



# The 2010 Horizontal Merger Guidelines After 10 Years

Joseph Farrell<sup>1</sup> · Carl Shapiro<sup>1</sup> 

Accepted: 22 December 2020 / Published online: 7 January 2021  
© The Author(s) 2021

## Abstract

This paper introduces the Special Issue of the *Review of Industrial Organization* that studies the impact of the 2010 Horizontal Merger Guidelines after 10 years. On August 19, 2010, the U.S. Department of Justice (DOJ) and the Federal Trade Commission (FTC) issued newly updated Horizontal Merger Guidelines (2010 Guidelines) [See <https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf>]. The 2010 Guidelines begin by stating:

“These Guidelines outline the principal analytical techniques, practices, and the enforcement policy of the Department of Justice and the Federal Trade Commission (the “Agencies”) with respect to mergers and acquisitions involving actual or potential competitors (“horizontal mergers”) under the federal antitrust laws.”

Since the first Merger Guidelines were issued by the DOJ 1968, the merger guidelines have been an important channel by which economic research and learning affects antitrust enforcement. Each iteration of the merger guidelines has reflected the economic thinking of the day. Each iteration also has made a substantial impact on merger enforcement and the development of antitrust law. This special issue examines the impact of the 2010 Merger Guidelines after 10 years.

**Keywords** Antitrust · Mergers · Unilateral effects · Coordinated effects

---

Farrell is Professor of the Graduate School at the University of California at Berkeley. Shapiro is Professor of the Graduate School at the University of California at Berkeley and a Senior Consultant at Charles River Associates. Both authors were closely involved in the drafting of the 2010 Horizontal Merger Guidelines when they were officials at, respectively, the Federal Trade Commission and the U.S. Department of Justice. Our opinions are our own. No one has funded this article.

---

✉ Carl Shapiro  
cshapiro@berkeley.edu

<sup>1</sup> University of California at Berkeley, Berkeley, USA

## 1 Historical and Legal Context

The proper treatment of horizontal mergers has always been a central public policy question for industrial organization economists.

The Clayton Act prohibits acquisitions where “in any line of commerce or in any activity affecting commerce in any section of the country, *the effect of such acquisition may be substantially to lessen competition*, or to tend to create a monopoly.” (emphasis added)

Major mergers are reviewed *prospectively* by the DOJ or the FTC, so it is not possible to assess their impact on competition directly. Because merger review is a predictive exercise, economic analysis has come to play a central role in merger enforcement. Faced with a proposed merger, the analysis seeks to predict whether that merger “may substantially lessen competition.”

In evaluating mergers, antitrust law has typically equated a substantial lessening of competition with substantial harm to customers based on diminished competition.<sup>1</sup> This is a leading example of how antitrust law has embraced the “consumer welfare standard” in recent decades.<sup>2</sup>

A given horizontal merger thus presents a well-defined economic question: Will this merger likely harm customers rather than benefit them? Viewed this way, every horizontal merger involves a fundamental tradeoff: On the one hand, it will eliminate competition between the merging firms and lead to a more concentrated market, so it poses a risk of diminished competition. On the other hand, it may enable efficiencies that could make the merged entity a stronger rival for other firms. Williamson identified this fundamental tradeoff over 50 years ago.<sup>3</sup> Since 1968, the merger guidelines have explained how antitrust enforcers in the United States evaluate mergers and thus—implicitly or explicitly—make this tradeoff.<sup>4</sup>

The 1968 Merger Guidelines placed great emphasis on market concentration, establishing strong presumptions against mergers that raised concentration even modestly. Those Guidelines were fundamentally changed in 1982, making merger enforcement far more lenient. After a minor update in 1984, the next major revision came in 1992, at which time they became a joint product of the DOJ and the FTC. The 1992 Guidelines greatly advanced theories of harm that were based on “unilateral effects”: the elimination of competition specifically between the two merging firms. The 1982 guidelines had focused almost entirely on “coordinated effects”:

---

<sup>1</sup> For simplicity, we focus on mergers that diminish competition among sellers, so the injured parties are customers. An analogous analysis applies to mergers that diminish competition among buyers, so the injured parties are suppliers. Section 12 of the 2010 Guidelines, “Mergers of Competing Buyers,” addresses that case.

<sup>2</sup> Shapiro has advocated use of the “protecting competition standard” to address confusion that has grown around the “consumer welfare standard.” See <http://faculty.haas.berkeley.edu/shapiro/consumerwelfarestandard.pdf>.

<sup>3</sup> Oliver Williamson (1968), “Economies as an Antitrust Defense: The Welfare Tradeoffs,” *American Economic Review*, 58, 18–36.

<sup>4</sup> For a discussion of the history of merger guidelines in the United States, and how the 2010 Guidelines fit into that history, see Carl Shapiro (2010) “The 2010 Merger Guidelines: From Hedgehog to Fox in Forty Years,” *Antitrust Law Journal*, 77, 701–759.

the danger that the merger would enhance anti-competitive coordination between the merged firm and its remaining rivals. The treatment of efficiencies was updated in 1997. By and large, the 2010 Horizontal Merger Guidelines updated guidance going back to 1992. During those intervening 18 years, both economic learning and agency enforcement practice had significantly evolved.

The 2010 Guidelines sought to communicate more accurately how the DOJ and the FTC actually analyze horizontal mergers, which centers on the “well-defined economic question” described above. By doing so, it also sought to reinvigorate merger enforcement, within the contours of established case law, both where economic analysis had improved and also where accumulated interpretations of earlier Guidelines had made enforcement more difficult without sound reason.

At a high level, as one of us explained at the time,<sup>5</sup> it was time for the Guidelines to stress the agencies’ increasingly substantive focus (will the merger harm customers?—how do we know?... ) rather than a process focus (first define markets and calculate concentration; then consider effects, then entry...) that the 1992 Guidelines (section 0.2) had suggested.

The substantive focus in turn affects the kinds of evidence that is considered (2010 Guidelines, section 2) and how that evidence is evaluated and used. This did not mean abandoning traditional processes or technique; rather, it gave them a more flexible role in the service of the fundamental substantive question, and supplemented them with other techniques and evidence, as appropriate. This can be seen in many places; for instance:

- The greater emphasis on a variety of evidence that indicates that a merger may lessen competition;
- The greater openness to identifying harm to certain targeted customers even if other customers are not harmed;
- The explicit statement that “the measurement of market shares and market concentration is not an end in itself, but is useful to the extent it illuminates the merger’s likely competitive effects;”
- The clarification that relevant markets that are defined with the use of the hypothetical monopolist test (HMT) can be quite narrow, excluding a number of substitutes to the products and services that are sold by the merging firms (e.g., Guidelines Example 5), and a discussion of techniques for applying the HMT, such as critical loss analysis;
- The retention of the “structural presumption” that certain mergers that increase market concentration are likely to harm competition, based on updated HHI thresholds that more accurately reflect actual enforcement practice;
- A greatly expanded treatment of unilateral effects that identify diversion ratios and margins, and their combination in the form of upward pricing pressure, as the key metrics to diagnose unilateral price effects<sup>6</sup>;

---

<sup>5</sup> Shapiro, *ibid.*

<sup>6</sup> In discussing unilateral effects, the 1992 Guidelines (2.211) stated that when “the merging firms have a combined market share of at least thirty-five percent” and certain other conditions hold, market share data may be relied upon to demonstrate consumer harm. This seemed in 2010 to have been overtaken by

- The inclusion of theories of harm in markets where prices are set by auctions or by bargaining;
- The inclusion of theories of harm based on diminished innovation;
- A more expansive treatment of coordinated effects, including not just explicit and tacit collusion but also “parallel accommodating conduct;”
- A more skeptical treatment of the entry defense, with a call for evidence of actual, recent, successful entry, and with a preference for the identification of specific potential entrants<sup>7</sup>;
- The inclusion of a section that addresses mergers between competing buyers; and
- The inclusion of a section that addresses partial acquisitions.

The 2010 Guidelines also modified the “narrowest market principle.” The 1992 Guidelines (Section 1.11) stated that the Agency “generally will consider the relevant product market to be the smallest group of products that satisfies [the hypothetical monopolist] test.” This unexplained announcement risked committing to a methodology that would ignore important competition.

Consider a market with three differentiated products: A, B, and C. Evidence shows that all three are significant substitutes for one another, but B is slightly closer to each of A and C than A and C are to one another. Depending upon the diversion ratios and gross margins, it can easily be the case that, starting with product A, one finds that {A, B} is a relevant market using the hypothetical monopolist test, and likewise that {B, C} is a relevant market if one starts with C.

Now A and C propose to merge. Under the “narrowest market principle,” the HMT would generate relevant markets {A, B} and {B, C}, but *not* {A, B, C}, notwithstanding that a hypothetical monopolist over {A, B, C} would have an even greater incentive to raise prices than would a hypothetical monopolist over {A, B} or {B, C}. The 1992 Guidelines therefore would hinder if not block the Agency from challenging the merger between A and C as a three-to-two merger in the {A, B, C} market. The Agency would thus be hindered or blocked from establishing its prima facie case based on the increase in the HHI in the {A, B, C} market from 3333 to 5555. Indeed, advocates for the merger would emphasize that “B is the closest substitute to A” (and likewise to C) and stress that “A and C are not even in the same relevant market!”

To avoid that kind of error, Section 4.1 in 2010 Guidelines gives the agencies the flexibility to define the market in this example as {A, B, C}. The key passage states: “The hypothetical monopolist test ensures that markets are not defined too narrowly, but it does not lead to a single relevant market. The Agencies may evaluate a merger

---

Footnote 6 (continued)

advances in understanding of unilateral effects, but was also problematic in that it was misread by some merger advocates as ruling out unilateral effects from mergers with combined share below that threshold. It was thus abandoned.

<sup>7</sup> The 2010 Guidelines also dropped the 1992 Guidelines’ discussion of a 2-year threshold for timeliness of entry, which risked becoming interpreted as permission for anticompetitive effects lasting that long.

*in any relevant market satisfying the test*, guided by the overarching principle that the purpose of defining the market and measuring market shares is to illuminate the evaluation of competitive effects.”<sup>8</sup> (emphasis added)

However, defining markets too broadly can also lead to errors. Because “the relative significance of more distant substitutes is apt to be overstated by their share of sales,” the inclusion of distant substitutes can bias inferences from market shares. In evaluating a merger between two motorcycle producers (Guidelines Examples 4 and 7), if one includes “cars” in the market, the resulting market shares would greatly overstate the competitive significance of car manufacturers relative to that of other motorcycle manufacturers (a bias that could incorrectly make the merger look either more troubling or less so, depending on whether a merging motorcycle manufacturer also makes many cars). Thus the 2010 Guidelines retain the principle that “when the Agencies rely on market shares and concentration, they *usually* do so in the smallest relevant market satisfying the hypothetical monopolist test.” (emphasis added)

The papers in this special issue address many of these specific topics, based on 10 years of experience with the 2010 Merger Guidelines.

## 2 Individual Papers in this Special Issue

The first two papers in this special issue discuss the 2010 Guidelines from the perspective of the DOJ and the FTC respectively. These two papers are invaluable—especially because so much merger enforcement is not visible to the public, as it involves confidential information and the antitrust agencies seldom explain publicly their reasons when they do not bring an enforcement action. Both papers report that the 2010 Guidelines continue to provide an accurate description of how the two agencies analyze horizontal mergers. Both papers emphasize the centrality of Section 2 of the 2010 HMGs—“Evidence of Anticompetitive Effects” – to merger investigations.

“Ten Years of the 2010 HMG: A Perspective from the Department of Justice,”  
by Craig Peters and Jeff Wilder

Craig Peters and Jeff Wilder report on the DOJ experience with the 2010 Guidelines over the past 10 years. They summarize the DOJ perspective this way: “In our view, the 2010 HMG have aged well. They continue accurately to describe Agency practice and reflect current legal and economic principles of antitrust. Over the past 10 years, the 2010 HMG have only grown in force, as a number of courts have issued opinions endorsing the Agencies’ analytical approach to horizontal merger enforcement as outlined in the 2010 HMG.”

---

<sup>8</sup> If the HMT is satisfied for a set of substitute products, it will also be satisfied if another substitute is added to that set. Some judgment is thus needed to decide what relevant market is most informative in a given case. This passage from the 2010 Guidelines explains the principle that should be used when exercising that judgment.

Peters and Wilder report that from August 2010 through the first quarter of 2020, the DOJ filed 91 complaints in federal court, 71 of which involved consent decrees that resolved the DOJ's concerns, and 20 of which were "litigation" complaints. They dismiss concerns that the 2010 Guidelines would reduce the ability of the DOJ to challenge mergers based on their impact on market concentration; they cite data and state: "The structural presumption has remained an important element in the Division's horizontal merger cases in the years since." They further report: "In all six of the litigated Division horizontal merger cases that yielded a judicial opinion, the opinions directly cited the 2010 HMG concentration thresholds." They go on to detail various ways in which DOJ merger enforcement has tracked the 2010 Guidelines. Their section on how the DOJ has continue to improve its evaluation of unilateral price effects, following Section 6.1 from the 2010 Guidelines, is especially valuable for antitrust economists.

"The 2010 Horizontal Merger Guidelines at Ten: A View from the FTC's Bureau of Economics," by Alison Oldale, Joel Schrag, Christopher Taylor

Alison Oldale, Joel Schrag, and Christopher Taylor report on the FTC experience with the 2010 Guidelines over the past 10 years. Their overall view is that "the revised Guidelines have contributed positively to the Commission's merger enforcement program." (abstract) Like their DOJ counterparts, they emphasize that Section 2 of the 2010 HMGs, "Evidence of Competitive Effects," has proven to be a very valuable addition to the Guidelines, because it continues to reflect actual FTC practice in assessing mergers and because it helps guide and frame many merger investigations. They detail a number of examples that establish this point.

These authors also confirm what experienced practitioners know: There is a significant distinction between how mergers are investigated and how they are evaluated in court. Merger litigation places considerable weight on market definition and market shares: the means by which the government establishes a prima facie case that the merger is likely to substantially harm competition. The FTC authors explain that market definition and market concentration often play a much smaller role in merger investigations: "If direct evidence of the likely effects of a merger is available, less direct inferences from structural measures of concentration may add little to the analysis and therefore may be of secondary importance in investigations."

The authors go on to explain how the FTC has implemented Section 6 of the HMGs when evaluating mergers where the primary concern is with unilateral effects, "which represent the bulk of Commission merger cases in recent years." These examples help bring alive the analytical techniques that are described in Section 6 of the HMGs and show how they work in practice. They indicate that Section 7 of the 2010 HMGs, "Coordinated Effects," has had less impact, in part because "there may be some confusion" about how to interpret the concept of parallel accommodating conduct.

"Judicial Response to the 2010 Horizontal Merger Guidelines," by Carl Shapiro and Howard Shelanski

Shapiro and Shelanski focus on how the 2010 Guidelines have fared in court. Historically, the merger guidelines have been treated with respect by the courts, and have (gradually) influenced the development of the case law. Shapiro and Shelanski observe this same pattern for the 2010 Guidelines. They find an especially clear shift in how the courts have analyzed unilateral effects. After the DOJ's 2004 loss in its challenge to Oracle's acquisition of PeopleSoft, the DOJ was skittish about challenging mergers based on unilateral effects, and the ability of the government to win in court based on showing significant head-to-head competition between the merging parties was in doubt.

That reluctance dramatically changed following the release and application of the 2010 HMGs—starting with the DOJ's 2011 success in blocking H&R Block proposed acquisition of TaxACT.

Other areas where the 2010 Merger Guidelines have supported stronger antitrust enforcement include market definition, with clarifications of how to implement the hypothetical monopolist test properly—including defining markets around targeted customers—and greater skepticism towards arguments by the merging parties that entry will replace the competition that is lost through the merger.

In contrast, the expanded treatment of coordinated effects that is found in the 2010 Guidelines—including “parallel accommodating conduct” as a form of coordination—has not yet had a significant impact on the case law.

“The 2010 HMGs After Ten Years: Where Do We Go From Here?” by Steven Salop and Fiona Scott Morton

Salop and Scott Morton build on the 2010 Guidelines by identifying further changes that they believe would support stricter merger enforcement. Their starting point is that Congress intended to prohibit mergers that “may” substantially lessen competition; consequently, effective merger enforcement should not place an undue burden of proof on the government to prevail in court when challenging a merger—especially given the resource constraints that face the government. They acknowledge that some of the changes that they advocate would require new legislation—and not merely a change in merger enforcement policy at the DOJ and the FTC.

Salop and Scott Morton recommend creating a presumption against mergers that generate a Gross Upward Pricing Pressure Index (GUPPI) of more than 10%—with no safe harbor based on a low GUPPI. They also favor reversing the increase in the HHI thresholds that was made in the 2010 Guidelines. Complementing these changes, they recommend expanding potential competition analysis to take a tougher approach to mergers between firms that might compete in the future. In particular, they urge the agencies and the courts to focus on the expected impact of possible future competition between the two merging firms—not just on its probability.

Salop and Scott Morton call to “improve the analysis of coordinated effects” as one way to support stricter merger enforcement. They justify this recommendation

in part to address what they see as a growing danger of algorithmic coordination.<sup>9</sup> They point out that “except where there is a maverick, coordinated effects analysis has been stuck in a process of weighing a checklist of facilitating and complicating market factors.” However, they do not indicate how their desired improvement can be accomplished—other than to recommend a presumption against mergers that involve the acquisition of a “maverick.” Further economic research on this topic could be quite valuable—and arguably necessary—to identify workable and effective improvements in the treatment of coordinated effects that could be written into future merger guidelines.

Salop and Scott Morton recommend adding a section to the HMGs to address common ownership by financial funds. This would be a natural extension of Section 13 in the 2010 HMGs, “Partial Acquisitions,” which introduced the issue of partial ownership into the HMGs.

“Natural Oligopoly Responses and Coordinated Effects in Merger Analysis,”  
by Joseph Farrell and Jonathan Baker

Farrell and Baker argue that coordinated effects should be understood in the 2010 Guidelines’ broad sense: the competitive implications of rivals’ responses to oligopolists’ price changes. For example, if a firm cuts its price, it probably intends to gain volume from rivals, and that gain can be largely neutralized if those rivals match the price cut.

Farrell and Baker argue that earlier Guidelines—and the way that the game theory revolution in industrial organization economics played out over the past 40 years— inadvertently caused a focus that was too exclusively on two ways to think of oligopoly: Since the 1992 Guidelines, “unilateral effects” are almost always modeled as Nash equilibria in simultaneous-move games, in which each player takes its rivals’ moves as given. “Coordinated effects,” by contrast, hinge on rivals’ responses, but the standard supergame approach emphasizes conscious common understanding and purposive deterrence of deviations, and its standard model often drastically overpredicts highly collusive (such as shared monopoly) outcomes. Farrell and Baker first suggest making that standard model more flexible and realistic by allowing for stochastic transitions between cooperative and competitive states.

They then turn to what the 2010 Guidelines (Section 7) call “parallel accommodating conduct”: a pattern of competitive responses that is “individually rational, and not motivated by retaliation or deterrence nor intended to sustain an agreed-upon market outcome, but nevertheless emboldens price increases and weakens competitive incentives to reduce prices.” Farrell and Baker develop this concept by considering Stackelberg leader-and-follower price dynamics, which they argue may often align with firms’ “non-purposive” responses. They show how the strength of the “emboldening/weakening” effect relates to the familiar antitrust concept of diversion ratios, and illustrate by simulating two simple three-to-two mergers.

<sup>9</sup> See, for example, Emilio Calvano, Giacomo Calzolari, Vincenzo Denicolò, and Sergio Pastorello (2020), “Artificial Intelligence, Algorithmic Pricing, and Collusion,” 110 *American Economic Review* 3267–3297.

“Quantitative Methods for Evaluating the Unilateral Effects of Mergers,” by  
Nathan Miller & Gloria Sheu

The final three papers focus on the analysis of unilateral effects: the section of the 2010 Guidelines that has received by far the most attention in recent years in the economics literature.

Miller and Sheu provide an extremely valuable guide to the methods that are actually used in practice to assess unilateral effects, as updated and expanded in the 2010 Guidelines. They “describe the quantitative modeling techniques that are used in horizontal merger review for the evaluation of unilateral effects, and discuss how the 2010 Horizontal Merger Guidelines helped legitimize these methods and motivate scholarly research.” As they point out, “the modeling techniques we describe here are the result of an ongoing interplay between current academic research and antitrust practice.” Miller and Sheu’s impressive treatment is both sophisticated and accessible.

Miller and Sheu consider pricing competition in markets with differentiated products, procurement auctions, and quantity competition in markets with homogeneous products. For each topic, they demonstrate the basic theory that has been developed in the academic literature and explain how that theory is implemented in practice. By far the most work involves pricing competition in markets with differentiated products. Miller and Sheu explore in depth the relationship between measures of upward pricing pressure, pass-through rates, and the price effects of mergers that are based on a full merger simulation. They make a convincing case that measures of upward pricing pressure often can be used to generate a first-order approximation of the merger simulation’s predictions of a merger’s impact on prices. They recommend a presumption against mergers that increase the HHI by at least 200 points.<sup>10</sup>

“Mergers with Differentiated Products: Where Do We Stand?” by Tommaso  
Valletti & Hans Zenger

This paper also focuses on unilateral effects—including effects on innovation—with the use of illustrations from a number of European merger cases. Valletti and Zenger emphasize that the analytical techniques that relate to unilateral effects that were introduced, clarified, or emphasized in the 2010 Guidelines have since evolved into standard practice: both in the United States and in Europe. The 2010 Guidelines helped spur the evolution toward a greater use of economic tools in merger assessment that was already ongoing in 2010 at the European Commission.

Valletti and Zenger helpfully introduce the idea of “implied market shares” that are associated with diversion ratios between the products that are sold by the

---

<sup>10</sup> Their elegant solution is to establish a presumption against mergers for which the post-merger HHI exceeds 2500 or for which the HHI increases by at least 200 points. The presumption based on the post-merger level of the HHI would capture mergers that may substantially harm competition based on *coordinated* effects, and the screen based on the change in the HHI would capture mergers that may harm competition based on *unilateral* effects. On the latter, see Volcker Nocke and Michael Whinston (2020), “Concentration Screens for Horizontal Mergers.” For comparison, the 2010 Guidelines (Section 5.3) describe presumptions when *both* the level and the increase in the HHI are substantial.

two merging firms. These are the market shares that would give the same diversion ratios if diversion were proportional to market share. Many observers who are familiar with using market shares may find these “implied market shares” more intuitive and easier to interpret than are diversion ratios. They explain the practical virtues of two tools that have seen much greater usage in Europe since 2010: the Gross Upward Pricing Pressure Index (GUPPI) and the Compensating Marginal Cost Reduction (CMCR). In some cases, the European Commission has used these tools at the initial screening stage, and later use merger simulation to inform its final decision.

Valletti and Zenger go on to offer a highly instructive “comparative analysis” of the various analytical tools that are used to assess unilateral price effects. As they point out, there is a tradeoff between complexity and precision: The more complex and more precise tools—notably merger simulation—require more data and more assumptions. GUPPIs tend to understate a merger’s impact on price by ignoring feedback effects. They report that at the European Commission there has been a trend toward using merger simulation with linear demand—in contrast with the U.K. Competition and Markets Authority, which has more often relied on price pressure indices.

Valletti and Zenger also discuss at length unilateral *innovation* effects; the authors build on Section 6.4 in the 2010 Guidelines, which introduced innovation effects into the HMGs. They demonstrate how much progress has been made in this area over the past 10 years: both in the academic literature and in practice. While innovation effects are inherently difficult to predict, we have much more experience evaluating these effects now than we did prior to the release of the 2010 Guidelines.

“Effects of the 2010 Horizontal Merger Guidelines on Merger Review, Based on Ten Years of Practical Experience,” by Dennis Carlton & Mark Israel

The third and final paper that focuses on unilateral effects offers a contrarian view: Carlton and Israel articulate many of the arguments that merging firms typically make in defense of their deals. The authors support the exercise of defining relevant markets and measuring market shares to establish safe harbors, but *not* to establish strong anti-competitive presumptions: “a finding that a market has a large number of significant competitors should be a safe harbor for a merger, but finding high market shares for the merging parties should, at most, point to the need for further analysis and should create, at most, a weak presumption in favor of finding harm from the merger.”

Carlton and Israel also express considerable skepticism about price pressure tools such as upward pricing pressure (UPP), stating: “we believe UPP has been overused, leading the agencies to focus scarce investigative time and resources on UPP even when more direct evidence from natural experiments is available.” They further state: “UPP analysis is a type of (incomplete) structural approach. A superior structural approach is merger simulation.” They further assert that “the attention UPP has garnered detracts from the use of ‘natural experiments,’ which

are much less structural and instead look at what happened to price after some event.”

We agree that natural experiments can be highly valuable, as is explained in Section 2.1.2 of the 2010 Guidelines. Carlton and Israel also call for more merger retrospectives; this is a widely held view that we share. The FTC recently announced additional efforts in this direction.

**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.