Causation and Counterfactual Analysis in Abuse of Dominance Cases:

Lessons from the General Court's *Qualcomm* Ruling

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Counterfactual analysis, which compares the competitive situation prevailing with and without the allegedly abusive behaviour, is nowadays regarded the lynchpin of an effects-based approach to the analysis of dominant firm conduct under Article 102 TFEU. This article draws on the recent Qualcomm *ruling by the General Court of the European Union to critically reflect on the use and requirement of counterfactual analysis in abuse of dominance cases. It argues that Qualcomm offers two lessons on the role of the counterfactual analysis in modern competition law. First, it shows that counterfactual analysis is vulnerable to under-inclusiveness and type II errors when it ignores the problem of concurrent causes of foreclosure effects, disregards standard economic analysis of exclusivity rebates, and remains oblivious to dynamic competition. Second,* Qualcomm *sheds light on the intricate relationship between the counterfactual analysis and the requisite standard of harm for finding anticompetitive effects under Article 102 TFEU. In limiting the relevant counterfactual scenarios to a very narrow set of actual or nearby likely worlds, Qualcomm is but the last indication of a much more profound transformation of Article 102 TFEU: the transition from a capability to a balance of probabilities or beyond reasonable doubt standard of harm.*

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1 Introduction

Most fields of law require some proof of a causal link between an impugned conduct and an allegedly harmful event to engage the legal liability of the defendant. Establishing such a link of cause and effect is a ubiquitous evidentiary requirement that cuts across various legal domains, ranging from tort to criminal law. Yet, showing causality is anything but an easy task. One widely-used conceptual tool to determine whether a certain harmful event has been caused by, and can therefore be attributed to, the defendant's conduct is the "*sine qua non*" or "but-for" test.[1] This test consists of a counterfactual analysis that asks whether a (harmful) event would have materialised in a nearby but-for-world in the absence of the impugned conduct.

Counterfactual analysis has also gained currency in the field of competition law,[2] especially following the shift of modern competition law towards a so-called "more economic" or "effects-based" approach.[3] To support the finding of a violation of competition law, competition authorities and private plaintiffs are increasingly expected to provide a detailed assessment of the causal mechanism through which the allegedly anticompetitive conduct leads to harmful effects in a given case. Such an effects-based analysis arguably presupposes a careful analysis of the chain of cause and effect linking the impugned anticompetitive agreement, dominant firm conduct or merger, and the alleged anticompetitive harm. Therefore, the proponents of an effects-based approach contend that the finding of anticompetitive effects is predicated on a counterfactual analysis.[4] To them, counterfactual analysis is nothing less than

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[1] HLA Hart and T Honoré, *Causation in the Law* (Oxford, Oxford University Press 1985) Chapter V, 109–32. The principles for establishing causation in tort and criminal law are also fairly aligned, ibid 325. See to this effect also S Steel, 'Causation in tort law and criminal law: unity or divergence?' in M Dyson (ed), *Unravelling Tort and Crime* (Cambridge, Cambridge University Press 2014).

[2] See for instance C Veljanovski, 'Counterfactual Tests in Competition Law' (2010) 9 *Competition Law Journal* 436; A Bavasso and A Lindsay, 'Causation in EC Merger Control' (2007) 3(2) *Journal of Competition Law & Economics* 181; P Davis and A Cooper, 'On the Use of Counterfactuals in Merger Inquiries', UK Competition Commission Working Paper' (2010).

[3] A Witt, *The More Economic Approach to EU Antitrust Law* (Oxford, Hart Publishing 2016).

[4] See for instance P Ibáñez Colomo, 'Anticompetitive Effects in EU Competition Law' (2021) 17(2) *Journal of Competition Law & Economics* 309; P Ibáñez Colomo, 'Is the counterfactual relevant under Article 102 TFEU?

the "cornerstone"[5] or "core component of any effects-based approach".[6] Some even perceive it as consubstantial to the very notion of anticompetitive effects and the concept of restriction of competition itself.[7]

The case law is, however, far less clear on the role of the counterfactual analysis in EU competition law. The EU judicature expressly requires a counterfactual analysis as part of the assessment of the anticompetitive effects of coordinated conduct[8] under Art. 101 (1) TFEU[9] and mergers[10] under Regulation 139/2004.[11] By contrast, no such explicit requirement can be found in the case law for the finding of a restriction of competition by object under Article 101 (1) TFEU.[12] Neither is the counterfactual analysis a prerequisite for establishing an abuse of dominance under Article 102 TFEU, even though the Commission committed itself to revert to a counterfactual analysis as part of the assessment of the anticompetitive effects of dominant

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How could it not?' (3 December 2021) chillingcompetition.com/2021/12/03/is-the-counterfactual-relevant-under-article-102-tfeu-how-could-it-not/.

[5] D Geradin and I Girgenson, 'The Counterfactual Method in EU Competition Law: The Cornerstone of the Effects-Based Approach' in JHJ Bourgeois and DF Waelbroeck (eds), *Ten years of effects-based approach in EU competition law: State of play and perspectives* (Brussels, Bruylant 2013).

[6] M Rato and N Petit, 'Abuse of Dominance in Technology-Enabled Markets: Established Standards Reconsidered?' (2013) 9(1) *European Competition Journal* 1, 21. Incidentally, one of the co-authors of this article, M Rato, represented Qualcomm as a legal counsel before the General Court.

[7] In this sense, P Ibáñez Colomo, 'Pay-For-Delay and the Structure of Article 101(1) TFEU: Points of Law Raised in Lundbeck and Paroxetine' [2020] *Journal of European Competition Law & Practice* 591, 592–93, 595–98; P Ibáñez Colomo, 'The legal status of pay-for-delay agreements in EU competition law: Generics (Paroxetine): Case C-307/18, Generics (UK) Ltd and Others v. Competition and Markets Authority, Judgment of the Court (Fourth Chamber) of 30 January 2020, EU:C:2020:52' (2020) 57 *Common Market Law Review* 1933, 1940, 1947; P Ibáñez Colomo, 'Counterfactual analysis and restrictions by object: myths and misconceptions' (3 February 2023) chillingcompetition.com/2017/03/17/counterfactual-analysis-and-restrictions-by-object-myths-and-misconceptions/.

[8] Case 56/65 *Société Technique Minière v Maschinenbau Ulm* ECLI:EU:C:1966:38 p. 250; Case T-328/03 *O2 (Germany) v Commission* ECLI:EU:T:2006:116 para. 116; Case C-382/12 P *MasterCard and Others v Commission* ECLI:EU:C:2014:2201 paras. 161–70.

[9] Consolidated version of the Treaty on the Functioning of the European Union. [2012] OJ C 326/47.

[10] Case C-265/17 P *Commission v United Parcel Service* ECLI:EU:C:2019:23 para. 32.

[11] Council Regulation (EC) No 139/2004 on the Control of Concentrations between Undertakings. [2004] OJ L 24/1.

[12] See to this effect Case T-472/13 *Lundbeck v Commission* ECLI:EU:T:2016:449 para. 473; I Lianos, V Korah and P Siciliani, *Competition law* (Oxford, Oxford University Press 2019) 567. See however for the opposite view P Ibáñez Colomo, 'Counterfactual analysis and restrictions by object: myths and misconceptions' (n 7).

firm conduct[13] and the EU Courts have occasionally held that the alleged anticompetitive effects must be attributable to the impugned dominant firm's conduct.[14]

When it comes to counterfactual analysis, the abuse of dominance case law has thus appeared for a long time to be the odd one out. This changed radically with the *Qualcomm* ruling by the General Court. In *Qualcomm*, the General Court first reaffirmed the principle that dominant firm conduct must be capable of excluding an as-efficient competitor to qualify as an abuse of dominance in breach of Article 102 TFEU.[15] It then further clarified that this foreclosure effect must also be substantiated on the basis of a *sine qua non* counterfactual analysis which indicates that in the absence of the impugned conduct the customers of the dominant firm would have been likely to enter into supply relationships with the allegedly foreclosed rivals.[16] In short, the Commission has to compare the conditions of competition that would have prevailed in the absence of the conduct (*status quo ante*) with the market situation affected by the conduct to draw the legitimate conclusion that the impugned conduct was capable of harming competition.

This introduction of a counterfactual requirement in *Qualcomm* has so far attracted little scholarly attention. For the most part, legal commentary on *Qualcomm* has welcomed the greater role of counterfactual analysis under Article 102 as another important step in the evolution of the abuse of dominance case law towards an "effects-based" approach.[17] Against this backdrop, this article interrogates the requirement of a counterfactual analysis in abuse of dominance cases that was introduced by the General Court in *Qualcomm* and reflects on its

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[13] Guidance on the Commission's Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings, Guidance Paper. [2009] OJ C 45/7 para. 21; *National Grid PLC v The Gas and Electricity Markets Authority* [2010] EWCA Civ 114 para. 54.

[14] Case C-23/14 *Post Danmark II* ECLI:EU:C:2015:651 para. 47; Case T-612/17 *Google and Alphabet v Commission (Google Shopping)* ECLI:EU:T:2021:763 para. 441.

[15] Case T-235/18 *Qualcomm v Commission* ECLI:EU:T:2022:358 paras. 351, 416.

[16] ibid para. 415. See also paras. 400–14, 476–78.

[17] A Lamadrid de Pablo, 'Case T-235/18, Qualcomm v European Commission (Part II: Substance)' (11 July 2022) https://chillingcompetition.com/2022/07/11/case-t-235-18-qualcomm-v-european-commission-part-ii-substance/ ; D Auer and L Radic, 'The Growing Legacy of Intel' [2022] *Journal of European Competition Law & Practice*, 3–4.

broader implications for the evolution of Article 102 TFEU. It asks whether the counterfactual analysis, as applied in *Qualcomm*, really moves Article 102 TFEU toward a more effects-based approach and whether a counterfactual analysis is warranted at all under the currently prevailing critical threshold for anticompetitive effects—which will be called in the following the "standard of harm"—governing Article 102 TFEU.

This article argues that the counterfactual analysis in *Qualcomm* offers two main lessons. First, *Qualcomm* shows that the counterfactual analysis can go utterly wrong and fly in the face of an effects-based analysis. In particular, this article highlights that the counterfactual analysis of anticompetitive effects under Article 102 is prone to a number of serious pitfalls. For example, the counterfactual analysis may yield misleading results if it fails to account for the problem of concurrent causes of foreclosure effects (the so-called problem of "overdetermination"). Errors might also occur if the counterfactual analysis is carried out without regard for the standard theories of harm and economic analysis of exclusionary conduct. Moreover, a static but-for counterfactual analysis that uses the *status quo ante* as the relevant benchmark against which causality is established may also disregard the adverse impact of dominant firm conduct on dynamic competition. As a consequence, the introduction of a counterfactual analysis may have the perverse consequence of raising the competition authority's evidentiary burden in exactly those cases where competition law intervention is most needed, thereby entailing the risk of too many false acquittals and significant type II error costs. The standard *sine qua non* counterfactual analysis that mechanically compares the competitive conditions prevailing in the market with and without the conduct is therefore an inapt method to implement a truly effects-based competitive assessment.

Second, *Qualcomm* sheds light on the far-reaching implications that the introduction of a counterfactual analysis has for the requisite standard of harm under Article 102 TFEU. This article contends that the *sine qua non* counterfactual requirement in *Qualcomm* goes against the

prevailing standard of harm under Article 102 TFEU, which requires antitrust plaintiffs to demonstrate that the impugned dominant firm conduct was capable of foreclosing competitors.[18] While this "capability standard"[19] does not necessarily preclude the use of a counterfactual analysis, it grants competition authorities considerable leeway in selecting the relevant but-for-scenario from a wide range of relevant possible worlds. In limiting the relevant counterfactual scenarios to a very narrow set of nearby likely worlds, *Qualcomm* is only the most recent manifestation of a much more profound transformation of Article 102: the transition from a capability to a balance of probabilities, or even a beyond reasonable doubt standard of harm.

The remainder of this article is structured as follows. The first part provides the relevant context by surveying the major facts of the Commission's Decision and the General Court's ruling in *Qualcomm* and outlines the General Court's counterfactual analysis in that case. In the second part, this article discusses whether *Qualcomm* further aligns the Article 102 case law with an effects-based approach and highlights how the counterfactual analysis may entail major pitfalls. The third part will then focus on the bigger picture by reflecting on the implications of the counterfactual analysis in *Qualcomm* for the interpretation of the standard of harm under Article 102 TFEU.

2   Why the Counterfactual Analysis Mattered in *Qualcomm*

Before closing in on the counterfactual analysis in *Qualcomm*, this section will first give some necessary background details. It will provide a short overview of the Commission's

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[18] Case 322/81 *Michelin v Commission* ECLI:EU:C:1983:313 paras. 73; Case C-95/04 P *British Airways plc v Commission of the European Communities* ECLI:EU:C:2007:166 paras. 67–68.
[19] P Ibáñez Colomo and Lamadrid de Pablo, A. 'On the Notion of Restriction of Competition: What We Know and What We Don't Know We Know' in D Gerard, M Merola and B Meyring (eds), *The Notion of Restriction of Competition: Revisiting the Foundations of Antitrust Enforcement in Europe* (Brussels, Bruylant 2017) 361–63.

Qualcomm case and will then describe the pivotal role of the counterfactual analysis in the General Court's ruling that quashed the Commission's decision on appeal.

2.1   The Commission's Qualcomm Decision

At the heart of the *Qualcomm* case lie so-called exclusivity payments in the market for LTE (4 G) baseband chipsets. Baseband chipsets enable the connectivity of electronic handsets (e.g., smartphones and tablets) to the mobile broadband network. From 2011 to 2016, Qualcomm, the dominant chipmaker, [20] offered Apple, its most important customer, in total 2– 3 billion USD of different incentive payments and discount schemes.[21] These payments were conditional upon Apple's commitment to purchase its entire requirement of baseband chipsets for the production of various generations of its Apple iPhones and iPads exclusively from Qualcomm.[22]

In 2018, the Commission issued an infringement decision against Qualcomm which found that its exclusivity payments were in breach of Article 102 TFEU. The Commission based its finding of an abuse of dominance on the qualification of Qualcomm's exclusivity payments as loyalty rebates. Relying on the *Hoffmann-La Roche* presumption,[23] the Commission took the view that Qualcomm's exclusivity payments amounted to a *prima facie* abuse of dominance.[24] The Commission further observed that this presumption was corroborated by additional evidence that the exclusivity payments, which in total amounted to around 10–20% of Apple's yearly expenditure on baseband chipsets,[25] had materially diminished Apple's incentives to switch to competing baseband chipset suppliers.[26] For most of the period during which the

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[20] Qualcomm held a market share of around 90–100 % in the world-wide market for LTE chipsets during the period 2010–14 and above 60-70% in the period 2015-16. AT.40220 Qualcomm (exclusivity payments). C(2018) 240 final para. 310.

[21] ibid paras. 172, 140–67.

[22] ibid paras. 152, 158, 162, 166–67.

[23] ibid para. 382; Case 85/76 *Hoffmann-La Roche v Commission* ECLI:EU:C:1979:36 paras. 89–90; Case C-413/14 P *Intel v Commission* ECLI:EU:C:2017:632 paras. 137–38.

[24] AT.40220 Qualcomm (exclusivity payments) (n 20) paras. 382, 389–97, 405–06; Case T-235/18 *Qualcomm v Commission* (n 15) paras. 361–62, 381–82.

[25] AT.40220 Qualcomm (exclusivity payments) (n 20) para. 413.

[26] ibid paras. 383, 409–22.

exclusivity payments were granted, Apple sourced its LTE baseband chipsets exclusively from Qualcomm.[27] The Commission also highlighted that the exclusivity payments covered a considerable share of the relevant market because Apple was a strategically important customer whose LTE chipset requirements amounted to a significant share of up to 40–50% and, on average, 25% of the worldwide LTE chipset demand.[28] The Commission also rebutted a critical margin study that was produced by Qualcomm to demonstrate, pursuant to *Intel*,[29] that its exclusivity payments were not capable of excluding an equally efficient competitor.[30] Concluding that Qualcomm had failed to provide any objective justification for its exclusivity rebates, the Commission fined Qualcomm almost 1 billion EUR.

2.2   *The General Court's Qualcomm Ruling*

In the summer 2022, the General Court quashed the Commission's decision in its entirety. The Court criticised the Commission's analysis not only on procedural grounds for infringing on Qualcomm's rights of defence[31] but it also identified a fundamental flaw in the Commission's substantive analysis. The thrust of the General Court's criticism centred on the Commission's finding that there was no alternative supplier to Qualcomm from which Apple could have purchased its LTE chipsets for all of the iPhones that were launched during most of the relevant period of the alleged abuse.[32] The General Court took this finding as an indication that there was no competitor to which Apple could have realistically switched part or all of its chipset requirements for iPhones in the absence of the impugned conduct.[33] In other words, even in a counterfactual but-for-world where Qualcomm had not offered any exclusivity

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[27] ibid para. 168.
[28] ibid para. 467.
[29] Case C-413/14 P *Intel v Commission* (n 23) para. 138.
[30] AT.40220 Qualcomm (exclusivity payments) (n 20) paras. 487–503; Table 17.
[31] Case T-235/18 *Qualcomm v Commission* (n 15) paras. 154–346.
[32] ibid paras. 409–12, 476–78.
[33] ibid paras. 412–13.

payments, no competitor could have supplied Apple with chipsets fulfilling its technical requirements for iPhones.

The General Court took the view that the lack of Apple's incentives to move its LTE chipset requirements for iPhones from the dominant supplier Qualcomm to its competitors could not be attributed to the alleged anticompetitive foreclosure effect of Qualcomm's exclusivity payments. Rather, it was exclusively caused by the absence of any credible and equally efficient competitor who could have satisfied Apple's quality and technical requirements.[34] Given that Apple's sales of iPhones represented a very large share of Apple's overall sales of LTE devices,[35] the General Court concluded that the Commission had failed to establish that Qualcomm's exclusivity payments entailed the alleged anticompetitive foreclosure effect with respect to Apple's entire demand for LTE chipsets for iPhones and iPads.[36] It instead implied that Qualcomm's exclusivity payments could have equally plausibly been consistent with competition on the merits.[37] Therefore, the General Court held that the Commission had not properly accounted for Apple's alleged lack of incentives to switch to competitors as a relevant factor that called into doubt the capacity of Qualcomm's rebates to foreclose competition.[38] Accordingly, the Commission had failed to consider "all the relevant factual circumstances",[39] including the evidence submitted by the defendants,[40] to sustain the finding that the impugned conduct was capable of entailing anticompetitive effects.[41] As a consequence, the Commission

> *could not legitimately conclude that the payments concerned had reduced*
> *Apple's incentives to switch to [Qualcomm's] competitors covering all*

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[34] ibid paras. 414–17.

[35] The sales of iPhones amounted to about 90% of Apple's sales of LTE devices during the relevant period, while the sales of iPads amounted to about 10% of LTE devices sales, ibid para. 408.

[36] ibid paras. 409–12.

[37] ibid paras. 414, 416.

[38] ibid paras. 414, 417.

[39] ibid para. 417.

[40] This requirement arises from Case C-413/14 P *Intel v Commission* (n 23) paras. 138–39.

[41] Case T-235/18 *Qualcomm v Commission* (n 15) paras. 355–56, 397; Case C-307/18 *Generics (UK) and Others* ECLI:EU:C:2020:52 para. 154.

iPhones and iPads to be launched during the period concerned, and that those payments were, accordingly, capable of restricting competition in the entire relevant market for LTE chipsets.[42]

2.3 The General Court's Counterfactual Analysis: A Further Step Towards an Effects-based Analysis of Dominant Firm Conduct?

The General Court's criticism of the Commission's failure to carry out a counterfactual analysis to sustain the finding of an abuse of dominance is significant. The Court referred to counterfactual analysis as an essential element of the relevant factual evidence that the Commission must consider before it can legitimately conclude that the impugned conduct is capable of foreclosing competition. *Qualcomm* suggests that a counterfactual analysis is part and parcel of the "all the relevant circumstances" assessment that the Commission is required to undertake to prove the existence of an abuse of dominance under the heightened evidentiary standard introduced by *Intel*[43] and progeny.[44] Thus, the General Court's *Qualcomm* ruling brings into being, albeit implicitly, a novel counterfactual requirement for the finding of anticompetitive effects under Article 102 TFEU.

At first sight, the reasoning of the General Court underpinning this novel counterfactual requirement appears to be of rigorous logic. Who would seriously take issue with the proposition that impugned conduct by a dominant firm cannot be legitimately said to exclude competitors and restrict competition if the customer(s) of the dominant firm would have, in any event, purchased all of their requirements from the dominant firm because there was no alternative competitor who could have possibly provided the product at the required quality? After all, as Professor Petit puts it, dominant firm conduct cannot harm "ghost competitors".[45] Accordingly, "the Court says that the Commission's logic is simply wrong because it accused

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[42] Case T-235/18 *Qualcomm v Commission* (n 15) para. 414.

[43] Case C-413/14 P *Intel v Commission* (n 23) paras. 138–39.

[44] Case T-235/18 *Qualcomm v Commission* (n 15) paras. 355–56, 397; Case C-307/18 *Generics (UK) and Others* (n 41) para. 154; Case C-377/20 *Servizio Elettrico Nazionale and Others* ECLI:EU:C:2022:379 paras. 52, 72; Case C-680/20 *Unilever Italia Mkt. Operations* ECLI:EU:C:2023:33 paras. 40, 54.

[45] N Petit (5 February 2023) twitter.com/CompetitionProf/status/1537342101960237057. See also N Petit (5 February 2023) twitter.com/competitionprof/status/1537063913149308931.

the company of killing competitors that did not exist."[46] Along similar lines, Professor Ibáñez Colomo contends that a "counterfactual analysis that is, the evaluation of the conditions of competition that would have prevailed had the practice […] not been implemented"[47] is a *sine qua non* for establishing the adverse effect of that practice on "competition that would have otherwise existed" in the absence of the conduct.[48] The corollary of this proposition is that if no competition existed in the market in the absence of the allegedly anticompetitive conduct, then the conduct could not have possibly restricted competition.[49]

From this perspective, the introduction of a counterfactual requirement in *Qualcomm* is a much anticipated and welcome development that further aligns the interpretation of Article 102 TFEU with an effects-based approach. It brings much-needed conceptual clarity and consistency to the analysis of anticompetitive effects under all three branches of EU competition law.[50] It also further increases the precision of competition analysis because it ensures that an alleged exclusionary effect can, with sufficient confidence, be attributed to the impugned conduct of the dominant firm and is not the result of extraneous economic factors, such as changes in consumption patterns or the inefficiency of competing rivals.[51]

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[46] This statement on *Qualcomm* by Professor Petit is reported in L Bertuzzi, 'EU court dismisses Commission's €1 billion antitrust fine against Qualcomm' *Euractiv* www.euractiv.com/section/digital/news/eu-court-dismisses-commissions-e1-billion-antitrust-fine-against-qualcomm/ accessed 25 January 2023;
[47] Ibáñez Colomo (n 4) 314.
[48] ibid 327; Ibáñez Colomo (n 7) 598.
[49] This logic underpins, for instance, Professor Ibáñez Colomo's contention that a pay-for-delay settlement cannot restrict competition if the generic firm could only enter the market by infringing the originator's patent and that, hence, the scope of the patent predetermines the existence of (a restriction of) competition. Ibáñez Colomo (n 7) 598–9.
[50] P Ibáñez Colomo, 'Is the counterfactual relevant under Article 102 TFEU? How could it not?' (n 4).
[51] This argument has been recently advanced by Google's legal counsel in Case T-612/17 *Google and Alphabet v Commission (Google Shopping)* (n 14) paras. 366, 389; Ibáñez Colomo (n 4) 328.

3   *Qualcomm* as a Cautionary Tale of the Pitfalls of Counterfactual Analysis in Abuse of Dominance Cases

Upon further reflection, however, the logic underpinning the General Court's counterfactual analysis is neither as cogent as some[52] appear to believe, nor is it necessarily consistent with an effects-based approach—at least if we understand the effects-based approach as competition law analysis that seeks to catch dominant firm conduct that is "capable"[53] of foreclosing competitors and distorting competition to a greater extent or with a greater probability than would be the case in the absence of the conduct.[54] Indeed, *Qualcomm* offers a cautionary tale of the potential pitfalls that might result from the greater role of counterfactual analysis in abuse of dominance cases.

3.1   *The Problem of Overdetermination*

To better understand the shortcomings that are inherent in counterfactual analysis, it is worth starting the discussion with a brief scenario. Kreuz and Lange are two former German competition law professors (and staunch Ordoliberals) who are enjoying their retirement on the French Côte d'Azur. Both regularly meet to play chess and discuss the newest competition law developments. One day, their erudite discussions get out of hand over a disagreement on the question of whether or not *Bronner* has been wrongly decided. In the heat of the argument, Kreuz sets fire to Lange's house. Simultaneously, a wildfire breaks out. Both fires converge

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[52] For instance Professor Petit as reported in Bertuzzi (n 46).

[53] Case 322/81 *Michelin v Commission* (n 18) paras. 71 ,73; Case C-95/04 P *British Airways plc v Commission of the European Communities* (n 18) paras. 67–68; Case 85/76 *Hoffmann-La Roche v Commission* (n 23) paras. 127, 90.

[54] Note that the General Court's counterfactual analysis pertains to the passages of the Commission decision where the Commission sought to establish the potential—not actual—effects of the exclusivity payments on competition Case T-235/18 *Qualcomm v Commission* (n 15) paras. 392–93, 395. By contrast, the General Court reviewed the Commission's assessment of the impact of Qualcomm's exclusivity rebates on Apple's incentives to source its requirements of LTE chipsets for iPads from Qualcomm with respect to their actual—not potential—effects. ibid paras. 395, 429 et seq. This part of the judgment that focuses on the actual effects is not discussed here.

and Lange's house is burned to the ground.[55] Lange, and presumably many readers of this article, would emphatically reject the proposition that Kreuz should not be held liable for the damage inflicted to Lange's house by the fire that he had set just because the house would have been destroyed in any event by the second (wild)fire.

This scenario describes what legal theorists often refer to as the overdetermination problem, which plagues the counterfactual analysis of causation. Overdetermination occurs where an event has multiple sufficient concurrent causes.[56] In Lange's case, two concurring factors or events of roughly symmetric magnitude—the fire set by Kreuz (c1) and the wildfire (c2)—are independently sufficient to cause the occurrence of a third event (e)—the destruction of Lange's house. Yet, because neither of the two is necessary for the destruction of Lange's house to materialise, the counterfactual analysis suggests that neither Kreuz's fire (c1) nor the wildfire (c2) could have caused the destruction of Lange's house. Even in the absence of Kreuz's fire (c1), the wildfire (c2) would cause Lange's house to burn down (e), and *vice versa*.[57] Arguably, this problem of symmetrically overdetermined concurrent causes[58] is also at stake in *Qualcomm*.

Many cases involving dominant firm conduct concern markets that usually exhibit high barriers to entry. In these markets, market entry is difficult and the number of competitors is low, even in the absence of anticompetitive conduct. The market for LTE chipsets in *Qualcomm* is no exception. It is characterised by high entry barriers stemming from substantial R&D costs,[59] the importance of standards, complex thickets of standard-essential patents,[60]

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[55] This example draws on RW Wright, 'Causation in Tort Law' (1985) 73 *California Law Review* 1735, 1775–76. The issue of overdetermination arises in tort and criminal law cases alike Steel (n 1) 243–45, 252–55.
[56] LA Paul, 'Counterfactual Theories' in H Beebee, C Hitchcock and PC Menzies (eds), *The Oxford handbook of causation* (Oxford, Oxford University Press 2012) 178–82; M Moore, 'Causation in the Law' plato.stanford.edu/entries/causation-law/; M Moore, *Causation and responsibility: an essay in law, morals, and metaphysics* (Oxford, Oxford University Press 2009) 411–25.
[57] M Moore (n 56) 412.
[58] ibid 411.
[59] AT.40220 Qualcomm (exclusivity payments) (n 20) paras. 326–30.
[60] ibid paras. 118–34, 331–45, 360–67.

reputational advantages,[61] and, most notably, relationship-specific investments.[62] These relationship-specific investments arise from the fact that original equipment manufacturers (OEMs), such as Apple, and Mobile Network Operators (MNOs) must ensure the compatibility of baseband chipsets with their handsets and existing telecommunication standards. The launch of new baseband chipsets thus involves the prior certification of chipsets by OEMs and MNOs.[63] The adoption of a new type of baseband chipsets requires OEMs to make considerable investments in the definition of specific technical requirements, testing processes, and the design of their devices in compliance with the supplier's chipsets. These investments are often sunk. Once such a certification process is completed and a chipset is adopted, any change of chipset supplier involves substantial additional investments, transaction costs, and risks on the part of OEMs. Therefore, OEMs often have limited incentives to switch their chipset requirements for existing product lines from an established supplier to an alternative provider.[64] The switching costs arising from relationship-specific investments may lock OEMs into existing supply relationships, even where alternative suppliers are as efficient as their existing supplier.

The high entry barriers prevailing in the baseband chipsets market may, in themselves, be sufficient to cause (c1) the absence of any meaningful competitor, regardless of any additional anticompetitive conduct on the part of *Qualcomm*. However, the presence of high entry barriers does not *a priori* preclude Qualcomm's exclusivity payments from being capable of foreclosing competitors. On the contrary, it is equally conceivable that loyalty rebates granted by a dominant firm are also in themselves a sufficient cause for the exclusion of a competitor (c2). The General Court's mechanic *sine qua non* counterfactual analysis in *Qualcomm* disregards the possibility that the absence of alternative suppliers in the LTE chipset

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[61] ibid paras. 352–59.
[62] ibid para. 347, 349.
[63] ibid paras. 346–51.
[64] ibid.

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market may be the result of the concurrence of multiple sufficient causes—that is, entry barriers (c1) and exclusionary conduct (c2). Instead, it simply took the fact that even in the absence of the impugned conduct (c2), no actual competitor was able to compete for a very large part of Apple's demand for LTE chipsets as an indication of the impossibility of Qualcomm's exclusivity payments to cause any anticompetitive effects.

The General Court had thus failed to appreciate that even if Qualcomm's rebates were not in themselves *necessary* to foreclose competitors, this does not mean that they are not in themselves *sufficient* to cause such foreclosure. It is, for instance, conceivable that the impugned exclusivity payments reinforced Qualcomm's incumbency advantages and existing entry barriers, which prevented the emergence of meaningful competitors.[65] By turning a blind eye to the possibility of concurrent causes of exclusion, the counterfactual analysis in *Qualcomm* overlooks the fact that dominant firm conduct may amplify entry barriers, which might explain why there are, even without any anticompetitive conduct, no or only a limited number of competing alternatives to the dominant firm.

The inability to cope with overdetermination renders the counterfactual analysis underinclusive and constitutes a major source of under-enforcement (type II errors), notably in abuse of dominance cases. In its ultimate consequence, *Qualcomm* implies that dominant firms have free rein to engage in anticompetitive conduct in exactly those markets where competition is already weakened by the presence of incumbency advantages[66] that are in themselves sufficient to hinder or prevent entry. On a counterfactual analysis, both the entry barriers and the dominant firm's conduct would each be sufficient to cause foreclosure, regardless of the other. However, under the General Court's mechanic but-for-test, neither would appear as the cause of the absence of competitors. According to the logic of the counterfactual analysis in

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[65] See to this effect, ibid paras. 410, 474, 482–83.
[66] ibid para. 349.

Qualcomm, exclusionary conduct by a dominant firm in markets characterised by high entry barriers could never be found to have caused anticompetitive foreclosure because, in any event, even without the conduct, entry barriers would have prevented competitors from entering the market. Suppose, *arguendo*, that the Commission was correct in finding that Qualcomm's exclusivity payments resulted in below-average variable cost (AVC) pricing that would have foreclosed an equally efficient competitor.[67] From the perspective of the counterfactual analysis in *Qualcomm*, this below-AVC pricing would be beyond the scope of Article 102 TFEU if the dominant firm's customers are in any event unlikely to source their inputs from alternative suppliers who are unable to enter the market, with and without the exclusivity rebates. For similar reasons, the foreclosure of competitors may also remain unaddressed if the dominant firm adopts an exclusionary strategy that includes more than one conduct—such as exclusivity rebates and tying—each of which is itself sufficient to cause partial or total market foreclosure.[68] If applied sequentially to each type of conduct individually, then a *sine qua non* counterfactual analysis would yield the conclusion that neither of the allegedly exclusionary practices could have caused the foreclosure effects.

The counterfactual analysis would also fail to identify anticompetitive effects in a situation of so-called "asymmetrically overdetermined concurrent causes".[69] Suppose that the exclusivity rebates adopted by a dominant firm are themselves insufficient to exclude competitors. Assume further that they do, however, contribute to the foreclosure of competitors by reinforcing the incumbency advantage of a dominant firm, which are themselves sufficient to prevent competitors from effectively entering the market. This situation poses similar challenges to the ones arising in symmetrically overdetermined concurrent cause cases where the exclusivity rebates and the incumbency advantage of the dominant firm are both

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[67] ibid paras. 487–504.

[68] For a recent example of such a multi-pronged foreclosure strategy, see Case T-604/18 *Google and Alphabet v Commission (Google Android)* ECLI:EU:T:2022:541 paras. 1023–26.

[69] M Moore (n 56) 411.

individually sufficient to prevent market entry. On a counterfactual analysis, the rebates would

not appear to be a necessary condition for the exclusion of a competitor. Even in their absence,

the entrenched incumbency advantage of the dominant firm would render market entry difficult

or impossible. Does this mean then that the rebates have not causally contributed to the

foreclosure of competitors? Many would disagree with such a hasty conclusion. Although

competitors might have been prevented from entering the market absent the exclusivity rebates,

it is conceivable that their foreclosure ultimately results from the joined effect of the entrenched

market position (sufficient) and the exclusivity rebates (insufficient condition) of the dominant

firm. As long as there is no clear indication that the contribution of the exclusivity rebates to

the foreclosure of competitors was immaterial,[70] it cannot be ruled out that they are capable of

entailing foreclosure effects. A simple application of the *sine qua non* counterfactual analysis

along the lines envisaged in *Qualcomm* would nonetheless lead to the opposite conclusion—it

would fail to detect situations where the foreclosure of competitors is caused by the joint effect

of the incumbency advantage and the exclusivity rebates of the dominant firm.[71]

The problem of overdetermination suggests that elevating the *sine qua non*

counterfactual analysis to a new evidentiary prerequisite in Article 102 cases, as propounded in

Qualcomm, would have troubling consequences for the enforcement of abuse of dominance

rules. It would entail that in markets where a dominant firm already possesses an entrenched

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[70] To address the problem of overdetermination, tort and criminal law have reverted to the concept of "significant" or "material contribution" to expand the idea of causation beyond the but-for counterfactual analysis Steel (n 1) 243–45, 253–55.

[71] This situation differs from what Moore calls "garden-variety concurrent causes", where harm is caused by the cumulative effect of similar acts, each of which is necessary but only all acts together are jointly sufficient for harm to occur (e.g., the cumulative effect of multiple similar exclusive purchasing agreements having the joint effect to lead to the foreclosure of competitors) M Moore (n 56) 71, 262, 397, 411. In the case of garden variety concurrent causes, where each act is a necessary (but individually insufficient) condition for harm to occur, a counterfactual analysis would indicate for each of the acts (e.g., each exclusive purchasing agreement) that it caused (i.e., contributed to) the anticompetitive harm, provided that their impact was not insignificant (*de minimis*) Case C-234/89 *Delimitis v Henninger Bräu* ECLI:EU:C:1991:91 paras. 23–24; M Moore (n 56) 411. Wright, however, points out that a *sine qua non* counterfactual analysis might also struggle to attribute the causation of individual elements of a set of agreements or conduct creating a cumulative foreclosure effect if they are only weakly necessary for such foreclosure to occur. RW Wright, 'Causation, Responsibility, Risk, Probability, Naked Statistics, and Proof: Pruning the Bramble Bush by Clarifying the Concepts' (1987) 73 *Iowa Law Review* 1001, 1020–21.

position of market power due to its important incumbency advantages, the firm would have complete freedom to engage in conduct that makes its market position unassailable. Overreliance on standard counterfactual analysis risks handing out a *carte blanche* to dominant firms in markets characterised by high entry barriers. It would send a signal that dominant firms may adopt exclusionary conduct, such as exclusivity payments, to reinforce existing entry barriers and dig another moat around their already fortified market positions without having to worry about Article 102 TFEU liability. This implication of the introduction of a counterfactual requirement in *Qualcomm* is difficult to square with the fundamental principle of the special responsibility of dominant firms not to allow their conduct to further reduce competition in a market where competition is already weakened as a result of the presence of entry barriers and incumbency advantages that underpin their dominant position.[72] The problem of overdetermination in markets that are characterised by high barriers to entry and the resulting under-inclusiveness of the but-for test might be valid reasons not to rely on a counterfactual analysis when assessing the anticompetitive effects of dominant firm conduct.[73]

3.2   *Counterfactual Analysis as a Source of Distraction from the Economic Analysis of Anticompetitive Conduct*

A second shortcoming of counterfactual analysis, aside from being vulnerable to the problem of overdetermination, is that it may distract factfinders from the economic theory of harm that informs the analysis of allegedly exclusionary dominant firm conduct. If carried out without regard to the relevant economic and factual circumstances, the counterfactual analysis may obfuscate important economic or factual elements that are indicative of foreclosure effects. This is what arguably happened in *Qualcomm*. The conclusions that the General Court drew in this case from the counterfactual analysis sit uneasily with the economic analysis of exclusivity

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[72] Case 322/81 *Michelin v Commission* (n 18) para. 57.
[73] Cf. 'I cannot think of a valid reason why the analysis of effects would be conducted differently under Article 102 TFEU.' P Ibáñez Colomo, 'Is the counterfactual relevant under Article 102 TFEU? How could it not?' (n 4).

payments and rebates. The Court's analysis turned upon the assumption that the absence of contestability of Apple's demand for LTE chipsets for iPhones warranted the conclusion that Qualcomm's exclusivity payments had no impact on Apple's incentives to source its entire demand for LTE chipsets for iPhones and iPads exclusively from Qualcomm, and hence had no exclusionary effect.[74] This reasoning runs counter to the economic analysis of rebates.

Economic research tells us that the foreclosure effects of exclusivity rebates arise from the fact that they enable the dominant firm to leverage its market power from the non-contestable into the contestable portion of its customers' demand.[75] This leverage effect raises the costs of rival firms as it imposes an additional "entry fee" on them.[76] To gain a foothold in the market, competitors must not only match the dominant firm's (discounted) price (e.g., for baseband chipsets) but also compensate the customers of the dominant firm for the foregone exclusivity payments that they would otherwise receive if they were to continue to purchase their requirements exclusively from the dominant firm. Whereas the dominant firm is usually able to spread its exclusivity payments over a large portion of the customers' non-contestable demand, competitors have to offer their compensatory payments over a much smaller contestable portion of customer demand. In the presence of such a disparity between the size of the customers' contestable and non-contestable demand, exclusivity rebates can generate a leverage effect to the benefit of the dominant firm. As a consequence, competitors are often forced to offer a much steeper price-per-unit discount to be able to compensate customers for their foregone revenues from exclusivity payments.[77] The greater the non-contestable share of demand, the smaller the number of units over which a competitor of the dominant firm can

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[74] Case T-235/18 *Qualcomm v Commission* (n 15) paras. 402, 407, 413–17.
[75] C Fumagalli, M Motta and C Calcagno, *Exclusionary Practices: The Economics of Monopolisation and Abuse of Dominance* (Cambridge, Cambridge University Press 2018) 148–49.
[76] WK Tom, DA Balto and NW Averitt, 'Anticompetitive Aspects of Market-Share Discounts and Other Incentives to Exclusive Dealing' (2000) 67(3) *Antitrust Law Journal* 615; FM Scott Morton and Z Abrahamson, 'A Unifying Analytical Framework for Loyalty Rebates' (2017) 81(3) *Antitrust Law Journal* 777, 819.
[77] D Spector, 'Loyalty Rebates: An Assessment of Competition Concerns and a Proposed Structured Rule of Reason' (2005) 1(2) *Competition Policy International* 89, 95–97.

spread its compensatory payment and the higher the switching costs that a competitor has to overcome to win over part of the customers' contestable demand from the dominant firm. Hence, the economic analysis of exclusivity rebates clearly suggests that their loyalty-enhancing and foreclosure effects increase, the smaller the contestable share of the customer demand.[78]

This economic insight—which is also, in part, recognised by commentators[79] who wholeheartedly welcomed *Qualcomm*—contradicts the General Court's assertion that the absence of contestability of Apple's demand for baseband chipsets for iPhones indicates that Qualcomm's rebates could not have generated any foreclosure effects. On the contrary, Qualcomm's exclusivity payments arguably created a greater foreclosure effect relative to a situation where a larger part of Apple's demand for LTE chipsets for iPhones had remained contestable. This was also pointed out, albeit arguably not in the clearest terms, by the Commission's analysis.[80] The Commission observed that because Apple's entire demand for baseband chipsets for iPhones remained non-contestable for most of the duration of the alleged infringement, Qualcomm's competitors had to compensate Apple for its losses of exclusivity payments over existing and future generations of iPads and iPhones but were only able to recover these costs over revenues from future generations of iPads.[81] This suggests that it is not despite but because of Apple's limited contestable share of demand that Qualcomm's exclusivity payments may have generated a material foreclosure effect.[82]

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[78] G Federico, 'The Antitrust Treatment of Loyalty Discounts in Europe: Towards a more Economic Approach' (2011) 2(3) *Journal for European Competition Law & Practice* 277, 284; G Monti, 'Rebates after the General Court's 2022 Intel Judgment' (2023) 60 (1) Common Market Law Review, 107, 116 .

[79] N Petit, 'Intel, leveraging rebates and the goals of Article 102 TFEU' (2015) 11(1) *European Competition Journal* 26, 38–39.

[80] AT.40220 Qualcomm (exclusivity payments) (n 20) paras. 421, 495–96.

[81] ibid paras. 421, 491-92.

[82] The General Court threw out this analysis pointing out that, on a counterfactual analysis, Apple's LTE chipset requirements for iPhones launched during the period 2011 to 2015 would have, in any event, been non-contestable and that the foreclosure effects on the LTE chipsets for iPads to be launched in 2014 and 2015 were subject to a separate analysis on the basis of which the Commission had established actual foreclosure effects. Case T-235/18 *Qualcomm v Commission* (n 15) paras. 414, 418–22. The General Court thus disregarded the capability of Qualcomm's rebates to foreclose competitors from the contestable share of Apple's demand, comprising Apple's

An economic analysis of rebates suggests that the limited size of the contestable share of customer demand does not warrant the conclusion that the exclusivity rebates in issue are not capable of having foreclosure effects. Rather, it should be considered as a red flag which indicates that the impugned exclusivity payments have a high potential foreclosure effect by augmenting switching costs and, as a consequence, rivals' costs. In *Qualcomm*, the Commission found that the exclusivity payments added a switching penalty of up to 2–3 bn USD—of which 700–800 m USD were subject to a direct repayment mechanism—on Apple in addition to the already high switching costs arising from relationship-specific investments, which limited Apple's ability to source its baseband chipset requirements from competing providers.[83] The General Court's counterfactual simply discounted these additional switching costs induced by Qualcomm's exclusivity payments.

The Court's overreliance on the counterfactual analysis also obscured other features in the design of Qualcomm's exclusivity payments that may have cast further doubt on its finding that they were not capable of foreclosing competitors because there simply were no competitors that could have been foreclosed in the first place. Assume for a moment that the General Court was right in concluding that there was no competition that could have been plausibly distorted by Qualcomm's exclusivity payments. Why then did Qualcomm nonetheless design its incentive scheme in a way that it made the exclusivity payments conditional upon Apple not purchasing any LTE chipsets from competitors? If Qualcomm had the intention to incentivise Apple to sell more handsets containing its chipsets, it could have simply offered quantity discounts.[84] Such quantity discounts would have similarly lowered Apple's procurement costs for LTE chipsets and, if passed on, consumer prices for Apple handsets, without however

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requirements for iPad generations to be launched in 2012, 2013, 2014, 2015, and 2016, as well as 50% of the iPhones to be launched in 2016 AT.40220 Qualcomm (exclusivity payments) (n 20) para. 495. This might be, in part, down to the fact that the Commission omitted to clearly define the contestable share from the outset of its decision.

[83] ibid paras. 415–18, 494–504 and Tables 12–14, 17–18.

[84] See in this regard also ibid paras. 507, 511–25. The Commission found that Qualcomm's relationship specific investments could not justify the exclusivity conditions attached to Qualcomm's payments.

imposing an automatic switching penalty for purchasing from competing suppliers. Although it cannot be ruled out that quantity rebates also generate foreclosure effects,[85] they do not reference competitors.[86] Their contractual design thus does not automatically create the same leverage effect as exclusivity payments because the customers' eligibility for the rebates is not conditioned upon their not purchasing from competitors. If the General Court's conclusion that there was no competition that could have been harmed by Qualcomm's exclusivity payments was correct, then Qualcomm would not have had any reason to pay Apple 2–3 bn USD for not purchasing from any competitor.[87]

3.3   *Dynamic Competition Considerations*

A third shortcoming of the counterfactual analysis arises from specification problems in the selection of relevant counterfactual worlds. The outcome of the counterfactual analysis is highly contingent on the selection of the relevant comparator world, which is often indeterminate and shrouded in uncertainty.[88] The standard counterfactual analysis habitually glosses over this specification issue by referring to the state of competition prevailing before the impugned conduct has been implemented (*status quo ante*) as the relevant benchmark against which the causality of foreclosure effects is assessed. However, this overly static focus of the *sine qua non* counterfactual analysis fails to account for the impact of the impugned conduct on dynamic competition.

This shortcoming also becomes apparent in *Qualcomm*, where the General Court's counterfactual analysis discounted the adverse effects of Qualcomm's exclusivity payments on future entrants.[89] In its decision, the Commission had clearly articulated a dynamic theory of

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[85] Case 322/81 *Michelin v Commission* (n 18) paras. 71–72.
[86] FM Scott Morton, 'Contracts that reference rivals' [2013] *Antitrust* 72; Scott Morton and Abrahamson (n 76) 778–79.
[87] See for a similar consideration, AM Waksman, 'Editorial: issue 8' (2022) 43(8) *European Competition Law Review* 353, 354.
[88] For the notion of specification problems, see J Schaffer, 'Contrastive Causation in the Law' (2010) 16(4) *Legal Theory* 259, 270; Steel (n 1) 242.
[89] Case T-235/18 *Qualcomm v Commission* (n 15) para. 415.

harm. It pointed out that Apple was an important customer that would have enabled competing chip developers to enter the market and achieve scale. By tying Apple's demand through exclusivity payments, Qualcomm was able to deprive potential competitors of the demand of a customer who would have allowed them to gain critical scale.[90]

This dynamic theory of harm is consistent with strategic models of predatory pricing, which suggest that aggressive pricing may be used by dominant incumbents as a signalling tool to deter potential market entry.[91] Similarly, exclusivity discounts may serve dominant firms as a deterrence tool, yet at a much lower cost. Unlike linear predatory pricing, exclusivity rebates do not require the firm to sacrifice profits on all of its sales to dissuade potential competitors from entering the market. By harnessing the leveraging effect of exclusivity rebates, a dominant firm can drive the effective price that rivals would need to pay to compensate customers for foregone exclusivity payments far below its own or rivals' incremental costs, without incurring significant losses itself.[92] Exclusivity payments thus constitute a cheaper alternative to predatory pricing to deter potential entry.[93]

A dynamic analysis of rebates can also explain why the exclusionary effects of Qualcomm's exclusivity payments were not limited to the contestable share of Apple's demand. From a dynamic perspective, the exclusivity payments enabled Qualcomm to engage in a two-stage exclusionary strategy.[94] In the first stage, the exclusivity rebates allowed Qualcomm to prevent potential competitors' successful entry into the contestable share of the market. The rebates thus also deprived competitors of learning, scale and network effects, which would have allowed them, in a second stage, to also challenge Qualcomm's control over the non-contestable

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[90] AT.40220 Qualcomm (exclusivity payments) (n 20) paras. 474–79, 482–83.
[91] P Milgrom and J Roberts, 'Predation, Reputation and Entry Deterrence' (1982) 27(2) *Journal of Economic Theory* 280; P Bolton, JF Brodley and MH Riordan, 'Predatory pricing: Strategic theory and legal policy' (2000) 88(8) *Georgetown Law Journal* 2239.
[92] Spector (n 77) 98–100.
[93] ibid 95–96; Scott Morton and Abrahamson (n 76) 784–87.
[94] Scott Morton and Abrahamson (n 76) 780.

market share.[95] Hence, unlike what has been suggested by the General Court, [96] Qualcomm's rebates were well capable of foreclosing dynamic competition for the non-contestable demand share of Apple's demand, even though Apple had no immediate incentive to switch this part of its demand to other competitors.

This dynamic foreclosure theory was not purely hypothetical.[97] Before the start of the exclusivity scheme, Apple pursued a multi-sourcing strategy for the procurement of baseband chipsets.[98] During the period of the alleged abuse, Apple also regularly considered the offers of competing chipset suppliers.[99] In 2016, Apple eventually started to source LTE chipsets from Intel.[100] This suggests that there were "real and concrete possibilities"[101] for potential competitors to enter the market in the absence of Qualcomm's rebates, which were not "purely hypothetical".[102] Even in the absence of actual competitors, Qualcomm's exclusivity rebates were thus capable of entailing foreclosure effects because they allowed Qualcomm to at least "prevent the risk of competition".[103] Such a reduction in dynamic competition is cognisable as anticompetitive harm in both modern US[104] and EU competition law.[105]

The *Qualcomm* case not only highlights the difficulties of choosing between static and dynamic counterfactuals but it also sheds light on the current state of the analysis of dynamic competition in competition law circles. Statements such as "the Commission's logic [in

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[95] AT.40220 Qualcomm (exclusivity payments) (n 20) paras. 482–83; Spector (n 77) 99–100; G Monti (n 78) 117–18; C Fumagalli and M Motta, 'Exclusive Dealing and Entry, when Buyers Compete' (2006) 96(3) *American Economic Review* 785.

[96] Case T-235/18 *Qualcomm v Commission* (n 15) paras. 409–12, 417.

[97] Case C-23/14 *Post Danmark II* (n 14) para. 65.

[98] AT.40220 Qualcomm (exclusivity payments) (n 20) para. 452.

[99] ibid paras. 426–39, 464. The General Court took the view that the relevance of this evidence was limited to the assessment of foreclosure effects in relation to iPads, but could not support any finding of foreclosure effects in relation to Apple's LTE chipset requirements for iPhones Case T-235/18 *Qualcomm v Commission* (n 15) para. 427.

[100] AT.40220 Qualcomm (exclusivity payments) (n 20) paras. 142, 169–73, 415. As a consequence of its decision to source part of its rebates from Intel, Apple forewent exclusivity payments worth 600–700m USD that Qualcomm retained because Apple's non-compliance with the exclusivity requirement. ibid para. 415.

[101] Case C-307/18 *Generics (UK) and Others* (n 41) paras. 36–37.

[102] ibid para. 38.

[103] *Federal Trade Commission v Actavis et al.* 570 U.S. 136 (2013) 157.

[104] ibid.

[105] Case C-307/18 *Generics (UK) and Others* (n 41) paras. 151, 155; see also 35–58, 88–89, 100.

Qualcomm] is simply wrong because it accused the company of killing competitors that did not exist"[106] sound particularly hollow if one adopts a more dynamic perspective on the impact of exclusivity rebates on potential competition. What is even more startling is that this position is promoted by the self-proclaimed proponents of "dynamic competition"[107] in the current competition policy debate. It reveals how deeply the notion of dynamic competition championed by prominent antitrust scholars continues to be anchored in the Schumpeterian paradigm,[108] which perceives monopoly power as a source rather than as an impairment to innovation.[109]

Acolytes of the dynamic competition paradigm tend to use innovation arguments as a shield to insulate incumbents from antitrust liability. Dynamic competition considerations are primarily advanced to counsel prudence towards antitrust intervention in technology- and innovation-driven markets out of fear that type I errors might chill the incentives of incumbents to innovate.[110] In contrast, the proponents of dynamic competition are much less alarmed about the chilling effect of market power and exclusionary conduct on the incentives of potential competitors to innovate. Failures of competition law to address the adverse effects of incumbency advantages and exclusionary conduct on potential competitors and dynamic competition are therefore of little or even no concern to the prophets of dynamic competition. Using dynamic competition considerations as a sword to support antitrust intervention against incumbents that foreclose potential competitors is, in their view, futile. In a world of Schumpeterian competition, market power is by definition contestable and short-lived. The next

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[106]Professor Petit as reported by Bertuzzi (n 46).

[107] N Petit and DJ Teece, 'Innovating Big Tech firms and competition policy: Favoring dynamic over static competition' (2021) 30(5) *Industrial and Corporate Change* 1168. See also 'Dynamic Competition Initiative' (6 February 2023) www.dynamiccompetition.com/.

[108] Rato and Petit (n 6) 42; JG Sidak and DJ Teece, 'Dynamic Competition in Antitrust Law' (2009) 5(4) *Journal of Competition Law and Economics* 581, 582.

[109] JA Schumpeter, *Capitalism, Socialism and Democracy [1942]* (New York, Harper & Row 1962) 82–88 and Chapter 7; Rato and Petit (n 6) 23.

[110] ibid 10, 65. This philosophy continues to inform the interpretation of § 2 of the Sherman Act by US courts. See for instance *FTC v. Qualcomm Inc.* 969 F. 3d 974 (2020) 990.

disruptive innovation is just around the corner and will, in any event, correct false acquittals in the long run.[111]

The General Court's *Qualcomm* ruling thus accords nicely with an antitrust philosophy that consistently prefers type II over type I errors, and advocates in the name of dynamic competition a competition policy that, in the case of doubt, always errs on the side of non-intervention.[112] Thus, the uncritical reception of *Qualcomm* by the leading scholars also exposes the one-sided framing of dynamic competition arguments in the current antitrust debate.

3.4   The Implications of the Counterfactual Analysis in Qualcomm

Taken together, a critical analysis of *Qualcomm* offers a cautionary tale about the role of counterfactual analysis in abuse of dominance cases. It reveals that the use of a counterfactual analysis does not automatically move the interpretation of Article 102 TFEU closer to an effects-based analysis. On the contrary, given its inability to cope with the problem of overdetermination, counterfactual analysis struggles to account for the anticompetitive effects of dominant firm conduct in markets that are characterised by high entry barriers and incumbency benefits. An overreliance on counterfactual analysis may also distract from the economic theory of harm that guides the competitive analysis of exclusivity rebates. Counterfactual analysis is also beset with specification problems regarding the identification of the appropriate counterfactual scenario. In selecting a static *sine qua non* counterfactual analysis in *Qualcomm*, the General Court paid little attention to the impact of the allegedly exclusionary conduct on dynamic competition. As a result, the introduction of counterfactual analysis as an additional evidentiary requirement as envisaged in *Qualcomm* tightens the evidentiary standards in circumstances where exclusionary conduct may have a particularly

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[111] Rato and Petit (n 6) 42.

[112] ibid 21; FH Easterbrook, 'The Limits of Antitrust' (1984) 63(1) *Texas Law Review* 1, 15–16. See for an economic criticism of this skewed error cost analysis JB Baker, 'Taking the Error out of "Error Cost" Analysis: What's Wrong With Antitrust's Right' (2015) 80(1) *Antitrust Law Journal* 1.

high potential to harm competition by further cementing the market power of dominant incumbents and suffocating dynamic competition.

This implication of the General Court's counterfactual analysis in *Qualcomm* is at odds with a serious error-cost analysis. Markets that are characterised by an entrenched dominant position and high entry barriers are normally those markets where antitrust intervention against exclusionary conduct which harms actual or potential competition can make a real difference. In these markets, even the presence of a limited number of competitors may intensify rivalry and drive innovation. The foreclosure of competitors may therefore generate greater harm in these concentrated markets relative to similar conduct in fairly competitive markets with relatively low entry barriers. At the same time, the exclusionary leverage effect of exclusivity rebates increases the smaller the contestable demand of the customers of the dominant firm. The failure of competition authorities to intervene against truly anticompetitive conduct (type II errors) may in these circumstances generate harm of considerable magnitude. This harm is further amplified if the conduct kills future innovation. Hence, an unexpected consequence of the *Qualcomm* ruling is that it raises the evidentiary burden for antitrust authorities for exactly those markets and practices in relation to which competition law intervention can generate the greatest benefit.

4 The Big Picture: Counterfactual Analysis and the Standard of Harm in Article 102 TFEU

Aside from revealing the pitfalls of counterfactual analysis in abuse of dominance cases, the General Court's *Qualcomm* ruling also raises broader questions about the evidentiary role of counterfactual analysis and its relationship with the requisite standard of harm for finding anticompetitive effects under Article 102 TFEU.

4.1   The Concept of Standard of Harm

Before considering more closely the evidentiary role of counterfactual analysis in abuse of dominance cases, it is important to briefly clarify what is meant by "standard of harm" in this article. The notion of the standard of harm is employed here to designate the requisite degree of likelihood to which an antitrust plaintiff needs to demonstrate that conduct would entail anticompetitive effects to discharge its burden of proof. Conventional competition literature habitually refers to the standard of harm as the (substantive) "standard of proof".[113] Yet, the nature and appropriate interpretation of the requisite standard of proof in EU competition law remain highly ambivalent. Distinguished scholars, such as Dr Kalintiri and Professor Ibáñez Colomo, insist on a strict distinction between the likelihood threshold of anticompetitive effects (which we call here the standard of harm) and the standard of proof. In their account, the required likelihood threshold for anticompetitive effects is an element of the substantive legal test for finding anticompetitive conduct. This substantive element ought to be distinguished from the concept of standard of proof, which is procedural in nature and prescribes the requisite quality or likelihood threshold that evidence needs to surpass for a factual allegation (e.g., that conduct entails anticompetitive effects) to be considered true and, hence, proven.[114]

This compartmentalised analysis of the substantive test and standard of proof as two distinct concepts is a genuine and welcome attempt to inject much-needed clarity into the discussions of evidence and proof in EU competition law. However, the difficulty with this account is that the strong dichotomy between the substantive test and the procedural standard of proof is not necessarily borne out in the case law. The EU Courts have repeatedly used the

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[113] D Bailey, 'Standard of Proof in EC Merger Proceedings: A Common Law Perspective' (2003) 40(4) *Common Market Law Review* 845; CF Beckner, III and SC Salop, 'Decision Theory and Antitrust Rules' (1999) 67 *Antitrust Law Journal* 41, 61–62.

[114] A Kalintiri, *Evidence Standards in EU Competition Enforcement: The EU Approach* (Oxford, Hart 2019) 72–73, 79–80; A Kalintiri, 'Substantive Legal Tests and Standard of Proof: Rules Lost in Translation?' (12 May 2023) chillingcompetition.com/?s=standard+of+proof; Ibáñez Colomo (n 4) 355, 359.

terminology of "standard of proof" to refer to the requisite likelihood of anticompetitive effects.[115] Does this suggest that the EU Courts themselves occasionally "conflate the legal test and the standard of proof"?[116]

The distinction between the substantive likelihood threshold of anticompetitive effects and the standard of proof as a critical procedural likelihood threshold that governs the entire body of evidence is also difficult to fathom from a conceptual point of view. If the standard of proof is operationalised in probabilistic terms,[117] the proposition of a dichotomy between the likelihood threshold of anticompetitive effects and the standard of proof introduces two distinct probability estimates into the overall assessment of anticompetitive conduct. To discharge its burden of proof, a competition authority would (i) be required to produce evidence which shows to the requisite standard that the impugned conduct is likely to result in anticompetitive effects. The competition authority can only legitimately conclude that the conduct in issue is unlawful if this body of evidence on which the finding of anticompetitive effects is based surpasses (ii) the standard of proof for the overall finding of (likely) anticompetitive effects to be accepted. A counterintuitive implication of this compartmentalisation of the assessment of anticompetitive effects and factual evidence is that there may be instances where a competition authority establishes anticompetitive effects with a likelihood of, say, 90% but the evidence on which this finding is based is only held to be with a probability of 49% true. Under a balance of probabilities standard which sets the critical likelihood threshold for a legal fact or claim considered to be proven at slightly above 50%,[118] the competition authority would thus fail to meet the standard of proof and, hence, to discharge its burden of proof. The problem becomes

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[115] See for instance Case C-413/06 P *Bertelsmann and Sony Corporation of America v Impala* ECLI:EU:C:2008:392 paras. 45, 47, 51, 53; Opinion of Advocate General Kokott in Case C-413/06 P *Bertelsmann und Sony Corporation of America/ Impala* ECLI:EU:C:2007:790 paras. 201–11; Case T-399/16 *CK Telecoms UK Investments v Commission* ECLI:EU:T:2020:217 para. 118; Opinion of Advocate General Kokott in Case C-376/20 *Commission v CK Telecoms UK Investments* ECLI:EU:C:2022:817 paras. 1, 41–67.
[116] Ibáñez Colomo (n 4) 355; A Kalintiri (n 114) 78.
[117] A Kalintiri (n 114) 76–78, 80.
[118] L Kaplow, 'Likelihood Ratio Tests and Legal Decision Rules' (2014) 16(1) *American Law and Economics Review* 1, 13.

even more complicated if the critical likelihood threshold for the finding of anticompetitive effects diverges from the critical likelihood threshold of the standard of proof.[119]

Most importantly, the proposition of a strict dichotomy between the standard of proof and the likelihood threshold of anticompetitive effects disregards the "continuum of fact-finding" that exists between the analysis of the likelihood of anticompetitive effects and the assessment of factual evidence.[120] In drawing a bright-line distinction between the two, it ignores the point that a factfinder's probability estimate of anticompetitive effects will, in most cases, naturally take into account the quality of the entire body of evidence. Indeed, economic theories of evidence assume, consistent with Bayesian decision theory, that factfinders will update their initial probability estimates of anticompetitive effects in light of and depending on the strength of case-specific evidence.[121] Put differently, the probability estimate of anticompetitive effects is a function of the quality or plausibility of evidence on which it is based. This explains why the decision-theoretic literature habitually refers to the likelihood threshold of anticompetitive effects as the standard of proof, which naturally depends on and subsumes the quality of the overall body of evidence.[122] Approaching the likelihood threshold of anticompetitive effects as the standard of proof is arguably a conceptually less complex and more realistic representation of the fact-finding process than those accounts that postulate a strict dichotomy between the two.

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[119] Such a divergence between the critical likelihood threshold of anticompetitive effects and the standard of proof has emerged in Australian merger control, resulting in ambiguous pronouncements of various courts and the Australian Competition and Consumer Commission about the appropriate likelihood threshold for finding a substantial lessening of competition. *Australian Competition and Consumer Commission v Metcash Trading Limited* [2011] FCA 967 para. 145 (Emmett J).*Australian Competition and Consumer Commission v Metcash Trading Limited* [2011] FCAFC 151 paras. 25 (Buchanan J) 216–37 (Finn, Buchanan, Yates JJ). *Australian Competition and Consumer Commission v Pacific National Pty Limited* [2020] FCAFC 77 paras. 243–45 (Middelton, Perram, O'Bryan JJ); 2008 Merger Guidelines (amended in 2017) para. 3.15; R Sims, 'Protecting and promoting competition in Australia keynote speech: Competition and Consumer Workshop 2021 - Law Council of Australia, 27 August 2021' (15 May 2023) www.accc.gov.au/about-us/media/speeches/protecting-and-promoting-competition-in-australia-keynote-speech.
[120] *Australian Competition and Consumer Commission v Metcash Trading Limited* (n 119) paras. 228–29 (Finn, Buchanan, Yates JJ).
[121] Kaplow (n 118) 6; J Kaplan, 'John Kaplan, Decision Theory and the Factfinding Process' (1968) 20 *Standford Law Review* 1065, 1083–84.
[122] Beckner, III and Salop (n 113) 61–62.

It remains hence doubtful that the evidentiary standard of proof can be as easily disentangled from the substantive assessment of the likelihood of anticompetitive effects as some scholars suggest. To ensure conceptual clarity, this article will nonetheless revert to the notion of "standard of harm" rather than "standard of proof" to refer to the critical likelihood threshold of anticompetitive effects.

4.2 Is Counterfactual Analysis At All Relevant Under Article 102 TFEU?

Having settled the notion of the standard of harm, a first question relating to the evidentiary role of the counterfactual analysis in Article 102 is whether there is at all an evidentiary requirement for the European Commission to revert to a counterfactual analysis to sustain the finding of an abuse of dominance to the requisite standard of harm. In this regard, *Qualcomm* markedly departs from the recent *Google Shopping* ruling. In *Google Shopping*, the very same Court seemed to suggest that the finding of potential foreclosure effects does not presuppose a *sine qua non* counterfactual analysis which seeks to establish a causal link between the practice in issue and the alleged anticompetitive effects by comparing conditions of competition with and without the impugned conduct.[123] One reason why the General Court in *Google Shopping* took the view that a counterfactual analysis is not always the most appropriate tool to establish a causal link between dominant firm conduct and its alleged exclusionary effects are its practical difficulties. In particular, counterfactual analysis is often difficult and, at times impossible, to implement. For instance, there might simply not be any markets that are not affected by the impugned practice, and which could therefore serve as a control group for a counterfactual analysis.[124]

Google Shopping also pinpoints a second reason why the application of a counterfactual analysis is not always relevant or required under Article 102 TFEU. The rejection of a

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[123] Case T-612/17 *Google and Alphabet v Commission (Google Shopping)* (n 14) para. 378. See to the same effect with respect to by-object restrictions under Art. 101 (1) TFEU Case T-472/13 *Lundbeck v Commission* (n 12) para. 473.
[124] Case T-612/17 *Google and Alphabet v Commission (Google Shopping)* (n 14) para. 377.

counterfactual requirement in *Google Shopping* is inextricably linked with the standard of harm in abuse of dominance cases. The EU Courts have consistently held that for unilateral conduct to be caught by Art. 102 TFEU, the Commission was not required to demonstrate that it entailed actual or likely anticompetitive effects. Rather, it suffices for the Commission to advance evidence showing that the impugned conduct was capable of causing potential anticompetitive effects.[125] This "capability standard"[126] importantly differs from the balance of probabilities standard that governs civil law cases in common law jurisdictions and competition law in the US[127] and, to some extent, in the UK.[128] The balance of probabilities standard makes the proof of anticompetitive effects conditional on them being shown to be more likely than not; that is, causing anticompetitive harm with a likelihood in excess of 50%. In contrast, under the capability standard it is conceivable that anticompetitive effects are considered plausible even though the probability of impugned conduct resulting in anticompetitive effects is below 50% (and, hence, lower than their probability of being innocuous).

In *Google Shopping*, the General Court asserted that the Commission does not necessarily need to carry out a *sine qua non* counterfactual analysis to discharge its evidentiary burden of showing anticompetitive effects under the capability standard. More precisely, it held that the Commission "cannot be required... systematically to establish a counterfactual scenario" that compares the "market to which [the impugned] practices relate"[129] with the competitive conditions that would have prevailed in its absence, that is a market situation "not affected by all of the [impugned] practices at issue".[130] It contended that making the *sine qua*

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[125] Case 322/81 *Michelin v Commission* (n 18) paras. 73; Case C-95/04 P *British Airways plc v Commission of the European Communities* (n 18) paras. 67–68; Case C-413/14 P *Intel v Commission* (n 23) paras. 138, 140; Case C-307/18 *Generics (UK) and Others* (n 41) para. 154; Case C-377/20 *Servizio Elettrico Nazionale and Others* (n 44) paras. 50, 53–58; Case C-680/20 *Unilever Italia Mkt. Operations* (n 44) paras. 41–42, 44.
[126] Ibáñez Colomo and Lamadrid de Pablo, A. (n 19) 361–63.
[127] Federal Rules of Evidence - Effective July 1, 1975, as amended to December 1, 2020. 28 U.S.C, Rule 401; Beckner, III and Salop (n 113) 61–62.
[128] *Napp Pharmaceutical Holdings Limited and Subsidiaries v Director General of Fair Trading* [2002] CAT 1 paras. 105-06; CMA Merger Assessment Guidelines 2021. CMA 129 para. 2.36.
[129] Case T-612/17 *Google and Alphabet v Commission (Google Shopping)* (n 14) para. 377.
[130] ibid para. 378.

non counterfactual analysis a prerequisite for establishing a causal link between the impugned conduct and alleged anticompetitive effects would compel the Commission to establish the actual effects of the impugned conduct by comparing "two actual developments".[131] Yet, such a requirement would run counter to the capability standard under which the Commission is merely expected to undertake the "assessment of potential effects which, although it must be realistic, effectively describes a probable situation".[132]

Google Shopping thus posits that in order to demonstrate potential anticompetitive effects under the capability standard, the Commission is under no obligation to carry out a counterfactual analysis to determine the existence of a causal link between the impugned conduct and the anticompetitive effects. Although it is incumbent on the Commission to demonstrate that the alleged anticompetitive effects can be attributed to the impugned conduct,[133] the Commission can revert to other approaches and information to support the finding of such a causal link.[134] Instead of being required to establish a strict causality by means of a counterfactual analysis, it suffices for the Commission to show a correlation between the allegedly anticompetitive conduct and the adverse effect on competition that is further supported by additional evidence.[135]

The General Court's recognition that the counterfactual analysis is not the only method to determine a causal link between the impugned conduct and the alleged harm in *Google Shopping* is important. Legal scholars have indeed developed various alternatives to a counterfactual conception of causality. By way of example, law and economics scholars, among

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[131] ibid para. 377.
[132] ibid.
[133] Case C-23/14 *Post Danmark II* (n 14) para. 47; Case T-612/17 *Google and Alphabet v Commission (Google Shopping)* (n 14) para. 441.
[134] Case T-612/17 *Google and Alphabet v Commission (Google Shopping)* (n 14) para. 382.
[135] ibid paras. 382, 412.

them most prominently Professors Calabresi[136] and Shavell,[137] operationalise causality as an increase in the conditional probability of the incidence of one event as a result of the occurrence of another. A probabilistic theory of anticompetitive causation would ask whether the impugned conduct raised the probability of the occurrence of the alleged anticompetitive effects. If this increase in the probability is significant, then the conduct can be considered to have caused the anticompetitive effects.

Applied to *Qualcomm*, the inquiry would consist of assessing whether the exclusivity rebates have heightened the probability of the occurrence of anticompetitive foreclosure. Such an increase in probability can be supported by various types of available evidence and theories of harm, as suggested by the General Court in *Google Shopping*. By which factor (i.e., by how much) the probability of the occurrence of anticompetitive effects must be increased so that they can be confidently attributed to the impugned conduct is a matter of debate and ultimately depends on the critical likelihood threshold[138] of the standard of harm. Under the balance of probabilities standard, the increase in the probability must be of such a magnitude that the (subjective) probability of the occurrence of anticompetitive effects exceeds 50%. In contrast, the capability standard of harm would mandate a factfinder to consider the causal link proven, even if the anticompetitive effect will materialise with less than a 50% chance. Unlike what has been claimed by some commentators, a counterfactual analysis is certainly not the only conceivable way to establish the attributability of anticompetitive effects to the dominant firm's conduct or to understand the very notion of a restriction of competition.[139]

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[136] G Calabresi, 'Concerning Cause and the Law of Torts: An Essay for Harry Kalven, Jr.' (1975) 43 *University of Chicago Law Review* 69, 71–72.
[137] S Shavell, 'An Analysis of Causation and the Scope of Liability in the Law of Torts' (1980) 9 *Journal of Legal Studies* 463, 468–70.
[138] S Shavell, 'Uncertainty over Causation and the Determination of Civil Liability' (1985) 28(3) *Journal of Law and Economics* 587, 588–89.
[139] Ibáñez Colomo (n 4) 328; P Ibáñez Colomo, 'Counterfactual analysis and restrictions by object: myths and misconceptions' (n 7).

4.3 The Intricate Relationship Between the Standard of Harm and Counterfactual Analysis

That said, it is important to note that while the capability standard does not necessarily presuppose a counterfactual analysis, it is also correct to say that it does not preclude a counterfactual analysis.[140] Yet, akin to the probabilistic theory of causation, the counterfactual analysis under the capability standard operates differently from that under a balance of probabilities standard. The example of UK merger control is a case in point to illustrate this intricate relationship between the standard of harm and the counterfactual analysis. Phase II merger proceedings in the UK are subject to a balance of probabilities standard. Accordingly, the UK Competition and Markets Authority (CMA) must show that the merger is more likely than not (i.e., with a chance slightly over 50%) to result in a substantial lessening of competition to support a finding of a substantial lessening of competition (SLC).[141] In contrast, the standard of harm for Phase I merger proceedings is less demanding. It mandates the CMA Mergers Unit to refer mergers for an in-depth analysis, even if their chance of resulting in a SLC is below 50%.[142]

The use of two distinct standards of harm for the phase I and II merger assessments has immediate implications for the selection of the relevant counterfactual scenario. In keeping with the balance of probabilities standard,[143] the CMA's counterfactual analysis in phase II is based on the most likely scenario out of a set of possible scenarios.[144] This suggests that to prove the anticompetitive effects to the balance of probabilities standard, the competition authority needs to establish that the impugned conduct or transaction results in anticompetitive effects compared to a nearby likely world that would eventuate with a likelihood of at least 50% or

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[140] Ibáñez Colomo (n 7) 2, 6.
[141] *Office of Fair Trading & Ors v IBA Health Ltd* [2004] EWCA Civ 14 para. 48, see also para. 46; CMA Merger Assessment Guidelines (n 128) para. 2.36.
[142] CMA Merger Assessment Guidelines (n 128) para. 2.33.
[143] ibid para. 2.36.
[144] Competition Commission Merger Assessment Guidelines 2010, CC2 (Revised). OFT1254 para. 4.3.6.

more without the conduct or transaction. In other words, the counterfactual scenario must be based on the single most likely out of a number of relevant possible but-for worlds, which is more likely to come to pass than any competing hypothesis. By contrast, under the realistic prospect standard in phase I proceedings, the CMA has greater leeway to choose a counterfactual scenario from a broader set of relevant possible worlds. The CMA does not necessarily rely on the most likely but,

> *must consider multiple potential counterfactual scenarios where each of those scenarios is a realistic prospect, it will choose the one where the merger firms exert the strongest competitive constraint on each other, and where third parties exert the weakest competitive constraints on the merger firms.*[145]

This means that the CMA would not necessarily assess the impact of a merger against the competitive conditions prevailing before (and in the absence) of the merger (i.e., the *status quo ante*) but can choose another counterfactual if the "prospect of prevailing conditions continuing is not realistic […] or where there is a realistic prospect of a counterfactual that is more competitive than prevailing conditions."[146]

There are two potential explanations as to why the balance of probabilities standard allows for only one counterfactual scenario, whereas the realistic prospect standard can accommodate multiple counterfactual scenarios. A first explanation assumes that the standard of harm is applied in a sequential manner as a critical threshold that determines (i) first the selection of a suitable counterfactual scenario and (ii) then sets the critical degree of likelihood to which anticompetitive harm must be established when compared to the scenario where the counterfactual comes about.[147] In this sequential setting, the standard of harm acts as a

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[145] CMA Merger Assessment Guidelines (n 128) para. 3.12. Previous Merger Assessment Guidelines referred to the "most competitive counterfactual providing always that it considers that situation to be a realistic prospect" as the relevant counterfactual under the "realistic prospect standard." Competition Commission Merger Assessment Guidelines (n 144) para. 4.3.5.

[146] ibid; CMA Merger Assessment Guidelines (n 128) paras. 3.2–3.3, 3.9. See for instance Anticipated acquisition by Amazon of a minority shareholding and certain rights in Deliveroo - Reference Decision paras. 60–64.

[147] This sequential approach is followed by the CMA. See for instance, ibid 60–64, 69, 178–179, 203–288. The Federal Court of Australia also uses a sequential approach *Australian Competition and Consumer Commission v Metcash Trading Limited* (n 119) paras. 138, 142, 145–46 (Emmett J); *Australian Competition and Consumer Commission v Metcash Trading Limited* (n 119) paras. 23–35 (Buchanan J) and paras. 230, 236–37 (Finn,

specification tool that sifts relevant from irrelevant—because too remote or speculative—counterfactual worlds. One can think here of the standard of harm as a critical measure of similarity relation between possible worlds that determines how closely a counterfactual world needs to match the actual world to be considered true.[148] In its role as a specification tool, the balance of probabilities standard only allows for a single and most likely counterfactual scenario against which the competitive effects of an impugned merger or conduct are assessed. This is because within a set of possible counterfactual worlds there can only be one single counterfactual scenario that is more likely than not to come to pass with a probability above 50%.[149] In contrast, a less demanding standard of harm, such as the realistic prospect standard, which sets the critical likelihood threshold below 50% can accommodate multiple counterfactual scenarios. Each of these scenarios can have a realistic prospect—say, a 20%, 30% or 40% chance of materialising—without being more likely than not.[150]

A second explanation considers that the standard of harm is applied in a combinatorial manner. Under this combinatorial approach, the standard of harm operates as an overall likelihood threshold that the overall probability estimate of anticompetitive effects based on the analysis of the (i) likelihood of anticompetitive effects given a counterfactual world ($P(H \mid w_c)$) and the (ii) likelihood of the counterfactual world ($P w_c$) (and hence causation) has to meet to be considered true.[151] In mathematical terms, this overall probability estimate of

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Buchanan, Yates JJ). A similar sequential approach, albeit with a lower standard, is also guiding merger analysis in New Zealand *Woolworths & Ors v Commerce Commission* (2008) 8 NZBLC 102 paras. 122–126; 2022 Mergers and acquisitions Guidelines 2022 paras. 2.31–34.

[148] The notion of a "similarity condition" was introduced by Lewis' seminal theory of counterfactuals. D Lewis, 'Counterfactual Dependence and Time's Arrow' (1979) 13(4) *Noûs* 455, 464–67.

[149] This becomes clear if one pictures various counterfactual scenarios as branches of a decision tree originating in a single chance node. Because the sum of the respective probabilities of each branch originating in the chance node must be 1, there can only be one branch whose probability exceeds 0.5. The fact that the balance of probabilities standard only allows for one counterfactual scenario is also occasionally recognised by courts. See for instance *Australian Competition and Consumer Commission v Metcash Trading Limited* (n 119) para. 146 (Emmett J); C Veljanovski, 'Metcash, Market Power and Counterfactuals' [2012] *SSRN Electronic Journal,* 18.

[150] *Woolworths & Ors v Commerce Commission* (n 147) para. 116; 2022 Mergers and acquisitions Guidelines (n 147) para. 2.30.

[151] This approach is favoured by economists. See for instance P Davis and A Cooper (n 2) 3–11; P Davis, G Eastman and K Hatzitaskos, 'Non-standard counterfactuals in merger control' (2020) 2–3 www.cornerstone.com/insights/articles/non-standard-counterfactuals-in-merger-control/.

anticompetitive effects ($P_{overall}$) is the joint probability of the conditional probability of the likelihood of anticompetitive harm ($P(H|w_c)$) and the likelihood of the counterfactual world (w_c) against which such harm is established. In accordance with the so-called "product rule" of probability theory, this joint likelihood of anticompetitive effects is computed by multiplying the conditional probability of anticompetitive effects $P(H|w_c)$ with the probability of the counterfactual world ($P w_c$); that is, $P_{overall} = P(H|w_c)*(P w_c)$.[152]

From the product rule follows again that the balance of probabilities standard can only accommodate one single counterfactual. Suppose that a competition authority finds that an impugned merger will result in anticompetitive effects with a probability slightly above 50% given a counterfactual world w_c. For those anticompetitive effects to be proven to the balance of probabilities standard of 50%, the counterfactual world needs to come about with a likelihood of almost 100% (because $0.5 * 1 = 0.5$). Conversely, a finding of anticompetitive effects against a counterfactual world whose likelihood is only slightly above 50% will only surpass the balance of probabilities standard if they are shown to materialise with a close to 100% chance. As a matter of arithmetic, the balance of probabilities standard will only be met if the respective probabilities of the occurrence of anticompetitive effects and of the counterfactual world exceed 50% by far.[153] In contrast, the realistic prospect standard again allows for multiple counterfactuals because anticompetitive effects are considered to be proven even if their overall probability does not exceed 50%. Consider, for instance, a situation where a competition authority finds that a merger has a 45% chance of resulting in anticompetitive effects compared to a counterfactual that will come about with a probability of 35% (i.e., $0.45 * 0.35 = 0.1575$)

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[152] Ibid; MO Finkelstein and WB Fairley, 'A Bayesian Approach to Identification Evidence' (1970) 83(3) *Harvard Law Review* 489, 491, 514. RA Posner, 'An Economic Approach to the Law of Evidence' (1999) 51 *Stanford Law Review* 1477, 1512–1514. The product rule leads to a number of paradoxes in the assessment of evidence S Levmore, 'Conjunction and Aggregation' (2001) 99(4) *Michigan Law Review* 723, 724 et seq. This explains why competition authorities and courts favour the sequential over the combinatorial approach. See for instance 2022 Mergers and acquisitions Guidelines (n 147) para. 2.29 fn 40; *Woolworths & Ors v Commerce Commission* (n 147) paras. 119–21.
[153] Veljanovski (n 149) 16–17.

and a 55% chance of being competitively neutral compared to a counterfactual that will materialise with a probability of 65% (i.e., 0.55 * 0.65 = 0.3575). Arguably, both counterfactual scenarios warrant to be assessed and would meet the realistic prospect standard.

What does this difference between the counterfactual analysis under the realistic prospect and the balance of probabilities standards imply for the use of a counterfactual analysis under Article 102 TFEU? In a similar vein as the realistic prospect standard, the capability standard of harm governing Art. 102 TFEU sets the critical likelihood threshold for the showing of anticompetitive effects at a lower level than the balance of probability standard. As the anticompetitiveness of conduct is considered proven, even if its probability of causing anticompetitive harm does not exceed 50%, the competition authority is not required to show anticompetitive effects in the actual or nearby likely world. But it may also be sufficient for it to demonstrate that the impugned conduct has anticompetitive effects in a relevant possible world, even if the probability of these effects does not exceed 50%. Conversely, this also suggests that the range of possible counterfactual scenarios is not only limited to the actual or nearby likely world. Rather, the competition authority can establish anticompetitive effects against multiple counterfactual scenarios, even if they are not the most likely scenarios.

In the context of the *Qualcomm* case, this would suggest that under the capability standard the Commission would have been entitled to establish potential anticompetitive effects, not only by considering the competitive situation that would exist in the absence of the exclusivity payments (*status quo ante*). Instead, the Commission would also be justified to ascertain the potential effects of the conduct relative to a counterfactual world where, for example, in the absence of the conduct a potential competitor had entered the market.[154]

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[154] For such a broad reading of Guidance on the Commission's Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings (n 13) para. 21, see *National Grid PLC v The Gas and Electricity Markets Authority* (n 13) para. 57.

Despite its ambiguity on the relevant standard of harm (which will be further discussed in the sequel), the description of the counterfactual analysis in the Commission's Guidance paper is consistent with this interpretation of the capability standard. It states that the counterfactual

> *assessment will usually be made by comparing the actual or likely future situation in the relevant market (with the dominant undertaking's conduct in place) with an appropriate counterfactual, such as the simple absence of the conduct in question or with another realistic alternative scenario, having regard to established business practices.[155]*

If the analogy between the capability standard and realistic prospect standard holds, then the Commission would be entitled to consider multiple counterfactuals and pick a "more competitive"[156] counterfactual world than the prevailing conditions of competition at the point when the conduct is implemented. Such a more competitive counterfactual would assess the conduct against a but-for-world where the dominant firm would have been subject to the "strongest competitive constraint" had the conduct not been implemented—of course, provided that such a more competitive counterfactual is a realistic prospect.[157]

One major shortcoming of the capability standard of harm is that, unlike the balance of probabilities standard, it does not clearly state how broadly or narrowly the range of possible but-for-worlds ought to be construed.[158] Whereas the balance of probabilities standard sets a clear critical likelihood threshold of 50%, it remains unclear how plausible the potential anticompetitive effects and the counterfactual scenario need to be for the anticompetitive effects to be considered proven to the capability standard. Do the alleged effects need to occur with a

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[155] Guidance on the Commission's Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings (n 13) para. 21; emphasis added by the author. See in a similar vein Commission Guidelines on the Assessment of Horizontal Mergers (n 10) para. 9.

[156] Competition Commission Merger Assessment Guidelines (n 144) para. 4.3.5; CMA Merger Assessment Guidelines (n 128) paras. 3.2–3.3. 3.9.

[157] CMA Merger Assessment Guidelines (n 128) para. 3.12; Competition Commission Merger Assessment Guidelines (n 144) para. 4.3.5; Commerce Commission of New Zealand 2022 Mergers and acquisitions Guidelines (n 147) para. 2.33.

[158] A similar shortcoming would also arise if the standard of harm is used to determine a critical probability factor under the probabilistic theory of causation.

probability of at least 25%? Or, can a competition authority legitimately find anticompetitive effects by considering a counterfactual world that would only come to pass with a probability of 5%?[159]

The EU Courts have only grappled with this question to a limited extent. To this date, the pronouncements by the Court of Justice on this point suggests that while the alleged anticompetitive effects do not necessarily have to be concrete[160] they must not be "purely hypothetical".[161] This formulation mirrors the loose formula with which UK courts operationalised the realistic prospect standard as requiring the possibility of a SLC to "be more than fanciful".[162] At the same time, they recognised that "[i]n between fanciful and a degree of likelihood less than 50% there is a wide margin in which [the competition authority] is required to exercise its judgment".[163]

This limiting principle is unlikely to satisfy many proponents of an effects-based approach. To them, the balance of probabilities standard has the appeal of defining a clear threshold for finding anticompetitive effects.[164] The lack of such a threshold is, however, not a problem as such. Legal certainty is arguably preserved as long as competition authorities are required to establish a distinct and plausible possibility of anticompetitive effects. All that is required is for the competition authority to show on the basis of cogent evidence that the alleged

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[159]By way of example, under New Zealand's merger rules, a probability of anticompetitive effects of at least 10% is considered to generate a "real chance" of a substantial lessening of competition. *Woolworths & Ors v Commerce Commission* (n 147) para. 113.

[160] Case C-52/09 *TeliaSonera Sverige* ECLI:EU:C:2011:83 para. 64; Case T-336/07 *Telefónica and Telefónica de España v Commission* ECLI:EU:T:2012:172 para. 268; Case C-295/12 P *Telefónica and Telefónica de España v Commission* ECLI:EU:C:2014:2062 para. 124; Case T-398/07 *Spain v Commission* ECLI:EU:T:2012:173 para. 90; Case C-457/10 P *AstraZeneca AB and AstraZeneca plc v European Commission* ECLI:EU:C:2012:770 para. 112.

[161] Case C-23/14 *Post Danmark II* (n 14) para. 65; Opinion of Advocate General Kokott in Case C-23/14 *Post Danmark II* ECLI:EU:C:2015:343 para. 80; Case C-680/20 *Unilever Italia Mkt. Operations* (n 44) para. 42. Under Article 101 (1), the Court also insisted that the counterfactual must be 'realistic' Case C-382/12 P *MasterCard and Others v Commission* (n 8) para. 166.

[162] *Office of Fair Trading & Ors v IBA Health Ltd* (n 141) para. 86.

[163] ibid para. 48.

[164] Some call even for a quasi-criminal 'in all likelihood' standard. Rato and Petit (n 6) 19–21.

anticompetitive practice is "*capable* not only *in the abstract* but also *in practice*"[165] of harming competition. The lack of a uniform threshold—akin to the 50% threshold of the balance of probabilities standard—is not inevitably at odds with economic theory either. On the contrary, decision theory suggests that an optimal standard of harm should calibrate the critical probability threshold for finding anticompetitive conduct in accordance with both the magnitude and likelihood of the anticipated anticompetitive harm to minimise error costs. From this perspective, the capability standard may be preferable to the purely probabilistic balance of probabilities standard that applies the same critical likelihood threshold across the board without having regard to the scale of harm that may result from a given practice.[166] As long as we assume that the magnitude of harm of unilateral conduct is positively correlated with market power [167]—this assumption is arguably the very *raison d'être* of abuse of dominance rules— the capability standard of proof is less prone to type II errors than the balance of probabilities standard.[168]

4.4 Towards a Balance of Probabilities or Beyond Reasonable Doubt Standard of Harm in Article 102 TFEU

The General Court's standard counterfactual analysis in *Qualcomm* discredited the finding of potential anticompetitive effects by merely considering the prevailing competitive situation in the most likely counterfactual world (i.e., the *status quo ante*). Its narrow focus on how competition in the market would have evolved absent the impugned conduct thus markedly departs from the capability standard of harm that would permit the Commission to assess the impugned conduct against a range of relevant possible and more competitive counterfactual

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[165] *Opinion of Advocate General Kokott in* Case C-23/14 *Post Danmark II* (n 161) para. 80 (emphasis in the original).
[166] Beckner, III and Salop (n 113) 61–62; Kaplow (n 118) 18–20; Shavell (n 138) 588–89.
[167] Case C-52/09 *TeliaSonera Sverige* (n 160) para. 81; Case C-307/18 *Generics (UK) and Others* (n 41) paras. 147, 157.
[168] E Deutscher, 'Reshaping Digital Competition: The New Platform Regulations and the Future of Modern Antitrust' (2022) 67(2) *Antitrust Bulletin* 302, 336.

worlds. This outcome is, however, not surprising. Rather, it is testament to the state of uncertainty that presently surrounds the requisite standard of harm under Article 102 TFEU.

There are indeed growing signs that the commitment of the EU Courts and Commission to the capability standard is faltering. Already in 2009, the Commission's Guidance paper seemed to foreshadow a departure from the capability standard by repeatedly referring to the assessment and proof of likely anticompetitive effects.[169] In *Post Danmark II,* the Court also held that the anticompetitive effects must be shown to be, if not actual, then at least "likely"[170] or "probable".[171] The *Servizio Elettrico Nazionale* ruling appears to further weaken the capability standard. Although it reaffirmed that the absence of actual or concrete anticompetitive effects is not sufficient to preclude the finding of abusive conduct,[172] it may, if combined with other evidence, nonetheless be a relevant element to call into doubt an initial finding that the conduct in issue was capable of causing anticompetitive harm.[173] The most recent *Unilever* judgement appears to move Article 102 yet another inch towards a balance of probabilities standard that requires the showing of "likely" anticompetitive effects.[174] More precisely, the Court observed that a

> *Competition authority cannot rely on the effects that that practice might produce, or might have produced, if certain specific circumstances had arisen, but 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.[175]*

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[169] Guidance on the Commission's Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings (n 13) paras. 2, 20.
[170] Case C-23/14 *Post Danmark II* (n 14) para. 67, 69; Opinion of Advocate General Kokott in Case C-23/14 *Post Danmark II* (n 161) para. 82. See also Case C-209/10 *Post Danmark A/S v Konkurrencerådet* ECLI:EU:C:2012:172 paras. 42, 44.
[171] Case C-23/14 *Post Danmark II* (n 14) para. 74 and operative part.
[172] Case C-377/20 *Servizio Elettrico Nazionale and Others* (n 44) para. 55.
[173] ibid para. 56.
[174] Case C-680/20 *Unilever Italia Mkt. Operations* (n 44) para. 43.
[175] ibid para. 43 (emphasis added by the author).

The language in recent judgements is, in some instances, even suggestive of the criminal standard of harm that would require the anticompetitive effects of impugned conduct be proven "beyond reasonable doubt".[176] Such a criminal standard of harm would raise the bar for finding anticompetitive effects even higher because it is habitually associated with a critical likelihood threshold of 90% or more.[177]

The General Court's counterfactual analysis in *Qualcomm*, which focuses on the *status quo ante* world as it presented itself at the time of the abuse, mirrors this tightening of the standard of harm. The fact that the case law continues to pay lip service to the capability standard[178] fits the overall pattern of incremental judicial reinterpretation of Article 102 since *Intel*, which dresses up change as continuity. What is really happening beneath the surface is that the interpretation of Article 102 slowly but steadily gravitates from a capability to a balance of probabilities, or even a beyond reasonable doubt standard of harm, which necessitate the showing of anticompetitive effects with a probability beyond 50% or even 90%. The counterfactual analysis in *Qualcomm* is fully consistent with and simply anticipating this transformation by limiting the relevant counterfactual scenario to the *status quo ante* as the most likely out of a range of possible counterfactual worlds. This tightening of the requisite standard of harm by stealth is likely to make Article 102 TFEU more prone to type II errors and to align it with an error-cost framework that is (in the case of the balance of probabilities standard marginally) slanted in favour of erring on the side of non-intervention.[179] Thus, the case law moves further in the direction of what proponents of an effects-based approach and

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[176] Case T-286/09 RENV *Intel Corporation v Commission* ECLI:EU:T:2022:19 paras. 160–61, 265; Case T-604/18 *Google and Alphabet v Commission (Google Android)* (n 68) paras. 78–80, 762, 799; Case C-307/18 *Generics (UK) and Others* (n 41) para. 107; Case C-680/20 *Unilever Italia Mkt. Operations* (n 44) para. 42.
[177] Kaplow (n 118) 15.
[178] Case C-680/20 *Unilever Italia Mkt. Operations* (n 44) para. 41.
[179] SC Salop, 'An Enquiry Meet for the Case: Decision Theory, Presumptions, and Evidentiary Burdens in Formulating Antitrust Legal Standards' (2017) 6–7 scholarship.law.georgetown.edu/facpub/2007/.

dynamic competition paradigm had long envisaged as the appropriate standard of harm in abuse of dominance cases.[180]

5 Conclusion

Counterfactual analysis is frequently stylised as the quintessence of an effects-based analysis in modern competition law. This view is grounded on the assumption that only a comparison of the competitive conditions with and without the allegedly anticompetitive practice would enable a competition authority or court to attribute alleged anticompetitive effects to the impugned conduct of the antitrust defendant, and thereby establish causation between the two. To proponents of the effects-based approach, the General Court's *Qualcomm* ruling is, therefore, a welcome development because it recognises for the first time that counterfactual analysis forms part of the assessment of 'all the relevant circumstances' that, according to the more recent case law,[181] a competition authority or court needs to consider to sustain the finding of an abuse of dominance in violation of Article 102 TFEU. Hence, it comes as no surprise that the *Qualcomm* ruling appeals to many commentators as an important step towards a yet more coherent, empirically robust, and quasi-scientific analysis of competitive effects.[182]

This article provides a more sobering account of the counterfactual analysis in *Qualcomm* and its broader implications for the assessment of anticompetitive effects under Article 102 TFEU. It argues that the counterfactual analysis in *Qualcomm* is difficult to square

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[180] Ibáñez Colomo (n 4) 343–44; J Kallaugher and B Sher, 'Rebates Revisited: Anti-Competitive Effects and Exclusionary Abuse Under Article 82' (2004) 25(5) *European Competition Law Review* 263, 279–82. Some authors already mistakenly suggest that the 'capability standard' requires the showing of 'likely' effects N Petit, 'A Theory of Antitrust Limits' (2020) 28 *George Mason Law Review* 1399, 1444–45, 1147–48. Rato and Petit advocate an even stricter 'in all likelihood' standard that is akin to the beyond a reasonable doubt standard in criminal law. Rato and Petit (n 6) 19, 21.

[181] Case T-235/18 *Qualcomm v Commission* (n 15) paras. 355–56, 397; Case C-307/18 *Generics (UK) and Others* (n 41) para. 154; Case C-377/20 *Servizio Elettrico Nazionale and Others* (n 44) paras. 52, 72; Case C-680/20 *Unilever Italia Mkt. Operations* (n 44) paras. 40, 54.

[182] Auer and Radic (n 17) 3.

with a more economic or effects-based analysis of dominant firm conduct. Instead, it shows that *Qualcomm* offers a useful lesson about the potential pitfalls and weaknesses that can beset a counterfactual analysis. *Qualcomm* reveals that a counterfactual analysis is vulnerable to under-inclusiveness and type II errors in situations of overdetermination where the foreclosure of competitors may result from several concurring, independently sufficient causes. *Qualcomm* also exhibits how a simplistic application of a counterfactual analysis may distract from the economic theory of harm that informs the analysis of the foreclosure mechanism of exclusivity rebates. Furthermore, *Qualcomm* also demonstrates that a static counterfactual analysis that mechanically uses the *status quo ante* as the relevant benchmark against which anticompetitive effects are assessed utterly fails to account for the effect of dominant firm conduct on dynamic competition.

This article also sheds light on the broader implications of a greater role of counterfactual analysis in abuse of dominance cases on the requisite capability standard of harm that governs Article 102 TFEU. This standard is less demanding than the balance of probabilities standard because it only requires that the impugned conduct be shown to be capable of foreclosing competition rather than showing that such a foreclosure effect is more likely than not. The intricate relationship between the standard of harm and the counterfactual analysis warrants three observations. First, this article has shown that existing case law clearly suggests that the causal link between dominant firm conduct and anticompetitive effects can be established by other means than a counterfactual analysis. Second, even if a competition authority was to use a counterfactual analysis to establish the causality of anticompetitive effects to a capability standard of harm, it would not be required to focus only on the actual or nearby likely world that compares the state of competition affected by the impugned conduct with the competitive conditions that had prevailed at the time of its implementation—as the General Court did in *Qualcomm*. Whereas the balance of probabilities standard of harm limits

the range of legitimate counterfactual scenarios to the most likely but-for-world, the capability standard of proof arguably allows the competition authority to select from a much broader set of relevant possible counterfactual worlds as long as they are not purely hypothetical. In limiting the legitimate counterfactual scenarios to the nearby likely counterfactual world, *Qualcomm* is thus the latest manifestation of an incremental recalibration of the standard of harm under Article 102 TFEU from a capability to a balance of probabilities or even a beyond reasonable doubt standard.

The Commission has decided not to appeal the General Court's *Qualcomm* ruling before the Court of Justice.[183] *Qualcomm* is hence a missed opportunity for the Court of Justice to clarify important questions about the requisite standard of harm and the role of the counterfactual analysis under Art. 102 TFEU. However, this should not preclude a serious and critical reflection on the role of counterfactual analysis in modern competition law which goes beyond the conventional wisdom that any counterfactual analysis is good because it is a "core component" or "prerequisite" of an effects-based approach. The recently announced reform process of the Commission's Guidance Paper and the envisaged adoption of Guidelines on Exclusionary Conduct offer a timely window of opportunity for a serious debate on the role of causation and counterfactual analysis in Article 102 case law.[184]

This article foreshadows three axes of reflection that might inform a rethinking of the proper place of counterfactual analysis in competition law analysis. First, a counterfactual analysis is underinclusive if it fails to address the problem of overdetermination, ignores the economic mechanics of foreclosure effects, and disregards dynamic competition. Accordingly, this calls for more dynamic counterfactuals that are calibrated to the economic mechanics of the impugned conduct and account for concurring causes of exclusion, in particular in markets

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[183] Competition Policy International, 'In A Win For Qualcomm, EU Will Not Appeal Court Ruling In $991B Fine' www.competitionpolicyinternational.com/in-a-win-for-qualcomm-eu-will-not-appeal-court-ruling-in-991b-fine/.
[184] European Commission, *Press Release No IP/23/1911 Antitrust: Commission announces Guidelines on exclusionary abuses and amends Guidance on enforcement priorities* .

characterised by high entry barriers. Second, there are alternatives to the counterfactual method to establish causality and attribute anticompetitive effects to the conduct of a dominant firm. This counsels against a strict counterfactual requirement for establishing anticompetitive effects and calls for an open-minded reflection on alternative ways to establish causation.[185] Third, the appropriate role of counterfactual analysis and alternative methods of establishing causality depends on the requisite standard of harm. This calls for a discussion of the optimal standard of harm and how it affects the range of possible counterfactual but-for-worlds that a competition authority can consider to sustain a finding of anticompetitive effects. Such a discussion presupposes a reckoning that anticompetitive conduct can conceivably harm competition that does not exist in the actual or nearby likely worlds but does exist in a relevant (i.e., not purely hypothetical) possible world.

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[185] RW Wright, 'The NESS Account of Natural Causation: A Response to Criticisms' in R Goldberg (ed), *Perspectives on causation* (Oxford. Hart 2011).