

January 2024

# Economic principles for the enforcement of abuse of dominance provisions

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## 1 INTRODUCTION

On 27 March 2023, the European Commission (EC) amended the Guidance on enforcement priorities,<sup>2</sup> which was issued in 2009,<sup>3</sup> and announced it would write new guidelines on exclusionary abuses. It also published a Competition Policy Brief explaining these initiatives in light of the evolution of the case law and the EC's practice (European Commission, 2023).

In this Policy Insight, we offer our view on how to use economics to improve the enforcement of the abuse of dominance provisions of Article 102 TFEU. We shall do so by covering the points amended by the EC Guidance Paper and discussed in the related Policy Brief. In particular, Section 2 will discuss the definition and the objective of exclusionary abuse; Section 3 will focus on horizontal foreclosure, suggesting how to treat conduct such as predation, rebates, and exclusive dealing; and Section 4 will focus on foreclosure in adjacent markets, discussing how to treat, for instance, refusal to supply, margin squeeze, self-preferencing, and tying.

Before dealing more extensively with each of these issues, however, we spell out a few principles that in our view should guide an effects-based approach of exclusionary abuse, and summarise the main arguments we shall make in our paper.

### 1.1 General principles

We welcome the EC's intention to issue Guidelines on the enforcement of exclusionary abuse and to clarify how it intends to incorporate an effects-based approach (fully endorsed by the Union Courts in recent case law) in such enforcement. This will promote predictability and legal certainty.

Consistently with the objective of improving legal certainty, it is important to stress that an 'effects-based' and 'economically sound' approach does not mean a 'case-by-case' approach where each case is assessed in a completely different way, nor that

- <sup>1</sup> This paper is based on two documents written for DG Competition of the European Commission. The information and views set out here are those of the authors and do not necessarily reflect the official opinion of the Commission. Without implicating them (on some of the issues, we 'agree to disagree'), we have greatly benefited from discussions with Giulio Federico, David Kovo, Thomas Buettner, Lluís Sauri, Hans Zenger, as well as members of DG Competition's Economic Advisory Group on Competition Policy (EAGCP), in particular Giacomo Calzolari, Patrick Rey and Emanuele Tarantino.
- <sup>2</sup> Communication from the Commission. Amendments to the Commission Communication – Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conducts by dominant undertakings.
- <sup>3</sup> Communication from the Commission - Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ C 45, 24.2.2009, p. 7.

each and every case should necessarily involve sophisticated quantitative evidence or bespoke economic theory models. We also note that in some quarters the economic approach to abuse of dominance cases has been equated to the use of the (misleadingly named) ‘as efficient competitor test’. We strongly disagree: the now vast body of economic knowledge on exclusionary practices clearly indicates that price-cost tests are useful when dealing with certain practices, but irrelevant or misleading with others. Relatedly, certain practices, such as exclusive dealing and other practices that reference rivals, should simply be presumed to be anti-competitive. For other practices (e.g., predation, selective price cuts, quantity rebates), instead, the price-cost test is useful and its result should determine presumptions of harm or lawful behaviour.

We also stress that *formulating an explicit and coherent theory of harm is essential in all cases*, and all quantitative and qualitative evidence should be interpreted within its framework. Of course, this is even more relevant for cases which do not fall neatly within either of the two categories above, for instance, cases of rebates conditional on a market share which is appreciable but far from 100%, or cases where the price-cost test does not give unambiguous results.

## 1.2 Summary

*General considerations on the concept of exclusionary abuse*

**Objective of enforcement.** In line with EU competition law, *the objective of the enforcement of Article 102 should be consumer welfare*, a concept that (a) takes into account not only prices but also other factors such as quality, variety, innovation; (b) should be seen in a dynamic (or forward-looking) perspective, which takes into account (appropriately discounted) future effects; and (c) should be assessed by factoring in uncertainty through a ‘balance of harms’ approach where both the probability and the magnitude of harm are taken into account.

We also believe that the Guidelines should avoid reference to possible objectives (e.g., protection of the competitive structure of the market) which are sometimes mentioned in the EU case law but lack a clear economic counterpart, are not well-defined, and might give rise to ambiguity.

**Definition of abuse.** As a corollary of the previous point, *for an exclusionary abuse to be established, it is necessary to show that the conduct produces anti-competitive effects by harming consumers*.

Accordingly, we believe that the Guidelines should refrain from using ambiguous concepts such as “conduct not being competition on the merit” or tests which seem to identify an abuse with exclusionary effects on rivals rather than adverse effects on consumers.

**Partial foreclosure.** Importantly, and consistently with the above, a practice can be anti-competitive even if it has neither the intent nor the effect of fully excluding the rival. However, the conduct at issue should have *appreciable* anti-competitive effects.

**Form versus effects of conduct.** Although an effects-based approach is incompatible with the idea that a practice which takes a particular shape should automatically be considered abusive, as suggested above the economic literature shows that certain practices have a stronger anti-competitive potential than others. Therefore, we favour establishing rebuttable presumptions for these.

*Horizontal foreclosure*

Turning to practices which involve market rivals, and following on from the previous point, exclusive dealing and rebates conditioned on buyers purchasing a large part of their needs from the dominant firm – for brevity, henceforth we call them ‘**practices that reference rivals**’<sup>4</sup> – do not necessarily require profit sacrifice on the side of the

<sup>4</sup> Taken literally, even a discount conditional on 10% of the buyer’s need does ‘reference rivals’. Instead, we use the term to mean that it involves a significant proportion of needs of the buyers.

dominant firm and have a high anti-competitive potential. Accordingly, they should be treated as *presumptively abusive*, and the burden of proving otherwise should fall on the dominant firm. For this category of cases, a price-cost test does not shed light on the lawfulness of the practice. Accordingly, if the defendant showed that it is setting prices above costs, this should not be treated as discharging its burden of proof.

**The role of the ‘as efficient competitor test’.** Price-cost tests are crucial evidence for the practices which likely include profit sacrifice, such as predation, selective price cuts and quantity rebates<sup>5</sup> (i.e., all forms of discounts which do not reference rivals). For such cases, we believe that – in line with case law – a price below the lower cost threshold (e.g., average avoidable costs) should be presumed unlawful, whereas a price above the higher cost threshold (e.g., average long-run incremental costs) should be presumed lawful. (A rule which could find above-cost pricing abusive, for instance, to protect less efficient competitors, would chill competition and harm consumers.) If prices fall between these cost thresholds, abuse should be established if the available evidence supports a clearly defined theory of harm. Such evidence includes documentary evidence showing intent and about the coverage and length of the discounts, as well as the *degree of dominance*. Indeed, we believe that a general principle when dealing with abusive conduct is that *the more entrenched a dominant position, the higher the potential for anti-competitive harm of any given conduct*.

More generally, since such tests necessarily involve some degree of judgement on the appropriate cost data and might entail complex calculations, their results might be uncertain and should be interpreted within the framework of a *theory of harm* and of all other qualitative and quantitative evidence available. (The same holds for cases where it is unclear if the practice has such coverage to trigger an anti-competitive presumption.) Indeed, *we regard the formulation of an explicit theory of harm as indispensable in any abuse case*: the EC should spell it out clearly and check the extent to which the facts of the case are consistent with such a theory.

It is also important to underline that price-cost tests should be carried out with measures of the dominant firm’s costs, not those of its rivals, whether as or less efficient. This is for at least two reasons: first, the price-cost test acts as a proxy for profit sacrifice by the dominant firm, and hence *the efficiency of the rivals is irrelevant*; second, given that cost information is typically private information, using a measure of cost that the defendant does not know would undermine legal certainty.

#### *Foreclosure in adjacent markets*

**On indispensability in vertical foreclosure cases.** When dealing with vertical foreclosure, one should be aware that a dominant firm might resort to different practices which, at least to some extent, can be substitutable to each other. An effects-based approach should not treat in a different way cases which differ in form but not in substance. For instance, there is no effective difference between a dominant firm which bluntly refuses to supply its input and another that offers it at such an arbitrarily high price that the buyer would obviously not buy, or accepts to give it but then delays access continuously, or degrades interoperability to a level that the input is of little use to the buyer. In this respect, we think that outright and constructive refusal to supply should *not* be subject to different standards, such as requiring to show the indispensability of the input in the former but not the latter cases in order to undertake antitrust action. We also note that constructive refusal to supply (which may include a range of degrees of unfairness in the terms of supply) has the same or less anti-competitive potential than an outright refusal to supply. Hence, if anything, it should be treated less strictly than outright refusal, contrary to the current case law.

<sup>5</sup> Some quantity rebates may amount to practices that reference rivals. For instance, a dominant firm may offer individualised rebates which are conditional on a certain volume of orders, knowing (for instance, because of stable market conditions and absence of uncertainty) that that volume amounts to the totality or quasi-totally of the likely purchases of the buyer. In such a case, though, the EC should have the burden of showing why in the case at hand the quantity discount should be interpreted as a contract referencing rivals.

In any case, the literature on exclusionary practices shows that the indispensability of the input is not a necessary condition for a dominant firm to engage in vertical foreclosure (which includes outright or constructive refusal to supply, margin squeeze, tying of an important input, and self-preferencing) with anti-competitive effects. Therefore, (a) for a vertical foreclosure action, the input at issue should be a crucial asset but not necessarily an indispensable one (within the *Bronner* meaning); (b) all vertical foreclosure cases (including both outright and constructive refusal to supply cases), should be subject to this principle.

Yet, in order to preserve the incentives to invest and innovate, we would find it justified to limit vertical foreclosure actions only to dominant undertakings that (i) have not committed considerable resources, effort, creativity or acumen to develop the input; or (ii) have already abundantly gained from their input; (iii) or are already subject to regulatory obligations to share the input with rivals.

**Self-preferencing.** The term ‘self-preferencing’ refers to a number of situations where an integrated firm discriminates in favour of its (first-party) services or products to the detriment of those of a rival (third party). Since it is a relatively new concept, it is worth some additional considerations. Whatever the precise features it takes, it is a form of vertical foreclosure and can have the same anti-competitive effects. As such, the considerations we made about input essentiality also apply to practices which can be defined as self-preferencing. We also argue that *price-based self-preferencing* should generally be assessed under the usual margin squeeze approach.

**Limiting principles.** Practices which may be described as self-preferencing should be subject to limiting principles. First, as for other forms of vertical foreclosure, self-preferencing might have objective justifications, including safety or security concerns or reputational effects. Of course, the dominant firm should support such claims with unambiguous and objective evidence. Second, there might be situations where self-preferencing is unlikely to have appreciable effects. Third, in some cases, what might appear as self-preferencing is, in fact, an efficiency. For instance, a first-party app might guarantee a better and more seamless experience to users than a third-party app because its programming code is fully integrated into the software of the platform, while the third-party one is not. Therefore, for self-preferencing to constitute an exclusionary abuse, it should be shown that it leads to the (partial or full) exclusion of rivals to the detriment of consumers.

**Tying and bundling.** The current case law treats tying as abusive if certain conditions are satisfied. One such condition is that the tying at issue ‘restricts competition’. When assessing such cases, the Commission should be guided by the ultimate objective of consumer welfare, and interpret the concept of ‘restricting competition’ as ‘harming consumers’ rather than ‘harming rivals’. This, together with making explicit the theory of harm, that is, the mechanism whereby tying would allegedly be detrimental to consumers, is essential to avoid finding tying abusive even in instances where it is actually pro-competitive.

## 2 GENERAL CONSIDERATIONS ON THE CONCEPT OF EXCLUSIONARY ABUSE

### 2.1 Consumer welfare as the objective of Article 102 enforcement

From an economic perspective, the objective of competition policy should be economic welfare (i.e., total surplus). We understand, though, that under EC law, the objective is likely consumer welfare (or consumer surplus), and hence this should be the objective guiding the enforcement of Article 102. We take this objective as given and choose to avoid a discussion on the relative merits of economic welfare versus consumer welfare.

We would rather highlight three important features of the concept of consumer surplus. First, consumer surplus is a *broad objective* that takes into account not only prices but also other factors such as quality, variety, and innovation.

Second, consumer surplus should be *seen in a dynamic or forward-looking perspective*, taking into account not only immediate effects but also (properly discounted) future ones. This is particularly important as there exist practices that may increase consumer surplus in the short run but decrease it in the long run by creating barriers to future entry/expansion. Predatory pricing, which benefits consumers today but is detrimental to them tomorrow, is an obvious case in point. But other examples may include practices such as tying. For instance, a platform which ties its core service to a complementary application may benefit consumers in the short run by reducing transaction costs but may harm them in the long run by discouraging future entry into the platform's core market, when alternative complementary applications have the potential to turn into future substitutes but need enough scale in order to do so (e.g., Carlton and Waldman, 2002; Choi and Stefanadis, 2001).

Third, the impact on consumer surplus should be assessed so as to *factor in uncertainty* about the future evolution of the market, something that is particularly salient in markets characterised by significant technological change, such as digital markets. Importantly, both the probability and the magnitude of harm should be taken into account. This standard approach in economics corresponds to the so-called 'balance of harms' principle proposed by Furman et al. (2019). The use of this concept as a standard of proof instead of 'balance of probabilities' has been associated with merger control but is equally valid for other instruments of competition law.

## 2.2 Protection of the competitive structure of the market

The jurisprudence of the EU Courts sometimes mentions the protection of the competitive structure of the market as objective of competition law. It is not clear to us what the exact meaning of this concept is. In an attempt to rationalise the judges' views, from an economic point of view, one could arguably see it as an intermediate objective towards consumer welfare, in the following sense. If a dominant firm's conduct leads to a market structure that is not sufficiently contestable, this will have repercussions for future consumer welfare as well. It is therefore crucial to make sure that a market works well, otherwise consumer surplus would be adversely affected.

However, the ultimate goal being consumer welfare, the effect on the competitive structure of the market cannot be determinative of the overall assessment of the practice. For instance, an above-cost price cut by a dominant firm (for example, in response to more competitive pressure) could lead to a more concentrated market structure, yet should be seen as a pro-competitive outcome and something that competition law should favour. Conduct such as exclusive dealing may make the market less contestable by creating a barrier to entry but, by promoting relation-specific investment (Segal and Whinston, 2000b), it may in principle generate substantial efficiency gains and may lead to a net increase in consumer welfare. Or exclusivity rebates, when adopted in markets in which dominance is not pronounced, may intensify competition and increase consumer welfare by leading to lower prices (Calzolari and Denicolò, 2013). The competitive structure is affected, but the effect is pro-competitive.

In sum, for the sake of clarity, we submit that the guidelines should not rely on concepts that can be subject to different interpretations<sup>6</sup> and may not be fully aligned with the ultimate objective of EU competition policy, namely, consumer welfare.

<sup>6</sup> This comment also extends to other concepts sometimes invoked by the EU Courts, such as the "protection of the competitive process." It is not clear to us what this term exactly means. In an optimistic interpretation, "competitive process" might be seen as a synonym for "competition". But then saying that one of the objectives of competition enforcement is to protect competition does not allow us to advance much.

## 2.3 What is an exclusionary abuse?

Recent case law of the Court of Justice mentions the notions of “*competition on the merits*” and of “*capability to produce anti-competitive effects*” (somehow described as “making it harder for rivals to compete”) as defining an exclusionary abuse. For instance, *Servizio Elettrico Nazionale*, at para. 61, recites:

“As recalled in paragraph 50 of the present judgment, the characterisation of an exclusionary practice as abusive depends on the exclusionary effects that that practice is or was capable of producing. Thus, in order to establish that an exclusionary practice is abusive, *a competition authority must show that, first, that practice was capable, when implemented, of producing such an exclusionary effect, in that it was capable of making it more difficult for competitors to enter or remain on the market in question and, by so doing, that that practice was capable of having an impact on the market structure; and, second, that practice relied on the use of means other than those which come within the scope of competition on the merits.* Neither of those conditions requires, in principle, evidence of intent.” (Our emphasis)

In what follows, we explain why it is difficult to establish a direct relationship between the concept of ‘competition not being on the merits’ and that of ‘abuse’ in the economic literature.

As for the requirement that a practice should be ‘capable of anti-competitive effects’, we believe that this is a necessary but not sufficient condition for the finding of abuse: capability is a term which seems to indicate a mere possibility, whereas we believe that effects should be appreciable and likely.

### 2.3.1 Competition on the merits

From an economic perspective, we define abusive conduct as one that reduces consumer surplus. This may occur through very different economic mechanisms.

First, in some cases (for instance, theories of predatory pricing), the conduct may involve a profit sacrifice by the dominant firm in the short run to be recouped by higher profits after rivals have exited. In other cases (for instance, theories of exclusive dealing based on scale economies à la Segal and Whinston, 2000a), the dominant firm does not need to sacrifice profits to exclude.

Second, while some contributions showed that harm to consumers can derive from conduct that aims at excluding rivals, another strand of the literature has rationalised the use of practices that can be detrimental to consumers without aiming at excluding rivals, although rivals’ foreclosure may be a by-product of those practices. In Chen and Rey (2012), a firm may engage in tying/loss-leading, selling a product below cost where it faces competition in order to *increase the price* charged to the less competitive segment to those consumers who have lower shopping or adoption costs. As a side-effect, rivals’ market share and profits are reduced, although that is not the primary intent of the conduct. In Calzolari and Denicolò (2015) and Calzolari et al. (2020), a dominant firm may have an incentive to offer exclusivity rebates to take advantage of the demand-boosting effect and be able to set *higher* prices.<sup>7</sup> Calzolari and Denicolò (2021) show that market share contracts with a requirement below 100%, which therefore do not fully exclude the rival, may allow the dominant firm to take advantage of the demand-boosting effect more profitably. In Ordober et al. (1990), a vertically integrated firm may have an incentive to engage in refusal to supply to an independent downstream rival so as to soften downstream competition. In Aghion

<sup>7</sup> The demand-boosting effect consists in the fact that, for given prices, the imposition of exclusivity increases the residual demand faced by a firm. Absent exclusivity the buyer would likely split purchases among various suppliers (for instance because of love for variety), whereas under exclusivity the whole requirement is concentrated on a single supplier.

and Bolton (1984), a dominant firm engages in exclusive contracts as a way to extract efficiency rents from rivals, and if exclusion takes place, it is due to uncertainty and it is not the aim of the practice.

Since there are very different ways through which a dominant firm's practice may have anti-competitive effects (i.e., may produce harm to consumers), it is difficult to find a common denominator among them. In other words, we cannot associate abusive conduct with one whereby a dominant firm makes necessarily immediate profit sacrifice, nor with one which has the primary aim of excluding rivals. For these reasons, it is difficult to define in general what constitutes 'normal competition' or 'competition on the merits'.

This premise is to explain why it is not obvious to us how to reconcile the economic notion of abusive conduct with that of 'competition on the merits'.<sup>8</sup> We regard the latter as a perhaps appealing concept, but not one with a clear economic counterpart, at least in the context of abusive practices. In what follows, we try to elaborate on this difficulty.

One possible interpretation is that 'competition on the merits' refers to a situation where the actions taken by a firm make business sense taking as given the existence of competitors. Under this interpretation, a firm is not 'competing on the merits' whenever it aims to exclude a rival. However, this notion of 'competition on the merits' would not encompass cases like the ones mentioned above where the practices have an anti-competitive effect even taking as given the existence of the rival.

Equating 'competition on the merits' with a situation where a firm does not incur immediate profit sacrifice (it may be reasonable to think that absent strategic motives, no firm would want to sustain losses) would not be helpful either, since we know there are anticompetitive practices (think of exclusive dealing for one) which do not require making profit sacrifice.

Another possibility is to think that 'competition on the merits' refers to a situation where there exists a '*level playing field*'. However, competition policy cannot intervene whenever there exist asymmetries in the market. If a dominant firm is protected by network effects, scale economies, switching costs or the like, this is not a situation where there exists competition on the merits, but this does not imply that there is an abuse.

Yet another interpretation may be that 'lack of competition on the merits' indicates practices that *prima facie* are anti-competitive because they might '*automatically exclude rivals*', such as exclusive contracts, exclusivity rebates, tying or refusal to supply. However, the economic literature has emphasised that these practices may generate substantial efficiency gains, thereby benefitting rather than harming consumers.

To sum up, we do not find an economic underpinning of the concept of 'competition on the merits'. Furthermore, with all respect and deference to the EU Courts, it does not seem particularly helpful in distinguishing abusive practices from practices which do not run counter to Article 102 of the TFUE.

### 2.3.2 Anti-competitive effects

To discuss anti-competitive effects, we find it useful to recall the following part of the Court's judgement of *Servizio Elettrico Nazionale*:

69. [...] if such conduct is to be characterised as abusive, that presupposes that that conduct was *capable of producing the alleged exclusionary effects* which form the basis of the decision at issue.

<sup>8</sup> *Unilever* at 39: "Thus, 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 (see, to that effect, judgment of 12 May 2022, *Servizio Elettrico Nazionale and Others*, C-377/20, EU:C:2022:379, paragraphs 69, 71, 75 and 76 and the case-law cited)."

70. Admittedly, *such effects must not be purely hypothetical* (...). As a result, first, a practice cannot be characterised as abusive if it remained at the project stage without having been implemented. Second, competition authorities cannot rely on the effects that that practice might produce or might have produced if certain specific circumstances – which were not prevailing on the market at the time when that practice was implemented and which did not, at the time, appear likely to arise – had arisen or did arise.

71. By contrast, in order for such a characterisation to be established, *it is sufficient that that practice was, during the period in which it was implemented, capable of producing an exclusionary effect in respect of competitors that were at least as efficient as the undertaking in a dominant position* (...).

72. Given that *the abusive nature of a practice does not depend on the form it takes or took*, but presupposes that that practice is or was capable of restricting competition and, more specifically, of producing, on implementation, the alleged exclusionary effects, *that condition must be assessed having regard to all the relevant facts* (...). (Citations omitted; our emphasis.)

Therefore, we understand that – whatever the Courts mean by a practice which is not ‘competition on the merits’ – for an exclusionary abuse to be established it is necessary to show that the conduct at hand produces exclusionary effects.

The following considerations appear important to us when discussing effects.

First, given the economic literature mentioned above and based on our understanding that the Courts do not regard exclusionary intent on the part of the dominant firm as indispensable for a finding of exclusionary abuse (see, for example, Servizio Elettrico Nazionale at para. 61), we interpret a practice adopted by a dominant firm as producing exclusionary effects not only when it has the objective of excluding (partially or totally) rivals from the market but also when it harms consumer welfare without such an ultimate objective.<sup>9</sup> In our view, therefore, for an exclusionary abuse to be established, it is necessary to show that the conduct at issue, by excluding (totally or partially) existing or potential rivals, harms consumer welfare.

We understand that this interpretation is in line with the view expressed in the Competition Policy Brief No 1/2023 (Section III.A) based on the recent jurisprudence, and with the proposal to use the term anti-competitive foreclosure “to describe a situation where the conduct of the dominant undertaking adversely impacts an effective competitive structure, thus allowing the dominant undertaking to *negatively influence, to its own advantage and to the detriment of consumers, the various parameters of competition, such as price, production, innovation, variety or quality of goods or services*” (our emphasis).

Second, the above citation is a welcome reminder that a formal approach whereby a conduct is considered abusive because of its ‘shape’ is not valid, and that one has to understand the likely effects of the practice in light of the facts of the case. This approach is in line with economic thinking, which stresses that certain practices might or might not have anti-competitive effects depending on the context.

Third, one should assess whether a given practice produces *appreciable* effects. For instance, an incumbent firm might have resorted to below-cost pricing to a particular client, but the order involved was so small that it would be irrelevant. Alternatively, a dominant firm might offer an exclusive dealing contract to a minority of buyers without significantly affecting a rival’s operations.

<sup>9</sup> In other words, we regard as exclusionary those practices that harm consumer welfare by (partially or totally) excluding rivals irrespective of whether exclusion is the primary goal or a side-effect. Exploitative abuses consist instead of those practices that have a direct negative impact on customers/suppliers, irrespective of their effects on rivals.



Independently of the fact that there is no *de minimis* rule, the courts have established that the conduct being investigated must have appreciable effects, for instance, in terms of coverage and of being non-occasional. We fully agree with this: we do not think that a dominant firm which gets rid of some units of its products to make space in its congested warehouse, or one which engages in exclusive dealing contracts that cover a marginal proportion of the buyers, should be regarded as ‘abusing its dominance’.

Therefore, we do not believe that the absence of a *de minimis* rule in Article 102 should be interpreted to mean that all conduct which seems to exert some exclusionary effects is necessarily abusive. The appreciability of the effects should always be shown.

However, we believe that *the appreciability of the effects may somehow depend on market structure*. In dynamic markets, a rival that currently holds a marginal position may turn into a disruptive competitor in the near future.<sup>10</sup> A firm that enjoys an entrenched dominant position and that adopts practices that prevent the expansion of that rival may harm consumer (or total) welfare considerably despite seemingly limited present effects. In general, therefore, the stronger a dominant position, the higher the risk that even small effects might have important consequences on the market evolution.

Finally, let us stress again that the ultimate effects to be assessed should be those on consumer welfare, not on rivals. For instance, as shown by Calzolari and Denicolò (2013), in situations where dominance is not pronounced, exclusivity rebates intensify competition. As a consequence of such fierce competition, the rival may be excluded but the net effect on consumer surplus is positive. Similarly, as mentioned above, a dominant firm may use exclusive dealing contracts to stimulate relation-specific investments (Segal and Whinston, 2000b). This may harm rivals but benefit buyers (and welfare).

### 2.3.3 Making it harder for rivals to compete

“Making it harder for rivals to compete” (an expression that has appeared in the case law in the context of description of exclusionary abuses) is not a useful antitrust standard as it does not allow distinguishing between pro- and anti-competitive forms of unilateral conduct: pro- competitive conduct such as innovation or lowering prices also makes it harder for rivals to compete.

That said, “making it harder for rivals to compete” can be part of an abusive conduct to the extent that it exerts anti-competitive effects and harms consumer welfare without resulting in full-fledged exclusion (i.e., elimination or eviction of existing rivals, or complete deterrence of potential entrants), with an existing rival continuing to operate but being relegated to a niche market or product or to a scale or scope of activities such that it will not be able to challenge the dominant firm on the whole market or for the whole range of products. This is what we would call ‘partial exclusion’ of rivals. In the presence of a conduct which achieves partial exclusion, and more generally makes it difficult for rivals to compete, without resulting in full-fledged exclusion, and which has the effect of harming consumers, we would also have an abuse.

### 2.3.4 Form versus effects of conduct

One may ask whether the form of conduct might allow establishing whether it is or is not abusive.

In this respect, from an economic, effects-based perspective one would not wish to use a form-based approach according to which conduct that takes a particular shape should *automatically* be interpreted as abusive.

<sup>10</sup> In this respect, we reiterate the importance of applying a ‘balance of harms’ approach that takes into account both the probability and the magnitude of harm.

However, the economic literature suggests that some practices have a stronger anti-competitive potential than others. Therefore, we favour establishing (rebuttable) presumptions according to the form of *some* practices. In particular, we shall argue in Section 3 that exclusive dealing and other practices which reference rivals should be presumed unlawful. We believe that, by shifting the burden of proof to defendants in cases where anti-competitive effects are very likely, this will help enforce abuse of dominance of provisions in a more efficient and timely way.

### 2.3.5 Partial foreclosure

As we have argued above, an exclusionary abuse may also take the effect of partially rather than fully excluding a rival. However, note that not all shifts in market share from the rival to the dominant firm should necessarily be interpreted as partial foreclosure, as they might simply be the result of healthy price competition, for example, the dominant firm engaging in above-cost price undercutting.

## 3 PRACTICES OF HORIZONTAL FORECLOSURE

### 3.1 Practices which reference rivals should be presumed unlawful

Well-established economic research shows that market share discounts with a large requirement – where a buyer qualifies for the discount conditional on a large proportion of her total needs being purchased from the seller making the offer and, therefore, on a limited proportion purchased from rival sellers – or exclusive dealing contracts where the terms of trade depend on whether there are purchases from rival sellers can have strong anti-competitive effects when adopted by a dominant firm. For brevity, from now on we will refer to these practices as ‘**practices that reference rivals**’.<sup>11</sup> A fortiori *naked restrictions*, such as the payments awarded by a dominant firm (such as in the *Intel* case) conditional on buyers postponing or cancelling the launch of a rival’s products and/or putting restrictions on the distribution of those products, belong to this category.

On the grounds of their strong anti-competitive potential, we propose a rule according to which *these practices are abusive unless the dominant firm is able to prove otherwise*. For instance, it should be able to prove that in the particular case at hand, the practices generate efficiency gains that outweigh any possible anti-competitive effects, or that they indeed intensify competition to the benefit of consumers.

We would add that the standard of proof for the dominant firm’s rebuttal should be high, and *the stronger the firm’s degree of dominance, the higher the standard of proof should be*.

This is consistent with the General Court Judgement in *Google Shopping* (10 November 2021, Case T-612/17):

183. Moreover, *in view of its ‘superdominant’ position*, its role as a gateway to the internet and the very high barriers to entry on the market for general search services, it was under a *stronger obligation not to allow its behavior to impair genuine, undistorted competition* on the related market for specialised comparison-shopping search service.

And with the Judgement of the European Court of Justice in *Tomra* (19 April 2012, Case C- 549/10 P):

39. Moreover, it is clear from paragraphs 80 and 81 of *Telia Sonera* that Article 102 TFEU does not envisage any variation in form of degree in the concept of a dominant position. Where an undertaking has an economic strength such as that required by Article 102 TFEU to establish that it holds a dominant position in a particular market, its conduct must be assessed in the light of that provision.

<sup>11</sup> Strictly speaking, a discount conditional on a *small* proportion of the buyer’s need is also a practice that references rival. But this is not what we intend here with this expression.

None the less, *the degree of market strength is*, as a general rule, *significant in relation to the extent of the effects of the conduct* of the undertaking concerned rather than in relation to the question of whether the abuse as such exists.

However, as stated above, an anti-competitive presumption of this kind is only justified for contracts or rebate schemes with a large coverage. We find it unlikely that contracts or rebate schemes which involve a marginal share of the market can significantly impact the success of the rival and be detrimental to consumer welfare.

This approach is grounded in several contributions of the economic literature. First, there is a branch of the literature showing that exclusive dealing contracts and market share contracts have strong exclusionary power in situations in which the rival/potential entrant needs to achieve efficient scale to operate profitably (Rasmusen et al., 1991; Segal and Whinston, 2000a; Fumagalli and Motta, 2006; Fumagalli et al., 2012; Chen and Shaffer, 2019, 2014).<sup>12,13</sup> Such contracts differ from exclusivity rebates and market share discounts because they also involve a commitment on the side of the buyer for the duration of the contract.<sup>14</sup> As shown by Ide et al. (2016), the contractual commitment on the side of the buyer facilitates exclusion by allowing a dominant firm to take advantage of a first-mover advantage and deter entry.<sup>15</sup> Moreover, the literature has shown that exclusivity rebates may facilitate exclusion by allowing the dominant firm to secure the crucial buyers/markets (i.e., those that are enough to prevent the rival from achieving efficient scale) while limiting the distortions on the sale to those buyers (Bernheim and Whinston, 1998).

The economic literature has shown that contracts that reference rivals may also lead to exclusion in situations in which the goal of the dominant firm is to manipulate the buyer-rival relationship (by placing the buyer in a favourable position when bargaining with the rival) and *extract rents from rivals*. However, uncertainty about the rivals' characteristics at the time of contracting may lead to downward distortions to the quantity supplied by the rival, in the form of complete exclusion but also of partial foreclosure (Aghion and Bolton, 1987; Choné and Linnemer, 2015, 2016). Uncertainty is likely to be severe in industries with a rapid pace of innovation and high product complexity. Dominant firms may respond to that uncertainty with price schemes that foreclose the market. Contracts that reference rivals are shown to be more exclusionary (and more detrimental to welfare) than unconditional contracts. However, it is not clear in this literature whether full exclusivity is more harmful than contracts that reference rivals but without full exclusivity.

In the above papers, the main goal of the contracts is to extract rents from rivals. Other contributions show that practices that reference rivals can be used by a dominant firm to generate a demand-boosting effect and raise its price, as in Calzolari and Denicolò (2015, 2021) and Calzolari et al. (2020). In Calzolari and Denicolò (2021), the dominant firm finds it more profitable to offer a pricing scheme which does not involve full

<sup>12</sup> See also Fumagalli et al. (2018, Chapters 2 and 3).

<sup>13</sup> An insight of this literature is that contracts that do not require full exclusivity (labelled as contracts with minimum share requirements, or MSR) cannot be considered a weaker form of exclusive dealing. For instance, Chen and Shaffer (2014, 2019) show that an incumbent firm may find it more profitable to engage in contracts with MSR than in exclusive dealing contracts and that the former may give rise to higher foreclosure levels than exclusive dealing contracts.

<sup>14</sup> By signing an exclusive dealing contract, a buyer commits not to buy from any other seller for a determined period of time. Instead, an exclusivity rebate is just an offer from the seller to award a certain discount if all of the buyer's requirement is purchased from that seller. A buyer can switch at any moment to an alternative supplier, even though it will obviously lose the discount. A similar reasoning applies to market-share contracts versus market-share discounts.

<sup>15</sup> On the role of buyers' commitment for the exclusionary power of exclusive dealing, see also Fumagalli and Motta (2017).

exclusivity, because the presence of the rival allows it to increase its price further.<sup>16</sup> An important implication of these contributions is that the stronger a dominant position, the stronger also the anti-competitive effect.

Since the literature stresses that such practices might also exert beneficial effects on consumer welfare, through the promotion of relation-specific investments (Segal and Whinston, 2000b) or by making competition more intense (Calzolari and Denicolò, 2013), the right policy should be one that calls for a *rebuttable presumption of harm* and *not a prohibition per se*.

### 3.2 Predation, discounts which do not reference rivals, and the role of price-cost tests

Exclusive dealing and rebates which reference rivals are of course not the only practices a dominant firm may resort to in order to exclude (partially or wholly) rivals. How to deal with such practices, of which predatory pricing is probably the best example, is the subject of this section. We shall argue, in particular, that price-cost tests are a useful instrument when investigating this type of conduct.

To start with, let us point out that even in the case of **pure predation** (i.e., of a dominant firm setting low prices *across the board* to all customers in a given period of time), economic theory does *not* predict that below-cost pricing is *necessary* for the exclusionary effect. For instance, according to the well-known deep-pocket theory of predation (Bolton and Scharfstein, 1990), predatory prices are those that limit the rival's profit to the extent that it will not be able to obtain external financing. Those prices entail a sacrifice of profits for the dominant firm (i.e., lower profits than it would otherwise make) in the short run, but not necessarily a loss. In other words, economic theory does not suggest that the criterion to distinguish prices that are predatory from those that are simply the result of fierce competition is generally a price-cost test.<sup>17</sup>

Although predation *might* take place with above-cost pricing, there is little doubt that there is predation when a dominant firm is setting below-cost prices to a considerable part of its customers. Accordingly, evidence of prices below appropriate cost measures should be considered as indicative of profit sacrifice, and hence of predation. In line with the case law, and for the purpose of avoiding the risk of chilling legitimate competition, it also makes sense to establish a safe harbour in case of above-cost pricing (see Fumagalli and Motta, 2017, for a deeper discussion).

Note that according to this interpretation, the price-cost test *is not a replicability test* aimed at verifying whether a competitor as efficient as the dominant firm is able to profitably match the dominant firm's offer. Rather, it is a test meant to verify whether the dominant firm is sacrificing profits. For this reason, we prefer to refer to it a 'price-cost' test rather than an 'as efficient competitor' test.

This interpretation of the price-cost test has two advantages. First, the test should guarantee legal certainty to the dominant firm (in order to verify that its offers are lawful, the dominant firm does not need information about the rival). Second, it should be administrable (as it does not require a comparison between actual profits and the profits that the dominant firm would make in a hypothetical counterfactual, but just a determination of whether actual prices are or not above costs).

<sup>16</sup> The dominant firm uses a combination of on-path and off-path offers. On path, the dominant firm offers a market-share rebate, which creates a tying effect between the dominant firm's product and the rival's product (because the only way to obtain more units of the rival's product without violating the market share requirement is to increase the quantity of the product of the dominant firm). This boost in demand allows the dominant firm to raise its price. Off path, the dominant firm offers an exclusivity rebate that serves as an outside option for the buyer and induce the rival to reduce the price of its product. This allows the dominant firm to increase its price further. Note that the dominant firm finds it more profitable to engage in a pricing scheme with less than 100% requirement for the discount, because it is the fact that the rival sells some units at a very low price that allows it to increase even more the price of the own product.

<sup>17</sup> See Rey et al. (2022) for another model in which above-cost prices may suffice to exclude the rival.

Finally let us also stress that, even in the case of ‘pure’ predation, the economic analysis should not consist exclusively of the price-cost test. A convincing theory of harm should be proposed (i.e., an internally consistent mechanism should be spelled out that explains why predation is profitable for the dominant firm – *rationalising the incentive to exclude* – and detrimental for consumers), supported by the facts of the case.<sup>18</sup>

Provided that the price-cost test is done within the framework of (and complementary to) the theory of harm, we agree with the current case-law approach, which establishes a strong presumption of abuse if prices are below average avoidable costs and of legality if prices are above average long-run incremental costs,<sup>19</sup> with a grey area between these two cost thresholds where intent (and, we would add, a coherent theory of harm) is crucial.<sup>20</sup>

So far, we have referred to price-cost tests for across-the-board or ‘pure’ predatory pricing. We would apply the same approach to **selective price cuts** and other forms of **discounts** (including quantity rebates) **that do not reference rivals**, within the meaning we have defined above.

However, the economic literature has shown that selective price cuts can be used to discriminate across customers and target aggressive price offers to *some specific buyers*. This may reduce the sacrifice of profits that the dominant firm must bear to exclude, thereby facilitating exclusion. When explicit price discrimination is not feasible, quantity rebates can implicitly serve the same purpose, even though in a less powerful way (Karlinger and Motta, 2012). Similarly, under the presence of portions of customers’ demand that are captive to the dominant firm, quantity rebates can also be used to target aggressive price offers to the contestable part of the demand, also in this case limiting the sacrifice of profits of the dominant firm and facilitating exclusion.

This implies that evidence that the price averaged across *all* customers, or across *all* units purchased by a given customer, is above costs does not allow for the conclusion that there is no abuse. The price-cost test should be performed focusing on the critical customers, or portion of demand, that the dominant firm needs to secure in order to exclude. This indicates that a well-specified theory of harm is crucial to guide the application of the test and explain why securing some specific customers (or portion of their demand) through aggressive offers leads to profitable exclusion.

This remark applies equally to *retroactive* and *incremental quantity* rebates. However, when rebates are retroactive and part of customers’ demand is not contestable, the application of the price-cost test calls for some caution, because the discounted price to compare with the dominant firm’s costs should be computed attributing to the contestable units also the discount concerning the captive units and that the customer loses when she does not qualify for the discount. Performing this exercise, therefore, requires an estimation of the contestable part of the demand. It is unlikely that such estimation can be done with a high degree of precision. It is therefore important to engage in some robustness analysis to ensure that the outcome of the test holds for a

<sup>18</sup> See Fumagalli and Motta (2013) and Fumagalli et al. (2018, Chapter 1).

<sup>19</sup> In light of the economic theories of predation indicated above, where profit sacrifice does not mean actual losses, one might suggest that evidence of profit sacrifice, a predatory intent, and a coherent exclusionary plan may be sufficient to prove predation even if there is no below-cost pricing. However, this might conflict with legal certainty. Therefore, only under very exceptional circumstances and with a high standard of proof on the side of the Commission could we conceive of a pure predation finding above the upper bound of the cost thresholds. In this sense, we differ from the interpretation expressed in the Competition Policy Brief No 1/2023 (Section III.B) with the proposed text: “At the same time, the Commission recognises that in certain circumstances a less efficient competitor may also exert a constraint which should be taken into account when considering whether particular price-based conduct leads to anti-competitive foreclosure.”

<sup>20</sup> See Fumagalli et al. (2018, Chapter 1) for a more extensive discussion about the cost thresholds and the interpretation of the test.

range of reasonable values of the contestable share and not only for few specific ones. At the same time, of course, it should not be required that a given outcome of the test holds for any possible value of the contestable share.<sup>21</sup>

This is a good moment to stress that the price-cost test contains several elements of complexity, concerning not only the estimation of the contestable share when retroactive rebates are involved, but also other features such as the determination of the cost thresholds (it is not always obvious how to identify the categories of costs that are avoidable, or to allocate common and joint costs to the product involved in the predatory strategy). This is another reason why the price-cost test should not be dispositive unless it is also consistent with a well-formulated and clear theory of harm.

### 3.3 Additional considerations on the price-cost test

In the circumstances we have identified where a price-cost test makes sense (predatory pricing, etc.), then it will be informative independently of quality, variety, innovation and so on. Recall that the guiding principle is to see whether the incumbent is setting its price below own cost whatever the feature (quality, value of the brand, etc.) of the own good.

Further, when it makes sense to run a price-cost test, the prices and costs of the dominant firm should be compared, and the efficiency level of the rival is not informative at all in this respect. The objective of the test is to check whether the dominant firm is sacrificing profits (which, apart from exceptional circumstances, is necessary for an exclusionary effect), therefore the efficiency level of the rival is immaterial.

We understand that it may be tempting in some circumstances to think of protecting a rival while it has not achieved sufficient scale or scope, but this would be highly distortionary and would result in legal uncertainty. It is distortionary because it would oblige the incumbent firm not to compete on the merit for a period and charge prices higher than they otherwise would, with adverse consequences for consumers. Further, how long should that period be? If the rival does not achieve the desired efficiency level, should the incumbent continue to set prices well above costs forever?

Second, this would break the principle of legal certainty for the incumbent firm. A rule prescribing a firm not to sell below its cost is relatively simple and requires the firm to have information only about itself (although measures of costs may not always be objective and easy to take). Instead, a rule which, say, prescribes a dominant firm to price above the costs of its rivals would require information that the incumbent firm generally does not have. As such, the firm would have to second-guess not only the true level of the costs of the rival but also the likely cost estimate of the antitrust authority.

We note that in support of protecting less efficient rivals, it has been raised that (i) less efficient rivals can exert significant competitive pressure; and (ii) in dynamic markets, the rival may be less efficient than the dominant firm at present, but it may have the potential to become a disruptive competitor in the future conditional on achieving sufficient foothold in the market.

For predation and quantity rebates, we nevertheless strongly advise against a 'not yet as efficient test' because, as stressed above, it would distort competition and hamper legal certainty.

For cases of exclusive dealing or contracts that reference rivals, we argued that the price-cost test should not be dispositive, so the matter is less relevant.

<sup>21</sup> We understand this is consistent with the approach indicated in the Competition Policy Brief 1/2023 (Section III.C): "as regards non-exclusivity rebates the use of the AEC test may be appropriate to prove anticompetitive effects, depending on the circumstances on each specific case, keeping in mind the 'difficulties inherent in the drawing up of an AEC test', and that the appropriateness of such test needs to be assessed in light of factors such as the type of conduct at stake, the availability of data and the possibility to establish sufficiently reliable parameters to run the test (which is by nature based on economic inferences, assumptions and approximation)" (footnotes omitted).

A similar reasoning applies to **bundled rebates**, i.e., discounts conditional on the buyer purchasing a bundle of products (or, more generally, achieving a pre-determined target concerning the sales of a set of products). If the supplier has a strong dominant position on the markets of some products, whose demand is therefore ‘captive to the dominant firm’, and faces competition on the markets of other products, then a bundled rebate may represent a way to make an aggressive offer on the more competitive markets. Also in this case, in order to identify the discounted price that has to be compared with costs, one should allocate to the contestable product the discount lost on the captive products if the buyer does not qualify for the discount.

Overall, therefore, the assessment of bundled rebates and the application of the price-cost test should broadly follow that of predatory pricing and quantity discounts.<sup>22</sup> Consistently with what is stated for those practices, we also stress here that a robust and convincing theory of harm is the key factor in the assessment of this conduct.

Instead, bundled rebates designed in such a way that the buyer qualifies for the discount only if she purchases the whole range of products of the dominant firm (**full-line forcing**) are similar to exclusivity rebates for which, as we discuss below, prices above costs should not represent a safe harbour.

When a dominant firm is vertically integrated (see also Section 4) and has a strong position in one segment of the industry (say, upstream), while it is more exposed to competition in the downstream segment, **margin squeeze** may be used in a predatory fashion to exclude or marginalise rivals from the latter segment (see Jullien et al., 2014 and Fumagalli et al., 2018, Chapter 5 for contributions that rationalise margin squeeze in an environment in which the dominant firm is regulated in the monopoly segment). Coherently with what we discussed for pure predation, also in this context we are inclined to interpret the price-cost test as a test for profit sacrifice that aims at checking whether the margin obtained by the vertically integrated firm on the sales to the final market is lower than the margin obtained by supplying the input to the downstream rival, which represents the opportunity cost of downstream sales. If so, the vertically integrated firm sacrifices profits in the short run in an attempt to foreclose independent rivals.

Interpreted in this way, the test requires only information about the dominant firm to be performed, not information about the rival, which has the advantage, as already commented upon, to guarantee legal certainty to the dominant firm.<sup>23</sup>

Also in this case, the application of the test should be guided by a convincing and solid theory of harm that identifies (i) the precise mechanism that rationalises the incentive of the vertically integrated firm to exclude the independent rival (on the ground of imperfect rents extraction or the goal to protect/transfer its monopoly position in a dynamic perspective); and (ii) the mechanism that rationalises predation (on the ground of financial frictions or scale economies in the market more exposed to competition).<sup>24</sup>

22 When a portion of a buyer’s demand for a *given product* is captive to the dominant firm, the economic literature has identified the rational for designing the discount as a quantity discount, or more generally a conditional rebate. This allows the dominant firm to target the aggressive pricing to the contestable portion of the buyer’s demand, thereby making it less costly to engage in predatory pricing. Instead, we are not aware of theories where a dominant firm whose objective is to exclude rivals in the markets where it faces more intense competition finds it more profitable to use bundled rebates than plain predatory pricing in those markets (i.e., without involving the captive products in the design of the discount).

23 If one accounts for product differentiation and for a difference between the vertically integrated firm and the independent rival in the number of input units per unit of the final product, the test should be adjusted on the ground of the diversion ratio and of the input requirement of the downstream rival (Jullien et al., 2014). However, these are parameters reflecting the characteristics of the independent competitor and difficult to be assessed by the vertically integrated firm.

24 Moreover, one has to take into account that the pricing policy of the vertically integrated firm may fail the test also in situations in which the integrated firm is extracting rents from the independent rival with no exclusionary intent (see Jullien et al., 2014, for an extensive discussion of margin squeeze as an exploitative abuse). This reiterates the importance of using the test within the framework of a well specified theory of harm.

Instead, the price-cost test should not be used when dealing with practices which reference rivals. Accordingly, evidence that discounted prices are above costs, or that contractual offers do not involve losses (even on all customers), should not be regarded as a ‘safe harbour’ when sophisticated pricing schemes, such as discounts conditional on purchasing a large proportion of needs or **exclusive dealing contracts**, are involved.

As discussed above, the economic theory has demonstrated that the anti-competitive potential of these practices is stronger. For instance, Segal and Whinston (2000a) have shown that exclusive dealing contracts can allow a dominant firm to prevent entry of more efficient rivals without profit sacrifice. Moreover, as discussed above, exclusivity rebates or market-share rebates can be used by a dominant firm to take advantage of a demand-boosting effect (Calzolari and Denicolò 2015, 2021; Calzolari et al., 2020) and set higher prices. In this case, price-cost tests designed to detect low prices are conceptually flawed and misleading (Calzolari and Denicolò 2020).<sup>25</sup> Similarly, when rivals are unable to contest a significant part of the dominant firm’s demand (because of capacity constraints, narrower range of products, loyalty effect to the dominant firm must-have product), contracts including ‘all or nothing’ clauses may facilitate exclusion, by making it cheaper for the dominant firm to elicit acceptance on exclusivity.<sup>26</sup>

To summarise this section on horizontal foreclosure, we have argued that it consists of a range of practices with increasing anti-competitive potential, from across-the-board predation to exclusive dealing contracts. We have grouped these practices into two categories: one including predation and other practices which do not reference rivals, for which it is reasonable to use a price-cost test; and another one including exclusive dealing and exclusivity rebates, for which there should exist a presumption of abuse and prices above costs should not represent a safe harbour. The defendant should have the chance to rebut the presumption, but we believe that the standard for rebuttal would be very high, and the more entrenched the dominant position, the higher it would be.

Finally, we stress that, no matter the conduct being investigated, it is important that the European Commission spells out the theory of harm, that is, a convincing mechanism that explains why, by adopting the practice at issue, the dominant firm has the capability to exert anti-competitive effects and the incentive to do so.

#### 4 EXCLUSION IN ADJACENT MARKETS

In this section, we deal with practices which might foreclose rivals operating in a market related to the one which exhibits a dominant position. First, we discuss vertical foreclosure, focusing in particular on the role of the indispensability of the input, the importance of preserving the incentive to innovate (in this context, to create an input), and the concept of self-preferencing. Then, we shall make some considerations on tying and bundling.

##### 4.1 Vertical foreclosure: The role of indispensability

Following *Bronner*, the indispensability of the input is one of the conditions required by the Union Courts for an *outright* refusal to supply to be abusive. This is because even a dominant firm should enjoy freedom of contract and the right to dispose of its own property. There is also an economic rationale behind this requirement: the

<sup>25</sup> Hence the reason why the price-cost test is not appropriate for exclusivity rebates is not that “exclusivity rebates applied by a dominant undertaking are by their very nature capable of affecting competition” as stated in Competition Policy Brief 1/2023 (Section III.C, page 7). As shown by Calzolari and Denicolò (2015), when dominance is not pronounced, exclusivity rebates intensify competition and are pro-competitive. The reason why the price-cost test is not appropriate for exclusivity rebates is that a dominant firm may want to offer them to be able to set high – not low – prices.

<sup>26</sup> This is consistent with the approach indicated in the Competition Policy Brief 1/2023 (Section III.C, footnote 59): “An AEC test may not be appropriate in situations where rebates are granted in conjunction with non-price advantages, as the quantitative nature of the test may not be capable of capturing the overall price and non-price loyalty-inducing effect of the scheme.”



Courts aim to preserve the ex-ante incentives to invest and innovate; a firm expecting to be obliged to share its inputs with its rivals might not want to develop such inputs in the first place. (And rivals would have little incentive to try and create substitute inputs, since they can free-ride on the existing input.) Therefore, only in exceptional circumstances (input indispensability, elimination of all competition, absence of an objective justification) could an antitrust action against refusal to supply be justified. In this perspective, input indispensability is a way to balance the objective of promoting competition with that of preserving the incentives to innovate.

In the subsequent case law, though, the EU Courts have established that in situations where the dominant firm has accepted to or must (because of regulatory obligations) give access to its input, such as in margin squeeze cases (*Telefónica*, *TeliaSonera*), or it degrades the supply of the input and sets unfair terms and conditions (*Slovak Telecom*) or otherwise unfairly restricts access (*Google Shopping*), the indispensability criterion is not required.<sup>27</sup> Effectively, the judges seem to have taken the view that if the dominant firm is already supplying the input, then it has already exercised its contractual freedom, and its attempt to restrict access to the input is not worthy of the same protection.<sup>28</sup> Accordingly, and paradoxically, even if likely to be *more* restrictive, an *outright* refusal to supply is effectively treated *more* leniently than less exclusionary practices, such as *constructive* refusal (a category which includes degradation of the input, delay in supplying it, or imposing restrictive conditions for accessing it)<sup>29</sup> or margin squeeze, since the requirement of indispensability applies to the former but not to the latter practices.<sup>30</sup> We find it difficult to reconcile this differential treatment with economic understanding,<sup>31</sup> and we attribute it to an interpretation of the application of the abovementioned fundamental rights of contractual freedom and protection of private property.

Leaving aside the different legal treatment of various vertical foreclosure practices, we next turn to the question of whether, from an economic perspective, the indispensability of the input should be a necessary condition for a finding of abuse consisting of (constructive or outright) refusal to supply or other related vertical foreclosure practices.

The economic literature has identified several instances in which a dominant firm has an incentive to engage into vertical foreclosure.<sup>32</sup> In general, such theories focus on cases where a vertically integrated firm has a *monopoly* on the input (which amounts to assuming that the input is indispensable). But this assumption is made for simplicity, and there are models where there exist alternative (even if possibly inferior)

27 Similarly, it is not necessary to show indispensability in (the admittedly extreme) case of the destruction of (part of) the input by a dominant firm which manages the railway infrastructure and has an obligation to give access (*Lithuanian Railways*)

28 Or, as Slovak Telekom at para. 51 puts it: “While such practices [practices other than a refusal of access] can constitute a form of abuse where they are able to give rise to at least potentially anticompetitive effects, or exclusionary effects, on the markets concerned, they cannot be equated to a simple refusal to allow a competitor access to the infrastructure, since the competent competition authority or national court will not have to force the dominant undertaking to give access to its infrastructure, as that access has already been granted. The measures that would be taken in such a context will thus be less detrimental to the freedom of contract of the dominant undertaking and to its right to property than forcing it to give access to its infrastructure where it has reserved that infrastructure for the needs of its own business.”

29 As economists, we do not find the distinction between outright and constructive refusal to supply particularly useful. There is effectively no difference between a firm which bluntly refuses to supply the input and another which offers it at such an arbitrarily high price that the buyer would obviously not buy; or accepts to give the input but then delays forever access; or degrades interoperability to a level that the inferior becomes of little use to the buyer. An effects-based approach should not treat differently those cases which differ only in form but not in substance.

30 Such a rule can also have undesirable effects: a firm may not want to give access today because it anticipates that if market conditions change and it wanted to restrict access tomorrow, Courts will more easily find such a practice abusive.

31 Indeed, to the extent that margin squeeze implies a dissipation of profits, a firm has less incentive to engage in this practice than in an outright refusal to supply. The former practice arguably entails less anticompetitive harm too, since consumers might even gain from the margin squeeze in the short run.

32 See Rey and Tirole (2007) and Fumagalli et al. (2018, Chapter 5) for a review and discussions; see also Fumagalli and Motta (2020a).

input providers (e.g., Hart and Tirole, 1990; Reisinger and Tarantino, 2015; Nocke and Rey, 2018). Furthermore, in the ‘raising rivals’ costs’ theory (Ordober et al., 1990), the existence of an upstream oligopoly is an inherent part of the theory of harm.<sup>33</sup>

Therefore, from an economic perspective, the indispensability of the input is not a necessary condition for a dominant firm to engage in vertical foreclosure which has anti-competitive effects.

To sum up, in line with the insights from the literature on exclusionary practices discussed above, (a) for a vertical foreclosure action, the input at issue should be a crucial asset but *not necessarily indispensable* within the *Bronner* meaning;<sup>34</sup> and (b) all vertical foreclosure cases (including both outright and constructive refusal to supply cases) should be subject to this principle.<sup>35</sup>

Yet, as mentioned above, it might make sense to balance the objective of protection of competition with that of preservation of the incentive to innovate. Taking antitrust actions against any firm which has an essential input and chooses not to make it available to rivals would reduce the incentives to develop and invest in the first place. In this sense, and in line with *Bronner*, the criterion of input indispensability can be read as a guarantee that firms can enjoy the reward of their investment and innovation.

In order to balance the objectives of avoiding anticompetitive effects and preserving the incentives to innovate, instead of requiring the strict condition of indispensability, a possible approach would be to limit vertical foreclosure actions only to dominant undertakings whose input does not deserve (further) protection, in the following sense: (i) they have *not* committed considerable resources, effort, creativity or acumen to developing the input (for instance because the input is the result of a public investment undertaken under a legal monopoly, or because persistent control of the input is mostly due to strong network effects that insulate the first mover from competition);<sup>36</sup> or (ii) they have already likely abundantly gained from their input; (iii) or are already subject to regulatory obligations to share the input with rivals.

Admittedly, the general principle that intervention should be limited to those dominant firms whose investment or innovation is (no longer) worth protecting needs to be applied with some discretion. In particular, points (i) and (ii) are subject to value judgement, but this is true for many other areas of competition law.

Furthermore, this approach would be largely in line with the existing EU case law on vertical foreclosure. For instance, in *Microsoft* and *Google Shopping* there is little doubt that the company held an entrenched dominant position originating from the input at issue (the operating system and the search engine, respectively) and had benefited from it for a long time. It would be difficult to argue that denying interoperability or, respectively, reserving a prominent position to its own comparison shopping service (and demoting the rivals) allowed the company to recoup its investment.

This approach would also be consistent with cases of constructive refusal to supply and margin squeeze involving dominant telephone operators which had developed the network not in a competitive environment but rather under a legal monopoly, and were

<sup>33</sup> Motta (2023) formalises a model inspired by the *Google Shopping* case. There, the input is not essential, in the sense that a part of the user population needs access to the input, while the remaining part does not. Still, vertical foreclosure takes place and it is anti-competitive.

<sup>34</sup> In *Google Shopping*, indispensability was not necessary to prove an abuse for the (self-preferencing) practice at issue (see paras. 237-240), but the judgement also says (224 and ff., references omitted): “It must be noted that Google’s general results page has characteristics akin to those of an essential facility [...], inasmuch as there is currently no actual or potential substitute available that would enable it to be replaced in an economically viable manner on the market [...]. Paragraph 225: “It must be noted in that regard, [...] that the Commission found, [...] that generic search traffic from Google’s general results pages accounted for a large proportion of traffic to competing comparison shopping services and that such traffic could not be effectively replaced by other sources of traffic currently available to comparison shopping services, factors which are presented as essential aspects in the analysis of the abusive conduct.” Paragraph 226: “The Commission thus made clear [...] that there was currently no viable alternative for traffic accounting for a large proportion of the activity of comparison-shopping services.”

<sup>35</sup> We note that tying over a crucial input can be seen as a form of vertical foreclosure and should be treated in the same way.

<sup>36</sup> This approach is consistent with the one proposed in Motta and de Streel (2007) for the use of excessive pricing actions.

subject to regulatory obligations of access (*Telefónica, Slovak Telecom, TeliaSonera*), as well as with an abuse consisting of disrupting a railway infrastructure which the dominant firm had an obligation to maintain (*Lithuanian Railways*).<sup>37</sup>

## 4.2 Vertical foreclosure: Self-preferencing

The term ‘self-preferencing’ refers to situations where an integrated firm discriminates in favour of its (first-party) services or products to the detriment of those of a rival (third party).<sup>38</sup> This may occur through a variety of ways, such as degrading or delaying rivals’ access to the input, worsening their terms and conditions of access, or – in a digital platform context – making rivals’ offers less prominent, ranking them lower.

As far as we know, this term was first used by the European Commission to describe the practice at issue in the Google Shopping case, and it has typically been used with reference to digital markets. However, it may equally refer to any industry where an integrated firm makes access to its input (or to its customers) more difficult or more expensive to rivals.<sup>39</sup>

Self-preferencing – whatever the precise form it takes – belongs to the same family of practices as refusal to supply and can have the same anti-competitive effects (namely, completely or partially foreclosing rivals). For instance, there is no effective difference between an integrated firm that refuses to supply the input to a downstream rival (or offers to give it at an exorbitantly high price) and a hybrid online marketplace that consistently relegates a third-party merchant to ranking 200th in its list of results.

As such, the insights from the literature on vertical foreclosure apply to self-preferencing too.<sup>40</sup> Furthermore, all the considerations we made about input essentiality in the previous section should apply to practices which can be defined as self-preferencing too.

Self-preferencing might in principle also be price-based: one might argue that if the downstream subsidiary of a vertically integrated firm pays a lower access price for the input than a downstream rival, this might be characterised as self-preferencing. However, in such price-based self-preferencing cases, we believe that the anti-competitive assessment should generally be carried out through the usual margin squeeze test (see the section on price-cost tests above).

Consider a different approach where a higher price for the downstream rival than the one paid by the subsidiary provides the basis for an independent abuse. There would be at least two problems here. The first is that the transactions between subsidiaries of the same firm take place at artificial transfer prices, so they cannot be the base for a competitive assessment. (It would not be costly for a vertically integrated firm to raise internal prices, so an extremely high access price for both the downstream subsidiary and the rival might evade this rule while being problematic.)

The second problem is that there is the risk of finding an abuse any time that a downstream rival is charged a price which is above the production cost of the input.

<sup>37</sup> Arguably, this approach might differ from *IMS Health*, where the Court found in favour of the dominant firm because the rival would have offered very similar services as IMS, thus failing the ‘new product test’ of *Magill*. In that case, the input at issue was essential – the existence of a ‘brick structure’ that had become the standard in the organization of data in the pharmaceutical sector in Germany – but in our view access should have been warranted because the input was more the result of network effects than of the company’s investments. On the other hand, we also note that the interpretation of the ‘new product test’ has evolved since Microsoft, so it is unclear to us whether the judges would still find in favour of IMS today.

<sup>38</sup> Note that discrimination refers to different treatment of equal (or very similar) products and services. Therefore, if a firm, say, gives more prominence to its products or ranks them higher because they provide consumers/users with a higher quality/price relationship, we would not define it as self-preferencing (as long as, of course, the difference in treatment is proportional to the difference in quality/price).

<sup>39</sup> For instance, we see no difference between Google displaying its services more prominently or, respectively, demoting its rivals in its SERP and a supermarket which reserves its most prominent and accessible shelves to its own labelled products or, respectively, relegates rivals’ brands to less visible shelves or in the limit does not put them on offer in its stores.

<sup>40</sup> For an economic rationalisation of abuse of dominance cases involving self-preferencing in the digital markets within the framework of the literature on vertical foreclosure, see Motta (2023).

Therefore, we submit that price-based self-preferencing should generally be assessed under the usual margin squeeze approach.

#### *Limiting principles*

Given that self-preferencing is a form of refusal to supply, it should be treated in the same way.

First, as for other forms of vertical foreclosure, self-preferencing might have objective justifications and potentially efficiency justifications. For instance, a delay or a suspension in the supply of a rival may be motivated by the necessity to control the quality of the rival's products or services after complaints about them have emerged. Safety or security concerns might justify (if proven) the suspension or elimination of a third-party app from the offer of a platform. One should also consider that in certain circumstances, a user's bad experience with a product hosted by a hybrid marketplace or a supermarket might negatively affect the reputation of the whole marketplace/supermarket, which should have the right to protect itself against the perception of being of lower quality.

Of course, in all these cases, for the integrated dominant firm to be able to invoke a legitimate justification behind its self-preferencing conduct, it must be able to support its claim with unambiguous and objective evidence (for instance, of an app failing to deliver a quality service or a safe one, or of consumers demanding the third-party app less than in the past).

Second, we can also imagine situations where self-preferencing is unlikely to have appreciable effects. Think, for instance, of a delay in supply being of short duration; a precautionary suspension being perhaps suspiciously conservative but resolved after a relatively short time; an algorithm changing the ranking in a self-promoting way only for particular search patterns or for a minority of users; and so on.

Third, there may be situations where what might appear as self-preferencing is, in fact, an efficiency. For instance, a first-party app might guarantee a better and more seamless experience to a user than a third-party app because its programming code is fully integrated in the software of the platform, while the third-party one's is not. Therefore, any limiting principle governing whether self-preferencing constitutes an exclusionary abuse requires showing that the conduct leads to the (partial or full) exclusion of rivals, to the detriment of consumers.

### **4.3 Tying and bundling**

Another conduct that is central to prominent cases of abuse of dominance is **tying**. A growing economic literature points to the anti-competitive effects of tying. This literature has identified three main mechanisms to rationalise the incentive of the dominant firm to exclude (fully or partially) rivals from the tied market:

1. Imperfect rents extraction due to business models, frictions in contracting (Greenlee et al., 2008; Carlton and Waldman, 2012; Chambolle and Molina, 2023; de Cornière and Taylor, 2021, 2023), inability to price discriminate (Choi et al., 2023), non-negative price constraints (Choi and Jeon, 2021), or downstream competition between distributors (Ide and Montero, 2023).
2. The existence of scale economies in the tied market, both from the supply or demand side, whereby tying allows to secure critical buyers and exclude an existing rival/potential entrant from the tied market (Choi et al., 2023; Fumagalli and Motta, 2020b) and future entrants from the tying market (Carlton and Waldman, 2002).
3. A commitment to aggressive pricing in the case of entry in the tied market (Whinston, 1990; Hurkens et al., 2019) or aggressive R&D (Choi 1996, 2004).

Moreover, Hurkens et al. (2019) study the effect of tying in asymmetric oligopolies and show that, unless dominance is quite limited, it exerts anti-competitive effects by allowing the dominant firm to sustain higher prices. The rival may be harmed, but this is not the primary intent of the conduct.<sup>41,42</sup>

However, we recognise that tying is also a way through which firms continuously innovate by adding new features, accessories or functionalities into a given product, and produce significant improvements for consumers. Therefore, we do not see enough economic evidence to establish an anti-competitive presumption for tying.

We note, however, that the current case law is effectively already close to making such a presumption. According to *Microsoft*,<sup>43</sup> tying is abusive if the following conditions hold: (i) the tying and tied products are two separate products; (ii) there is dominance in the market for the tying product; (iii) the dominant firm does not give customers a choice to obtain the tying product without the tied product; (iv) the practice in question is ‘capable of restricting competition’; (v) and it is not objectively justified.

It seems to us that these conditions might result in bundling being treated very strictly. Consider for instance a dominant firm which includes a new feature, previously produced by rivals, into its primary product, to the benefit of consumers (due to transaction cost savings, consumption synergies, or one-stop shopping). If the tying product is *not* offered without the additional feature, and given that rivals’ sales will likely be harmed by its inclusion in the primary product, the first four conditions might be easily satisfied, in particular, if condition (iv), which refers to ‘foreclosing competition’, is interpreted as ‘foreclosing competitors’. At that point, the dominant firm will have the burden of proving that either bundling was objectively necessary or that its exclusionary effect is counterbalanced by pro-competitive effects. Given that efficiency defences typically have a high standard of proof, this task might be very demanding.

It is therefore crucial that, when assessing the effects of tying, the Commission is guided by the ultimate objective of consumer welfare and interprets the concept of ‘restricting competition’ as ‘harming consumers’ rather than ‘harming rivals’. Reliance on a coherent theory of harm will also be essential, to clarify the mechanism whereby tying would allegedly be detrimental to consumers. Otherwise, there is a serious risk that the Commission might end up finding tying abusive even in instances where it is pro-competitive.

## REFERENCES

- Aghion, P. and P. Bolton (1987), “Contracts as a barrier to entry”, *American Economic Review* 77: 388-401.
- Bernheim, B. Douglas and Michael D. Whinston (1998), “Exclusive Dealing”, *Journal of Political Economy* 106(1): 64-103.
- Bolton, P. and D.S. Scharfstein (1990), “A Theory of Predation Based on Agency Problems in Financial Contracting”, *American Economic Review* 80:93-106.
- Calzolari, G. and V. Denicolò (2013), “Competition with exclusive contracts and market- share discounts”, *American Economic Review* 103: 2384-2411.
- Calzolari, G. and V. Denicolò (2015), “Exclusive dealing and market dominance”, *American Economic Review* 105(11): 3321-51.

41 Hurkens et al. (2019) extend the analysis of Carbajo et al. (1990) and Zhou (2017) to asymmetric oligopolies and show that the extent of dominance is a crucial determinant of the way tying exerts anti-competitive effects. When dominance is limited, tying intensifies competition. Hence, it can be used to discourage entry (to the extent that it has commitment value). Instead, when dominance is pronounced, tying softens competition and increased both the profits of the dominant firm and of the rival. For intermediate levels of dominance, tying allows the dominant firm to set higher prices by decreasing the price elasticity of its demand, but decreases the profits of the rival.

42 See Fumagalli et al. (2018, Chapter 4) for a discussion of the literature on the anti-competitive effects of tying.

43 See Judgement of 17 September 2007, *Microsoft v Commission*, T-201/04, EU:T:2007:289.

- Calzolari, G. and V. Denicolò (2020), “Price cost tests in loyalty discounts cases”, *International Journal of Industrial Organization* 73.
- Calzolari, G. and V. Denicolò (2021), “Exploiting rivals’ strengths”, CEPR Discussion Paper No. 15520.
- Calzolari, G., V. Denicolò and P. Zanchettin (2020), “The demand-boost theory of exclusive dealing”, *RAND Journal of Economics* 51: 713-738.
- Carbajo, J., D. De Meza and D.J. and Seidmann (1990), “A strategic motivation for commodity bundling”, *Journal of Industrial Economics* 38(3): 283-298.
- Carlton, D.W. and M. Waldman (2002), “The strategic use of tying to preserve and create market power in evolving industries”, *RAND Journal of Economics* 33(2): 194-220.
- Carlton, D.W. M. and Waldman (2012), “Upgrades, Switching Costs and the Leverage Theory of Tying”, *The Economic Journal* 122: 675-726.
- Chambolle, C. and H. Molina (2023), “A Buyer Power Theory of Exclusive Dealing and Exclusionary Bundling”, *American Economic Journal: Microeconomics* 15(3): 166-200.
- Chen, Z. and P. Rey (2012), “Loss Leading as an Exploitative Practice”, *American Economic Review* 102: 3462-82.
- Chen, Z. and G. Shaffer (2014), “Naked exclusion with minimum share requirements”, *RAND Journal of Economics* 45: 64-91.
- Chen, Z. and G. Shaffer (2019), “Market Share Contracts, Exclusive Dealing, and the Integer Problem”, *American Economic Journal: Microeconomics* 11: 208-42.
- Choi, J.P. (1996), “Preemptive R&D, Rent Dissipation, and the Leverage Theory”, *Quarterly Journal of Economics* 110: 1153-81.
- Choi, J.P. (2004), “Tying and Innovation: A Dynamic Analysis of Tying Arrangements”, *The Economic Journal* 114: 83-101.
- Choi, J.P. and D.S. Jeon (2021), “A leverage theory of tying in two-sided markets with non- negative price constraints”, *American Economic Journal: Microeconomics* 13(1): 283-337.
- Choi, J.P. and C. Stefanadis (2001), “Tying, Investment, and the Dynamic Leverage Theory”, *RAND Journal of Economics* 32: 52-71.
- Choi, J.O., D.S. Jeon and M.D. Whinston, (2023), “Tying with Network Effects”, mimeo.
- Choné, P. and L. Linnemer (2015), “Nonlinear pricing and exclusion: I. buyer opportunism”, *RAND Journal of Economics* 46: 217-240.
- Choné, P. and L. Linnemer (2016), “Nonlinear pricing and exclusion: II. Must-stock products”, *RAND Journal of Economics* 47: 631-660.
- De Cornière, A. and G. Taylor (2021), “Upstream bundling and leverage of market power”, *The Economic Journal* 131(640): 3122-3144.
- De Cornière, A. and G. Taylor (2023), “Anticompetitive Bundling when Buyers Compete”, *American Economic Journal: Microeconomics*, forthcoming.
- European Commission (2023), “A dynamic and workable effects-based approach to Article 102 TFEU”, Competition Policy Brief.
- Fumagalli, C. and M. Motta (2006), “Exclusive Dealing and Entry, when Buyers Compete”, *American Economic Review* 96: 785-95.
- Fumagalli, C. and M. Motta (2013), “A Simple Theory of Predation”, *Journal of Law and Economics* 56: 595-631.

- Fumagalli, C. and M. Motta (2017), “On the use of price-cost tests in loyalty discounts: Which implications from economic theory?”, *Antitrust Law Journal* 81: 501-549.
- Fumagalli, C. and M. Motta (2020a), “Dynamic Vertical Foreclosure”, *Journal of Law and Economics* 63: 763-812.
- Fumagalli, C. and Motta M. (2020b), “Tying in Evolving Industries, when Future Entry Cannot Be Deterred”, *International Journal of Industrial Organization* 73: 1-23.
- Fumagalli, C., M. Motta and T. Ronde (2012), “Exclusive Dealing: Investment Promotion May Facilitate Inefficient Foreclosure”, *The Journal of Industrial Economics* 47: 785-811.
- Fumagalli, C., M. Motta and C. Calcagno (2018), *Exclusionary Practices: The Economics of Monopolisation and Abuse of Dominance*, Cambridge University Press.
- Furman, J., D. Coyle, A. Fletcher, P. Marsden and D. McAuley (2019), *Unlocking digital competition*, Report of the Digital Competition Expert Panel.
- Greenlee, P., D. Reitman and D.S. Sibley (2008), “An antitrust analysis of bundled loyalty Discounts”, *International Journal of Industrial Organization* 26(5): 1132-1152.
- Hart, O. and J. Tirole (1990), “Vertical Integration and Market Foreclosure”, *Brookings Papers on Economic Activity: Microeconomics*, pp. 205-86.
- Hurkens, S., D.S. Jeon and D. Menicucci (2019), “Dominance and competitive bundling”, *American Economic Journal: Microeconomics* 11(3): 1-33.
- Ide, E. and J.P. Montero (2023), “Monopolization with Must-Haves”, *American Economic Journal: Microeconomics*, forthcoming.
- Ide, E., J.P. Montero and N. Figueroa (2016), “Discounts as a Barrier to Entry”, *American Economic Review* 106: 1849-77.
- Jullien, B., P. Rey and C. Saavedra (2014), “The Economics of Margin Squeeze”, CEPR Discussion Paper No. 9905.
- Karlinger, L. and M. Motta (2012), “Exclusionary Pricing when Scale Matters”, *Journal of Industrial Economics* 60: 75-103.
- Motta, M. (2023) “Self-preferencing and foreclosure in digital markets: theories of harm for abuse cases”, *International Journal of Industrial Organization* 90.
- Motta, M. and A. de Streel (2007), “Excessive Pricing in Competition Law: Never say Never?”, Chapter 2 in *The Pros and Cons of High Prices*, Konkurrensverket (Swedish Competition Authority).
- Nocke, V. and P. Rey (2018) “Exclusive Dealing and Vertical Integration in Interlocking Relationships”, *Journal of Economic Theory* 177: 183-221.
- Ordover, J., A.G. Saloner and S.C. Salop (1990), “Equilibrium Vertical Foreclosure”, *American Economic Review* 80: 127-42.
- Rasmusen, E.B., J.M. Ramseyer and J.S. Wiley, Jr. (1991), “Naked Exclusion”, *American Economic Review* 81: 1137-45.
- Reisinger, M. and E. Tarantino (2015), “Vertical Integration, Foreclosure, and Productive Efficiency”, *RAND Journal of Economics* 46: 461-79.
- Rey, P. and J. Tirole (2007), “A Primer on Foreclosure”, in M. Armstrong and R. H. Porter (eds), *Handbook of Industrial Organization*, North-Holland.
- Rey, P., Y. Spiegel and K. Stahl (2022), “A Dynamic Model of Predation”, TSE Working Paper No. 22-1375.
- Segal, I. and M.D. Whinston (2000a), “Naked Exclusion: Comment”, *American Economic Review* 90: 296-309.

Segal, I. and M.D. Whinston (2000b), “Exclusive Contracts and Protection of Investments”, *RAND Journal of Economics* 31: 603–633.

Whinston, M.D. (1990), “Tying, Foreclosure, and Exclusion”, *The American Economic Review* 80(4): 837–859.

Zhou, J. (2017), “Competitive bundling”, *Econometrica* 85(1): 145–172.

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