

Article

The As-Efficient Competitor Test and Principle. What Role in the Proposed Guidelines?

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I. Introduction

The guidance paper on the priorities for enforcement of Art. 102¹ states that, in relation to price-based conduct, the Commission would normally only intervene if a given conduct was capable of harming as-efficient competitors.² The foreclosure of as-efficient competitors is thus seen as a criteria for identifying anti-competitive foreclosure, or foreclosure leading to anti-competitive effects warranting intervention. The guidance paper also describes the ‘as-efficient competitor test’, which takes cost as a metric for efficiency, as a piece of evidence that would be informative in assessing whether a given conduct was capable of harming as-efficient competitors.³ A number of Commission decisions since the adoption of the guidance paper have referred to the principle and have deployed the test, and some of these decisions have been reviewed by European Courts. In March of this year, the Commission adopted an amendment of the guidance paper,⁴ which reformulates the principles and changes the scope of the enforcement of the test, with the objective of bringing the guidance paper in line with what the Commission sees as insights from Court judgments.

The objective of this paper is to discuss both the principle and the test, as well as their implementation and amendments, from economic and enforcement perspectives and assess the role that they could play in proposed guidelines. We first consider the ‘as-efficient competitor principle’ in enforcement. We take the Commission’s

Key Points

- The amendment of the guidance paper, which removes the soft safe harbor for a conduct that does not foreclose as efficient competitors, has led to greater consistency with Court judgments.
- The assessment of the implementation of the test by the General Court fails to recognize the margin of error that is inherent in the implementation of the test.
- The as efficient competitor principle and the inference that can be drawn from the test should be contingent on the theory of harm being investigated.
- Relying solely on the as efficient competitor principle would lead to under enforcement, in particular regarding competition softening.

guidance paper as a reference and discuss (a selection of) recent Court decisions in relation to the guidance paper as well as its recent amendment. We find a thread in Court judgments that recognises that (i) the ultimate objective of enforcement is to protect consumer welfare, (ii) that a conduct leading to the foreclosure of a competitor⁵ is not necessarily abusive and might involve competition on the merit against a less efficient competitor, that (iii) a *sufficient* condition for a conduct to be characterised as abusive (and thereby involving anti-competitive foreclosure) is that it leads to the foreclosure of as-efficient competitors, and that (iv) a conduct can be abusive even if it does not lead to the foreclosure of as-efficient competitors as less efficient competitors might also exercise a significant competitive constraint. These principles are such that the as-efficient competitor principle is used as a red line and such that the foreclosure of less efficient competitors can be either abusive or consistent with competition on the

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1 Guidance on the Commission’s enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings [2009] OJ C45/7.

2 Ibid., para 23.

3 Ibid., paras 23–27, as well as more detailed discussions in relation to particular conducts (see, e.g. paras 41–45 with respect to retroactive rebates).

4 Amendments to the 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 [2023] OJ C116/1.

5 Note that foreclosure, as understood in the Guidance Paper and the case law, can be partial (and might thus not involve the exit of the competitor concerned).

merits. These principles are generally consistent with the original formulation of the guidance paper, except regarding the significance that the guidance paper attaches to the as-efficient test as a soft safe harbour for conducts that do not foreclose as-efficient competitors. The foreclosure of an as-efficient competitor, which is a sufficient but not a necessary condition, is thus only one sufficient condition to characterise a conduct as abusive; that is, it is, in principle, possible to find an abuse even when only less efficient competitors are foreclosed or indeed when neither efficient nor less efficient firms are foreclosed.

One of the amendments adopted by the Commission effectively removes the soft safe harbour for conducts that do not foreclose as-efficient competitors. This, at least according to our review (and the Commission's motivation for the amendment), contributes to greater consistency with the Court judgments. There is, however, also another amendment that is not helpful as it might reduce the discipline that the Commission imposes on itself. The Commission has chosen to adopt language from recent judgments that make renewed reference to the effect of the conduct of the dominant firm on the competitive structure as a criteria to assess its abusive character. This term is ill-defined, and the suspicion may arise that it could be used as a shortcut to avoid the analysis of anti-competitive effects. In its commentary on the amendments,⁶ the Commission (or at least a group of officials) also expresses concerns that the assessment of effects imposes such a burden that it might lead to under enforcement (or type II errors)⁷ and welcomes a potential relaxation of the disciplines to define a counterfactual. The fact that, in its commentary, the Commission has chosen to signal this, is a source of concern, as the delineation of a counterfactual is arguably one of the most fundamental disciplines in the assessment of effects.

The second part of the paper focuses on the implementation of the test in enforcement. More specifically, we find that there is some confusion in decisions and court judgments over two dimensions of the interpretation of the test; first, there is no clear articulation of whether the test attempts to assess whether, when competitors are equally efficient, the conduct of the dominant firm involves a sacrifice for the dominant firm, relative to a counterfactual, or whether the test attempts to assess whether an equally efficient competitor could not profitably compete in response to the conduct of the dominant firm. Second, there is occasional confusion over whether

the test refers to a hypothetical competitor, or an actual competitor and whether inferences should be drawn from the likely absence of equally efficient competitors in particular circumstances. We also find that significant issues arise with respect to the inferences that can be drawn (or not) from particular implementations of an as-efficient test. In particular, the discussion by the General Court of the as-efficient competitor test implemented by the Commission in the *Intel* case⁸ fails to recognise the margin of errors that is inherent in the implementation of the test. What should be considered from a methodological perspective is the confidence interval around the point estimate of the difference between cost and effective price rather than the point estimate itself. The explicit recognition of margins of errors also has implications for the aggregation of evidence over time and the consolidation of different pieces of evidence.

The third part of the paper assesses the as-efficient competitor principle, and associated tests, from an economic perspective and asks whether it is appropriate to use the principle, as currently being used, in terms of defining a red line. From an economic perspective, there is a general concern that the principle is not derived from any particular theory of harm. Whether evidence that an equally efficient firm is foreclosed is revealing of the presence anti-competitive effects and whether the absence of foreclosure is revealing of the absence of anti-competitive effects can only be assessed in the context of a particular theory. We illustrate this for a number of theories of harm. We show, for instance, that using the as-efficient competitor principle as a red line might lead to overenforcement (or type I errors) in the context of particular theories of harm involving the appropriation of rents from downstream competitors (in the context of margin squeeze) or the demand boost theory of exclusivity discounts. We also show that with some particular theories, the as-efficient competitor principle could be used as a safe harbour without inducing significant underenforcement (or type II errors) but that with respect to other theories, it would involve significant type II errors. Hence, a clear recommendation for the future guidelines would be to make the use of the as-efficient competitor principle (and associated test) as well as inferences that can be made from it, contingent on the particular theory of harm being investigated.

The paper is organised as follows. Section II provides some background on the use of the as-efficient competitor test by the Commission since the adoption of the guidance paper. Section III discusses the as-efficient

6 Linsey McCallum and others, 'A dynamic and workable effects-based approach to abuse of dominance' Competition Policy Brief (March 2023), available at https://ec.europa.eu/competition-policy/publications_en.

7 *Ibid.*, page 4, under title III.

8 Case T-286/09 RENV *Intel Corporation Inc. v Commission*, EU: T: 2022: 19.

competitor principle in enforcement. Section IV discusses the use of the test in enforcement and issues arising in the interpretation of the results from particular implementations of the test. Section V discusses the as-efficient competitor principle (and associated tests) in relation to theories of harm. Section VI offers some brief concluding remarks with respect to future guidelines.

II. Background on the use of the test and principle

Table 1 provides the list of decisions in which the Commission has made reference to the as-efficient competitor test. This list has been obtained by searching all decisions under Art. 102 for the key word ‘as-efficient competitor test’.⁹ In addition to cases in the list,¹⁰ the Commission has also deployed a test similar in spirit to the as-efficient competitor test in the *Tomra* case¹¹ (but did not use the term as such in the decision). The reference to the as-efficient competitor test in the *Google Search AdSense* decision is only made in response to an argument by Google. It is noticeable that a number of important decisions by the Commission did not refer to the test, in particular the *Google Shopping*¹² and *Google Android* decisions,¹³ presumably because the practices in those cases do not involve pricing abuses. There was, however, a discussion regarding the use of an as-efficient competitor test in the *Google shopping* court judgment¹⁴ in response to an argument from one of the intervening parties.

In addition, the as-efficient competitor test has been discussed in Court judgments in relation to these cases (in particular for *Deutsche Telekom*,¹⁵ *Tomra*,¹⁶ *Telefonica*,¹⁷

Slovak Telekom,¹⁸ *Intel*,¹⁹ and *Qualcomm exclusivity payments*²⁰) as well as in the context of request for preliminary rulings (in particular *Telia Sonera*,²¹ *Post Denmark I*,²² and *Post Denmark II*²³).

These cases deal with a variety of practices, including exclusivity rebates (*Intel*, *Tomra*, *Qualcomm exclusivity payments*), retroactive rebates contingent on thresholds (*Tomra*), margin squeeze (*Telefonica*, *Slovak Telekom*, *RWE gas foreclosure*, *Deutsche Bahn*), predation (*Qualcomm predation*), exclusive dealing (*Google AdSense*), and self-preferencing/discrimination (*Google search*).

III. As-efficient competitor principle

It is useful to organise the discussion of the ‘as-efficient competition principle’ in Commission decisions and Court judgments, in relation to the approach put forward in the guidance paper. Hence, we will review the approach of the guidance paper (Section III.A) and consider (a selection of) Court decisions (Section III.B) and finally the relevant amendments of the guidance paper by the Commission.

A. The approach of the guidance paper

The guidance paper first provides a standard (a metric and a benchmark) to assess exclusionary conduct by a dominant firm, in terms of whether it leads to anti-competitive foreclosure. The guidance paper (in para 19) refers to ‘foreclosing (their) competitors in an anti-competitive way, thus having an adverse impact on consumer welfare, whether in the form of higher price levels than would have otherwise prevailed or in some other form such as limiting quality or reducing consumer choice’. This approach provides a metric to assess anti-competitive effect (consumer welfare) and a benchmark, namely, what would have otherwise prevailed (the counterfactual). Anti-competitive foreclosure is further defined as ‘a situation where effective access of actual or potential competitors to supplies or markets is hampered or eliminated as a result of the conduct of the dominant undertaking whereby the dominant undertaking is likely

9 I would like to thank the Compass Lexecon research team for giving access to their database of Commission decisions.

10 Note that price costs tests (as distinct from as-efficient competitor tests) have been discussed in other cases, in particular predation cases like *AKZO—ECS/AKZO* (Case IV/30.698) Commission Decision of 14 December 1985—and *Wanadoo—Wanadoo Interactive* (Case COMP/38.233) Commission Decision of 16 July 2003. The distinction is further discussed below.

11 *Prokent-Tomra* (Case COMP/E-1/38.113) Commission Decision of 30 March 2006.

12 *Google Search* (Case AT.39740) Commission Decision of 27 June 2017.

13 *Google Android* (Case AT.40099) Commission Decision of 18 July 2018.

14 Case T-612/17 *Google LLC and Alphabet, Inc. v Commission*, EU: T: 2021: 763.

15 Case T-271/03 *Deutsche Telekom AG v Commission*, EU: T:2008: 101; Case C-280/08 P *Deutsche Telekom AG v Commission*, EU: C:2010: 603.

16 Again without explicit reference to the as-efficient competitor but applying a version of the logic of the test. Case T-155/06, *Tomra Systems ASA and others v Commission*, EU:T:2010:370, Case C-549/10 P, *Tomra Systems ASA and others v Commission*, EU:C:2012:221.

17 Case T-336/07, *Telefónica, SA and Telefónica de España, SA v Commission*, EU:T:2012:172; case C-295/12 P, *Telefónica, SA and Telefónica de España, SA v Commission*, EU:C:2014:2062.

18 Case T-851/14, *Slovak Telekom as v Commission*, EU:T:2018:929; Case C-165/19 P, *Slovak Telekom as v Commission*, EU:C:2021:239.

19 See the first-instance judgment in Case T-286/09, *Intel Corporation Inc v Commission*, EU:T:2014:547; the appeal ruling in Case C-413/14 P, *Intel Corporation Inc v Commission*, EU:C:2017:632; and the *renvoi* judgment in Case T-286/09 RENV, *Intel* (n 8).

20 Case T-235/18, *Qualcomm v Commission (Qualcomm—exclusivity payment)*, EU:T:2022:358.

21 Case C-52/09, *Konkurrensverket v TeliaSonera Sverige AB*, EU:C:2011:83.

22 C Case C-209/10, *Post Danmark A/S v Konkurrenserådet*, EU:C:2012:172.

23 Case C-23/14, *Post Danmark A/S v Konkurrenserådet*, EU:C:2015:651.

TABLE 1: As-efficient competitor test in Commission decisions.

Date	Case	Decision type
21 May 2003	Deutsche Telekom	Prohibition Decision
7 April 2007	Telefonica S.A.	Prohibition Decision (Art. 102 Ex 82)
18 March 2009	RWE gas foreclosure	Commitments Decision
13 May 2009	Intel	Prohibition Decision (Art. 102 Ex 82)
18 December 2013	Deutsche Bahn	Commitments Decision
15 October 2014	Slovak Telekom	Prohibition Decision (Art. 102 Ex 82)
24 January 2018	Qualcomm (exclusivity payments)	Prohibition Decision (Art. 102 Ex 82)
20 March 2019	Google Search (AdSense)	Prohibition Decision (Art. 102 Ex 82)
18 July 2019	Qualcomm (predation)	Prohibition Decision (Art. 102 Ex 82)
16 October 2019	Broadcom	Interim Measures Decision

to be in a position to profitably increase prices to the detriment of consumers'.²⁴

Second, the guidance paper provides a decision rule for the implementation of the standard, which is formulated in terms of the 'as-efficient competitor' principle (at least for price-based conducts). At para 23, the guidance paper indicates that 'With a view to preventing anti-competitive foreclosure, the Commission will normally only intervene where the conduct concerned has already been or is capable of hampering competition from competitors which are considered to be as efficient as the dominant undertaking'. This decision rule is to some extent ambiguous: it involves not only a red line (a conduct hampering competition from as-efficient competitors will be subject to intervention) but also a soft safe harbour (the conduct will *normally only* intervene when the conduct hampers competition from the as-efficient competitors). However, para 24 weakens the safe harbour by recognising that less efficient firms also exercise a competitive constraint that should be taken into account.²⁵

B. A (selective) summary of the Court's approach

A comprehensive discussion of the case law is beyond my expertise. While recognising that my reading of the case law may be selective, the following observations²⁶ can be made in light, in particular, of recent judgments

like *Servizio Elettrico Nazionale*²⁷ and *Unilever Italia*.²⁸ These observations suggest that there is a combination of statements by the Courts such that the resulting norm is largely consistent with the guidance paper.

First, it seems that Court has acknowledged that preventing consumer harm is the ultimate objective of enforcement. For instance, in *Servizio Elettrico Nazionale* (n28), the Court states (at para 46) that 'the well-being of both intermediary and final consumers must be regarded as the ultimate objective warranting the intervention of competition law in order to penalize abuse of a dominant position within the internal market or a substantial part of that market'.

However, the Court also appears to emphasise the effect on the conduct on what could be an ill-defined proxy for anti-competitive effects, namely, the competitive structure. For instance, in *Servizio Elettrico Nazionale* (n 28, para 44) the Court found that 'To that effect, as the Court has held, that provision seeks to sanction not only practices likely to cause direct harm to consumers but also those which cause them harm indirectly by undermining an effective structure of competition'. It is not entirely clear what is meant by competitive structure. There is a benign interpretation such that the Court sees the foreclosure or the marginalisation of competitors as a change in the structure of competition. There is some support for that interpretation in para 68 of the judgment, which refers again to the competitive structure but provides a further explanation: 'In practice, as is apparent from paragraph 44 of the present judgment, that the concept covers any practice capable of adversely affecting, by way of resources other than those which govern normal competition, an effective competition structure. It is therefore intended to penalize the conduct

24 The reference to a profitable price increase by the dominant firm has been removed in the 2023 amendment. This is further discussed below.

25 However, in para 27, which discusses the test, the Commission indicates that 'If the data clearly suggest that an equally efficient competitor can compete effectively with the pricing conduct of the dominant undertaking, the Commission will, in principle, infer that the dominant undertaking's pricing conduct is not likely to have an adverse impact on effective competition, and thus on consumers, and will therefore be unlikely to intervene'.

26 The various blogs post of Pablo Ibanez Colomo on the as-efficient competitor principle have been as strong source of inspiration for the discussion that follows.

27 Case C-377/20 *Servizio Elettrico Nazionale SpA and Others v Autorità Garante della Concorrenza e del Mercato and Others*, EU:C:2022:379.

28 Case C-680/20 *Unilever Italia Mkt. Operations Srl v Autorità Garante della Concorrenza e del Mercato*, EU:C:2023:33.

of a dominant undertaking which, on a market where the degree of competition is already weakened precisely because of the presence of the undertaking concerned, through recourse to means different from those governing normal competition in goods or services on the basis of the transactions of commercial operators, has the effect of hindering the maintenance of the degree of competition still existing in the market or the growth of that competition'. The judgment in *Unilever* (n 29) also makes a reference to the competitive structure (para 36).

Second, the Court has further indicated that 'although undertakings in a dominant position can defend themselves against their competitors, they must do so by using means which come within the scope of 'normal' competition, that is to say, competition on the merits' (*Servizio Elettrico Nazionale*, n 28, para 75). Whereas the Court had previously used either a reference to normal competition or a reference to competition on the merits as a necessary and sufficient condition to find a conduct abusive (or not), the Court judgment clarifies that these two formulations are synonyms. Hence, it would appear that the absence of competition on the merit or the absence of normal competition is a circumstance in which intervention is warranted and hence in which (in line with the objective of Art. 102) there is consumer harm.

Advocate General Rantos, in his opinion in *Servizio Elettrico Nazionale*,²⁹ makes the connection even clearer; he indicates (para 48) that 'To my mind, demonstrating that a dominant undertaking used means other than those which come within the scope of "normal" competition is not a requirement that needs to be assessed separately from the restrictive effect of the conduct'.³⁰

The observation of AG Rantos has the potential to greatly clarify the conceptual framework for the assessment of potentially abusive conduct as it crystallise the test on a single issue, namely, whether the conduct has an anti-competitive effect. In this perspective, the absence of normal competition or competition on the merits are just different paraphrases for the presence of anti-competitive effects.

Third, it seems that the Court has recognised that not every exclusionary effect is necessarily detrimental to

competition. For instance, in para 22 of *Post Denmark I* (n 23), the Court indicated that 'Thus, not every exclusionary effect is necessarily detrimental to competition (see, by analogy, *TeliaSonera Sverige*, paragraph 43). Competition on the merits may, by definition, lead to the departure from the market or the marginalization of competitors that are less efficient and so less attractive to consumers from the point of view of, among other things, price, choice, quality or innovation'.³¹

This observation also appears at para 45 in *Servizio Elettrico Nazionale*. Advocate General Rantos in that case (n 30) expresses the same view, while adopting the terminology of the guidance Paper (and referring to it as guidelines (!)). In para 43 of his opinion, he states 'it must be emphasized that an exclusionary effect does not necessarily undermine competition and does not, therefore, always equate to a "restrictive effect in the reference market" (to follow the wording of the question). Indeed, the mere fact that certain conduct has the potential to drive a competitor from the market does not make the market less competitive, still less does it make the conduct abusive within the meaning of Article 102 TFEU. A distinction must therefore be drawn between a risk of foreclosure and a risk of anticompetitive foreclosure, since only the latter may be penalized under Article 102 TFEU (footnote: See, to that effect, point 19 of the Communication from the Commission entitled 'Guidance on the Commission's enforcement priorities in applying Article 82 [EC] to abusive exclusionary conduct by dominant undertakings' (OJ 2009 C 45, p. 7, 'the Guidelines'))'.

The Court has also explained that it is necessary to consider all circumstances in assessing the significance of foreclosure. For instance, with respect to rebates, in *Post Denmark II* (n 24), the Court (para 30 and ff) referred to the retroactive nature of the rebates, the period of time during which it was implemented, whether the rebates applied to non-contestable sales covered by the statutory monopoly, and the coverage of the rebated scheme (see also the *Intel* ECJ judgment for an discussion of the relevant factors at para 139).

Fourth, the Court has defined conditions that would be sufficient to find that a conduct is abusive, In *Servizio Elettrico Nazionale* (n 28), the Court (para 76) stated that dominant 'undertakings cannot make it more difficult for competitors which are as efficient to enter or remain on the market in question by using means other than those which come within the scope of competition on

29 Opinion of Advocate General Rantos in Case C-377/20, *Servizio Elettrico Nazionale SpA and Others v Autorità Garante della Concorrenza e del Mercato and Others*, EU:C:2021:998.

30 Note that from para 43 of the opinion, it is also clear that when AG Rantos refers to restrictive effects, he is also referring to anti-competitive effects. See also the judgment of the Court of appeals in the *Royal Mail* case (case C3/2020/151, *Royal Mail v Ofcom and Whistl UK Ltd*, judgment of 7 May 2021). In para 18, the Court found that 'the concept of normal competition means competition on price, quality choice, and innovation. Thus, there is nothing wrong with a dominant undertaking competing with other undertakings on price. . . . But it is unlawful for dominant undertakings to adopt pricing practices which are anti-competitive'.

31 The Court has also repeatedly indicated that 'it is not the purpose of Article 102 TFEU to . . . or to ensure that competitors less efficient than an undertaking in such a position should remain on the market'. See, for instance, *Unilever* (n 28), para 37.

the merits'. This statement is a clear expression of the principle that foreclosure of as-efficient competitor is a red line. It is also a clear expression that exclusion (total foreclosure) is not required and that marginalisation (partial foreclosure) suffices.

The formulation adopted by the Court in *Unilever* (n 29) is slightly different; it states (para 39) that an 'abuse of a dominant position could be established, *inter alia*, where the conduct complained of produced exclusionary effects in respect of competitors that were as efficient as the perpetrator of that conduct in terms of cost structure, capacity to innovate, quality, or where that conduct was based on the use of means other than those which come within the scope of "normal" competition, that is to say, competition on the merits'. Whereas *Servizio Elettrico Nazionale* (n 28) formulates the sufficient conditions for finding an abuse in terms of two components, namely, the marginalisation of as-efficient competitors *and* the use of means that falls outside the scope of competition on the merit, *Unilever* (n 29) only refers to the marginalisation of as-efficient competitors. The formulation adopted by *Unilever* (n 29) is more coherent with the expression of the general principle (see above) that a conduct is abusive if and only if it does not involve conduct that falls within the scope of competition on the merits.

Note that the finding of the Court that foreclosure of as-efficient competitors is a red line does not imply that failing the as-efficient competitor test (as distinct from the principle) is necessarily sufficient to find an abuse. As discussed further below, the as-efficient competitor test is only one piece of evidence. Other pieces of evidence will be considered, and any finding will rest on an overall assessment that takes into account the relative evidentiary value of the difference pieces.

Fifth, the Court recognises that the assessment of whether a conduct is abusive needs to consider what would have happened in the absence of the conduct, namely, the counterfactual. This has been formulated in terms of an *ex post* analysis (rather than a methodological principle), in which the consequences are observed and it is necessary to show that these consequences are attributable to the conduct (or equivalently to establish a 'causal link' between the consequences and the conduct). For instance in *Post Denmark II* (n 24), the Court (para 47) makes a reference to anti-competitive effects that are attributable to the conduct of Post Denmark.³² Similarly in *Google Shopping* (n 15), the General Court

found (para 441) that 'in order to find that Google has abused its dominant position, the Commission had to demonstrate that – at least potential – effects attributable to the impugned conduct of restricting or eliminating competition'. More generally, the need to consider the counterfactual flows from the recognition that the exit or marginalisation of a firm that is less efficient could either be due to the conduct of the dominant firm or merely the consequence of its inferior efficiency (see above).

Overall, there is thus a remarkable consistency between (our account of) the Court's approach and that of the guidance paper. They have in common to recognise the ultimate objective of protecting consumer benefits, to consider what would have happened in the absence of the conduct as the relevant benchmark and to take the foreclosure of an as-efficient competitor as (one) sufficient criteria for finding an abuse. There is some divergence, however, with respect to whether the absence of foreclosure of an as-efficient competitor is a safe harbour. Whereas the wording of the guidelines can be interpreted as involving a soft safe harbour, this is not the case for the Court judgments, at least according to our review. Besides, when the conduct of the dominant firm does not lead to the marginalisation of as-efficient competitor but to the marginalisation of less efficient ones, the criteria to identify a conduct as abusive is 'competition on the merit'. This concept has not been delineated in such a way that it could be said to be operational, but at least according to AG Rantos, the absence of competition on the merits could be understood simply as the presence of anti-competitive effects.

A couple of additional observations may be useful with respect to the scope of the principle. First, efficiency is defined in terms of cost, quality, and the capacity to innovate (for instance, in *Unilever* (n 29) or *Telia Sonera* (n 22)). However, the application of the principle will typically consider a hypothetical competitor that differs from the dominant firm,³³ for instance, in terms of the range of products that it offers both horizontally as well as vertically.³⁴ Hence, the efficiency of the hypothetical competitor is considered in relation to a subset of the products offered by the dominant firm.³⁵ When there are efficiencies stemming from the scope of products offered by the dominant firm, it may not be feasible for a competitor (even hypothetically) to achieve the same

32 See Pablo Ibanez Colomo, 'As efficient competitors in case T-612/17, Google Shopping: the principle and the connotations' (Chillin'Competition, 19 November 2021).

33 See Pablo Ibanez Colomo, 'Why article 102 TFEU is about equally efficient rivals: legal certainty, causality and the competition on the merits' (Chilling competition 10 May 2021) and the exchanges with Tim Cowen.

34 The issue is not discussed as such by the Guidance paper or, as far we are aware, by the Courts.

35 For instance, where the dominant firm is vertically integrated, and efficiency is considered only in relation to a downstream product.

level of cost with respect to a narrower set of products considered in isolation and the principle will fail to identify circumstances in which the position of dominant firm cannot be challenged.

Second, one can also wonder whether the Court has developed a principle with respect to as-efficient competitors that applies beyond pricing practices. The Court, in *Servizio Elettrico Nazionale* (n 28) indicates (para 79) that the principle has application across the board: ‘The relevance of the material or rational impossibility for a hypothetical competitor, which is as efficient but not in a dominant position, to imitate the practice in question, in order to determine whether that practice is based on means that come within the scope of competition on the merits, is clear from the case-law on practices both related and unrelated to prices’. Still, with respect to non-price related conduct, the Court only makes reference to the indispensability criteria in cases of refusal to supply as an application of the principle (at para 83)—‘Regarding the second category of practices referred to in paragraph 79 of the present judgment, namely practices not related to pricing, such as refusal to supply goods or services, the Court has emphasized that the choice of an undertaking in a dominant position to reserve to itself its own distribution network does not constitute refusal to supply contrary to Article 102 TFEU where, specifically, it is possible for a competitor to create a similar network for the distribution of its own goods (see, to that effect, judgment of 26 November 1998, *Bronner*, C-7/97, EU: C: 1998: 569, paragraphs 44 and 45)’. The reference to indispensability in *Bronner* is also possibly a source of confusion as in *Bronner*, indispensability is a *necessary* condition for the finding of an infringement; accordingly, when it is possible for competitor to develop an alternative network, so that (according to the Court) the inference would be that the conduct does not foreclose an equally efficient competitor, the conduct is not abusive. Hence, the approach suggested by the Court leads to the conclusion that the absence of foreclosure of an as-efficient competitor is actually a safe harbour (unlike what happens with pricing practices).

At the opposite, in *Google Shopping* (n 15), the Court (para 538) has denied the relevance of an as-efficient competitor *test* for the assessment of self-preferencing because this conduct is not a ‘pricing practice’. The Court was thus not discussing the as-efficient competitor principle but rather the as-efficient competitor test. Still, one would expect the denial to apply to the principle more generally.

Besides, one can wonder whether the principle offers useful guidance for non-pricing practices. Besides refusal to supply, it might concern self-preferencing and pure

tying.³⁶ As discussed in the last section, the relevance of the as-efficient competitor principle and associated test should be assessed in relation to particular theories of harm. It is not clear a priori which theories of harm involving self-preferencing or pure tying would be usefully informed by an as-efficient competitor principles and associated test.³⁷

C. The amendments of the Commission

There are a number of amendments adopted by the Commission that are relevant to the substantive principles.³⁸ First, the Commission has rephrased para 23 of the guidance paper, which now reads ‘With a view to preventing anti-competitive foreclosure, the Commission will generally intervene where the conduct concerned has already been or is capable of hampering competition from competitors that are considered to be as efficient as the dominant undertaking’. Hence, by substituting ‘normally only’ by ‘generally’, the Commission has effectively removed the soft safe harbour for conduct that do not foreclose as-efficient competitors. This, at least according to our review (and according to the motivation of Commission for adopting this amendment), contributes to greater consistency with the Court judgments.³⁹

There is, however, also one amendment that is not helpful as it might reduce the discipline that the Commission imposes on itself. With respect to the definition of anti-competitive foreclosure (para 19 of the guidance paper), the Commission has replaced the definition on anti-competitive foreclosure in terms conduct that removes access to the market by conduct that ‘adversely impacts an effective competitive structure’ to the detriment of consumer. As mentioned above, ‘effective competitive structure’ is ill-defined and the suspicion may arise that it could be used as a shortcut to avoid the analysis of anti-competitive effects. A more benign interpretation (as mentioned above) might be that a change in effective structure actually refers to the foreclosure or marginalisation of competitors. In any event, the Commission could have chosen not to adopt a wording that

36 Situation in which products (the tying good over which the dominant firm has a monopoly position and a tied good for which there is a competitive supply) are only sold together. Mixed bundling (in which, for instance, the monopoly good is also sold independently) can be seen as involving an exclusivity rebate—and hence can be seen as a pricing practice.

37 Of course, rebates contingent on exclusivity or bundled rebates can be seen as instance of mixed bundling.

38 Other amendments that relate to the test itself will be discussed below.

39 Note that much of the opposition to the use of price cost test in the USA arises with respect to the use test as a safe harbour and concerns about type II errors (see, for instance, Steven Salop, ‘The raising rival cost foreclosure paradigm, conditional pricing practices and the flawed incremental price cost test’ (2017) 81 Antitrust Law Journal 371).

can potentially be used to circumvent the discipline of the assessment of effects.

In its commentary on the amendments, the Commission (or at least a group of officials) also expresses concerns that the assessment of effects imposes such a burden that it might lead to under enforcement, i.e. type II errors (see page 4, under title III). The commentary then finds solace from the *Google Shopping* (n 15) and *Google Android* (n 14) judgments in which the Court has found that ‘the Commission has established to existence of an abuse to the requisite standard without there being any need to carry out a speculative assessment of the hypothetical events that might have taken place absent the abuse’. Indeed, one cannot disagree that assessments should not be speculative and the guidance paper itself (para 21) already had referred to realistic (rather than hypothetical) scenarios. But the definition of a realistic counterfactual is possibly the most important dimension of the assessment that needs to be undertaken. The fact that, in its commentary, the Commission has chosen to signal what could be interpreted as a relaxation of this fundamental discipline might be a source of concern.

D. Summary on the as-efficient competitor principle

Overall, the foreclosure of as-efficient competitor is a sufficient condition for finding an abuse, both in the guidance paper and our account of Court judgments. Competitors that are as efficient as the dominant should be in position to challenge the dominant firm. The absence of foreclosure of an as-efficient competition is not a sufficient condition for finding that a conduct is not abusive, neither in the amended guidelines, nor in our account of Court judgments. When the conduct of the dominant firm does not lead to the marginalisation of the as-efficient competitor but to the marginalisation of less efficient ones, the criteria to identify a conduct as abusive is competition on the merit. Finally, when the conduct of the dominant firm leads neither to the foreclosure of as-efficient nor less efficient ones, a conduct can still be found abusive. The criterion is again competition on the merit. This concept has however not been delineated in such a way that it could be said to be operational.⁴⁰ Advocate General Rantos in *Servizio Elettrico Nazionale* (n30) (as well as the Court of Appeals in *Royal Mail* (n 31)) has adopted the view that the absence of normal (or competition on the merits) should be understood in terms of the presence of anti-competitive effects. It would clarify matters greatly if that view was adopted by the Court or indeed the Commission in its guidelines.

⁴⁰ The Court has, however, identified factors that are relevant to assess the magnitude of foreclosure.

IV. As-efficient competitor test

In order to organise the discussion, it is useful to consider how the as-efficient competitor test is defined in the guidance paper (Section IV.A) and in particular whether it is framed as a sacrifice test or a matching test. We then discuss the use of the test in recent cases (Section IV.B).

A. The test in the guidance paper

The Commission presents the test first in the section that relates to price-based conducts, in terms of a sacrifice test. Specifically, at para 25, the Commission indicates that in order to assess whether an equally efficient competitor is likely to be foreclosed, it ‘will examine economic data relating to cost and sales prices, and in particular whether the dominant undertaking is engaging in below-cost pricing’. The inference from a sacrifice would be that a competitor with the same cost and selling the same product would need to incur a loss in order to match the offer of the dominant firm (as indicated in para 27). In the section on predation, the Commission describes the sacrifice test as distinct from the as-efficient competitor test; whereas average avoidable cost (or the long-run average incremental cost (LRAIC)) would be the recommended benchmark to implement the as-efficient competitor test, sacrifice could be assessed in relation to alternative counterfactual (para 65). This is presumably meant to capture situations in which predation involves strategies, for instance, in terms of product development or promotion that do not relate to prices.

When discussing conditional rebates, the Commission does not emphasise a potential sacrifice, but rather whether a competitor would be in position to match the offer of the dominant firm; at para 41, ‘the Commission intends to investigate, . . . , whether the rebate system is capable of hindering expansion or entry even by competitors that are equally efficient by making it more difficult for them to supply part of the requirements of individual customers. In this context, the Commission will estimate what price a competitor would have to offer in order to compensate the customer for the loss of the conditional rebate if the latter would switch part of its demand (“the relevant range”) away from the dominant undertaking’.

Similarly, in discussing margin squeeze, the Commission (para 80) focuses on whether a competitor with the same cost as the dominant firms and charging the same price in the downstream market would be able to trade profitably.

Given that the discussion of the test by the Commission emphasises different aspects, it is useful to spell out whether the sacrifice for the incumbent firm could differ from the losses for the as-efficient competitor. Consider a situation in which the dominant firm and the competitor

sell only one product⁴¹ and make offers to customer for this product (or product range) and the customer chooses solely on the basis of their offers. If a competitor that has the same cost as the dominant incurs losses in order to make the customer indifferent between their offer for a particular product (or output range) and that of the dominant firm, then necessarily, the dominant also makes losses on that product (or output range). This is because by construction, the dominant firm and the competitor incur the same cost for the product (or output range) concerned and their revenues, which is also what the customer pays, need to be identical to make the customer indifferent. Hence, whatever loss an as-efficient competitor incurs in matching the offer of the dominant is also a loss that the dominant firm incurs as a consequence of his pricing practice and could avoid with another conduct.^{42,43}

That is not say, however, that the conduct involves an overall loss for the dominant firm. For instance, when the dominant firm makes sales that are non-contestable, providing a rebate on all sales (including non-contestable

ones) if the customer also purchases contestable sales from the dominant firm, i.e. an exclusivity rebate, such that an as-efficient competitor makes losses on the contestable sales, does not imply that the dominant firm makes overall losses (given the profit they earn on non-contestable sales). But the dominant firm makes less profit than what they would earn if they did not offer the rebates that foreclose the as-efficient entrant.

The sacrifice of the dominant firm and the losses of potential entrant can still diverge because of external effects across products that are not challenged by the entrant. For instance, if the dominant firm is selling a complement that is not challenged by the entrant, a reduction in the price for the product that is challenged by entry will also increase profits from the sales of the complement. In those circumstances, the sacrifice of the dominant firm will be lower than the losses of the entrant.

Hence, when customers choose solely on the basis of the offers made by the dominant firm and the competitor, in the absence of external effects across other products, whether one takes the perspective of the sacrifice of the dominant firm or the losses of the hypothetical competitor does not matter. But the perspective of the losses of a hypothetical competitor is directly focused on the question of foreclosure.

Overall, the test thus involves checking whether a competitor as efficient as the dominant firm, as measured by the cost that it incurs, would be in a position to profitably match the offer of the dominant firm. An implicit assumption of the test is that the competitor would offer the same product variety⁴⁴ so that a competitor that has either lower cost or is offering superior quality should be in position to win customers from the dominant firm. The test refers to an offer that could be for a particular customer and for a specific product/quantity.

As the test measures efficiency in terms of cost, the question of what cost should be taken into account naturally arises. This question is related to the horizon over which efficiency is assessed and the definition of what is an as-efficient (hypothetical) competitor. Whether the cost that is this relevant for the implementation of the test then includes only average avoidable cost (AAC, the cost that the dominant would save by not producing the product/volume range concerned, taking their capacity and sunk assets as given) or rather the LRAIC (the cost incurred in producing the additional product/volume range, including the investment in additional capacity/assets that would be required, relative to a counterfactual in which it is not produced) depends on the horizon.

41 Or more generally, only the products affected by the potentially abusive conduct (for instance, the products covered by a bundled rebate).

42 Consider, for instance, a rebate for non-contestable sales $(1-x)$ that is contingent on the purchase of contestable units x from the dominant firm (with the customer requirement normalised at 1). Consumers decide on the basis of the total cost of the procurement of non-contestable as well as contestable sales. The competitor can challenge the offer of the dominant firm when he can profitably attract the customers or, in other words, make an offer that involves the same total expenditure for the customer. When the customer purchases from the incumbent, he pays the discounted prices $(d p_d)$ on the overall purchase. When he purchases for the entrant, he pays the price offered by entrant p_e for the contestable units and then the non-discounted price for the non-contestable units (i.e. $(1-x) p_d + x p_e$). Hence, with $(1-x) p_d + x p_e = d p_d$, we have that $p_e = \frac{(d-(1-x)p_d)}{x}$. With a marginal cost of c , the profit of the entrant if he supplies the non-contestable units (relative to not supplying) is equal to $\left(\frac{(d-(1-x)p_d)}{x} - c\right) x = (d - (1-x) p_d) - cx$. The sacrifice of the dominant firm if he supplies the non-contestable sales relative to the situation in which he does not he given by $(d p_d - c_{nc}) (1-x) + (d p_d - c) x - (p_d - c_{nc}) (1-x)$. With c_{nc} denoting the unit cost of non-contestable sale. Simplifying, one obtains the same expression as the profit of the entrant. The reasoning can be transposed to bundled discounts (with fixed requirements and independent demand, such that non-contestable sales are associated with the monopoly good and the contestable sales are associated with the competitive good). The same logic applies if the goods are not independent in demand.

43 In the case of a margin squeeze, if an as-efficient competitor cannot match the offer of the vertically integrated firm downstream, the vertically integrated firm incurs a loss if the revenue from the sale of the input is treated as an opportunity cost (see Petzold, 'It is all predatory pricing: a margin squeeze abuse and the concept of opportunity cost in EU competition law', (2015) 6 Journal of European Competition Law and Practice 346). The Court in *Telia Sonera* (n 21) fails to see the revenue as an opportunity cost but somewhat confusingly assumes that the integrated firm would have to incur the wholesale price. At para 42, 'In particular, as regards a pricing practice which causes margin squeeze, the use of such analytical criteria can establish whether that undertaking would have been sufficiently efficient to offer its retail services to end users otherwise than at a loss if it had first been obliged to pay its own wholesale prices for the intermediary services'.

44 As discussed below in Section V, this assumption is important and might lead to overenforcement (type I errors).

The AAC may be relevant for a sacrifice in the short term given past investment and would thus be relevant for the ability to compete of an entrant that has also incurred these costs. By contrast, the LRAIC would be relevant for a sacrifice in the longer term and would be relevant for the ability to compete of an entrant that has not incurred these costs.

The question of whether one hypothetical competitor (the one having incurred capacity cost in the same way as the incumbent) or the other (the one who has to incur capacity cost) is more relevant for the assessment depends on the circumstances. Whereas the long-run as-efficient hypothetical competitor test provides insight about long-term foreclosure, this prospective may not be appropriate when the conduct of the dominant firm in the short term prevents the emergence of such competitor (so that an effective price in excess of LRAIC may be a concern). This is recognised by the guidance paper at para 24 in which the Commission refers to a less efficient competition so that ‘The Commission will take a dynamic view of that constraint (exercised by the less efficient competitor), given that in the absence of an abusive practice such a competitor may benefit from demand-related advantages, such as network and learning effects, which will tend to enhance its efficiency’. In its amendment, the Commission has emphasised this aspect.⁴⁵

Given that the dominant firm would, by construction, incur a sacrifice in putting forward an offer that a hypothetical competitor would not be able to match, there has to be another benefit for the dominant firm. In that respect, failing the as-efficient competitor test begs the question of what is the benefit that makes the conduct rational/profitable. This answer may be in terms of the dynamic effects mentioned above,⁴⁶ but more generally this question can only be understood in the context of a well-formulated theory of harm. The as-efficient competitor test is thus a test without theory. As discussed further below, in order to be implemented and interpreted

properly, this test needs to be framed as part of the validation of specific theories of harm.

B. The use of the test in recent cases

The Court has, in some instances, faced difficulties in formulating the test. For instance in *Tomra* (n 12), at para 78, the Court indicated ‘The General Court added, in that regard, in paragraph 267 of the judgment under appeal, that the exclusionary mechanism represented by retroactive rebates does not require the dominant undertaking to sacrifice profits, since the cost of the rebate is spread across a large number of units. If retroactive rebates are given, the average price obtained by the dominant undertaking may well be far above costs and ensure a high average profit margin’. Hence, the Court rightly observed that *Tomra* may well earn a high average profit because of non-contestable sales but incorrectly concludes that it does not sacrifice profits.

The Court has also faced some difficulties with the concept of a hypothetical competitor that would have the same cost as the dominant firm. In *Post Danmark II* (n 24), the Court dismissed the test because it found that in the circumstances of the case, no competitor could be expected to have the same cost as *Post Danmark*.⁴⁷ However, the test is not meant to assess whether actual competitors are foreclosed but whether the conduct of a dominant firm is capable of foreclosing competitors that would be as efficient.⁴⁸ As discussed above, failing the test provides a sufficient ground for finding the conduct abusive and whatever the efficiency of existing competitors, it would be dispositive. If the test is passed, it is not dispositive and the potential harm that can arise when competitors are less efficient should still be assessed. One of the benefits of the test is precisely that it does not rely on speculation about the actual level of efficiency of competitors.⁴⁹ In addition, irrespective of whether the test is passed or not, the magnitude of the profit (positive

45 See, in particular, title B of the Policy Brief (n 6). At footnote 44, the authors make the argument more explicit ‘Importantly, the entrant may remain less efficient than the incumbent in the short and medium term. However, the fact that the entrant offers a differentiated product may still imply that it may enjoy a distinct and specific demand and that it can constitute a credible competitive force in the market. Such competitive force could develop in the future as a competitive threat on the incumbent’s position on the overall market or part of it’. In terms of actual amendments, the Commission has replaced ‘however’ by ‘At the same time’ in the first sentence of para 24 and has added references to *Unilever* (n 28) and *Post Danmark I* (n 23).

46 The significance of the issue is particularly clear in cases like *Telefonica*—in which the theory of harm relates the progressive deployment of a network for the final mile by competitors (the so-called investment ladder theory). See also the *Royal Mail* case in the UK (n 30).

47 See also the Commission decision on *Google AdSense*, at para 324—see *Google Search AdSense* (Case AT.40411), Commission Decision of 20 March 2019.

48 Admittedly, the finding of the Danish competition agency that led to the request for a preliminary ruling was not helpful; at para 17, the ECJ (n 23) observed that ‘According to the Konkurrencerådet, in the light of the particular characteristics of the relevant market, it cannot be required, for the purposes of that comparison, that a new competitor be as-efficient in the short term as *Post Danmark*’. Contrary to what the agency observed, there is no requirement for an actual competitor to be as efficient as the dominant. The test involved is purely hypothetical.

49 When it is clear that actual competitors are not remotely close to long-run hypothetical competitors, it is possible to simulate to what extent the conduct of the dominant firm will prevent the development of a competitor (using assumptions about the development of its cost). This may be informative to assess a dynamic theory of harm. Such an exercise can be seen as a hypothetical dynamically efficient competitor (see, for instance, the *Royal Mail* case, n 30).

or negative) that an as-efficient competitor would obtain will provide useful information about the effect of the conduct.

However, in *Google shopping* (n 15), the Court emphasised (in response to an argument by Google) that the as-efficient competitor refers to a hypothetical and not an actual competitor (at para 539). The Court added that an assessment of the actual efficiency of competitors would be difficult to achieve and would, in any event, face a problem of endogeneity, as the actual level of efficiency of competitors could be driven by the anti-competitive behaviour of the dominant firm (para 540, 'Furthermore, assuming it is possible for a competition authority such as the Commission to compare the actual efficiency of several undertakings by studying in depth the various parameters of their business, such an exercise could produce objective results only if the conditions of competition were not in fact distorted by anticompetitive behavior. Consequently, such an exercise could not in itself serve to determine whether such conduct had been established'.)

Besides conceptual issues, the test has been applied by the Commission in the *Intel* decision.⁵⁰ This case involved the assessment of rebates contingent on exclusivity. In order to match the offer of Intel for contestable sales, a competitor would thus need to compensate customers for the loss of rebates that they would incur on the remaining purchase from Intel. The Commission compared the share of sales that should be contestable (the required share) to ensure that the matching offer would be profitable with an assessment of the share that was actually likely to be contestable. In its second judgment, the General Court (n 20) found that the evidence gathered by the Commission did not meet the required standard. The assessment of the evidence by the Court is, however, a source of concern.

First, the Court fails to recognise that key parameters for the implementation of the test are subject to measurement errors. For instance, regarding the contestable share of Dell, the Court observed at para 239: 'Accordingly, there remains a doubt as to the definitive percentage of the contestable share for Dell and, more particularly as to that contestable share having to be set at 7.1%'. Hence, the Court seems to take the view that there is a single correct number for the contestable share of Dell. The Court even criticises the Commission for having considered alternative sources of information to assess the contestable share. At para 244, the Court found that 'Even if the Commission took the view, in the contested decision, that those estimates were slightly higher than the estimate taken

from the 2004 spreadsheet, with the result that it was not necessary to take them into account, the fact remains that the very existence of those estimates is sufficient to demonstrate that the assumption of a 7.1% contestable share was not the only conceivable assumption and casts doubt on the substance of the assessment made by the Commission in the contested decision'. Hence, the underlying assumption of the Court seems to be that there is a single correct number and that all available information should be supporting that number.

This reveals a misunderstanding about the nature of the empirical exercise that the implementation of the as-efficient competitor involves. There is no direct and perfect observation of the key parameters involved but a process in which different pieces of information are aggregated to form a view of the magnitude of these parameters. The different pieces of information that are used may conflict with one another and the weight that should be given to any of them should be informed by a careful assessment of how they relate to the parameters being assessed⁵¹ and the measurement errors that may be involved.⁵² If the aggregation of the relevant information will lead to a point estimate, i.e. a particular number, there will be some uncertainty surrounding the estimates. Hence, it is best to consider each point estimate as being surrounded by a confidence interval. In other words, it is important to recognise that if 7.1 per cent is the point estimate for the contestable share of Dell, this share could also be close but somewhat higher or somewhat lower. To the extent possible, one should also set boundaries of the interval around the point estimate that will include most of the possible values. This can only be undertaken by a careful robustness analysis in which alternative but plausible estimations of key parameters are taken into account.

As a consequence, the implementation and interpretation of an as-efficient competitor test does not rest on the comparison between two numbers, namely, the point estimate of the contestable share with that of the

51 Interestingly, the Court seems to acknowledge the principle. For instance, at para 163, the Court found that 'Although the Commission must produce sufficiently precise and consistent evidence to support the firm conviction that the alleged infringement took place, it is important to emphasize that it is not necessary for every item of evidence produced by the Commission to satisfy those criteria in relation to every aspect of the infringement. It is sufficient if the body of evidence relied on by that institution, viewed as a whole, meets that requirement'. The way in which the Court dealt with the evidence put forward by the Commission does not arguably give effect to the principle.

52 This can be described as a Bayesian process in which the prior about the parameter is updated. See, for instance, Andrew Gavil and Steven Salop, 'Probability, presumptions, and evidentiary burdens in antitrust analysis, revitalizing the rule of reason for exclusionary conduct' (2020) 168 *University of Pennsylvania Law Review* 2107.

50 *Intel* (Case COMP/C-3/37.990) Commission Decision of 13 May 2009.

required share. Even when the estimated required share is lower than the estimated contestable share, there may be a significant probability that the true required share is higher than the true contestable share. To illustrate, assume that one estimates that the required share is 7 per cent but that it could range between 5 and 9 per cent and further assume that one estimates that the contestable share is 10% but that it could range between 8 and 12 per cent. The point estimate of the contestable share is higher than the point estimate of the required share, suggesting that an as-efficient competitor could profitably challenge the rebate of the dominant firm. Still, in this illustration, there is an overlap in the confidence intervals, between 8 and 9 per cent. Hence, there is some probability that the required share will exceed the contestable share, so that an as-efficient competitor would not be in position to profitably challenge the rebate of the dominant firm. An overall assessment of the evidence will thus take into account both the point estimate of the key parameters and the range of values that they could take given the available evidence.

Such an approach, in which the evidence is carefully aggregated, and alternative estimates are considered, is arguably what the Commission did but the Court takes issue with it. For instance, at para 238, the Court reports that ‘The Commission states, in that regard, in its written pleadings, that a contestable share ranging between 5.6% and 10.4% in an unbiased analysis of the D1 email of 10 November 2005 was consistent with the figure in the 2004 spreadsheet, namely 7.1%’. The Court adds at para 239 that ‘Such a conclusion cannot be accepted, as the result of the AEC test could vary depending on whether the contestable share used was 7.1% or 10.4%’. Indeed, the Court should accept the conclusion of the Commission that the contestable share could range between 5.6 and 10.4 per cent according to one source information. It might decide that the evidence is surrounded by too much uncertainty to draw inferences from it. But this is different from requiring that all evidence should support a single number.

There is a similar concern with respect to the way in which the Court considers the result of the test for different quarters. The Court considers evidence for different quarters in isolation. For instance, with respect to Dell, the court focuses on whether the test is passed for four quarters (December 2002–2003). With respect to HP, the Court focuses on whether data for November/December 2002 are taken into account. The Court seems to consider that each quarter should be considered in isolation—so that the outcome of the test is the collection of individual assessments for each quarter. However, given measurement errors, it is more appropriate from a methodological

perspective to consider the results in the aggregate and assess whether on the whole during the period, there is evidence of foreclosure (for an as-efficient competitor). Specifically, the fact that the test may fail in some quarter but will be passed in others could be a reflection of the fact that the evidence is subject to measurement errors. An interpretation of the evidence as a whole should take into account both the proportion of the period for which the test is passed or fails and the magnitude of the potential foreclosure (as captured by the magnitude of the difference between the required share and the contestable share).⁵³

It is also worth emphasising that not only should inference from the implementation of the test be drawn considering margins of errors but that the test itself is only one piece of evidence. As emphasised by the Court,⁵⁴ other pieces of evidence should be considered and a decision should be based on the overall assessment of the evidence.

V. A range of theories of harm

As mentioned in the previous section, the as-efficient competitor principle and the associated test are not derived from a particular theory of harm. The principle of a red line would seem to rest on the intuition that it cannot be in the customer’s interest to allow a dominant firm to tilt the playing field against competitors that are equally good, in particular in the longer term as it will affect incentives to invest, but this intuition is not supported by a particular formal reasoning.

At the same time, it is not difficult to find circumstances in which a dominant firm may fail the test even though its conduct is not motivated by the presence of a competitor (thereby leading to type I errors); for instance, a dominant firm selling complements might sell one of them below marginal cost. Indeed, a monopolist (who is not challenged by entry) would do so. Similarly, a monopoly platform might charge a price below cost on one side of the platform. At the opposite, it is not difficult to find circumstances in which the as-efficient competitor test would fail to capture anti-competitive effects (see below); even if as highlighted in the previous section, enforcement when an as-efficient competitor can match the offer of the dominant firm is left open, it is important

⁵³ In addition, the Court seems to attach a particularly strong weight to the evidence put forward by Intel (in the context of its second proceeding in front of the General Court); for instance, the fact that (219) ‘the evidence relied upon by Intel is not completely lacking in evidential value’ is sufficient for the Court to question the Commission analysis.

⁵⁴ See, for instance, *Post Danmark II* (n 23) para 29.

to understand these circumstances and thus to explore the theories of harm for which this may arise.

Amongst theories of harm in relation to exclusionary abuses, there is a common distinction (emphasised in US enforcement) between predation and raising rival cost theories.⁵⁵ Predation involves an intertemporal aspect with a period of low prices involving a sacrifice, leading to exclusion and followed by a period in which market power is exercised by the predator. By contrast, raising rival cost (RRC) theories involve conduct that forecloses competitors and thereby increases the cost of access to the market. The conduct could, in principle, increase the profit of dominant firm during the period during it is implemented (a static setting) and (or) lead to benefit in future periods (in a dynamic framework such as that discussed above). Relevant conduct could include not only pricing conduct (rebates, exclusive dealing, or margin squeeze) but also non-pricing conduct (like tying and refusal to supply). It has been argued, in particular in the USA that the ‘price cost’ test (using the US terminology) is generally not useful to assess (price-related) RRC theories. The concerns with respect to the price cost test in the USA arise with respect to the use of the test as a safe harbour and thus type II errors. This is particularly relevant as the use of the test as a safe harbour was sometimes advocated in the policy debates surrounding the enforcement of section II of the Sherman Act and is supported by some case law (see Salop 2017; Scott Morton and Abrahamson 2017⁵⁶). This is, of course, much less relevant in the EU, given that that the Court did not use the test as safe harbour (as discussed above). In addition, price cost tests have sometimes been used in the USA in way that does not take into account the overall consequences of the pricing conduct (for instance, considering the price on marginal sales rather than the effective price in the case of retroactive rebates⁵⁷). Hence, the terms of the debate in the USA and the EU are somewhat different.

RRC theories, however, involve a collection of very different theories of exclusion. In this section, we review a number of theories of harm that have been developed in the literature and discuss whether the as-efficient competitor principle, and associated test, as currently implemented as a red line, would lead to overenforcement (type

I error).⁵⁸ We also consider whether there are theories of harm for which a safe harbour on the basis of the observation that *less efficient* competitors are not foreclosed would lead to a type II error. Our ambition is not to provide a characterisation of all theories of harm that have been put forward but rather to motivate through a number of illustrations the deployment of an efficient competition test contingent on particular theories.

We first consider two theories of harm for which the as-efficient competitor principle and associated test would lead to type I errors.

A. Exclusivity discount to boost demand

Consider discounts contingent on reaching a particular share of a customer’s overall purchase (a market share discount) in the framework of Calzolari and Denicolo (2020).⁵⁹ They consider a framework in which there is an asymmetry between a dominant incumbent and a competitor in terms of capacity (so that the competitor faces a capacity constraint), products are potentially differentiated, buyers (consumers or retailers) value variety, and the dominant firm uses market share discounts in order to ‘boost’ the demand of its product. They show that in equilibrium, the dominant firm will always propose an exclusivity discount (or a discount contingent on a market share of 1) such that the competitor is totally foreclosed. This arises because starting from an outcome in which both firms are active, a deviation to exclusive representation always increases profit because it boosts its demand (considering that when both firms are active, in equilibrium, the large firm has a lower price). The effect of exclusivity discounts on consumer is, however, ambiguous, as it leads to lower prices but reduces product variety. At the same time, in this context, the as-efficient competitor test, as currently implemented (considering whether an as-efficient entrant could match the offer of the incumbent while selling the same product) will always fail.⁶⁰ This is because, if the competitor could match the offer of incumbent firm, they would be able to attract the consumer as they would be offering some benefit in terms of product variety (and hence exclusivity would not be an equilibrium). Hence, the test will involve type I errors, failing to identify circumstances in which the exclusivity discount is pro-competitive. This is because the test, by assumption, does not capture the competitors’

55 See, for instance, Steve Salop, ‘The raising rival cost foreclosure paradigm, conditional pricing practices and the flawed incremental price cost test’ (2017) 81 *Antitrust Law Journal* 371.

56 Fiona M. Scott Morton and Zachary Abrahamson, ‘A unifying analytical framework for loyalty rebates’ (2017) 81 *Antitrust Law Journal* 777.

57 See Chiara Fumagali, Massimo Motta and Claudio Calcagno, Exclusionary practices, *The economics of monopolization and abuse of dominance* (Cambridge University Press 2018) for a discussion of some of the relevant case.

58 See, for instance, Luc Peepkorn, ‘Conditional pricing and the AEC test—A happy marriage or an awkward couple?’ (2019), *Concurrences* 40 or Fiona M Scott Morton and Zachary Abrahamson (n 56).

59 Giacomo Calzolari and Vincenzo Denicolo, ‘Loyalty discounts and price-cost tests’ (2020) 73 *International Journal of Industrial Organisation* C.

60 *Ibid.*, Section 6.2.

ability to compete against the dominant firm, which is due to fact that it provides some product variety. When product differentiation is significant, the test will perform poorly and lead to type I errors.⁶¹

B. Margin squeeze—extracting rents from downstream competitors

Julien et al. (2014)⁶² consider two possible motivations for margin squeeze. On the one hand, margin squeeze could be implemented in order to exclude a competitor in the context of theories of harm in which the market power upstream is undermined by opportunism or when the integrated firm aims to protect its upstream market power from potential competition by downstream customers. On the other hand, an integrated firm might want to set downstream retail price and upstream input prices simply to exercise market power. The optimal prices will reflect the incentive to extract some of the value created by the downstream competition beyond what the downstream subsidiary can yield (through product differentiation). This tends to lead to excessively high input prices. At the same time, the upstream firm has an incentive to increase the cost of rivals downstream. In those circumstances, the downstream price will reflect the opportunity cost of the integrated firm (its actual cost downstream and upstream plus the lost net revenues on the sales of input to the downstream competitor). In the absence of product differentiation downstream and with an equally efficient competitor downstream, the opportunity cost of the integrated firm, and hence the downstream price, will lead to a downstream margin equal to input price (so that the test is met).⁶³ When the downstream competitor is more efficient, however, the downstream price will lead to a downstream margin that is less than the input price, so that the test fails.⁶⁴ However, if the upstream firms needs to avoid a margin squeeze, they will either reduce the input price or increase the retail price. In the absence of product differentiation, they will actually reduce the input price (and buyers are not worse off). The matter is different with product differentiation; the opportunity

cost of the integrated firm will then be lower as the increase of its own downstream output by one unit leads to a lower loss of revenue on the input, as only part of its additional output comes at the expense of sales of the rival. In the presence of product differentiation, the test also fails. Faced with the constraint of meeting the test, the integrated firm will actually increase its retail price—leading to an increase in the retail price of the competitors so that consumer can be worse off. This is referred to as the ‘price umbrella’ effect with softens competition. Interestingly (as in the previous case), the as-efficient competitor test in this case does not involve type I errors when there is no product differentiation downstream and the authors propose a modified test in the presence of product differentiation in which the benchmark for the identification of anti-competitive effects involves a lower margin.

We now consider theories in which harm might not be identified by an as-efficient competitor test. As mentioned above, the current policy, in which the as-efficient competitor principle and the associated test only involve a red line, would not prevent the enforcer from catching these situations. But it is useful to try and understand whether such circumstances are likely to be associated with some theories of potentially wide applicability.

C. Buyer miscoordination

One potential concern is that theories of harm involving buyer miscoordination can lead to harm without sacrifice (or equivalent situations in which an equally efficient entrant is foreclosed even if they could match the offer of the dominant firm). If there is an asymmetry between the dominant firm and the competitor such that the competitor needs to secure the demand from more than one customer, then there will be instances in which buyers do not accept attractive offers from the competitor because they do not expect that others will do so. This is an instance of buyer miscoordination. This arises in the context of exclusive dealing contracts in which the dominant firm can propose a fixed fee for exclusivity before the entrant can make an offer; assume, for instance, that there are only two customers and that the competitor needs to supply both to enter. If both customers expect that the other one will accept an exclusive offer, they will anticipate that they cannot induce entry and will accept the exclusive offer for a nominal inducement.⁶⁵ The same issue arises if the dominant firm and the competitor compete for

61 There is no type I error when the competitor sells the same product.

62 Bruno Julien, Patrick Rey, and Claudia Saavedra, ‘The economics of margin squeeze’ (2014), CEPR Paper No. DP9905, 2014. See also Germain Gaudin and Despoina Mantzari, ‘Margin Squeeze: an above cost predatory pricing approach’, (2016) 12 *Journal of Competition Law and Economics* 151.

63 Using the notation of Julien, Rey, and Saavedra (n 62), with p , c_u , c , w denoting the downstream price, the upstream cost, the downstream cost of the integrated firm, and the input price, respectively, $p = c_u + c + (w - c_u)$ and $p - c = w$.

64 With x capturing the greater efficiency of the downstream competitor in terms of lower input requirement, $p = c_u + c + (w - c_u)x$ leads to $p - c < w$.

65 Ilya R. Segal and Michael D. Whinston, ‘Naked exclusion, a comment’ (2000) 90 *American Economic Review*, 296. See also Eric B. Rasmusen, Mark Ramseyer and John S. Wiley, ‘Naked exclusion’ (1991) 81 *American Economic Review* 1137.

exclusivity. As discussed for instance by Fumagali and Motta (2006),⁶⁶ the competitor can then charge a price in excess of cost and match the offer of the incumbent (for both firms) but will still be foreclosed.

In this framework, there will be circumstance however in which the as-efficient competitor test will identify harm; if the dominant firms make a discriminatory offer, exclusion is more likely to take place (as there will be no equilibrium without exclusion) but it is more likely to be detected by an as-efficient competitor test. In this instance, the incumbent could offer full compensation to one customer and a nominal compensation to the other. The customer with full compensation will thus accept whatever the choice of the other. The other one who cannot induce entry will also sign (for a nominal inducement). This is a strategy of ‘divide and conquer’; in this instance, however, the as-efficient competitor test applied to the customer who obtains full compensation will reveal that an as-efficient competitor is foreclosed.⁶⁷

D. Competition softening

Competition softening has been highlighted in a number of different settings. Consider first retroactive rebates with a threshold above non contestable sales—which have been analysed in a number of closely related models.⁶⁸ In this framework, there is a segment involving non-contestable sales as well as a segment that can be challenged by an entrant and rebates are linked across segments. The incumbent sets a volume threshold above the share of the non-contestable sale with a retroactive rebate. The incumbent set a very high price below the threshold (and a large rebate above) so that the entrant would have to provide a large compensation to the buyers if they were to try to capture all contestable sales. In those circumstances, the entrant finds it more attractive to enter at reduced scale. This rebate scheme has the effect of softening competition (in particular relative to alternative scheme involving incremental rebates, for instance).

Whether this instance would be detected by the as-efficient competitor test is unclear. Both the dominant firm and the entrant have a positive margin for contestable sale above the threshold. An as-efficient competitor test applied to sales below the threshold (considering that it would lead to a loss of rebates on the non-contestable sales) might reveal that the competitor would not be able to profitably match the offer of the incumbent. But there may be circumstances in which both the entry at reduced scale and entry for the entire segment of non-contestable sale both yield positive profit, but the profit in the former case is larger (so that entrant prefers entry at a lower scale).⁶⁹ This would be an instance of competition softening that would not be identified by the as-efficient competitor test applied over the whole range on contestable sales.

Competition softening also arises through a commitment to provide a discount to loyal buyers. Elhauge and Wickelgren (2015)⁷⁰ consider rebates involving a buyer commitment to exclusivity in the absence of fixed cost of entry (so that there is no issue of coordination). An incumbent firm offers both a rebate (off the price that it will offer in the second period to nonexclusive buyers) and a fixed remuneration for exclusivity. In the second period, both incumbent and entrant set linear prices. In this set-up, the incumbent actually commits not to offer a better price to the buyers who do not sign an exclusive contract. This type of contract will soften competition. The discount reduces the incentive of the incumbent to compete for free buyers and hence increases the price both free and captive buyers. Even though the as-efficient competitor could match the offer of the incumbent, he is better off not doing so.

Another example of competition softening arises when a dominant firm uses market share discounts to soften both inter and inter-brand competition. Inderst and Shaffer (2010)⁷¹ consider a framework in which a dominant firm upstream distributes its product through competing

66 Chiara Fumagalli and Massimo Motta, ‘Buyers’ miscoordination, entry and downstream competition’ (2008) 118 *The Economic Journal* 1196.

67 Similarly, in a theory of harm involving incumbency advantage in both incumbent and entrant can make exclusive offer and customer appear sequentially, the incumbent will always attract the first customer because they can extract more rent from the second customer—the incumbent will extract the monopoly profit from the second buyer whereas the entrant will only obtain the duopoly profit (as they will face competition for the incumbent anyway). But the incumbent would make losses on the first customer so that an as-efficient competitor test applied to that customer would identify harm (see Fumagali, Motta, and Calcagno, n 57).

68 Chao, Tan, and Leung Wong, ‘All units discounts as a partial foreclosure device’, (2018) 49 *Rand Journal of Economics* 155; Michael Salinger, ‘All-units discounts by a dominant producer threatened by partial entry’, (2017) 81 *Antitrust Law Journal* 508. See also Scott Morton and Abrahamson (n 56).

69 This set-up is similar to Greenlee et al. (2008). They consider bundled discounts across different products and exclusivity discounts. The foreclosure mechanism is similar as it involves a very high price on the monopoly good, a discount on the monopoly good if the customer also buys the competitive good from the dominant firm and a price above the competitive level for the contestable good (but there is no capacity constraint for the contestable good). In their set-up, there is neither type II nor type I errors and the as-efficient competitor test would correctly identify instances of consumer harm—but not in instances in which the overall surplus falls. See Patrick Greenlee, David Reitman and David S. Sibley, ‘An antitrust analysis of bundled loyalty discounts’ (2008) 26 *International Journal of Industrial Organization* 1132.

70 Einer Elhauge and Abraham Wickelgren, ‘Robust exclusion and market division through loyalty discounts’ (2015) 43 *International Journal of Industrial Organization* 111.

71 Roman Inderst and Greg Shaffer, ‘Market-share contracts as facilitating practices’ (2010) 41 *Rand Journal of Economics* 709.

retailers. Dampening the effect of competition between retailers can be achieved by an increase in the wholesale price. However, this will give retailers an incentive to purchase more from the competing entrant upstream. Dampening inter-brand competition would, at the opposite, require low wholesale prices. Market share contracts can then be used to induce profitable relative retail prices for the dominant firm product and that of the competitor, despite relatively high wholesale price levels.

Overall, we find that the inferences that can be drawn from the as-efficient competitor principle and associated test vary across theories of harm. There may be a concern about type I errors for some theories. Relying on the principle and associated test would also involve type II errors in relation to others. In this context, it would seem appropriate to frame the principle and associated test in the proposed guidelines as contingent on the theory of harm being investigated and not as a principle with general applicability.⁷²

A couple of final comments may be useful with respect to the evidentiary value of the test in two specific settings.

First, the Commission, in its review of the guidance paper has deemphasised the significance of the as-efficient competitor test with respect to rebates contingent on exclusivity (see the comments from the group of officials⁷³) but did not change the text of the guidance paper.⁷⁴ The commentary indicates that ‘the use of an AEC test is generally not warranted’ (save in exceptional circumstances that are not further described). The commentary refers (besides practical difficulties) to the fact that the Court has not ‘referred to an AEC test as one of the elements that the Commission is bound to take into account to carry out its assessment’ of such practice. This observation is slightly surprising in two respects; first, it is not clear to us that the Commission is bound to perform itself an as-efficient competitor test for any practice but it is equally bound to take into account the

evidence put forward by the parties, including evidence on the as-efficient competitor test if submitted, with respect to all practices (see *Intel* ECJ judgment (n 20), para 138). Second, even in the Court did not include the as-efficient competitor test as one of the elements that the Commission is bound to take into account to carry out its assessment of rebates contingent on exclusivity (in para 139 of the judgment); in the very same paragraph, the Court indicated that the Commission is ‘also required to assess the possible existence of a strategy aiming to exclude competitors that are at least as efficient as the dominant undertaking from the market’. This is, of course, exactly what the as-efficient competitor test aims to do.⁷⁵ Indeed, even in the context of rebates contingent on exclusivity, the as-efficient competitor test will provide valuable insights with respect to the competitors’ ability to challenge the dominant firm and the magnitude of foreclosure effect.⁷⁶

More generally, as argued above, whether an as-efficient competitor test is insightful and the inference that can be drawn from it, should be considered in the context of particular theories of harm. Such an approach seems preferable to a ‘carve-out’ of the scope of the test on the basis of a taxonomy of conducts or contracts. This is not to say, however, that the presumption of harm for exclusivity contracts (or more generally for contracts that reference rivals) should not be different from those that do not.⁷⁷

Second, there is no clear benchmark to interpret the margins by which an as-efficient competitor test is met. As discussed above, the conduct of a dominant firm could be anti-competitive when the as-efficient competitor is met even considering long-run average cost because of dynamic considerations (such that the entrant needs time to invest). The particular evolution of prices over time that will provide a safe harbour to the incumbent is difficult to determine.⁷⁸ This gradual evolution requires an assessment of the timeframe that is required for entry. The specification of such a glide path might also lead to perverse incentives (as it might slow down entry if it is

72 *Intel* is a good example of a case without a clear theory of harm (in part because the Commission decision initially relied on what it perceived to be the norm arising from *Hoffmann-La Roche*). The General Court, in its *renvoi* judgment, seemed to be concerned about the lack of integration between the test and the theory. See Case T-286/09 RENV, *Intel* (n 8), for instance, at para (324): ‘In that regard, before considering whether or not the Commission erred in its assessment in the contested decision of the reinforcing factor identified therein, consisting of a transfer of the rebates initially granted to HP to its competitors, it must be observed that the contested decision contains no analysis of the effect of that factor on the factors taken into consideration in the AEC test’.

73 See Policy Brief (n 6), Section C, page 6.

74 The commentary argues that no change was required because rebates contingent on exclusivity were considered as an exclusive dealing practice for which the as-efficient competitor is not mentioned in the guidance paper. In this respect, the commentary refers to para 34 of the guidance paper. It is however unclear to us how para 34, which does not refer to rebates, can be construed as suggesting that rebates contingent on exclusivity should be assessed as an exclusive dealing practice.

75 It is also striking that rebates contingent on exclusivity is the one area in which the Commission has extensively deployed the as-efficient competitor test (in the *Intel* case).

76 It is not clear that, as argued by the commentary, exclusive dealing is the appropriate framework to consider rebates contingent on exclusivity. The analogy can actually be misleading because exclusive dealing tends to rely on the assumption that if customers accept an exclusive dealing offer (made at an earlier stage of competition), they are committed, unlike what happens with rebates. See Enrique Ide, Juan-Pablo Montero, and Nicolás Figueroa, ‘Discounts as a barrier to entry’ (2016) 106 *American Economic Review* 1849.

77 The question of whether the guidelines should have structured presumptions is central but is beyond the scope of this paper.

78 As discussed above, this issue arises in the *Royal Mail* case (n 30).

too generous) and does not provide the same guarantee in terms of legal security as a 'simple' static test.⁷⁹

VI. Concluding remarks

This paper has discussed the as-efficient competitor principle and the associated test from enforcement and economic perspectives with a view to consider their role in proposed guidelines on the enforcement of Art. 102. We conclude that an evolution from the guidance paper is desirable, which recognises that the inferences that can be drawn from the principle and associated test have to be considered in the context of each specific theory of harm. It should be recognised in particular that there are theories of harm, like those involving competition softening for which the principle and test are unlikely to be informative.

Whether the current policy such that foreclosure of an as-efficient competition is a red line should be amended to recognise concerns about possible type I errors is a more delicate issue. The circumstances identified above in which concerns about type I errors arise are driven by the tests and its simplifying assumptions more than the underlying principle. In any event, the principle is firmly established in Court judgments and could not

easily be challenged in guidelines. Still, the inferences that are drawn from the implementation of test could reflect possible concerns about type I errors.

In any event, the as-efficient competitor test is only one piece of evidence in the overall competitive assessment. When it is relevant, its insights should, however, not be too easily dismissed on the grounds that it relies on data subject to measurement errors, as well as 'economic inferences, assumptions and approximations'.⁸⁰ Rather, these shortcomings need to be recognised, different pieces of data can be integrated and the robustness of results should be explored. Even if the implementation of the test is subject to measurement errors, the order of the magnitude of its results might be revealing and draw attention to issues or factors that need to be further investigated as part of the overall assessment. Interpreting the results also requires to develop an understanding of the methodological challenge in gathering the evidence and deploying the test. The experience of the second judgment of the General Court in Intel shows that this is a challenge.

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⁷⁹ To put it in another way, the entrant has the right not to be excluded, but has no right not to compete.

⁸⁰ Policy Brief (n 6), section C, page 6.