is, however, important not only to include all relevant factors in the regression model, but also to refrain from including variables that appear clearly irrelevant (on the basis of industry knowledge). In fact, damages estimates could be wrongly lowered (even down to zero) if irrelevant variables are included in order to explain the price variation in the model.

[77]   The alternative approach is the dummy variable approach; see paragraph 71 above. Unlike the forecasting approach, the dummy variable approach estimates the effect of the infringement in a single step, by carrying out a regression analysis using data from both the infringement and non-infringement periods. In the case of the example above, this approach would estimate the effect of the cartel as the upward shift in price that is observed during the cartel period (i.e. the coefficient of the dummy variable in the regression equation) and is not explained by changes in other influencing variables, such as raw material costs.

and the third step. When the dummy variable approach is used, the regression analysis combines the three steps described above.[78]
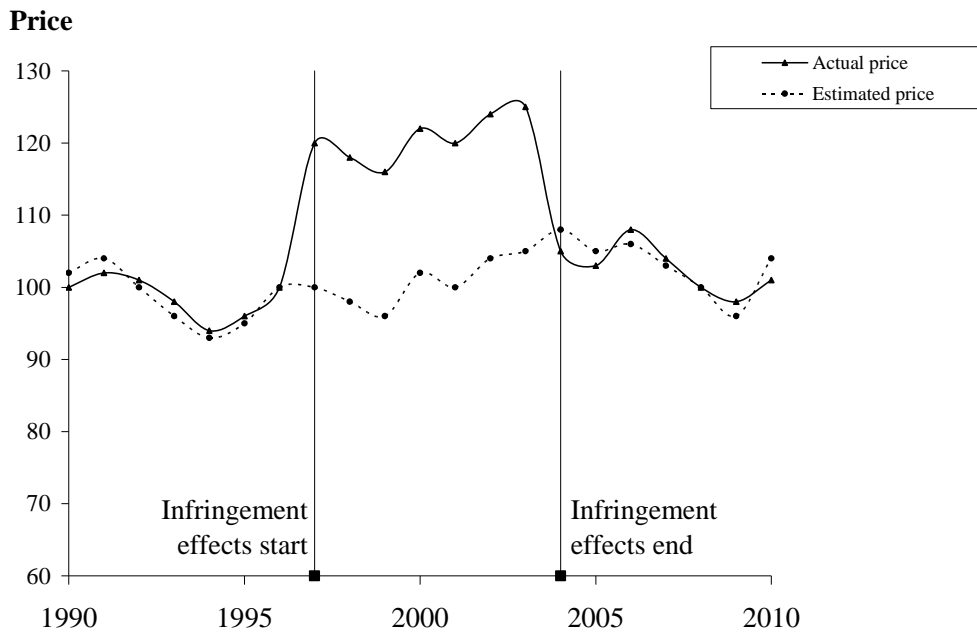
Price

80. The regression analysis illustrated in this graph is based on the forecasting approach, in which a regression is carried out on pre- and post-infringement data to establish in an equation the statistical relationship between price and various relevant explanatory variables (input costs and other relevant factors). Using this equation and the observed values of the relevant explanatory variables, an estimated price can be derived that is likely to have prevailed absent the infringement (dotted line). The continuous line is the actually observed price. The difference between the continuous and the dotted line during the infringement period is the estimated overcharge. The dotted line outside the infringement period is also derived from the regression equation and can serve, through comparison with the actually observed non-infringement prices (continuous line), to assess the predictive power of the regression model.

c.   Requirements for applying regression analysis

81. Carrying out a regression analysis requires knowledge of various statistical techniques to measure the relationship between variables, to construct an appropriate regression equation and to calculate the precision of the parameters in this equation. In addition, it is necessary to have a good understanding of the industry concerned, in the first place, to formulate the right hypotheses when constructing the regression equation and to make the right choice as to the factors that are likely to have significantly influenced the variable of interest (and which should therefore be included in the analysis). Industry understanding is furthermore necessary to make informed choices about which statistical techniques to use in a given situation, for instance, to account for unusual observations (outliers) or other specific features in

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[78]   In this case, the regression equation is estimated using data from both the infringement and non-infringement periods and directly indicates how much the variable of interest changed during the infringement period after accounting for the effect of other explanatory variables.

data sets. In particular, where the influencing variables were themselves affected by the infringement, biased results may occur if this aspect is not taken into account, e.g. through applying specific statistical techniques[79] or through using data observations that lie outside the infringement period or market.[80]

82. Without a sufficient number of data observations, statistical analysis cannot identify relationships between economic variables. To identify the effect of influencing variables on the variable of interest therefore requires that a sufficient range of data observations is available for all variables considered. Regression analysis therefore typically requires extensive data. However, statistical techniques may help to overcome some gaps in data or biases in their interpretation[81] and there can be situations where also the analysis of a smaller number of data observations is meaningful.

83. Data observations can, in principle, be gathered at different levels of aggregation. For example, where the relationship between price and input cost is to be analysed, data series either for the prices charged in individual transactions, for annual industry average prices or — in between — monthly data at firm level could be examined next to data series either for individual input costs per unit or for industry cost averages respectively. Using disaggregated data makes it possible to analyse a greater number of observations and therefore to obtain more precise estimates. Where such disaggregated data do not exist or are not accessible to the party carrying out the regression analysis, the analysis of aggregated data may still produce informative results, in particular if the aggregated data have a high frequency.

84. Having a sufficient range of data observations and the level of data aggregation are examples of the importance of data reliability and data relevance for economic analysis. However, most datasets are incomplete, and not all relevant facts may be observed or measured with high accuracy. It is therefore proper to explicitly acknowledge those imperfections. Deficiencies in the data should not prevent an economic analysis from being given proper weight, though conclusions should be drawn with caution.[82]

85. Where used appropriately and on the basis of sufficient data observations, regression analysis can considerably refine the damages estimation through comparator-based methods. It should be stressed, however, that even very sophisticated regression equations rely on a range of assumptions and will (like any technique to predict a hypothetical situation) only be able to deliver estimates. It is good practice to consider the assumptions underlying a regression equation, because some assumptions may be more appropriate than others in a given situation and may lead to significantly different results.

86. One way to deal with the uncertainty of the estimate is to indicate the results not as a point estimate ("the price in the non-infringement scenario is 10 €"), but as an

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[79] For example, the use of instrumental variables, an econometric technique that may be applied to correct such bias.

[80] In particular, by using the forecasting approach described above, where the value of the influencing variables included in the model to predict the counterfactual are corrected for the infringement effect on these variables.

[81] E.g. where a sample of data observations is not fully representative.

[82] See for a further explanation on the importance of data reliability and data relevance: DG COMP 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 cases, at http://ec.europa.eu/competition/antitrust/legislation/best_practices_submission_en.pdf.

interval ("the price in the non-infringement scenario is between 9 € and 11 €"). The notion of 'confidence interval' – which is standard in statistics – is used to describe how likely it is that the true value is contained in an interval. By convention in economics, a 95 % likelihood that a specific interval does in fact contain the true value is regarded as a high degree of certainty.

87.   A similar way of dealing with the uncertainty of estimates is to refer to the notion of "statistical significance", which is a standard way of testing whether the results obtained in a regression analysis are due to a coincidence or whether they reflect in fact a genuine correlation. For this, a certain hypothesis is tested: in the field of damages actions, such a hypothesis could for instance be whether the cartel infringement did in fact have an actual effect on prices or not. The hypothesis that the infringement did *not* have an effect (and that therefore the non-infringement price does not differ from the price in the infringement scenario) is called the "null hypothesis". Regression analysis is then used to test this null hypothesis. A result of a regression analysis is said to be statistically significant when it is possible to reject the null hypothesis, because it would be very unlikely that the results observed are due to chance. By convention, a likelihood of at least 95% that the null hypothesis is rejected is regarded in economics as allowing to judge that the results are 'statistically significant'.

88.   As described above, it is a convention in economic science for both the notion of 'confidence interval' and 'statistical significance' to use a 95% threshold of probability. It should be stressed that this represents a pure convention and that more as well as less stringent thresholds (for instance: 99%, or 90% probability) may likewise provide useful information. This is because statistical significance is determined, in part, by the number of observations in the data set: other things being equal, the statistical significance increases as the sample size increases. It is good practice to indicate the probability threshold chosen. In a damages action, it is then for the court, under applicable law to decide, the probative value of such regression analysis and the procedural consequences (in particular with regard to the burden of fact-pleading and proof) which such analysis may entail.

89.   Whether, by which party and at which stage of the proceedings a regression analysis is carried out in a court case will *inter alia* depend on the existence or accessibility of data and the rules under applicable law regarding fact pleading requirements, disclosure of evidence, the standard of proof and the allocation of the burden of proof between the claimant and the defendant.

90.   The different forms of regression analysis mentioned above (paragraphs 71 *ff.*) are sometimes referred to as 'reduced form' approaches, as they directly estimate parameters of an equation that are themselves derived from other economic relationships (e.g. the interaction of supply and demand), without modelling these explicitly. Alternatively, econometric models can be built to estimate these underlying economic relationships. Although such econometric models, which are usually referred to as 'structural', often rely on particularly strong assumptions, they may bring a deeper understanding of the market concerned and form an integral part of simulation exercises to estimate damages (as further detailed in section III.A).

(3)   Choice of techniques

91.   Sections 1 and 2 above have described different techniques whereby comparator-based methods can be implemented in practice. In a given case, the choice of technique will usually depend on a range of aspects, in particular the legal

requirements and the factual circumstances of the case. Considerations relating to the standard and burden of proof are likely to be very relevant in practice.

92.   Econometric techniques can increase the degree of accuracy of a damages estimate and may thus help in meeting a higher standard of proof if required under applicable rules. Whether regression analysis is required (possibly in addition to other evidence available) to meet such a standard, and on which party the burden of proof falls in this respect are questions of applicable law, including the EU law principle of effectiveness. It should be considered that carrying out an econometric analysis usually requires a significant number of data observations, which may not always be accessible. Moreover, it may also be that in a given procedural situation the applicable standard of proof does not require the party charged with the burden of proof to go further than the techniques mentioned in Section 1 above. This could be because the national legal system concerned considers the markets or periods compared as sufficiently similar and the estimate of damages resulting from the simple comparison as sufficiently accurate for what the party has to show in the given procedural situation. It may also be that the legal system, in view of the damages estimation presented by a claimant and the data that are reasonably accessible to him, provides for a shift of the burden of proof from the claimant to the defendant. In such a situation, the defendant may consider carrying out a regression analysis to rebut the submission of the claimant.

93.   Considerations of proportionality may also play an important role, as the gathering of data and their econometric analysis can entail considerable costs (including those of third parties) that may be disproportionate to or even exceed the value of the damages claim at hand. Such considerations may also become relevant with a view to the principle of effectiveness.[83]

94.   Courts in the EU have mainly used straightforward implementations of comparator-based methods without regression analysis, often on the basis of averages.[84] They have also accepted simple adjustments to the value of observed data when it is quite straightforward to identify a differentiating factor between an infringement market (or period) and a comparator market (or period). To date, little experience exists with econometric analysis in actions for antitrust damages before courts in the EU,[85] although such techniques can, as described above, provide valuable help in quantifying the harm suffered through infringements of Article 101 or 102 TFEU.

95.   Courts in the EU sometimes also apply a 'safety discount', i.e. they deduct from the observed data values an amount sufficient, under the standards of applicable law, to take account of uncertainties in a damages estimate.[86] Regression analysis can also

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[83]   See above paragraph 2 in Part 1, Section 1.

[84]   The use of averages was accepted in e.g. *Landgericht Dortmund* (Regional Court, Dortmund), decision of 1 April 2004, Case No 13 O 55/02 Kart (*Vitaminpreise*); WuW/DE-R 1352.

[85]   For a recent example concerning lost profits in an exclusionary case see *Juzgado Mercantil numero 2 de Barcelona* (Commercial Court, Barcelona), decision of 20 January 2011, case No 45/2010 (Céntrica Energìa S.L.U./Endesa Distribuciòn Eléctrica S.A.)

[86]   For instance, to exclude the effects on the variable of interest of possible other factors. See e.g. *Kammergericht Berlin* (Higher Regional Court, Berlin), decision of 1 October 2009, case No 2 U 10/03 Kart.; *Oberlandesgericht Karlsruhe* (Higher Regional Court, Karlsruhe) of 11 June 2010 in case No 6 U 118/05.

be considered to account for these other possible influencing factors, and to obtain a "lower bound estimate" of the damages incurred.[87]

III. SIMULATION MODELS, COST-BASED AND FINANCE-BASED ANALYSIS AND OTHER METHODS

96. Alongside comparator-based methods, other methods exist to establish an estimate for the hypothetical non-infringement situation. Such other methods include, in particular, the simulation of market outcomes on the basis of economic models (A), and the approach to estimate a likely non-infringement scenario on the basis of costs of production and a reasonable profit margin (B).

A. *Simulation models*

97. Simulation methods draw on economic models of market behaviour. Economic studies on how markets function and how firms compete with each other have shown that markets with certain characteristics may allow the likely outcomes of market interaction to be predicted, for instance the likely price or production levels or profit margins. The branch of economics known as industrial organisation has developed models of competition for various types of markets that can simulate such outcomes. These models range from monopoly models to, at the other end of the spectrum, perfect competition models.

98. Intermediate models designed to reflect firm behaviour in oligopolistic markets are, in particular, those designed originally in the 19th century by the economists Augustin Cournot and Joseph Bertrand. The Bertrand oligopoly model of competition describes a market with a relatively small number of firms (and high barriers to entry) that compete on price, not output quantity. Firms set their price simultaneously, based on their beliefs about the prices their competitors will charge. In this model, prices increase with the degree of product differentiation. The Cournot oligopoly model of competition describes a market with a relatively small number of firms (and high barriers to entry) that compete on the amount of output they will produce. Before they choose prices, they set their quantity (or capacity) simultaneously on the basis of how much they each believe the other firms will produce. Numerous extensions and variations of the Cournot and Bertrand models exist. These include, in particular, dynamic oligopoly models based on game theory[88] that take into account the repeated interaction between firms in the market.[89]

99. Prices are likely to be highest (and sales volumes lowest) in a monopoly and prices are likely to be lowest (and sales volumes highest) in a situation of perfect competition. Bertrand oligopolies in markets with differentiated goods[90] and Cournot oligopolies will normally lead to prices and volumes somewhere between perfect competition and monopoly levels; the exact outcome depends inter alia on the number of firms in the market and barriers to entry, on the degree of differentiation

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[87] Indeed, in addition to providing damages estimates that already control for the influence of other factors, regression analysis also measures the precision of these estimates (in the form of 'standard errors'), from which lower (and upper) bounds on the estimated damages can be obtained.

[88] Game theory is the study of how people and firms behave in strategic situations in which they must consider how others respond to their action.

[89] Taking into account the repeated interaction between firms in the market can be useful to explain, for instance, coordinated behaviour between firms or market entry of a new competitor.

[90] In a market with homogeneous goods with no capacity constraints, Bertrand price competition will, in contrast, lead to very competitive outcomes. Homogenous goods are goods that have little differences in terms of quality or features.

between them and their products and on other characteristics of the market at hand, such as demand characteristics (especially, how sensitive customers are to changes in price), and the capacities and cost structure of producers.

100. Based on such theoretical insights that link the market outcome e.g. in terms of prices to a given set of market characteristics, simulation models can be built to estimate the prices (or other variables) that are likely to have prevailed in the market had an infringement of Article 101 or 102 TFEU not occurred. The simulation model should be constructed in such a way that it replicates (a) the most significant factors influencing supply (in particular, the way competition takes place between firms ('competitive interactions')[91] and the cost structure of firms) and (b) demand conditions (in particular, the extent to which customers respond to price changes). These factors would be expressed as a set of equations in which a number of parameter values need to be included. These values may be known, estimated econometrically or assumed so that the output of the model matches some observed variables. When using simulation models to generate a non-infringement scenario, the relevant market structure and other characteristics must be those that would have existed without the infringement; these may correspond to the structure and other characteristics of the market observed in the infringement scenario, but they may also differ to some extent.[92]

101. An example may illustrate the use of simulation modelling to estimate damages. In the example of a cartel on a differentiated product market (e.g. confectionary chocolates), non-infringement prices could be estimated as follows, using data from the non-infringement period. First, one would estimate how the demand for each chocolate product varies with its own price (own-price elasticity) and with the price of competing products (cross-price elasticity).[93] Second, one would decide which model appropriately reflects the competitive interaction between firms in the non-infringement period (e.g. the Bertrand model of competition in the confectionary chocolates example). On this basis, it can be calculated at which prices the profits of the firms are maximised in view of the cost parameters (e.g. marginal costs) and demand parameters (e.g. the level of demand).[94] The value of some of these parameters can then be adapted to reflect the relevant conditions during the infringement period (e.g. supposing the cost of cocoa increases by 10%). With all this information expressed in equations, it can be simulated (under the assumption that firms strive for maximised profits) what prices these firms are likely to have

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[91] The term 'competitive interactions' is used to indicate how competition between firms takes place, e.g. (but not limited to) Bertrand or Cournot competition, or how firms refrain from competing between each other (in the case of collusive behaviour infringing competition rules). Markets on which price formation occurs through auctions or other bidding processes may also be conducive to modelling as interaction between competitors often follows fixed rules (prices or output quantities likely to result from an auction or other bidding process not affected by the infringement could, in particular, be estimated by oligopoly models that incorporate game theory to simulate the likely bidding behaviour of competitors in a non-infringement scenario).

[92] As the infringement may have led to a change in the market structure or may have prevented changes in the market that would otherwise have occurred (e.g. the exit of an inefficient competitor), the (hypothetical) market characteristics in the non-infringement scenario are not necessarily the same as those that could be observed in the infringement scenario. In addition, market shares observed during an infringement may significantly differ from those that would have prevailed in the absence of the infringement as cartel members may allocate markets between themselves.

[93] Technically, this would involve estimating a demand system, which is an example of the structural econometric analysis mentioned in paragraph 90.

[94] The value of these parameters (e.g. the value for marginal costs used in the calculation) in the non-infringement period can be determined so that the derived prices and volumes match the observed data.

charged during the infringement period. The cartel overcharge can then be estimated by taking the difference between the observed prices and the simulated non-infringement prices.

102.   This example is particularly demanding in terms of data requirements and assumptions. Simpler simulation models may be envisaged to estimate damages but they rely even more heavily on crucial assumptions that are difficult to verify. For example, damages following a cartel infringement could be calculated by comparing monopoly prices (aimed at reflecting prices during the cartel) with prices expected under a Cournot model (aimed at reflecting prices in the non-infringement scenario), using data such as market shares, costs, and market price elasticity. However, such a method crucially depends on the assumed competitive interactions in the infringement and non-infringement scenarios and entails the risk that these do not mirror sufficiently closely the way in which the cartel operates during the infringement period and the way in which competition on the market would have operated absent the infringement.

103.   Simulation models can be used to estimate market outcomes not only in cartel cases (or other price raising infringements), but also in cases of exclusionary behaviour. For example, an oligopoly model could be used to simulate the sales volume and the market share a foreclosed competitor would have attained had the infringement not taken place.

104.   Each model simulating market outcomes is an approximation of reality and relies on theoretical and often also factual assumptions regarding market characteristics and the likely behaviour of producers and customers. Although, by their very nature, models rely on simplification of reality, even simple models may in certain cases provide useful insights regarding the likely damages. Therefore, pointing out that a model relies on seemingly simplifying assumptions should therefore on its own not be sufficient to dismiss it; rather, one should consider how some of the simplifying assumptions are likely to affect its results. Building a comprehensive model that replicates a range of specific features of the market in question, if it can be properly solved and evaluated, can increase the likelihood that the result of the simulation is a reasonable estimate for the hypothetical non-infringement scenario. Even very comprehensive models, though, still depend very much on the right assumptions being made, in particular regarding the central questions of what is the likely mode of competition and the likely customer demand in the non-infringement scenario. Moreover, the development of complex simulation models can be technically demanding and may require significant amounts of data that may not always be accessible to the party concerned or possible to be estimated with sufficient reliability.

105.   Nonetheless, both simple and more complex simulation models could provide useful insights when estimating the outcomes that a market would have produced absent an infringement of Article 101 or 102 TFEU. Whether and in which procedural situation legal systems will consider that the use of an economic simulation is appropriate and its results are sufficiently reliable will depend on the specific circumstances of the case in point and the requirements under applicable legal rules.

B.   *Cost-based and finance-based methods*

106.   Other approaches to estimating the likely prices that would have emerged absent the infringement is provided by the cost-based method[95] or by methods based on the financial performance of claimant or defendant undertakings (finance-based methods).

107.   The cost-based method consists in using some measure of production costs per unit, and adding a mark-up for a profit that would have been 'reasonable' in the non-infringement scenario. The resulting estimate for a per unit non-infringement price can be compared to the per unit price actually charged by the infringing undertaking(s) to obtain an estimate of the overcharge.[96]

108.   Different types of production costs may be suitable for implementing the cost-based method, depending on the characteristics of the industry concerned. It is, however, essential to ensure that the treatment of costs and margins is consistent. For example, if variable costs (i.e. costs that vary with the level of production) are considered as the basis of this exercise, a gross margin (i.e. the margin earned once variable costs have been deducted) should be added to calculate the price. It should also be noted that the relevant cost for determining prices may be not only the cost of the infringer, but also the cost of one of its competitors (e.g. if the price in the market is determined by the least efficient producer).

109.   The first step of the cost-based method is to determine the production cost per unit. Per unit costs can be estimated by dividing the actual relevant production costs incurred by the infringer(s) for the relevant business activity by the total number of products produced. This approach can be rather straightforward where companies or separate business divisions of companies produce only one main product. Such companies or business divisions sometimes publish their major cost data or file this information as part of their audited accounts with public registries. In other situations, the access to data and the allocation of costs to the product affected by the infringement is more difficult. Where accounting data are available, adjustments may be necessary given that the notions of costs in accounting terms can differ from the notions of costs in economic terms.

110.   It may occur that the observed production costs during the infringement are not representative of the production costs that would have been likely without the infringement. This could mainly be for two reasons: first, in the event of infringements of Article 101, companies which due to their collusive behaviour are not subject to the competitive pressure that would exist in the non-infringement scenario may operate less efficiently and therefore generate higher production costs than under competitive pressure. Second, infringers may restrict output and may therefore, during the infringement, forego economies of scale that would have led to lower production costs. Where indications for such situations exist, adjustments to

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[95]   This method is also referred to as the 'cost plus method' or 'bottom-up costing method'. It is mentioned, as a subsidiary approach in cases where comparator-based methods are not appropriate, by the *Bundesgerichtshof* (Federal Court of Justice, Germany), decision of 19 June 2007, case No KBR 12/07 (*Paper Wholesale Cartel*).

[96]   Usually, the cost-based method is considered for quantifying price overcharges. The method, or elements of it, may, however, also be used for quantifying other forms of harm such as the profits lost by foreclosed competitors. For instance, the *Oberlandesgericht Düsseldorf* (Higher Regional Court, Düsseldorf), decision of 16 April 2008, case No VI-2 U (kart) 8/06, 2 U 8/06 (*Stadtwerke Düsseldorf*), estimated the lost profits of a foreclosed competitor by considering the costs of the competitor and the likely profit margin expressed as a proportion of these costs.

the observed costs data of the infringer(s) may be appropriate. Where such adjustments are not made, the observed costs may still contribute, under the cost-based method, to a lower-bound estimate of the possible price overcharge.

111. The second step of the cost-based method requires a 'reasonable' profit margin to be estimated and added to the per unit production costs. Various approaches exist to estimate a 'reasonable' profit margin. They are based either on a comparison over time or across markets, or on economic models, and thus have commonalities with the methods described in the preceding Sections. For instance, an estimate for the profit margin that could reasonably be expected in a non-infringement scenario may be derived from the profit margins made by similar undertakings in a comparable geographic market not affected by the infringement or in comparable product markets.[97] Similarly, the profit margins of the infringing (or a similar) undertaking during the pre- or post infringement periods could be used as a basis for the estimate. Both these comparator-based methods rest on the assumption that the reference period, market or firm are sufficiently similar,[98] in particular with respect to market characteristics that are relevant for profit margins such as the level of competition in the market,[99] the cost structure of producers (including costs of innovation), capacity utilisation and capacity constraints. These assumptions are not always easily verified, as a large number of factors and strategic decisions are likely to determine a firm's price and margin setting.

112. Another approach to estimating a 'reasonable' profit margin is to consider the nature of competition and the characteristics of the market absent the infringement and to derive a likely profit margin from the insights from industrial organisation models.[100] For instance, absent the infringement, prices may be likely to tend towards costs due to relative homogeneity of goods and overcapacities in the market; in such cases, the likely profit margin of producers would be relatively low.[101]

113. It is clear from the above that both the estimation of likely non-infringement costs and the estimation of a 'reasonable' profit margin can, in practice, require a range of difficult issues to be considered. In addition, the cost-based method supposes access to data that may be in the possession of the opposing party or a third party. Nonetheless, depending on the circumstances of the particular case and on the requirements under applicable legal rules, it may provide useful insights to support an estimation of the harm suffered through an antitrust infringement.

114. Methods based on financial analysis take the financial performance of the claimant or the defendant undertaking as the starting point for estimating whether the claimant has suffered harm and the amount of that harm.

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[97] *Bundesgerichtshof* (Federal Court of Justice, Germany), decision of 19 June 2007, case No KBR 12/07 (*Paper Wholesale Cartel*), referring to the profit margins generated in 'comparable industries'.

[98] For relevant considerations regarding sufficient similarity see above paragraphs 38-58 in Part 2, Section II.

[99] E.g. whether competition would have been so strong as to drive the price downwards towards marginal costs (as assumed in the model of perfect competition) or whether profit margins, due to an oligopolistic structure, would have been higher even without the infringement.

[100] See above paragraphs 97 *ff.* in Part 2, Section III.

[101] The cost of capital (i.e. the cost at which a firm can obtain capital on the market) is sometimes considered as an approximation of a 'reasonable' profit margin in such cases. However, margins in the absence of an infringement may significantly differ from the cost of capital, for example in the absence of perfect competition or in the presence of firm-specific cost advantages for certain firms, or demand and supply shocks.

115.   Where the claimant in an action for damages is an undertaking and the infringement has caused harm to that undertaking, it is possible that an analysis of the financial situation of that undertaking (and in particular its profitability) may give useful insights into that harm. This may be particularly useful in instances where loss of profits is claimed, for example in the case of a competitor illegally foreclosed from a market.

116.   On this basis, standard methods to assess the profitability of an undertaking (such as for instance the 'net present value' method, which calculates the present value of future cash flows of an undertaking) may be used to give insights into the amount of harm. Likewise, methods of business valuations, including accounting methods, may yield useful insights.

117.   For all of these methods, the appropriate counterfactual scenario has to be determined: once the actual profitability of the claimant undertaking has been calculated, it must be assessed how that profitability would have been had there been no infringement. It is possible to build this counterfactual by using profitability data from a comparator market – this approach is then similar to the comparator-based methods discussed above.[102] For instance, the profitability of the claimant before and after the infringement could be used to construct a non-infringement scenario. It is also possible to use an alternative standard to construct the counterfactual. One possibility in this regard is to use the cost of capital as a benchmark: this measure describes the minimal profit margin necessary in a particular industry to attract capital and it can therefore be appropriate to presume that the undertaking in question would at least have obtained that minimum profit in the non-infringement scenario.

118.   One advantage of financial methods is that in some case, the information necessary to apply them may be held by undertakings because of accounting requirements, or may even be publicly available, as may be the case of publicly traded companies.

C.   *Other methods*

119.   The methods described in this Practical Guide are those that have received most consideration so far in legal practice and academic scholarship. They should, however, not be seen as an exhaustive list, firstly, as the methods described could further evolve or others could be developed in practice.

120.   Secondly, there are methods *not* discussed in this Practical Guide could nonetheless prove useful, in particular, in order to establish an upper- or lower-bound[103] or approximate estimate[104] for the harm suffered. Especially where the legal systems provide for the possibility of an approximate estimation, national courts have opted for pragmatic techniques rather than a sophisticated implementation of the methods set out in Sections A and B above to establish the amount of damages to be awarded to injured parties. For instance, in cases where a new entrant has been foreclosed in breach of Article 101 or 102 TFEU, business plans have sometimes been used[105] as a

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[102]   See in more detail at paragraph 32 *ff*.

[103]   For example, an upper-bound estimation could be obtained through critical loss analysis. This technique assesses for a price increase what loss in quantities would make that price increase unprofitable.

[104]   For instance, counterfactual profits could be *prima facie* identified by taking as a benchmark the cost of capital, on the assumption that, absent the infringement, the undertaking would have earned the cost of capital, which represents the minimum return required by providers of capital to an undertaking. On the limitations of this approach, see footnote 101.

[105]   See for instance *Højesteret* (Danish Supreme Court), judgment of 20 April 2005, case UFR 2005.217H *(GT Linien A/S* v *De Danske Statsbaner DSB and Scandlines A/S).*

source of information on the likely profits of a business, albeit in some instances adjusted depending on the market circumstances or through the use of data from a comparator market or undertaking.

121. It is for national courts to establish whether, under the applicable rules, a method can be accepted for the quantification of harm in a given case, provided that the principles of effectiveness and equivalence of EU law are observed.

IV. CHOICE OF METHODS

122. Each of the methods described in Sections II and III above can, in principle, provide useful insights in relation to all infringements of Article 101 or 102 TFEU and the different types of harm such infringements tend to produce. In particular, they make it possible to estimate not only the amount of illegal price overcharge in a price fixing cartel but also, for example, the sales volume or the profit lost by a company suffering harm through an exclusionary abuse by a dominant competitor.

123. It should be stressed that it is only possible to estimate, not to measure with certainty and precision, what the hypothetical non-infringement scenario is likely to have looked like. There is no method that could be singled out as the one that would in all cases be more appropriate than others. Each of the methods described above has particular features, strengths and weaknesses that may make it more or less suitable to estimate the harm suffered in a given set of circumstances. In particular, the methods differ in the degree to which they are simple to apply, in the degree to which they rely on data that are the outcome of actual market interactions or on assumptions based on economic theory and in the extent to which they take into account factors other than the infringement that may have affected the situation of the parties.

124. In the specific circumstances of any given case, the appropriate approach to quantification must be determined under the applicable rules of law. Relevant considerations may include, alongside the standard and burden of proof under applicable legal rules, the availability of data, the costs and time involved and their proportionality in relation to the value of the damages claim at stake. The costs to be considered in this context may not only be those incurred when the party bearing the burden of proof applies the method, but also include the costs for the other party to rebut its submissions and the costs to the judicial system when the court assesses the results produced by the method, possibly with the help of a court-appointed expert. The costs and burden for an injured party and their proportionality may become particularly relevant with a view to the principle of effectiveness.[106] Moreover, the decision under applicable law as to whether and, if so, which of the methods and techniques described in this Practical Guide should be used may also depend on the availability of other evidence, for instance documentary evidence produced by the undertakings on the course of business showing that an illegally agreed price increase was actually implemented at a certain amount.

125. It may be that in a given case the application of *several* methods (e.g. comparison over time and comparison across geographic markets) is envisaged, either alternatively or cumulatively. Where two different methods yield results that are similar, such findings may lead a legal system to attribute stronger evidentiary value to the damages estimate, possibly a lower bound, based on these methods. Where,

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[106] See above paragraph 2 in Part 1, Section 1.

however, the application of two methods produces apparently contradictory results (especially when two opposing parties each rely on a different method), it is normally not appropriate to simply take the average of the two results, nor would it be appropriate to consider that the contradictory results cancel each other out in the sense that both methods should be disregarded. In such a scenario it would rather be appropriate to examine the reasons for the diverging results and to carefully consider the strengths and weaknesses of each method and its implementation in the case at hand.

Part 3 — Quantifying harm caused by a rise in prices

I.   EFFECTS OF INFRINGEMENTS LEADING TO A RISE IN PRICES

126.   Anticompetitive practices can have the effect of raising the prices that direct and often also indirect customers[107] of the infringing undertakings pay for the product concerned. The direct customers of the infringing undertakings are those who purchase a product directly from one of the infringing undertakings; indirect customers are those who purchase a product affected by the infringement from such direct customers or from other indirect customers.

127.   Typical examples of infringements leading to such increases are price cartels, or excessive pricing by a dominant undertaking. Customers can also be affected by practices that limit output or allocate customers or markets — distortions of competition which in turn normally lead to a rise in prices. A different type of harm is caused where infringements adversely affect the market position of competitors; the quantification of such harm and its consequences for customers is discussed in Part 4 below.

128.   In so far as infringements lead to a rise in prices for the products concerned, two main kinds[108] of harm caused by such infringement can be distinguished:

(a)   the harm resulting from the fact that direct and indirect customers of the infringing undertakings have to pay more for each product they purchase than without the infringement (the 'overcharge'). This type of harm is further discussed in Section II; and

(b)   the harm resulting from the so-called 'volume effect', which is caused by the fact that fewer of the products in question are bought due to the rise in prices. This type of harm is further discussed in Section III.

The following figure represents in a stylised way these two main effects:

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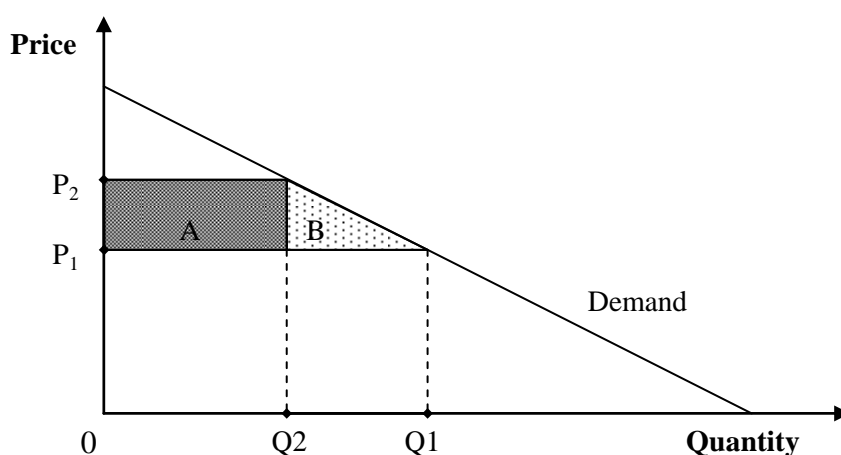
[107]   In some instances, undertakings that do not infringe the competition rules themselves can raise their prices, as market prices are higher because of the infringement. Customers who purchase from these undertakings are sometimes referred to as 'umbrella customers'. To what extent such customers can claim compensation for the harm from the infringing undertakings depends on the applicable legal rules.

[108]   For other kinds of harm, see above paragraph 22 in Part 1, Section III.

129. P_1 is the price charged if no infringement of Article 101 or 102 TFEU affects the market. In a perfectly competitive market, this price will equal the supplier's cost of producing one more unit ('the marginal cost'). Many markets are in fact not perfectly competitive and non-infringement prices on these markets will be above the level of marginal costs. At price P_1, Q_1 is the quantity of the product bought by customers.

130. P_2 is the higher price resulting from an infringement having an effect on price. This in turn leads to lower demand (Q_2) because some customers will consider that the higher price they have to pay exceeds the value of owning the product or of benefiting from the service. This effect is referred to as the 'volume effect' or the 'quantity effect'. The degree to which a rise in prices affects demand depends on demand elasticity: Demand elasticity measures by what percentage the quantity sold of a product in a given market varies in response to a one percent price change for a particular demand level, and provides a useful indication of the magnitude of the volume effect for small price changes.

131.   Rectangle A represents the value transferred from the customers to the infringers due to the infringement: the customers who buy at the higher price P_2 have to transfer more money to the infringing undertaking(s) in order to obtain the product. They can demand compensation for having had to pay more and Section II below will explain how to quantify this harm.

132.   Triangle B represents the volume effect and thus the value foregone by those who would have bought the product for price P_1, but refrain from doing so when the price rises to P_2.[109]

133.   Some customers use the product in question for their own commercial activities — for example to sell it on or to manufacture other goods. When they do not buy at price P_2 (or buy less), they forego the profit they would have made had they been able to purchase at price P_1. They can claim reparation for this loss of profit and Section III below will illustrate how to quantify this harm. Other customers are end-consumers. If these do not purchase at price P_2 this means that they fail to enjoy the utility of these products or services, for which they would have been prepared to pay price P_1.[110] Applicable legal rules may provide that some or all of such harm should be compensated for such failure to enjoy the usefulness of the product. At a minimum, end-consumers who have to bear higher costs (for example for the purchase of a substitute good) and who therefore have suffered an actual loss[111] must be able to obtain compensation.

134.   The foregoing summarises the basic effects on the market of infringements that lead to a *higher* selling price. Infringements of Article 101 or 102 TFEU can also affect the demand side and lead to lower purchasing prices paid by infringers in their own supply with products, for example in the case of a buyers' cartel or in the abuse of market power exercised by a dominant buyer vis-à-vis its suppliers. In such a case, the price effects would consist in an 'undercharge' for the supplier of the infringer, and often also an overcharge on the downstream markets, i.e. for the direct and

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[109]   For the economy as a whole, this triangle therefore represents the loss in value for customers due to a reduction in output: while the overcharge affects the distribution of assets within the economy, triangle B means welfare not created because of the infringement. This is referred to in economics as 'deadweight loss'.

[110]   It is also possible that customers would have been prepared to pay a price higher than P_1, but lower than P_2.

[111]   See, for this legal term, joined cases C-295/04 to C-298/04 *Manfredi* [2006] ECR I-6619, 95.

indirect customers of the infringer.[112] The same methods used to quantify an overcharge can, in principle, also be used to quantify the undercharge, e.g. the lower prices paid by the members of a buyers' cartel vis-à-vis their suppliers.

135. The same methods can, in principle, also be used[113] where at first sight no overcharge is visible, because the infringement served to artificially stabilise prices over a certain period of time in which prices would under normal market circumstances (i.e. without infringement) have declined. In the following, the term "overcharge" designates also these situations.

II. QUANTIFYING THE OVERCHARGE

136. Different types of infringements lead directly or indirectly to overcharges. Antitrust damages actions often deal with overcharges caused by cartels, which will be addressed in Section A below. The quantification of overcharges caused by other types of infringements will be addressed in Section B below.

A. *Quantifying overcharges caused by cartels*

137. In an action for compensation, it will be necessary — within the framework of applicable legal rules — to quantify the overcharge paid by the claimant(s). Economic and legal studies have analysed the effects of cartels; some insights from these studies are set out below in Section 1.

138. In actions for damages, it is useful to distinguish between the initial overcharge paid by the direct customer of the infringing undertaking (see below Section 2) and the possible harm that such overcharge causes to indirect customers at different levels of the supply chain (Section 3).

(1) Effects of cartels

139. Cartels are agreements and concerted practices between two or more undertakings aimed at influencing the parameters of competition through practices such as fixing the purchase or selling price or other trading conditions, allocating production or sales quotas or sharing markets (including bid-rigging). For the purpose of finding whether such practices infringe Article 101 TFEU, there is no need to quantify the concrete effects of such a practice, because the object of the cartel agreement is the prevention, restriction or distortion of competition.[114]

140. Infringing the competition rules exposes the cartel members to the risk of being discovered and thus subject to a decision finding an infringement and imposing fines. The fact alone that undertakings nonetheless engage in such illegal activity suggests

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[112] In order to drive down input prices, the cartel members/dominant buyers with downstream market power are likely to restrict their input purchases, hence also reducing output sales and increasing downstream prices.

[113] Only the method based on comparison between time periods in the variant of 'before and during' comparison (i.e. comparing the infringement prices with pre-infringement prices) would obviously be unsuitable, unless regression analysis or simple adjustments are applied to account for the factors that would lead to a price decrease under normal market circumstances (e.g. decreased raw material costs).

[114] Judgments of the General Court in joined cases T-25/95 etc. *Cimenteries CBR SA* v *Commission* [2000] ECR II-491, 837, 1531, 2589; case T-202/98 *Tate & Lyle* v *Commission* [2001] ECR II-2035, 72–74; Communication from the Commission: Guidelines on the application of Article 81(3) of the Treaty, OJ C 101, 27.4.2004, p. 97, 20–23.

that they expect to reap substantial benefits from their actions, i.e. that they expect the cartel to have effects on the market and, hence, on their customers.[115]

141. A study undertaken for the Commission examined the empirical evidence on the existence of overcharge effects and on their magnitude.[116] This study draws on a range of existing empirical studies on the effects of cartels. In particular, it refines the sample of cartels examined in the most comprehensive existing study by considering only cartels (a) that started after 1960 (thus taking into account only more recent cartels), (b) for which an estimate of the average overcharge was available (rather than only an estimate of the highest or lowest overcharge), (c) for which the relevant background study explicitly explained the method for calculating the average overcharge estimate, and (d) which were discussed in peer-reviewed academic articles or chapters in books.[117] While some care is required in interpreting the results of this exercise,[118] the study undertaken for the Commission contains some useful information as to the effects of cartels.

142. On the basis of the data observed, this study found that in 93 % of all cartel cases considered, cartels do lead to an overcharge. As to the magnitude of the cartel overcharge, this study made the following findings:[119]

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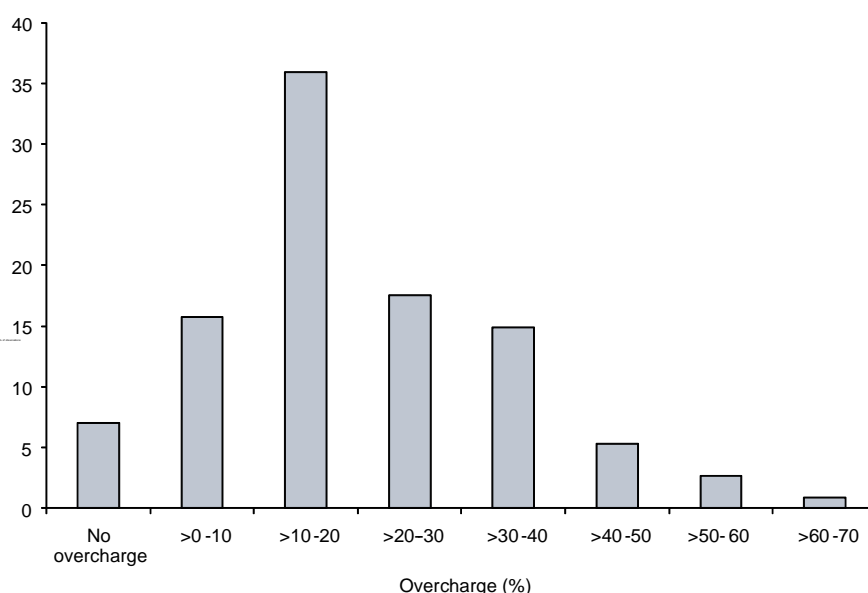
[115] See also the decision of the *Kammergericht Berlin* (Higher Regional Court, Berlin) of 1 October 2009 in case No 2 U 10/03, where the court referred to a similar argument.

[116] External study prepared for the Commission 'Quantifying antitrust damages' (2009), pages 88 *ff.*, available at http://ec.europa.eu/competition/antitrust/actionsdamages/index.html.

[117] In all, the study considers 114 cartels based on different types of collusion, including bid-rigging. The sample includes international and national cartels that affected a wide range of different industries. The geographic spread of the sample extends to the US and Canada as well as cartels from Europe and other regions.

[118] In particular, it seems possible that cartels that do have an effect on the market receive more attention in empirical studies than those that have no effects, which may lead to a certain bias in the findings; see the study 'Quantifying antitrust damages', page 89 (ref. in footnote 116), for further details about the interpretation of the data used in the study.

[119] Study 'Quantifying antitrust damages', page 91 (ref. in footnote 116). That magnitude is expressed as a percentage of the actual price. This means that if the actual price (meaning the price paid as influenced by the infringement) is €100 and the overcharge is said to be 10 %, the price absent the infringement is deemed to be €90.

143. According to this study, there is thus a considerable spread of the overcharges observed (with some cartels even having an overcharge of more than 50 %). About 70 % of all cartels considered in this study have an overcharge of between 10 % and 40 %. The average overcharge observed in these cartels is around 20 %.

144. The insights of this study concord with those of other available empirical studies, namely that (a) the vast majority of cartels do in fact lead to an overcharge, and (b) there is considerable variance in the overcharges observed. Also, all of these other empirical studies come largely to a similar estimate of the magnitude of the average overcharges as described above.[120]

145. These insights into the effects of cartels do not replace the quantification of the specific harm suffered by claimants in a particular case. However, national courts have, on the basis of such empirical knowledge, asserted that it is likely that cartels normally do lead to an overcharge and that the longer and more sustainable a cartel was, the more difficult it would be for a defendant to argue that no adverse impact on price did take place in a concrete case.[121] Such inferences, however, are a matter for the applicable legal rules.

(2)   The initial overcharge paid by the direct customer

146. All of the methods and techniques described above in Part 2 can, in principle, be used to quantify the initial overcharge paid by the direct customers of the infringing undertakings. Other types of evidence (such as, for instance, a specific agreement on the rise in prices as shown by internal documents) may also provide valuable insights into the scope of the overcharge. As the initial overcharge is a transfer of money from the direct customer to the infringing undertaking(s), any information that may exist on the illicit profits made by infringers can also serve to quantify this overcharge, although this will likely underestimate the amount of overcharge paid.[122]

147. In order to illustrate how methods and techniques can be used to estimate prices in a non-infringement scenario and, based on this estimate, to determine the overcharge paid by the customers of infringing undertakings, it is useful to consider the stylised example of a flour cartel already mentioned in Part 2.[123]

The flour cartel

In this example, all the flour in a certain Member State is produced by four milling companies (Mill A, Mill B, Mill C and Mill D). These mills purchase cereals from various farmers, grind the cereals and apply the appropriate treatments, package the flour and sell it on to bakers. These bakers use the flour to bake bread, which they sell on to consumers as well as to supermarkets.

The national competition authority investigates the market on suspicion of price-fixing and in January 2008 carries out unannounced inspections on the premises of the milling companies.

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[120]   For details and further references see the study 'Quantifying antitrust damages', pages 89 *ff*. (ref. in footnote 116).

[121]   See for example *Bundesgerichtshof* (Federal Court of Justice, Germany), decision of 28 June 2005, case No KRB 2/05 (*Transportable concrete*) (in the context of assessing the illicit gain by cartelists for the purpose of calculating a fine).

[122]   See also Section 33(3)(3) of the German Act against restraints on competition (*Gesetz gegen Wettbewerbsbeschränkungen*), which states that the proportion of the profit which the infringing undertaking made from the infringement may be taken into account when estimating damages.

[123]   Any resemblance of this fictitious example to real events would be purely coincidental; the example cannot be seen as reflecting the Commission's views regarding any specific undertaking or sector or the market definition in such a sector.

> In July 2010 the competition authority adopts a decision in which it establishes that all four milling companies infringed Article 101 TFEU by participating, during the period from 1 January 2005 till 31 December 2007, in a single and continuous infringement regarding the production of flour, covering the whole Member State, which consisted of fixing prices.
>
> A bakery company having purchased flour from one of the milling companies (Mill A) sues this company for compensation of the harm suffered because of the infringement of Article 101 TFEU.[124] The bakery claims that the infringement has led to a rise in prices for the flour and demands compensation for the payment of this overcharge for all purchases made in 2005, 2006 and 2007.

148.   The bakery is a direct customer of one of the infringing undertakings. If the infringement caused higher prices, the bakery paid an overcharge for each of the units of flour purchased while price was affected. Application of the methods and techniques described will yield an estimate of the price which the bakery would have paid for the flour had there been no infringement. By subtracting that non-infringement price from the price actually paid by the bakery, the cartel overcharge per unit purchased can be determined. That figure has to be multiplied by the number of units bought by the bakery in order to determine the actual direct overcharge loss (assuming that there were no significant changes in the overcharge during the infringement period). For the estimation of the overcharge paid by the bakery in the present example, the use of comparator-based methods will be illustrated as these are most often used in practice and will often yield helpful results in quantifying the initial overcharge.

a.   Comparison over time

149.   In the present example, the claimant bakery company bought flour from Mill A before, during and after the time for which the national competition authority found an infringement. As described above, using the prices actually paid before or after the infringement to reconstruct the prices as they would have been without the infringement makes it necessary, first, to determine which prices were affected by the infringement and which were not. This means finding out at which point the cartel infringement began to have an effect on the flour market and at which point that effect ended.

150.   In the present case, the national competition authority has determined the duration of the infringement. In fact, the decision details the evidence the authority had, which indicates that the milling companies met in January 2005 to discuss prices and thereafter continued to meet on a monthly basis, adjusting their pricing arrangements. The last meeting was held in December 2007. The authority found no evidence of meetings after it inspected the companies in January 2008. In a first step, therefore, the prices before January 2005 and after December 2007 appear to be suitable material for a time-based comparison. However, as described in Part 2, further consideration should be given to the extent to which these figures are useful to serve as comparators.

151.   As mentioned above, the decision by a competition authority might limit the finding of an infringement to a certain period for which solid evidence is available to the authority, while indicating that the infringement might have had a longer duration.[125]

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[124]   National law might well provide that all members of a cartel are jointly and severally liable for the entire harm caused by the cartel. The present example has no implications for these rules.

[125]   See paragraph 43 in Part 2, Section II.

It may then be appropriate not to use the relevant price data for the period that might have been affected by the infringement (and thus include an overcharge), although such data may nonetheless be used to determine a lower bound for the damages estimation, i.e. a safe estimate of what the harm suffered has been at least.

152.   Also, the timing of the cartel infringement may be different from the timing of the effects of the infringement: the milling companies infringed Article 101 TFEU by entering into an anticompetitive agreement. For the purpose of determining which prices observed could be regarded as unaffected by the infringement, it is necessary to look at the timing of the effects of that agreement, not its conclusion. If it can be shown that the companies met in January 2005 for the first time, but that their agreement was implemented from March 2005 onwards, prices before March 2005 would not be tainted by the infringement.

153.   As regards the suitability of using post-infringement price observations, it is possible that the cartel produced effects on the market even after the cartel members had ceased to engage in the kind of cooperation forbidden by Article 101 TFEU.[126] This may, in particular, be the case in oligopoly markets, where the information gathered because of the cartel might allow cartel members to adopt on a sustainable basis — after the cartel infringement has ended — a course of action aimed at selling at a price higher than the price likely associated with absence of the cartel infringement, without engaging in the sort of practices forbidden by Article 101 TFEU.[127] It is also possible that, after the end of the cartel, former cartel members resort to another type of infringement of the competition rules that raises prices for their customers. In these cases any time comparison based on the prices observed after the infringement ceased might lead to an underestimation of the overcharge paid by the customers of the infringers, as the post-infringement prices might still be influenced by an infringement. Where in the present example, the claimant bakery has reasons to believe that this might be the case for the prices paid in 2008 and thereafter, it could only use these prices in its submission to the court to estimate a lower bound of the overcharge harm suffered.

154.   In the present example, the claimant bakery finds that the prices paid before the infringement are well suited to estimate the likely hypothetical price. If the bakery compares infringement and non-infringement prices as they are observed, it implicitly assumes that the entire difference between the prices paid in the non-infringement years 2003 and 2004 and the prices paid in the infringement years 2005, 2006 and 2007 is due to the infringement. It is possible, however, that causes other than the infringement had a significant influence on the development of prices during the infringement period. Changes in grain prices, for instance, might be an alternative cause that influenced price developments, and they may be accounted for by using the techniques set out in Part 2, Section II B above. In so far as significant other influences can be identified and the price data are adjusted for their effects, the submission that the remaining difference between the prices in the non-infringement and the infringement periods is due to the infringement gains additional strength.[128]

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[126]   See also paragraph 44 in Part 2, Section II.

[127]   For further insights into the workings of such 'coordinated effects', see Commission, Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 31, 5.2.2004, p. 5, paragraph 39.

[128]   This is without implications for the application of national rules allowing the claimant to use the basic, unadjusted comparisons between prices charged in infringement and non-infringement periods to make an initial pleading, or to fulfil the duties incumbent upon him under national legal rules with regard to fact-pleading (in particular where national law allows a court to determine the damages award by way

The circumstances in which such adjustments would be required from claimants or defendants will depend on the rules of applicable law.

b.　　*Other comparator-based methods*

155.　　Besides comparisons over time, other comparator-based methods as described above in Part 2 may also be useful in quantifying the amount of the initial overcharge paid by the direct customer. In the example of the flour cartel, the claimant bakery could alternatively use a comparison with prices from another geographic market or another product market to show what the prices in its own market are likely to have been without the infringement.

156.　　One possibility would be the comparison with price data observed on a different geographic market for flour. On the assumption that the flour cartel as described above covered a national market, price data from another Member State could be used to construct the non-infringement price. In the case of markets with a sub-national regional scope, sales prices for flour from a different regional market could be a suitable reference point.

157.　　In order to be a suitable indicator for the prices as they would have been absent the infringement, the comparator prices should themselves not be influenced by the same or a similar infringement of the competition rules. If in the example of the flour cartel price data from a neighbouring geographic market are used and there is evidence that the anticompetitive agreement also covered that neighbouring market, prices from that market would lead to an underestimation of the overcharge. Also, in the case of neighbouring markets, the infringement in one market may have had an influence on that neighbouring market (for example through a rise in demand in the market without infringement), which might therefore not reflect non-infringement prices either.

158.　　Where the comparator market has different market characteristics, price data from that market might likewise not be sufficiently indicative of the prices as they would have been had there been no infringement. In the present example, the market concerned by the infringement is supplied by four milling companies. For instance, if it can be shown that prior to entering into the infringing practices, vigorous competition existed, price data from a neighbouring market characterised by the presence of a dominant milling company might not adequately reflect the prices as they would have been had there been no cartel and may only serve as a basis for a lower-bound estimate.

159.　　If the claimant bakery uses price data from a different geographic market in the form in which they are observed, it makes the implicit assumption that the remaining differences between the prices actually paid to the infringers and the prices prevailing on that comparator market are due to the infringement. Depending on the circumstances of the case and requirements under applicable law, the techniques described in Part 2 Section II B above may be used to identify and account for possible alternative influences on prices.

160.　　A further possibility to estimate the non-infringement price is comparison with price data observed on other product markets. In the case of flour, it may, however, be difficult to find a sufficiently similar product market not affected by the same or a similar infringement.

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of approximate estimation or determination on an *ex-aequo-et-bono* basis). Also, rules on the standard and the burden of proof remain unaffected.

(3)   The pass-on of overcharges

161.   Direct customers of the infringing undertakings who pay an overcharge caused by the cartel may themselves sell on the affected products (or use them as input for their own production of other goods or services). In the example of the flour cartel discussed above, the bakeries are the direct customers of the infringing undertakings and they use the purchased flour to bake bread, which they then sell on either directly to final customers or to supermarkets. These direct customers (bakeries), in reaction to the price increase they face, may raise the prices for their own goods or services (the bread they sell on), thereby passing on some or the entire initial overcharge to their own customers (the consumers or supermarkets). The same effect exists where it is *indirect* customers (such as the supermarkets in the present example) who themselves raise their own selling prices in their business deals with their customers, thereby passing on an overcharge which was first passed on to them.

162.   Such pass-on of overcharges normally entails a volume effect: as described above in paragraphs 128 *ff.*, a rise in prices normally leads to a decrease in demand. In the example of the flour cartel, in so far as the bakery passes on the overcharge by raising the prices it charges for the bread to the supermarkets and end customers, it may reduce the adverse financial impact of the overcharge on itself, but it will suffer decreased demand.[129] This decrease in demand means, for the bakery, less sales and a loss of profit — harm that is also caused by the infringement and should be compensated (see Section III below).

163.   The price increase through pass-on and the reduction in sales are thus intrinsically connected. In fact, both pass-on and volume effects are determined by the same factors, in particular, the elasticity of demand from downstream customers. This is because the market conditions regarding downstream demand affect both the sales price and the corresponding sales volumes at which the bakery would maximise its profits.

164.   In the context of a claim for compensation of overcharges in an antitrust damages action, the pass-on of overcharges can become relevant in two different types of situations:

(a)   In an action brought by the direct customer claiming reparation for the initial overcharge paid by him (in the present example: the claim by the bakery against Mill A), the defendant cartel infringer might argue that the direct customer should not, in fact, be compensated for the overcharge harm to the extent that he raised his own prices and thus passed on the overcharge. This is commonly referred to as the 'passing-on defence'. Pass-on by the purchaser may, as mentioned above, lead to a loss of sales and therefore a loss of profit for him.

(b)   An action brought by an indirect customer against the infringer (for example, a supermarket or a consumer who purchased bread from the bakery and who brings a claim against the milling companies) will also depend on a pass-on argument. Indeed, the indirect purchaser can claim compensation for an overcharge only where the initial overcharge paid by the direct customer has

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[129]   This connection between a company passing on an overcharge and its own sales volume has, in a different context, also been emphasised by the Court of Justice in case C-147/01 *Weber's Wine World* [2003] ECR I-11365, 98-99: "even where it is established that the (…) charge (…) has been passed on in whole or in part to third parties (…) the person may suffer as a result of a fall in the volume of his sales".

been passed on partially or entirely to him. This can be of relevance for claimants situated at different levels of the supply chain, including end customers.

165. Different legal rules exist concerning the availability of the passing-on defence and the burden of proof in this context.[130] The economic insights into the quantification of pass-on set out in paragraphs 168 *ff.* below can be of use no matter how these rules are designed.

166. In both situations considered above, claimants and defendants could rely on two different approaches to substantiate their claim that the overcharge was passed on to the indirect customer: they could either

(a) quantify the initial overcharge and determine the pass-on rate to the indirect customer, possibly at several levels of the supply chain and using the econometric techniques outlined above, or

(b) use the methods and techniques outlined above to determine whether the indirect customer concerned paid an overcharge. This second approach will often be easier to implement.

167. For instance, where an indirect customer brings a claim for compensation of an overcharge caused by a cartel, that indirect customer can either show that there was an initial overcharge and that this overcharge was passed on to him[131] or he may quantify the overcharge passed on to his level in the same manner as a direct customer would quantify an initial overcharge, namely by comparing the actual price he paid with the likely price in a non-infringement scenario: comparator-based methods can provide useful insights into the amount of overcharge paid by indirect customers, without it being necessary to identify the degree of pass-on. By using a time comparison, for instance, for the prices paid by the indirect customer before and during the infringement, it can be possible to ascertain how much those prices rose because of the infringement, without having to make a finding concerning the pass-on rate.

168. It is not possible to establish a typical pass-on rate that would apply in most situations. Rather, careful examination of all the characteristics of the market in question will be necessary to assess pass-on rates. In a specific case, the existence and degree of pass-on is determined by a range of different criteria and can therefore only be assessed having regard to the conditions of the market in question.

169. Where the direct customer of the infringing undertakings uses the cartelised goods to compete in a downstream market, it is likely that the direct customer will normally not be able to pass on this increase in cost (or only to a very limited degree) if his own competitors in that downstream market are not subject to the same or a similar overcharge (for example, where they receive their input from a market that is not subject to the cartel). In the example of the flour cartel, the claimant bakery is in competition with other bakeries for the production and supply of bread. In so far as these other bakeries do not obtain their flour from the cartel members, but are able to

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[130] See Commission White Paper on damages actions for breach of the EC antitrust rules (COM(2008) 165 final, 2.4.2008) for policy proposals concerning the treatment of pass-on in antitrust damages actions.

[131] Where the indirect customer substantiates his claim with reference to a pass-on rate and the infringement concerns a cost factor which is small compared to the entire cost of the product, the pass-on rates of other, more important cost factors that may be more easily estimated might serve as a useful indicator.

buy it at a lower price elsewhere, the bakery having to buy from the cartel is placed at a competitive disadvantage vis-à-vis its own competitors that prevents it from passing on the extra cost of the overcharge.

170.   Where all the undertakings in that downstream market are hit by the cartel and are thus similarly exposed to the payment of the direct overcharge, it is likely that the direct customer will be able to pass on at least part of that overcharge. The degree of such pass-on is influenced by the intensity of competition in the downstream market: if the downstream market is perfectly competitive, the pass-on rate in this case will be virtually 100 %. This reflects the fact that in perfectly competitive markets, price equals marginal costs and a rise in prices for the input will therefore directly lead to an equal rise in cost/output price. For less than perfectly competitive markets, it is likely that affected firms will pass on at least part of the overcharge, though not necessarily 100 %. For example, if the direct customer is a monopolist on the downstream market, he will choose a pass-on rate that reflects — for him — a profit-maximising price in view of the decrease in demand that the pass-on of the overcharge is likely to generate.[132]

171.   The other characteristics that may also have an influence on the degree of pass-on in such situations (everything else being constant) include:

- The price elasticity of demand and the question whether customers become more or less sensitive to price as prices rise. In particular, pass-on is generally more likely if customers do not easily switch to other products following a price increase (inelastic demand) and if customers become less sensitive to price increases when prices are higher.

- The variation of marginal cost with output changes. For instance, a substantial pass-on is less likely if marginal cost significantly decreases following a reduction in output, because the lower output would become less costly to produce (e.g. in the presence of capacity constraints). Conversely, a substantial pass-on is more likely if marginal cost does not significantly decrease following a reduction in output (e.g. due to the absence of capacity constraints).

- The impact of the infringement on different types of costs. Where the infringement impacts on variable costs, this renders pass-on more likely than if the impact is on fixed costs.

- The duration of the infringement and the frequency of business exchanges. Where infringements last for a long time, it is more likely that some level of pass-on occurs; the same applies to sectors where business exchanges and price adjustments are frequent.

B.   *Quantifying overcharges caused by other types of infringements leading to overcharge harm*

172.   Cartels are but one of the infringements leading to a rise in prices for customers of the infringing undertakings and thus to overcharge harm (or, in the case of infringements pertaining to the supply to the infringing undertakings, to an

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[132]   The exact extent of this pass-on will depend on the demand the direct customer faces and his cost structure. For example, in the simple case of a monopolist facing linear demand (meaning that the relationship between the quantity and price can be represented by a straight line) and constant marginal costs, the pass-on will be 50 % of the direct overcharge.

'undercharge'). Other examples of behaviour that can lead to overcharge harm include infringements of Article 101 TFEU by way of certain anti-competitive joint ventures and the abusive charging of excessive prices by a dominant undertaking within the meaning of Article 102 TFEU.

173. A common feature of these infringements is the fact that they may directly or indirectly allow the infringing undertaking(s) to raise the prices for their customers.[133] The payment of such overcharge in turn leads to a decrease in demand and thus to a volume effect as described above.

174. The methods and techniques whose application to the case of cartel overcharge has been described above[134] can in principle be used to quantify the overcharge harm caused by other infringements. The starting point is the question how the position of the claimant would have been had the specific infringement in question not taken place.

III. QUANTIFYING THE HARM CAUSED BY THE VOLUME EFFECT

175. A rise in prices for a particular product leads to less demand. The degrees to which both prices rise and quantities decrease following an infringement depend on the same cost and demand parameters, and are determined jointly. Hence, the overcharge and volume effects are intrinsically linked.

176. For an overcharge to an intermediate customer (as discussed above in paragraphs 161 *ff.*), the volume effect is also closely linked to the pass-on of overcharges along the supply chain to the final customer: where a customer of the infringing undertakings does not pass on the overcharge and thus absorbs it entirely, his own sales will not decrease because of the infringement as his customers will not experience a rise in prices due to the infringement. Where, however, the overcharge is passed on partly or entirely to the final customer, that customer will be subject to the rise in prices described in paragraph 128 and will reduce his demand. This in turn will reduce demand upstream in the supply chain.

177. As explained above, for those direct or indirect customers of the infringing undertakings who use the product in question for their own commercial activities, this decrease in demand ('volume effect') means that they sell less because of the infringement and therefore forego the profit they would have made on the units they failed to sell because of this effect. This loss of profit is harm for which compensation may be awarded[135] and, in principle, the methods and techniques described above in Part 2 could be used to quantify it.[136]

178. In particular, the comparator-based methods and techniques, whose application to the quantification of the initial overcharge paid by the direct customer is discussed above, can provide the claimant with useful insights in determining the decrease in his turnover and profits. For instance, a comparison over time or across markets can be used to reconstruct the sales volume in the non-infringement scenario, i.e. how many units the claimant would have been able to sell had there been no infringement. Likewise, the application of these methods and techniques can be used to arrive at

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[133] Or, if the infringement relates to the supply to the infringing undertakings, to lower the price these suppliers obtain from their customers.
[134] See paragraphs 149 and following, and 155 and following.
[135] Joined cases C-295/04 to C-298/04 *Manfredi* [2006] ECR I-6619, 95.
[136] Except for the cost-based method.

the hypothetical profit margin in a non-infringement scenario. In some instances, a court may also agree to these methods being used in a simplified fashion, for instance by determining an average profit margin per transaction and then multiplying it by the units that were not sold because of the infringement.[137]

179.　Loss of profit is a form of harm often associated with infringements that have the effect of excluding competitors from the market. Part 4 of the Practical Guide discusses the quantification of such harm in more detail. The insights presented in that part can also be relevant when it comes to quantifying the loss of profit caused by a rise in prices.

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[137]　See also below, paragraph 191.

PART 4 — Quantifying harm from exclusionary practices

I. EFFECTS OF EXCLUSIONARY PRACTICES

180. Infringements of Article 101 or 102 TFEU can have the effect of completely excluding competitors from a market or of reducing their market shares. Such effects of infringements on competitors are commonly referred to as 'foreclosure'. Examples of these practices are abuses of a dominant position prohibited by Article 102 TFEU through, for instance, predation, exclusive dealing, refusal to supply, tying, bundling, or margin squeeze.[138] Such abuses are called 'exclusionary abuses'. Foreclosure of a competitor can also be the object or effect of a practice prohibited by Article 101 TFEU. It is therefore possible to refer to 'exclusionary pratices', covering both infringements of Article 101 and of Article 102 TFEU.

181. Through exclusionary practices prohibited by the Treaty's competition rules, infringers distort competition in order to improve or artificially maintain their position on the market. This immediately affects their competitors by deteriorating their position in a market, driving them out of a market or preventing them from entering a market. Exclusionary practices can affect the costs borne by a competitor, the price it is able to charge for its products, or the quantities it is capable of producing and selling. They typically lead to a loss of profit for the competitors concerned.

182. Moreover, by illegally affecting the market position of competitors and thereby the level of competition in the market, such practices lead to harm to customers in the form of higher prices or reduced choice, quality or innovation. However, the detrimental effects of exclusionary practices on customers may not always manifest themselves immediately, as these practices target competitors in the first place, thereby reducing the competitive constraints exerted by them on the infringer(s). Whereas infringements of the kind described in Part 3 normally produce an immediate illegal profit for the infringers and immediate harm for their customers, exclusionary practices could result in an initial disadvantage for the infringers and in better prices for customers in the short run, as typically occurs in predatory pricing. The following sections will separately approach the issues of quantifying harm suffered by competitors (Section II) and harm suffered by customers (Section III).

183. The Treaty guarantees consumers and undertakings that have suffered harm caused by an exclusionary practice a right to compensation regardless of whether they are customers or competitors of the infringers. As already stated, the Court of Justice has specified that such compensation encompasses the actual loss suffered (*damnum emergens),* compensation for the profit they have lost due to the infringement *(lucrum cessans)*, and the payment of interest.[139] For the purposes of quantifying harm from exclusionary practices, the following Sections will primarily refer to the concept of 'loss of profit', in line with the case-law of the Court of Justice. The concept of 'loss of profit' will be used in a broad sense, as meaning any difference between the actual profits generated by an undertaking and the profits it would have generated in the absence of the infringement. The approaches to quantifying such loss of profit described in the following are without prejudice to the possibility of

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[138] For a description of these practices see also Communication from the Commission — Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ C 45, 24.2.2009, p. 7.
[139] Joined cases C-295/04 to 298/04 *Manfredi* [2006] ECR I-6619, 95.

injured parties to claim compensation under other heads of damage under national law. Indeed, some elements of lost profits in a broad sense may be classified under different legal concepts under the law of Member States (such as loss of chance[140] or loss of reputation) and there may also be heads of damage caused by exclusionary behaviour that go beyond the notion of lost profits.

II.   QUANTIFYING HARM TO COMPETITORS

184.   Loss of profit to competitors can be caused by reduced revenues (e.g. through the reduction in the quantity that such competitors can sell) or increased costs (e.g. when the infringement affects the price of an input). The overall situation can be reflected in a decrease in the competitor's market share. In the following Sections, after a short description of how exclusionary practices affect competitors over time (A), and an outline of the general approach to the quantification of lost profits (B), some typical situations in the quantification of exclusionary practices will be addressed, namely in cases where they affect existing competitors (C) and new entrants (D) and when the harm they produce extends also to the future (E).

A.   *The time dimension of exclusionary practices*

185.   Depending on the period considered, exclusionary practices can affect competitors in different ways. When an exclusionary practice starts, competitors typically face difficulties in selling their products or (where the practice concerns the upstream market) obtaining supplies. This translates into a deterioration of their profit through higher costs or reduced revenues. Competitors may typically suffer a drop in their market shares, or a lower market share than they could have expected absent the infringement (for instance where their expansion is prevented). This phase may coincide with an increase in profits for infringers. This is, however, not necessarily so, since infringers may have to bear costs due to the implementation of the exclusionary practice (e.g. by lowering their price, by not supplying a competitor and thus reducing their own sales, or by offering rebates or other advantages to customers that could lower profits in the short term). Competitors may eventually be forced out of the market.

186.   Once competitors have been successfully prevented from entering a market, or once their market presence has been reduced or eliminated, infringers usually recoup and benefit from increased profits to the detriment of customers and foreclosed competitors. When this occurs (either very soon after the infringement started or after a certain period of time), customers may have to pay a higher price and suffer a loss of quality or choice. The full exclusion of a competitor from a market is not a prerequisite for these effects on customers. Such effects may occur also from the very beginning of the exclusionary practice, and even if competitors are still on the market, provided the competitive pressure they exercise is weakened.

187.   When the exclusionary practice is detected by public enforcers or brought to an end as a result of private actions, competitive conditions could be progressively restored. It is important to stress that the restoration of market conditions as if the infringement had not occurred is factually impossible in many cases. This depends mainly on structural effects of the infringement that may be difficult and lengthy to undo (existing contractual obligations, network effects, or other barriers to the re-

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[140]   Loss of a chance identifies the business opportunities forgone by an undertaking due to the illegal exclusionary practice.

entry of a foreclosed competitor). Therefore, in some instances full convergence between the non-infringement scenario and the actual market development cannot take place.

B. *General approach to the quantification of lost profits*

188. In order to determine whether and to what extent competitors have suffered a loss of profits, it is necessary to compare the profit obtained by competitors during the infringement in the market affected by it with the profit they would have obtained from those products in a non-infringement scenario (i.e. the counterfactual scenario).[141] Whenever it can be shown that the foreclosed competitor would have earned higher profits in a non-infringement scenario, and that the difference is caused by the infringement, the competitor has suffered harm, even if its market share is unchanged or profits increased due to other factors.[142]

189. The actual profits earned by the undertaking in question are normally determined by deducting the actual costs incurred from the actual revenues earned. Similarly, profits that would have been obtained in a non-infringement scenario (counterfactual profits) can be determined by deducting the estimated costs in a non-infringement scenario (counterfactual costs)[143] from the revenues expected in the absence of the infringement (counterfactual revenues).[144] The amount of profits lost is the difference between counterfactual and actual profits. In the case of prevented entry, the actual profits are normally zero, or can even be a negative number if the foreclosed competitor incurred costs (e.g. investment to enter the market) that did not return any revenue.

190. This basic approach to calculating lost profits can be put into practice in different ways. For instance, it is possible to compare the revenues of the foreclosed competitor in the non-infringement scenario with actual revenues from the market as affected by the infringement. Once the lost revenues have been established, it is possible to deduct the costs that the undertaking has avoided due to the lower volumes produced, in order to obtain a value of lost profits. This approach to assessing lost profits does not make it necessary to quantify the entire costs that would have been incurred by the company, but only an estimate of those costs that have not been incurred because of the infringement.

191. There are also some further pragmatic approaches to assessing lost profits that may be suitable in certain specific cases. For instance, an average profit margin per unit of the product traded in the non-infringement scenario could be estimated and then multiplied by the number of units that have not been sold due to the infringement.[145]

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[141] This does not concern claims aimed at recovering only part of that loss, e.g. only the additional costs incurred. Such claims arise in practice also because of the availability of more straightforward approaches to quantifying the harm suffered. See below, paragraph 192.

[142] For instance, a new entrant with high potential for growth may maintain its profit levels but would have increased them absent the infringement.

[143] When estimating the profit lost by the undertaking in question, it is necessary to take into account the additional costs it would have naturally faced to increase production. In this respect, the cost per unit incurred by the undertaking does not necessarily correspond to its cost per unit in the counterfactual scenario. For instance, in the case of increasing returns to scale, the cost per unit in the counterfactual scenario would be lower than the observed cost as the undertaking's production would be higher in the counterfactual scenario (i.e. had it not been affected by the infringement).

[144] E.g. *Stockholms tingsrätt* (Stockholm District Court), judgment of 20 November 2008, joined cases T 32799-05 and T 34227-05 (*Europe Investor Direct AB and others* v *VPC Aktiebolag)*, appeal pending.

[145] For an example of a pragmatic approach based on real data on costs and revenues implemented through regression techniques, see *Juzgado Mercantil numero 2 de Barcelona* (Commercial Court, Barcelona),

Such an estimate of the average per unit profit may be based on one or more transactions that can be considered as sufficiently representative of the claimant's business for the product concerned. It is worth noting that in this calculation the avoided costs would implicitly be included.[146]

192. Practice of antitrust damages actions shows that foreclosed competitors sometimes choose to claim damages only for part of the harm, for instance the costs incurred in order to respond to an exclusionary practice,[147] the non recoverable costs ('sunk costs') incurred with a view to entering a market from which they have been foreclosed[148] or the amount judged excessive in cases of margin squeeze or of discriminatory pricing[149] that infringe EU competition law. This choice is sometimes prompted by the consideration that quantifying such heads of damage is more straightforward or may require less data, and that evidence is more easily available. Also when claimants seek compensation for loss of profits, quantification of harm on the basis of additional costs incurred (sunk and non-sunk) will generally constitute a lower bound when estimating the full loss of profit.

193. Whichever the method or technique chosen, quantifying lost profits may entail evaluating complex data referring to a hypothetical non-infringement situation against which the actual position of the foreclosed competitor needs to be assessed, often with a view at likely future developments. Assessing the profits that a company would have made, including future profits, may depend on such a number of factors that it could be appropriate to provide for less demanding requirements when it comes to quantification. Therefore, legal systems may allow courts to exercise some discretion as to the figures and statistical method to be chosen, and the way in which they are to be used to evaluate the damage.[150]

C. *Existing competitors*

194. In order to quantify the harm they suffered because of an exclusionary practice, competitors may choose to rely on the methods or techniques described in Part 2. The non-infringement scenario could be reconstructed by comparison with the performance of the same undertaking in a time period that was not affected by an infringement, a similar undertaking on the same market, aggregated industry profits[151] or the performance of the same or a similar undertaking in a market other than the one in which the exclusionary practice occurred. Alternatively, methods based on simulations may provide an estimate of the non-infringement scenario, i.e. simulating on the basis of a number of assumptions (regarding e.g. the type of

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decision of 20 January 2011, case No 45/2010 (Céntrica Energìa S.L.U./Endesa Distribuciòn Eléctrica S.A.)

[146] In order to estimate the average profit margin, it could be still appropriate to consider how costs and revenues in the counterfactual scenario would have evolved without the infringement. For example, profit margins observed in a pre-infringement period could have been reduced during the infringement period for reasons unrelated to the infringement, due to a reduction in demand or an increase in input costs that are caused by other factors. In addition, the reduction in the output of the excluded competitor could affect its unit cost, hence also affecting the margin on the units it continues to sell.

[147] E.g. additional marketing expenses necessary to retain the market position.

[148] E.g. the costs of building a new factory on that market.

[149] See for instance *Lietuvos apeliacinis teismas* (Lithuanian Court of Appeal), decision of 26 May 2006, case No 2A-41/2006 (*Stumbras*); *Højesteret* (Supreme Court, Denmark), decision of 20 April 2005, case No 387/2002 (*GT Linien A/S* v *DSB*).

[150] See for instance Joined cases C-104/89 and C-37/90 *Mulder and others* v *Council and Commission* [2000] ECR I-203, 79.

[151] See above at paragraphs 35, 48 and 66.

competitive interactions among firms) what the likely situation would have been if the excluded competitor could have been active on the market and unaffected by the exclusionary practice. The use of other methods is also possible, e.g. financial data from the undertakings involved could provide useful insights on the likely returns of companies had they not been affected by an infringement.

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Refusal to supply an essential input for commercial solvents

Worldco is a leading international producer of raw materials that are an essential input in the manufacturing of commercial solvents. Eusolv is a company that has been active on the market for commercial solvents since 1995, and most of its turnover is made from sales of Betanol. In order to produce Betanol, Eusolv purchases Rawbeta from Worldco. Worldco is dominant in the production of Rawbeta, which is the only raw material suitable for producing Betanol on an industrial scale and at prices that enable Betanol to be marketed. Worldco also supplies Rawbeta to its subsidiary Subco, which since 2004 has been producing Betanol and competes with Eusolv.

In 2006, Worldco decides to stop supplying Rawbeta to companies selling Betanol in the European Union, with the exception of its own subsidiary Subco. Eusolv initially tries to acquire sufficient Rawbeta from alternative suppliers or to replace its Rawbeta input with other raw materials produced through experimental processes, which are significantly more costly and produce sharp rises in the sales price of Betanol, together with a decrease in its quality and suitability for commercial purposes. As a consequence, Eusolv suffers a progressive decline in its sales and finally discontinues the production of Betanol in 2010. In the same year, Eusolv brings a damages action against Worldco and its subsidiary Subco in order to recover the profits it lost due to the refusal to supply. The court holds that Worldco's practice amounted to an abuse of a dominant position prohibited by Article 102 TFEU.

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(1)   Comparison over time

195.   When an exclusionary practice affects existing competitors, it is likely that data from the same undertaking in an unaffected period are available. In such cases, the profits lost by the harmed competitor could be estimated by means of a comparison over time. The non-infringement scenario could, for example, be constructed by reference to data on revenues and costs of the harmed undertaking before the exclusionary infringement produced effects.[152] In many exclusionary practices cases, data from after the infringement may not be available or would not be equally suitable, particularly if the infringement produced effects that may alter the structure of a market and are unlikely to disappear in the short term, for instance when the competitor is excluded from the market and there are barriers to re-entry in the short term, or when the competitor has lost market shares that could be difficult to regain because of network effects.[153]

In the Betanol example, reliable data from after the infringement are not available, since Eusolv, the harmed undertaking, is no longer active on the market, and its effective re-entry into the market may not occur promptly after the termination of the infringement. Eusolv thus

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[152]   For an example of the application of a before and during comparison to estimate the harm from an exclusionary practice prohibited by Article 101 TFEU see *Corte d'Appello di Milano* (Court of Appeal, Milan), decision of 3 February 2000, case No I, 308 (*Inaz Paghe* v *Associazione Nazionale Consulenti del Lavoro*).

[153]   A product is subject to network effects if its value for each user increases as the number of users increases.

decides to construct a likely non-infringement scenario by using data from before 2006, when the exclusionary practice was initiated.

196.   Under some circumstances, the pre-infringement revenue and cost data used for the comparison could be refined. For instance, and depending on applicable national rules on evidence and on the burden of proof, a defendant may challenge the amount estimated by the claimant by indicating other elements that may have adversely influenced the performance of an undertaking and are not related to the infringement, such as a drop in marketing investment, a loss of competitiveness of the product, or an increase in the cost of inputs that is specific to the competitor claiming damages. Conversely, it could be shown that the harmed competitor's situation in the non-infringement scenario would have been better than it was before the infringement, for instance because it had a potential for growth. Generally, the reference to an earlier unaffected time period on the same market is likely to be more reliable the longer the competitor has been on that market and the more stable its market position has been. In other words, the reference to a pre-infringement scenario could benefit more from adjustments[154] if the harmed competitor was a recent entrant on the market, since its market share could have been more likely subject to fluctuations.

In the example, Eusolv provides data on its overall actual revenues and costs from the production and sale of Betanol, as set out in the following chart:
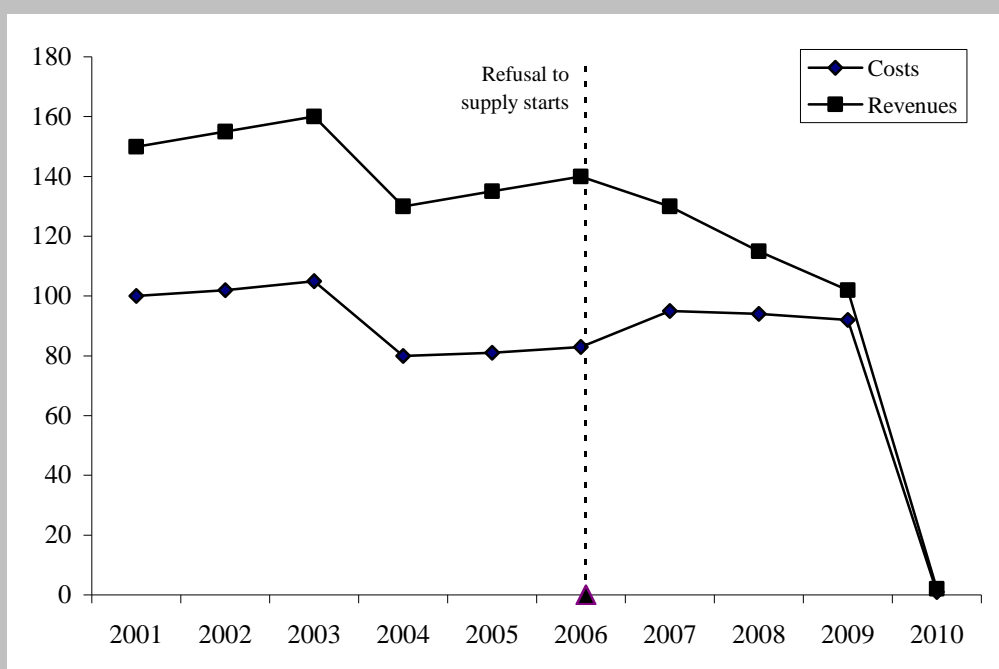
In order to establish a reliable non-infringement scenario, data from before 2004 are not taken into account because Subco, the most significant competitor of Eusolv, was not yet active on the market, whereas after 2004 and until 2006 Eusolv held a stable share of the market.

Eusolv, in accordance with national rules on the burden and the standard of proof, provides figures on the 'counterfactual' quantities, revenues and costs that would have occurred in the absence of the infringement.

Due to increasing industrial applications of Betanol, it is observed that the total demand for this product (thus, the size of the market) has grown steadily. The stability of Eusolv's market

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154   Such adjustments could be performed through the techniques described above at paragraphs 59 *ff.*

share after Subco's entry into the Betanol market is used by Eusolv to rely on the assumption that, absent the infringement, it would have maintained a similar market share. On this assumption Eusolv provides figures on its 'counterfactual' revenues for the years 2006–2010, calculated on the basis of the total value of the market and Eusolv's share of it. From its internal accounts, Eusolv provides figures on its unit costs for the years 2004 to 2006.[155] It is shown that costs closely followed the prices of the inputs for the production of Betanol, i.e. that, for instance, a rise in the input prices directly leads to a corresponding increase in costs. Using available industry data on input prices, Eusolv's experts estimate 'counterfactual' unit costs and, e.g. through regression analysis, account for the evolution in input prices and efficiencies related to the production of higher volumes. The figure for overall 'counterfactual' costs in the years 2006–2010 is then obtained by multiplying the estimated 'counterfactual' unit cost by the number of units it would have sold in the absence of the infringement.
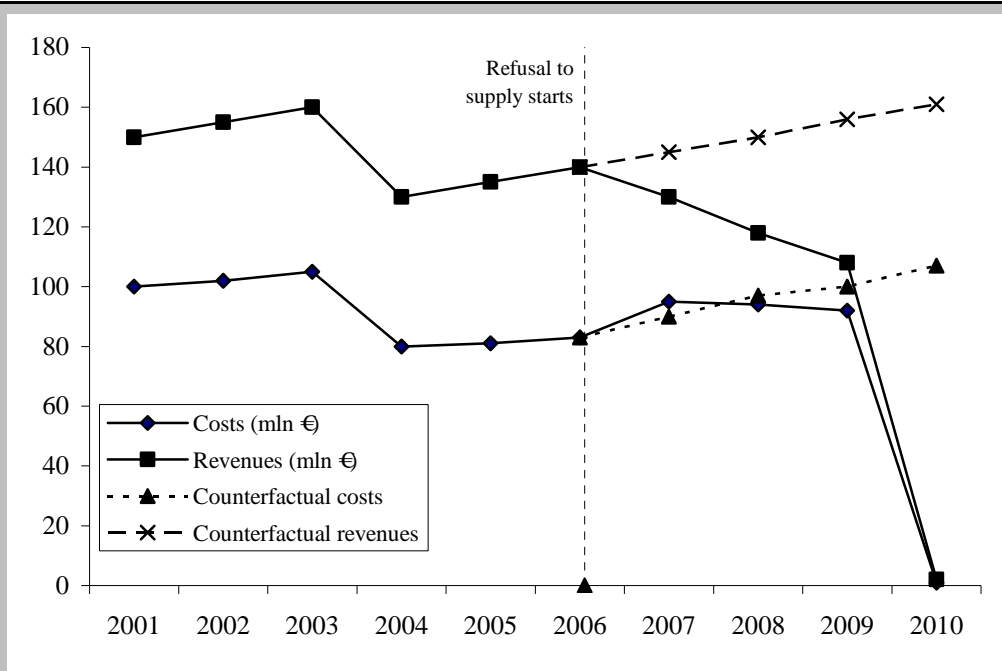
The figures obtained are compared with the actual revenues and costs faced by Eusolv as follows: the actual profits (actual revenues minus actual costs) are deducted from counterfactual profits (counterfactual revenues minus counterfactual costs). This constitutes the final estimate of the damages claimed by Eusolv.

However, Worldco and Subco argue that in order to be able to supply the expected increasing number of units in 2006-2010, Eusolv would have needed to expand its capacity, facing extra sunk costs that have not been included in the calculation. The defence is accepted by the court, and the compensation for lost profits is reduced accordingly (by deducting the expected extra sunk costs for the years in question, on a pro-rata basis, from the figure submitted by Eusolv).

197.   In exclusionary practices cases, market shares can play an important role as an indicator in the calculation of lost profits through comparator-based methods such as time comparisons. For instance, a comparator-based method could be used to obtain the likely market share of the foreclosed competitor absent the infringement. Lost profits could then be quantified by multiplying the observed data on actual per-unit

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[155]   These include sunk costs, distributed over time.

costs and revenues (or the actual average profit margin) by the extra quantities corresponding to the higher 'counterfactual' market share expected in the absence of the infringement. This relies on the assumption that costs and revenues per unit would not have significantly changed in the non-infringement scenario, and could be accepted by a legal system as an estimate of the harm suffered, possibly as *prima facie* evidence or as sufficient to shift the burden of proof.[156] A more refined estimate would assess the evolution of costs and revenues in the non-infringement scenario, provided that sufficient data are available.

198. When the market share is taken as an indicator in the estimation of lost profits, consideration should be given to the fact that it may be subject to fluctuations due to factors other than the infringement, such as the 2004 fall in Eusolv's market share in the Betanol example due to the entry of Subco as a competitor.[157] It may also be the case that if the infringement shrank the total size of the market, revenues for the excluded competitor estimated on the basis of actual market shares would result in an underestimate.

(2) Other comparator-based methods

199. Other geographic or product markets may also be used as a comparator in order to construct the non-infringement scenario.[158] Thus, costs and revenues of the same or a similar undertaking on a different market could be taken as a reference to estimate the costs and revenues that would have been yielded by the harmed competitor had the infringement not occurred. These methods can also be used as a means to assess the reliability of an estimation obtained by a comparison over time or other methods. For instance, if the pre-infringement performance of the sole competitor of a historically monopolistic undertaking indicates that it would have held a certain market share absent the infringement, the estimation could be comforted by the finding that the same or a similar undertaking which competes with the formerly monopolistic incumbent on a comparable geographic market actually holds a similar market share, taking into account possible differences between the undertakings or the markets concerned.

D. Prevented entry of competitors

200. Exclusionary practices can not only lead to the deterioration of the market position of an existing competitor, but also prevent the entry of a potential competitor that was not already active on the market. The foreclosure of new entrants can cause them a very significant harm for which they are entitled to compensation. Legal systems should take account of the inherent difficulties of quantifying such harm and should ensure that damages actions by prevented market entrants are not made practically impossible or excessively difficult.[159]

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[156] For an example of a court estimation based on multiplying the total number of contracts concluded by the infringer by the market share held by claimants before the exclusionary practice started, see *Corte d'Appello di Roma* (Court of Appeal, Rome), decision of 20 January 2003, case No I, 2474 (*Albacom S.p.A.* v *Telecom Italia S.p.A.*).

[157] For this reason, in the example the market share considered for the quantification is the stable market share held by Eusolv after 2004.

[158] *Juzgado Mercantil numero 5 de Madrid* (Commercial Court, Madrid), decision of 11 November 2005, case No 85/2005 (*Conduit-Europe, S.A.* v *Telefónica de España S.A.*), confirmed by *Audiencia Provincial de Madrid* (Court of Appeal, Madrid), decision of 25 May 2006, case No 73/2006.

[159] In some cases it is possible under applicable legal rules to quantify this harm through pragmatic approaches, such as calculation of the total value of the lost market in terms of profits, multiplied by a percentage expressing the share of the market that the foreclosed undertaking would have been likely to

201.   The situation of prevented entry presents some peculiar circumstances that can be taken into account when quantifying the harm. In particular, if the harmed undertaking was willing to enter a market where it was not active before, there is an inherent lack of observable data on its performance on that market.

202.   The general approach to quantifying the profits lost by competitors in such situations is not essentially different from the situation of foreclosure of competitors that see their existing market position deteriorate, as it also involves an assessment of the profits that could have been yielded by the excluded competitor absent the infringement. These can then be compared with the actual situation. In cases of prevented entry, it is likely that the excluded competitor made no profits or even sustained losses (for instance where the competitor had to bear costs it did not recover through not being able to enter the market).

203.   As mentioned above, foreclosed competitors may decide to seek damages only in relation to the costs borne in order to enter the market rather than the whole of the profits foregone. This approach can be more straightforward than claiming compensation for loss of profits as it only involves quantifying the sunk costs incurred by the claimant.

The medical equipment case

Newco is an undertaking that was committed to entering the market for a particular type of medical device in a Member State where Medco has a dominant position. In order to be profitable, Newco would have needed to achieve a minimum size on the market to take advantage of economies of scale.

Fearing to lose substantial sales to Newco, Medco concluded exclusive purchasing agreements with a number of customers in order to prevent Newco from achieving this minimum scale. As a result, Newco could not compete with Medco for these customers and was unable to profitably enter the market, which led to higher average prices for consumers than if Newco had entered the market. As Medco's conduct was considered to infringe Article 102 TFEU, Newco would be entitled to claim compensation for the profits it lost as a result of the infringement. However, in order to avoid carrying out a full loss of profit analysis, Newco only claimed compensation for the sunk costs it had already incurred to set up a new plant and enter the market (including e.g. financial costs and non-recoverable losses on purchased input material).

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204.   In cases where entry of competitors is prevented, there are no pre-infringement revenue and cost data for the market concerned, while post-infringement data could equally not lend themselves to be a reference for a time comparison because of the effects of the infringement. In such instances, reference to a comparable geographic or product market where the same or a comparable undertaking is active could prove a better means to construct a non-infringement scenario. Product or geographic markets concerned should offer a sufficient degree of similarity, although it may be possible to adjust for some differences between the markets.[160]

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acquire. For instance if the total profits generated by undertakings active on the relevant market after the infringement amount to 200 million euros, and it is estimated that, in the absence of the infringement, the foreclosed competitor would have held a market share of 30 per cent, the lost profit could be estimated, under this approach, at 60 million euros.

[160]   This could be done, for instance, through regression analysis, provided that sufficient data are available. See above, paragraph 69 *ff.*. For an example of an exclusionary practice where the use of a different geographic market was, in principle, accepted as a comparator see *Juzgado Mercantil numero 5 de Madrid* (Commercial Court, Madrid), decision of 11 November 2005, case No 85/2005 (*Conduit-*

205.   In some cases, assessment of the competitor's financial performance may suffice to find data in order to estimate the profits in the non-infringement scenario.[161]

> In the situation referred in the example above, assume that Newco is willing to supply the three biggest private health centres in a Member State with an innovative type of films for X-ray machines. Assume that normally the market for this type of medical equipment for private health centres is a bidding market. Thanks to a technological improvement, Newco is capable of offering its products at a lower price than Medco. However, Medco, which holds a dominant position in the market for X-ray machines, ties the products by applying a higher price for X-ray machines to centres that do not purchase films from it. As a result, Newco does not obtain any contract. In such circumstances, Newco showed that it was actually capable of supplying the quantities demanded by the centres for the price offered, and provided detailed data on its own costs. On the basis of these data, and on the assumption that Newco would have been chosen as a contractor in those instances where it offered the lowest price, expected profit margins could be estimated without resorting to a comparison in time or with other geographic or product markets.

E.   *Compensation for future loss*

206.   When foreclosed competitors claim compensation, they may seek compensation not only for the profits lost during the infringement period, but also for the profits foregone after its termination.[162] This is relevant, in particular, where they could not re-enter the market or fully recover their market share because of lasting effects of the terminated infringement. Compensation would then be asked for future profits, i.e. profits that are likely to be lost after the claim for compensation is brought and adjudicated.

207.   The challenges for quantifying such loss not only lie in the techniques to be deployed, but also have to do with the time frame during which a lost profit can still be identified and compensated. National law plays an important role in this context, for instance by determining under which circumstances a future loss can be recovered, or by establishing pragmatic rules to address this issue on a case-by-case basis.[163]

208.   Factors likely to affect the choice of the relevant limit in time for claiming loss of future profit may encompass, for instance, the likely time needed to re-enter the market in question. In other cases, this assessment could be easier because of the circumstances of the case. For instance, in the X-ray machine example above, the duration of the contracts Newco was bidding for could constitute a reasonable lapse of time over which loss of future profits should be compensated under applicable national rules. In other cases, the time over which the undertaking could reasonably have continued producing goods or providing services in the absence of new investments could also be considered.


Europe, S.A. v *Telefónica de España S.A.*), confirmed by *Audiencia Provincial de Madrid* (Court of Appeal, Madrid), decision of 25 May 2006, case No 73/2006.

[161]   For an illustration of the quantification of harm to a foreclosed new entrant in a bidding market see *Oberlandesgericht Düsseldorf* (Higher Regional Court, Düsseldorf), decision of 16 April 2008, case No VI-2 U (kart) 8/06, 2 U 8/06 (*Stadtwerke Düsseldorf*).

[162]   For an example of a damages award also for the period subsequent to the end of an infringement see *Østre landsrets* (Eastern High Court, Denmark), decision of 20 May 2009, case No B-3355-06 (*Forbruger-Kontakt a-s* v *Post Danmark A/S*).

[163]   When future profits are estimated, it is normally appropriate to discount their value in order to reflect the loss in the value of money over time.

In the Betanol example, Eusolv may claim compensation also for the profits it could have obtained after 2010, when it was driven out of the market and brought an action for damages. In such a case, it would be possible to use the same techniques employed to reconstruct the non-infringement scenario in the years 2006–2010 and project it further into the future. Of course, lost profits for the future cannot be claimed for an indefinite duration. Eusolv decided to take as a benchmark the likely lapse of time that would be needed for Eusolv to re-enter the market once the infringement was brought to an end.
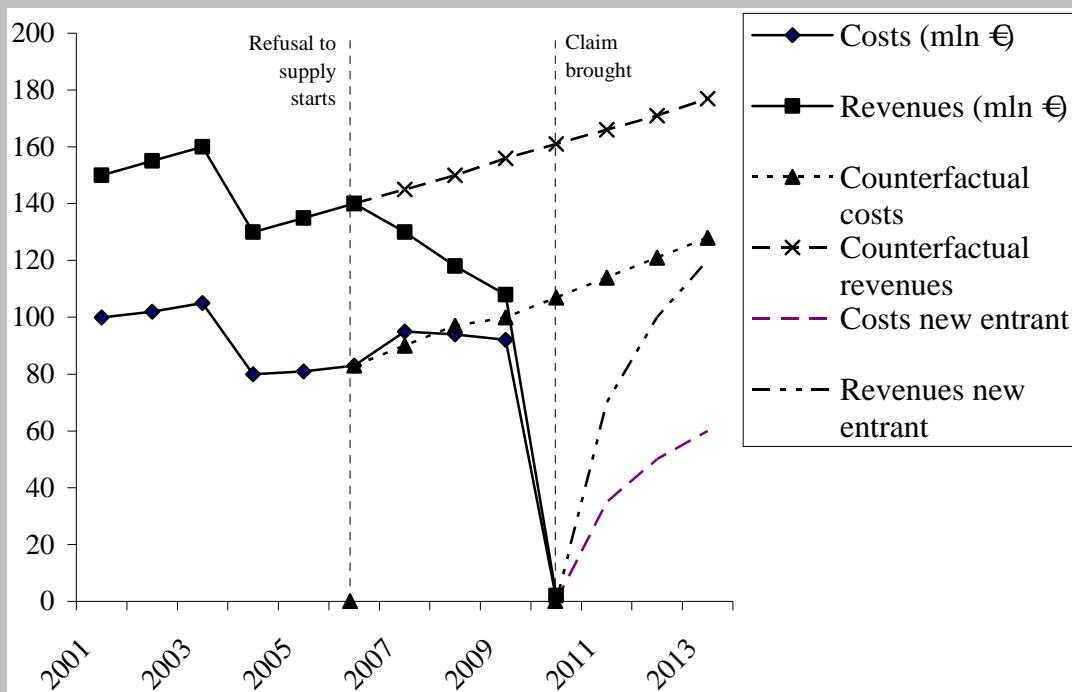
III. QUANTIFYING HARM TO CUSTOMERS

209. Undertakings that collude or abuse their dominant position in order to foreclose a competitor might face costs or a temporary reduction in their profits in order to implement the infringement. This sacrifice is borne in order to achieve a distortion of the competitive process that will eventually place the infringers in a position where they gain higher profits thanks to the distorted market conditions achieved, thus allowing them to recoup, at the expense of their customers, the temporary loss or reduction in profits borne in order to attain that position. The following sections will address two typical situations of harm to customers caused by exclusionary practices. For the purposes of quantification, the harm caused to customers by exclusionary practices can be analogous to that caused by infringements leading to a rise in prices, which is discussed in more detail in Part 3 of the Practical Guide.

A. Recoupment

210. The most straightforward example of the harm caused to customers in the recoupment phase of exclusionary practices is price predation, where an undertaking abuses its dominant position by setting its prices at an artificially low level that cannot be matched by its competitors, who will eventually leave the market or suffer a reduction in their market share. Once the competitors have been excluded from the market, or once a higher market share has been achieved, infringers can enjoy higher profits due to the weaker competitive constraints.

211.   Recoupment can be seen as a complementary phase of the infringement that can result in overcharge effects for the customers of the infringers. These overcharge effects constitute harm caused by the exclusionary practice, and compensation for them can be sought by customers.

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Recoupment in a predatory pricing case

Consider, for example, the market for flights on a particular route between two cities. Operating on this market in a dominant position is Titan Airlines, an established undertaking which offers high quality in-flight service for a standard fare of 1 000 euros. Another player on this specific market is the smaller Bluesky Airlines, which recently started operating on the same route with prices of 800 euros.

Titan Airlines engages in predatory pricing by strategically lowering its fares to a standard price of 500 euros. Bluesky Airlines experiences difficulties in meeting these predatory fares, as a result of which it fails to remain profitable, and is eventually driven out of the market. The dominant Titan Airlines will in that case take advantage of the reduction of competition and increase its profits by raising fares to a level beyond pre-predation fares, i.e. exceeding its initial standard price of 1 000 euros. If Titan Airlines, until re-entry of a competitor, were to charge a price of 1 100 euros, its customers would, due to the infringement, pay an overcharge of 100 euros.

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212.   When overcharges resulting from recoupment are to be quantified, the conceptual framework that applies is in principle not different from that discussed in Part 3, namely regarding infringements leading more directly to a rise in prices. Since the harm caused by an exclusionary practice is not confined to competitors of the infringer but extends to all customers in a specific market, the issues discussed in the framework of overcharge harm are thus relevant also in this scenario.

213.   The position achieved by an undertaking on the market due to an exclusionary infringement does not lead in all cases to a rise in price for customers of the infringing undertaking. However, also in such cases customers may still be harmed by the infringement, for instance if it results in reduced quality. In the example, it could happen that the dominant undertaking Titan Airlines reinstates the same standard price of 1 000 euros, not exceeding the fares it charged prior to the exclusion of Bluesky Airlines. Passengers travelling on this particular route are nevertheless adversely affected, for instance, if Titan Airlines seizes the opportunity of less competitive constraints to lower the standard of its in-flight service.

214.   Customers of the foreclosed competitor could be in a different situation than customers of the infringers, because they may have to switch to the products sold by the infringing undertaking as the competitor is driven out of the market. Apart from the possibility of reduced quality, they may also have to pay to the infringing undertaking prices that are higher than the prices paid for the products sold by the foreclosed undertaking. Depending on applicable legal rules, they could be allowed to show that, in the absence of the infringement, they would have purchased from the foreclosed competitor at a lower price. In such case, the effect to be considered is, in principle, similar to an overcharge. The overcharge can be calculated by comparing the price of the product sold by the infringing undertaking in the actual scenario with that charged by the foreclosed undertaking in the non-infringement scenario.

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For instance, passengers travelling with Bluesky Airlines prior to its foreclosure may face an overcharge when, due to Bluesky Airlines' exclusion from the market, they are forced to fly at more expensive fares with Titan Airlines. The overcharge could be estimated as the difference

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between the actual price of 1 000 euros paid to Titan Airlines and the price of 800 euros which Bluesky Airlines would have charged, had it not been driven out of the market. In such case, the overcharge suffered by passengers constrained to switch from Bluesky Airlines to Titan Airline could be estimated at 200 euros.

B. *Harm to competitors as customers of the infringers*

215.   In cases where a competitor is also a customer of the infringer, the exclusionary practice could damage the competitor in so far as it purchases from the infringer. In these situations, the foreclosed competitor can not only claim compensation for the increase in costs produced by the infringement, but also choose to claim compensation for the profits lost because the resulting volumes produced or sold are lower than if the infringement had not occurred.[164]

216.   It can be observed that for the purposes of quantification, competitors that suffer an overcharge are in a position analogous to that of customers of the members of a cartel or another infringement leading to an overcharge. In order to explain this, it is possible to take the example of Betanol, and assume that rather than refusing to supply Rawbeta to Eusolv, the dominant firm Worldco decides to increase the price of Rawbeta charged to Eusolv so as to squeeze its profit margins. In such a situation, similar considerations arise as in the case of an increase in price generated by other types of infringements. In the example Eusolv would claim compensation for the overcharge represented by the difference between the price it paid as a result of the exclusionary practice and the price it would have paid in the absence of the infringement. If the overcharge has been passed on, claims for damages could be also brought by Eusolv's own customers, and Eusolv itself could claim compensation for the volumes lost because of the price increase.

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[164]   For an example of the estimation of damages in a discriminatory pricing affecting a competitor as a customer of the infringer, see *Højesteret* (Supreme Court, Denmark), decision of 20 April 2005, case No 387/2002 (*GT Linien A/S* v *DSB*).

Table of cases cited

Court of Justice of the EU

Case 238/78 *Ireks-Arkady GmbH* v *Council and Commission* [1979] ECR 2955.

Case C-271/91 *Marshall* [1993] ECR I-4367.

Case C-308/87 *Grifoni II* [1994] ECR I-341.

Joined Cases C-104/89 and C-37/90 *Mulder and others* v *Council and Commission* [2000] ECR I-203.

Case C-453/99 *Courage* [2001] ECR I- 6297.

Case C-147/01 *Weber's Wine World* [2003] ECR I-11365.

Joined Cases C-295/04 to 298/04 *Manfredi* [2006] ECR I-6619.

Case C-360/09 *Pfleiderer*, [2011] ECR I-5161.

Case C-199/11, *European Community v. Otis NV and others*, [2012], not yet reported.

General Court

Case T-202/98 *Tate & Lyle* v *Commission* [2001] ECR II-2035

Joined Cases T-25/95 etc. *Cimenteries CBR SA* v *Commission* [2000] ECR II-491

Courts of the Member States

Corte d'Appello di Milano (Court of Appeal, Milan), decision of 3 February 2000, case No I, 308 (*Inaz Paghe* v *Associazione Nazionale Consulenti del Lavoro*).

Corte d'Appello di Roma (Court of Appeal, Rome), decision of 20 January 2003, case No I, 2474 (*Albacom S.p.A.* v *Telecom Italia S.p.A.*).

Corte d'Appello di Milano (Court of Appeal, Milan), decision of 11 July 2003, (*Bluvacanze*)

Cour d'Appel de Paris (Court of Appeal, Paris), decision of 23 June 2003 (*Lescarcelle-De Memoris* v *OGF*)

Landgericht Dortmund (Regional Court, Dortmund), decision of 1 April 2004, Case No 13 O 55/02 Kart (*Vitaminpreise*).

Højesteret (Supreme Court, Denmark), decision of 20 April 2005, case No 387/2002 (*GT Linien A/S* v *DSB*).

Bundesgerichtshof (Federal Court of Justice, Germany), decision of 28 June 2005, case No KRB 2/05 (*Transportable concrete*)

Juzgado Mercantil numero 5 de Madrid (Commercial Court, Madrid), decision of 11 November 2005, case No 85/2005 (*Conduit-Europe, S.A.* v *Telefónica de España S.A.*),

Audiencia Provincial de Madrid (Court of Appeal, Madrid), decision of 25 May 2006, case No 73/2006.

Lietuvos apeliacinis teismas (Lithuanian Court of Appeal), decision of 26 May 2006, case No 2A-41/2006 (*Stumbras*)

Corte Suprema di Cassazione (Supreme Court of Cassation, Italy), decision of 2 February 2007, case No 2305 (*Fondiaria SAI SpA* v *Nigriello*).

Bundesgerichtshof (Federal Court of Justice, Germany), decision of 19 June 2007, case No KBR 12/07 (*Paper Wholesale Cartel*)

Landesgericht für Zivilrechtssachen Graz (Regional Civil Court of Graz), decision of 17 August 2007, case No 17 R 91/07 p (*Driving school*).

Oberlandesgericht Düsseldorf (Higher Regional Court, Düsseldorf), decision of 16 April 2008, case No VI-2 U (kart) 8/06, 2 U 8/06 (*Stadtwerke Düsseldorf*).

Stockholms tingsrätt (Stockholm District Court), judgment of 20 November 2008, joined cases T 32799-05 and T 34227-05 (*Europe Investor Direct AB and others* v *VPC Aktiebolag)*, appeal pending.

*Tribunal Administratif de Paris (*Administrative Court of Paris), decision of 27 Mars 2009, *(SNCF v Bouygues)*.

Østre landsrets (Eastern High Court, Denmark), decision of 20 May 2009, case No B-3355-06 (*Forbruger-Kontakt a-s* v *Post Danmark A/S*).

Kammergericht Berlin (Higher Regional Court, Berlin), decision of 1 October 2009, case No 2 U 10/03 Kart.

Oberlandesgericht Karlsruhe (Higher Regional Court, Karlsruhe), decision of 11 June 2010,case No 6 U 118/05; appealed to the Federal Court of Justice (see below).

Juzgado Mercantil numero 2 de Barcelona (Commercial Court, Barcelona), decision of 20 January 2011, case No 45/2010 (*Céntrica Energìa S.L.U./Endesa Distribuciòn Eléctrica S.A.*).

Bundesgerichtshof (Federal Court of Justice), decision of 28 June 2011, case KZR 75/10.

Competition Appeal Tribunal, decision of 28 March 2013, case No 1166/5/7/10 (*Albion Water Limited v Dŵr Cymru Cyfyngedig*).