The 2023 Merger Guidelines and Coordinated Effects: Recommendations for Robust Protection of Competition*

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Abstract. The 2023 Merger Guidelines include new criteria for evaluating proposed mergers for potential coordinated effects. This Article will examine lessons from explicit collusion to inform the implementation of these guidelines. Anticompetitive coordination has occurred throughout history in many and varied industries, usually in highly concentrated markets. Thus, protecting competition requires a skeptical attitude toward mergers in such concentrated oligopolies. Where markets are less concentrated, we argue that history, norms, and institutions can determine the risk of coordinated effects and should be included in the evaluation of proposed mergers.

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Introduction

The recently released 2023 Merger Guidelines ("2023 Guidelines") provide a framework for antitrust regulators to determine which mergers may harm competition. In this Article, we focus on the implications of the 2023 Guidelines for reviewing those mergers which may increase the risk of coordinated effects.[1] Our analysis is based on studies of explicit collusion, which shed light on where an industry is vulnerable to explicit or tacit collusion.

Several studies have documented a decline in antitrust agencies' use of coordinated effects theories in merger cases, with most merger challenges over the last several decades focusing on concerns about unilateral effects.[2] Whatever the reasons for this decline, it unfortunately does not reflect a decline in the likelihood of coordination.[3] Our research on explicit collusion shows that anticompetitive coordination occurs in many and varied industries and is far from a relic of the past.[4]

Economic theory suggests that highly concentrated markets, such as duopolies, are unlikely to be intensely competitive.[5] Firms with a reasonable time horizon will consider strategic actions, including potential responses from competitors that could increase profits beyond the competitive outcome. Protecting competition requires a skeptical attitude toward mergers in such markets.

In markets that are not highly concentrated, market characteristics can influence the probability of coordinated effects. Our research on explicit collusion helps us understand where coordinated effects are more likely in relatively unconcentrated markets. We highlight the most important factors to keep in mind when trying to protect competition in the face of a proposed merger and how they comport with the new merger guidelines. These factors should include any history of explicit collusion:

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[1] U.S. DEP'T OF JUST. & FED. TRADE COMM'N, MERGER GUIDELINES 9 (2023) [hereinafter 2023 MERGER GUIDELINES].

[2] D. Daniel Sokol & Sean P. Sullivan, *The Decline of Coordinated Effects Enforcement and How to Reverse It*, 76 FLA. L. REV. 265, 265 (2024) ("Opposition to anticompetitive coordination once animated merger policy. But evidence now suggests that coordinated effects challenges are disfavored and rarely pursued."); *see also, e.g.*, Michal S. Gal & Daniel L. Rubinfeld, *Algorithms, AI, and Mergers*, 85 ANTITRUST L.J. 683, 692 (2024) ("While coordinated effects were the primary focus of merger enforcement before the 1990s, more recently they have taken a back seat to unilateral effects.").

[3] Joseph E. Harrington, Jr. & David Imhof, *Cartel Screening and Machine Learning*, 2 STAN. COMPUTATIONAL ANTITRUST 133, 134 (2022) ("[T]here is a shadow looming . . . : *cartels continue to form*.").

[4] *See, e.g.*, Margaret C. Levenstein & Valerie Y. Suslow, *What Determines Cartel Success?*, 44 J. ECON. LITERATURE 43, 44 (2006) [hereinafter Levenstein & Suslow, *Cartel Success*]; *see also* Margaret C. Levenstein & Valerie Y. Suslow, *Breaking Up Is Hard to Do: Determinants of Cartel Duration*, 54 J.L. & ECON. 455, 455 (2011) [hereinafter Levenstein & Suslow, *Cartel Duration*].

[5] *See* JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 243 (1988) (stating that "[t]he number of firms in the industry is, of course, thought of as affecting the possibility of collusion").

specifically, mergers among firms that have engaged in explicit collusion within the last five years should be presumed to be anticompetitive—no matter the impact on concentration—unless the merging firms can demonstrate otherwise.

The 2023 Guidelines highlight important issues related to coordinated effects that have received insufficient attention in earlier versions. For example, the 2023 Guidelines explicitly acknowledge the variety of dimensions along which firms can work to restrain competition: "Firms can coordinate across any or all dimensions of competition, such as price, product features, customers, wages, benefits, or geography."[6] This was implicit in the 2010 Horizontal Merger Guidelines (e.g., including coordinating on "other terms"),[7] but articulating the various dimensions across which coordination can occur supports both a fuller investigation of potential coordinated effects and a fuller understanding of the harms that can arise. Our research has shown that firms often begin by trying to coordinate on price and then expand to include other market features.[8] Thus, incorporating "such as" in Guideline 3 (of the 2023 Guidelines) is critical because dimensions not explicitly listed, such as innovation and technology, can be affected by inter-firm coordination and cause significant social and economic harm.[9]

The 2023 Guidelines also specifically address the threat of vertical harm, including the possibility that vertical market power contributes to coordinated effects.[10] Our prior research has shown that cartels often make use of vertical relationships and restraints to sustain a collusive equilibrium.[11] Our analysis of a sample of European Commission ("EC")

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[6] 2023 MERGER GUIDELINES, *supra* note 1, at 8.

[7] U.S. DEP'T OF JUST. & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 4 (2010).

[8] Margaret Levenstein & Valerie Suslow, *Cartel Bargaining and Monitoring: The Role of Information Sharing*, *in* THE PROS AND CONS OF INFORMATION SHARING 8, 16–18 (Mats Bergman ed., 2006) ("The initial terms of the agreement normally include price and output levels, and frequently also include market shares and assignment of key customers. . . . Cartel negotiations often expand beyond price and market share in order to address the possibility of cheating in non-price dimensions. These negotiations can lead to restrictions on terms of sale, advertising, and production capacities.").

[9] *See, e.g.*, George Symeonidis, *Price Competition, Innovation and Profitability: Theory and UK Evidence*, *in* CARTELS 612–36 (Margaret C. Levenstein & Stephen W. Salant eds., 2007).

[10] Section 2.5.A. notes the foreclosure risk that a vertical merger may have, to "tie up or obstruct routes to market." 2023 MERGER GUIDELINES, *supra* note 1, at 13–14. Specifically, item 4 of section 2.5.A.1. states that the DOJ and FTC "may also assess the potential for the merged firm to benefit from facilitating coordination by threatening to limit dependent rivals' access to the related product." *Id*. at 14–15.

[11] Margaret C. Levenstein & Valerie Y. Suslow, *How Do Cartels Use Vertical Restraints? Reflections on Bork's* The Antitrust Paradox, 57 J.L. & ECON. S33, S34 (2014) ("In this paper we examine cartels—both historical and contemporary examples—that used vertical restraints to support naked price fixing. . . . [and] develop a taxonomy of the use of vertical restraints to address two important cartel challenges, cheating and entry."); Margaret C. Levenstein & Valerie Y. Suslow, *How Do Cartels Use Vertical Restraints? Horizontal and Vertical Working in Tandem*, 83 ANTITRUST L.J. 15, 16 (2020)

and U.S. Department of Justice ("DOJ") cartel cases in the 1990s and 2000s uncovered instances of such behavior and found that one-quarter "showed evidence of vertical relationships that support collusion."[12] The integration of the horizontal and vertical merger guidelines in the 2023 Guidelines provides an opportunity for a more holistic analysis that can identify and prevent this kind of behavior.

Finally, although not specifically addressed in the 2023 Guidelines, we believe it is important to comment on the role of price wars in supporting or enforcing explicit collusive agreements.[13] As we discuss in prior research, cartels use a variety of mechanisms to punish deviations from the cartel agreement, but may overlook the deviations at times so as not to disrupt fragile agreements:

> Cartels do their best to use the information-gathering techniques described here to distinguish between cheating and random fluctuations in demand. Cartels do not want to disrupt collusion—reducing profits and undermining trust—by retaliating when a firm has not cheated, and even sometimes when they know that a firm has cheated. On the other hand, they do not want to tolerate excessive deviations from assigned quotas, as that would simply reward cheating and undermine the cartel.[14]

In other words, while collusion sometimes becomes obvious when price wars occur, cartel member firms more often find ways to avoid using price war punishments.[15] Thus, the lack of price wars should not be used as evidence that a market is invulnerable to coordinated effects.

This Article begins in Part I with a discussion of empirical evidence on the relationship between explicit collusion and market concentration. Part II then provides an overview of what we know about merger activity among former cartel participants after cartel investigations or prosecutions. We present specific examples from cartel cases and insights from empirical cross-section studies. In Part II, we also touch upon antitrust policy sequencing, relating anti-cartel enforcement and merger reviews. Finally, Part III discusses lessons from explicit collusion regarding information sharing, multi-market contact, the potential role of large customers, and vertical relationships.

[hereinafter Levenstein & Suslow, *Horizontal and Vertical Working in Tandem*] (expanding the sample of cartels for inquiry into the use of vertical restraints).

12 Levenstein & Suslow, *Horizontal and Vertical Working in Tandem*, *supra* note 11, at 15 n.1 ("We found that in a quarter of 81 international cartels, determined by the European Commission or the U.S. Department of Justice to have engaged in horizontal price fixing between 1990 and 2007, vertical relationships were a feature of the collusive arrangement.").

13 For classic discussions of the role of price wars in collusion, see generally George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44, 45–56 (1964), as well as Edward J. Green & Robert H. Porter, *Noncooperative Collusion Under Imperfect Price Information*, 52 ECONOMETRICA 87, 87 (1984).

14 Levenstein & Suslow, *Cartel Duration*, *supra* note 4, at 477.

15 *See id*. at 458–59, 476–77. In our empirical study of international cartels, we argue that price wars are often more appropriately understood as evidence of collusive breakdown than equilibrium punishments. We discuss preferred punishments, such as side payments that sustain collusive equilibria, as well as techniques cartels use to avoid punishments altogether.

I. Lessons from Explicit Collusion: Concentration

Although highly concentrated markets are prone to coordination, competition authorities should not overlook the possibility of coordination in less concentrated markets. Ideally, we could specify a simple correspondence between concentration levels and the likelihood of coordinated effects. Unfortunately, there is no such simple correspondence. In our own work, we have been unable to establish a statistically significant empirical relationship between concentration levels and the duration of collusion.[16] But this is not because concentration is unimportant. As we have documented previously, the distribution of concentration among observed colluding markets is highly skewed toward markets with very high concentration.[17] When we study explicit collusion, we observe only those markets where collusion has been attempted and discovered. Thus, we are observing something that has extreme left censoring, almost surely significantly reducing the variation in concentration levels for statistical analysis. The relationship between concentration and collusion is not easily captured by standard econometric specifications, which presume a one-to-one relationship between concentration (and other potential determinants) and collusion.

As argued by Professor John Sutton, the likelihood of coordinated effects is more accurately captured by what is known as a "bounds" relationship.[18] Once concentration has reached some minimum bound, whether coordinated effects exist depends on a host of factors, including the market's history and firm beliefs and behaviors, as well as cost, demand, and technology.[19] The problem is not that a scientific approach is lacking; the problem is that the science has identified a more

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[16] *Id*. at 479–80 (discussing econometric model results of the determinants of cartel break-up. "[W]e find that neither industry concentration nor the number of cartel members has a systematic impact on the likelihood of antitrust death . . . . Half of the cartels in the sample have a [four-firm concentration ratio] of 80 percent or above."). For a broader review of the empirical literature on the relationship between cartel prevalence, industry concentration, and the number of firms, see Levenstein & Suslow, *Cartel Success*, *supra* note 4, at 57–61.

[17] Levenstein & Suslow, *Cartel Duration*, *supra* note 4, at 470 ("The cartels in our sample occur predominantly in very highly concentrated industries. The mean industry four-firm concentration ratio (C4) is 75 percent: two-thirds of the cartels were in industries with a C4 of 75 percent or more. The existence of some cartels with a large number of participants is not as paradoxical as it may seem: many cartels with a large number of firms rely on the active involvement of a trade association." (footnote omitted)).

[18] JOHN SUTTON, SUNK COSTS AND MARKET STRUCTURE: PRICE COMPETITION, ADVERTISING, AND THE EVOLUTION OF CONCENTRATION 21 (1991) ("The theory predicts only a *lower bound* to equilibrium concentration levels.").

[19] *See generally* David M. Kreps & Robert Wilson, *Sequential Equilibria*, 50 ECONOMETRICA 863, 863 (1982) (showing that industry equilibria depend on beliefs).

complicated relationship than standard statistical tools support.[20] This has been noted by scholars such as Professors Daniel Sokol and Sean Sullivan, who point to the misplaced desire for "predictive precision in merger challenges,"[21] as well as Professor Robert Porter, who comments that coordinated effects, unlike unilateral effects, "do not lend themselves to a standardized quantitative merger review procedure . . . ."[22] Price and quantity outcomes in oligopolistic markets are fundamentally indeterminant because there are multiple possible equilibria, with hurdles to maintaining any particular one.[23]

If the question is, Does an increase in concentration give rise to explicit rather than tacit collusion? The answer is, It depends. Moreover, it depends on highly idiosyncratic industry factors. If the question is, Does an increase in concentration undermine competition? The answer is, Highly concentrated industries are prone to coordinated effects. Moderately concentrated oligopolies should not be overlooked; explicit cartel attempts may become successful tacit collusion as firms develop "sophisticated and flexible" mechanisms for softening competition.[24] In less concentrated markets, achieving a successful collusive outcome is less likely. Explicit communication is often necessary, as tacit coordination may be insufficient.

II. Lessons from Explicit Collusion: Market History

Analysis of a proposed merger generally begins by examining the likely impact on market concentration, as measured by the Herfindahl-Hirschman Index ("HHI").[25] The 2023 Guidelines return to the stricter HHI thresholds of the 1982 Merger Guidelines. The earlier guidelines recommend an investigation when the current HHI exceeds 1800 and the

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[20] *See, e.g.,* Sokol & Sullivan, *supra* note 2, at 313–14 ("[T]he demand for predictive precision in merger challenges drives enforcers to favor unilateral effects theories over coordination theories. The unlikely reason for this asymmetry is an artifact of mathematical game theory. The models typically used to justify unilateral effects predictions happen—when bolstered by simplifying assumptions—to admit unique equilibria. If economists are willing to assume that firms behave according to equilibrium strategies both before and after a merger, then one can express the predicted effects of a merger as the difference between two deterministic states of play." (footnote omitted)).

[21] *Id.*

[22] Robert H. Porter, *Mergers and Coordinated Effects*, 73 INT'L J. INDUS. ORG., article 102583, Dec. 2020, at 1, 13.

[23] *See, e.g.*, *id*. at 3–4 (providing a brief overview of the theory of collusion, the key obstacles to collusion, and the ambiguity around how cartel member firms choose among the possible equilibria and mechanisms to enforce the agreement).

[24] Levenstein & Suslow, *Cartel Success*, *supra* note 4, at 67, 69–70 (discussing the role of trade associations or other third-party firms that can facilitate information exchange for the cartel members, especially when the cartel members are numerous). For further details, see Levenstein & Suslow, *Cartel Duration*, *supra* note 4, at 474–75.

[25] 2023 MERGER GUIDELINES, *supra* note 1, at 5–6.

proposed merger would increase HHI by more than 100.[26] Still, coordination can occur in markets that do not cross those designated HHI thresholds if there is a history of collusion or other facilitating market features. When firms act in concert, threats to competition can occur at lower concentration levels.

A. *Market History*

Section 2.3.A. of the 2023 Guidelines, "Prior Actual or Attempted Attempts to Coordinate," recognizes the importance of identifying such attempts, stating, "Evidence that firms representing a substantial share in the relevant market appear to have previously engaged in express or tacit coordination to lessen competition is highly informative as to the market's susceptibility to coordination."[27] Firms that engage in explicit collusion, whether successful or not, demonstrate a willingness to expend resources to dampen competition. This motivation is likely to persist as a priority. Additionally, firms that have engaged in explicit collusion have valuable experience that lowers the challenges of engaging in tacit collusion.[28]

Cartel prosecutions of the last few decades have provided numerous examples of mergers among former cartel participants. While the suggestion above that regulators should not permit mergers among recent co-conspirators may seem obvious, such mergers have occurred. The following sections detail several such examples in the European Union ("EU") and the United States, based on our work and that of other cartel researchers.

1. Vitamins

The vitamins cartels, operating in the 1990s and famous for their international scope, provide an interesting sequence of events between collusion, merger, and antitrust intervention. Although numerous companies participated across a wide swath of vitamins, the three leading firms in the majority of the vitamins cartels were BASF Aktiengesellschaft (Germany), F. Hoffmann-La Roche Ltd. (Switzerland), and Rhone-Poulenc SA (France). In May 1999, the DOJ announced the first guilty pleas and half-billion-dollar fines in this conspiracy, naming Rhone-Poulenc and BASF as cartel participants.[29] In the same month, Rhone-Poulenc wrote to

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[26] *Id.*; U.S. DEP'T OF JUST., 1982 MERGER GUIDELINES 14–15 (1982).

[27] 2023 MERGER GUIDELINES, *supra* note 1, at 9.

[28] *See generally* Barbara Alexander, *The Impact of the National Industrial Recovery Act on Cartel Formation and Maintenance Costs,* 76 REV. ECON. & STAT. 245, 245–47 (1994) (discussing how cartel participants gained collusive experience under the NIRA's period of permissiveness toward cartels that then dampened competition after the NIRA was declared unconstitutional).

[29] Press Release, U.S. Dep't of Just., F. Hoffmann-La Roche and BASF Agree to Pay Record Criminal Fines for Participating in International Vitamin Cartel (May 20, 1999)

the EC requesting amnesty for fixing prices for a number of vitamins. The Commission began investigating the vitamin markets shortly thereafter.[30] In September 1999, Takeda pled guilty to U.S. charges for participating in the vitamin cartel.[31]

By the time the EC's decision was released in 2001, the vitamin industry had significantly consolidated. Rhone-Poulenc and Hoechst merged to form Aventis in December 1999. Takeda then announced in July 2000 that it was exiting the vitamins market and selling its vitamins capacity to BASF.[32] Within less than a year, four key players in the international vitamin cartel had been reduced to two.

2. Copper Tubes

The copper plumbing tubes industry presents another example of a merger between former cartel members.[33] In 2003, two years after the cartel's prosecution, the EC approved a merger between two former cartel firms.[34] This approval came one week before the EC fined one of these firms for participating in a separate copper tubes cartel, and nine months before the EC fined both parties for participating in the original copper tubes cartel.[35]

3. Chemicals (Hydrogen Peroxide, Perborate, and PMMA)

There are yet other merger cases where the antitrust authorities were probably unaware of ongoing collusive activity. In the hydrogen peroxide and perborate case, for example, participating firms merged as the cartel

(https://perma.cc/G98A-3XGC). *See also* Harry First, *The Vitamins Case: Cartel Prosecutions and the Coming of International Competition Law*, 68 ANTITRUST L.J. 711, 714 (2001) ("On May 20, 1999, the Department released informations and plea agreements involving F. Hoffmann-LaRoche Ltd. and BASF Aktiengesellschaft, the former a major pharmaceutical manufacturer with headquarters in Switzerland (its ultimate parent is a Swedish holding company) and the latter a major German chemical manufacturer. . . . The conspiracy . . . involved vitamins A, B2 (riboflavin), B5 (CalPan), C, E, and beta carotene.").

30 2003 O.J. (L 6) ¶¶ 124–142, Case COMP/E-1/37.512—Vitamins, Comm'n Decision (Nov. 21, 2001).

31 Press Release, U.S. Dep't of Just., Three Japanese Companies Agree to Plead Guilty, Pay Criminal Fines, for Participating in International Vitamin Cartel (Sept. 9, 1999) https://perma.cc/X75T-AAXR.

32 *See, e.g.*, *BASF, Takeda Merge Bulk Vitamin Operations*, NAT. PRODS. INSIDER (July 28, 2000), https://perma.cc/L6VE-ENBK.

33 *See generally* 2004 O.J. (L 192) ¶ 2, Case C.38.069—Copper Plumbing tubes, Comm'n Decision (Sept. 3, 2004).

34 Margaret C. Levenstein & Valerie Y. Suslow, *Constant Vigilance: Maintaining Cartel Deterrence During the Great Recession*, 6 COMPETITION POL'Y INT'L 145, 154 (2010) [hereinafter Levenstein & Suslow, *Constant Vigilance*].

35 *Id.*

fell apart. From 1994 to 2000, Degussa, Solvay, and Ausimont all colluded to fix the price of hydrogen peroxide.[36] In 2001, Degussa and Ausimont formed a 50-50 joint venture, MedAvox, a producer of perborate (and a consumer of hydrogen peroxide).[37] In 2001, Solvay agreed to purchase Ausimont, and press releases announced its completion in May 2002.[38] The merger was approved by the EC in September 2002 on the condition that Solvay sell Ausimont's hydrogen peroxide business and its share of MedAvox to Degussa.[39] Three months later, Degussa applied for immunity in the hydrogen peroxide and perborate cartels, leading the EC to launch dawn raids in March 2003.[40]

One interpretation of the industry restructuring in the early 2000s is that, as the hydrogen peroxide and perborate cartel collapsed, Solvay and Degussa divided Ausimont up between them. This was done not simply with the EC's blessing, but under EC orders. In addition, two other cartel members (Total and Elf Aquitaine) merged during the cartel period.[41] This raises suspicion that, as the cartel encountered more problems, it worked to control competition through structural change (merger) rather than through implicit or explicit agreements.

To add complexity, this was not the first time that firms producing hydrogen peroxide had colluded to fix prices and allocate national markets.[42] It is not uncommon to find a sequence of actions in a market where firms engage in collusion, collusion is disrupted, and then sometime later, a new cartel is formed.[43] As suggested in the 2023 Guidelines, regulators should be very skeptical of proposed mergers in such industries.

The polymethyl methacrylate ("PMMA") market presents a different twist on post-cartel prosecution restructuring. PMMA is a chemical with various uses, including in weather-resistant paints. The PMMA cartel operated from approximately 1997 to 2002, and cartel fines were issued

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[36] 2006 O.J. (L 353) ¶¶ 2–6, Case COMP/F/C.38.620—Hydrogen Peroxide and perborate, Comm'n Decision (May 3, 2006).

[37] *Id.* ¶ 27.

[38] *Id*. ¶¶ 29, 48.

[39] *Id*. ¶ 27; *see also* Commission of the European Communities, Case COMP/M.2690—Solvay Montedison-Ausimont, Merger Procedure Article 6(1)(b) and 6(2) Decision, Public Version ¶ 85 (Apr. 9, 2002), https://perma.cc/UAD7-N97L ("More specifically, the market structure indicates that only Degussa will be in a position to compete effectively against the new entity.").

[40] 2006 O.J. (L 353) ¶ 63, Case COMP/F/C.38.620—Hydrogen Peroxide and perborate, Comm'n Decision (May 3, 2006).

[41] *See* Registration Document 2014, *Merger of TotalFina with Elf Aquitaine*, TOTAL (2014), https://perma.cc/Y2CE-8Y62 (indicating that Total S.A. and Elf Equitaine agreed to merge in 1999).

[42] 2006 O.J. (L 353) ¶ 23, Case COMP/F/C.38.620—Hydrogen Peroxide and perborate, Comm'n Decision (May 3, 2006) (referring to a 1984 EC decision where fines were imposed on five firms, including Solvay and Degussa).

[43] Levenstein & Suslow, *Cartel Success*, *supra* note 4, at 52–57.

by the EC in 2006.[44] Although there were no direct mergers, within several years after the cartel broke up, multiple cartel members consolidated into one firm.[45]

4. Graphite Electrodes

Antitrust agencies have, in some cases, provided useful oversight of post-cartel industry restructuring. For example, after the graphite electrodes cartel fell apart and member firms faced fines, one of the conspiring firms declared bankruptcy.[46] As part of the court's bankruptcy proceeding, one former cartel member placed a bid to acquire another former cartel partner.[47] The DOJ brought this to the bankruptcy court's attention and another bidder was selected.[48]

B. *History Lessons for Competition Authorities*

These examples of mergers between cartel members have a basic lesson for merger policy: when conducting (or considering conducting) a merger review, regulators should talk to their sister regulators in the anti-cartel division. While we understand that such consultations occur, these examples highlight the need for increased inter- and intra-agency communication. If authorities are aware of recent convictions for, investigations of, suspicions of, or attempts at collusive activity, mergers should be denied unless there are compelling reasons for an exception.

More challenging but equally important is the strategic use of mergers by ongoing cartels. Merger guidelines have long recognized the potential anticompetitive impact of acquiring mavericks, and this is reflected in the 2023 Guidelines as one of the "primary factors" that could lead the DOJ or Federal Trade Commission ("FTC") to conclude that a merger "materially increases the risk of coordination . . . ."[49] Even where firms are not known to be aggressive mavericks, a growing fringe can pose

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[44] 2006 O.J. (L 322) ¶¶ 2, 28–29, Case COMP/F/38.645—Methacrylates, Comm'n Decision (May 31, 2006).

[45] *See generally* Registration Document 2014, *supra* note 41; *RAG Announces Complete Takeover of Degussa*, CHEMEUROPE (Dec. 21, 2005), https://perma.cc/LCT2-JYNH; *Akzo Nobel Completes ICI Acquisition, Restructures Organization*, PAINT & COATINGS INDUS. (Jan. 2, 2008), https://perma.cc/FA34-X75S.

[46] *See* 2002 O.J. (L 100) ¶¶ 1, 184, Case COMP/E-1/36.490—Graphite electrodes, Comm'n Decision (July 18, 2001); *see also* Levenstein & Suslow, *Constant Vigilance*, *supra* note 34, at 154 ("The DOJ filed an antitrust lawsuit to prevent SGL, a co-conspirator in the cartel, from acquiring Carbide/Graphite Group [which had filed for Chapter 11 bankruptcy protection]. The bankruptcy court judge awarded the assets of Carbide/Graphite Group to another company and the DOJ dismissed its lawsuit.").

[47] *See* Levenstein & Suslow, *Constant Vigilance*, *supra* note 34, at 154.

[48] *Id.*

[49] 2023 MERGER GUIDELINES, *supra* note 1, at 8.

a threat to collusion and to tacit coordination. In some instances, cartel members resolve this threat to the stability of their collusive agreements by assigning these smaller firms to specific cartel members as acquisition targets. For example, the organic peroxide producers "agreed that each of them would purchase [a] competitor. Akzo agreed to acquire . . . Nobel and Enichem. Laporte would purchase Aztec."[50]

In summary, as these illustrations show, investigations and challenges to mergers should be undertaken at lower concentration levels in markets with a history of collusion.

C. *Interaction of Cartel and Merger Policies*

Where there is strict enforcement of explicit coordination and relatively weak enforcement of mergers, firms may turn to mergers to reduce competition. This can arise as a sequencing problem in the evolution of competition policy. For example, Professors Naomi Lamoreaux and George Bittlingmayer demonstrate that the merger wave of the 1890s—after the passage of the Sherman Act in 1890 and before the 1914 Clayton Act—was largely intended to reduce competition in markets where explicit collusion had been common and was no longer permitted.[51] As described by Bittlingmayer:

> Perhaps as much as one-half of U.S. manufacturing capacity took part in mergers during the years 1898 to 1902. These mergers frequently included most of the firms in an industry and often involved firms that had been fixing prices or that had been operated jointly through the legal mechanism of an industrial trust . . . . The Sherman Antitrust Act was passed in 1890, and the first crucial decisions making price fixing illegal—*Trans-Missouri* (1897), *Joint Traffic* (1898), and *Addyston* (1899)—occurred just before or during the first stages of the merger wave. Merger of competing firms remained unchallenged until 1904.[52]

Professor George Symeonidis's 2002 study of Britain's adoption of an anti-cartel policy in the 1950s and 1960s finds a similar pattern.[53]

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[50] 2003 O.J. (L 110) ¶ 271, Case COMP/E-2/37.857—Organic peroxides, Comm'n Decision (Dec. 10, 2003), https://perma.cc/7LHA-9YYQ; *see also* Levenstein & Suslow, *Cartel Duration*, *supra* note 4, at 472 (discussing organic peroxides cartel's collusive activities and comparing its behavior to that of John D. Rockefeller's Standard Oil acquisitions to eliminate competition).

[51] *See generally* Naomi R. Lamoreaux, THE GREAT MERGER MOVEMENT IN AMERICAN BUSINESS, 1895–1904, 87 (1985); George Bittlingmayer, *Did Antitrust Policy Cause the Great Merger Wave?*, 28 J.L. & ECON. 77, 77–78 (1985); *see also* Vikram Kumar, Robert C. Marshall, Leslie M. Marx & Lily Samkharadze, Cartel Versus Merger 6 (May 22, 2012) (unpublished manuscript) (on file with the Human Capital Foundation) (listing "[e]vidence of the pattern of collusion followed by merger" and mergers from 1891 to 1903); Levenstein & Suslow, *Cartel Success*, *supra* note 4, at 83–84.

[52] Bittlingmayer, *supra* note 51, at 77.

[53] GEORGE SYMEONIDIS, THE EFFECTS OF COMPETITION: CARTEL POLICY AND THE EVOLUTION OF STRATEGY AND STRUCTURE IN BRITISH INDUSTRY 146 (2002) ("[O]n average, [anti]cartel policy in the UK raised the five-firm concentration ratio by about six to seven percentage points between 1968 and 1975.").

The United States and EU clearly have policies in place addressing both collusion and mergers, but the historical studies continue to be relevant. There are currently differences in the relative robustness of enforcement between the two types of policies. The relative strictness of anti-collusion policies versus merger oversight continues to adversely affect competition. Professors Kai Hüschelrath and Florian Smuda provide empirical evidence of this issue in their analysis of seventy-three EC cartel cases decided between 2000 and 2011, where they found that horizontal merger transactions increased by eighty-three percent in the three years after cartel breakdown compared to the three years prior.[54] In a subsequent paper analyzing a similar sample of EC cases from 1990 to 2012, Professors Stephen Davies, Peter Ormosi, and Martin Graffenberger "find that mergers are indeed more frequent after cartel breakdown, especially in markets that are less concentrated. . . . confirm[ing] that after a cartel breaks down, there is typically a period of increased merger activity among the former cartelists."[55] Looking at a similar set of EC cartel and merger cases, Professor Leslie Marx and Dr. Jun Zhou conclude that "ex-conspirators often try to restore the status quo by merging."[56]

Moreover, as mentioned in the introduction of this Article, legal scholars and economists have pointed to a trend of increased focus in merger enforcement on potential unilateral rather than coordinated effects. Sokol and Sullivan document a decline in emphasis on coordinated effects in U.S. merger reviews since the 1990s.[57] This lack of enforcement has allowed increases in concentration that in turn facilitate tacit coordination.[58] Dominance that would be prohibited if it were the

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[54] Kai Hüschelrath & Florian Smuda, *Do Cartel Breakdowns Induce Mergers? Evidence from EC Cartel Cases*, 9 EUR. COMPETITION J. 407, 408, 416 (2013).

[55] Stephen Davies, Peter L. Ormosi & Martin Graffenberger, *Mergers After Cartels: How Markets React to Cartel Breakdown*, 58 J.L. & ECON. 561, 561, 581 (2015). A 2014 study by these researchers found that of a sampled eighty-three mergers among former collusive partners, twenty-five were investigated by the EC. Eighteen of those mergers were cleared without remedies and seven were approved with remedies. An additional sixteen of the sampled mergers were investigated by a national competition authority; all were cleared without remedies. The remaining forty-two mergers were not investigated primarily because they were too small to warrant further review. *See* Stephen Davies, Peter L. Ormosi & Martin Graffenberger, *Mergers After Cartels: How Markets React to Cartel Breakdown* 27 (ESRC Ctr. Competition Pol'y, Working Paper No. 14-1, 2014).

[56] Leslie M. Marx & Jun Zhou, The Dynamics of Mergers Among (Ex)Co-Conspirators in the Shadow of Cartel Enforcement 4 (Mar. 12, 2015) (unpublished manuscript) (on file with author).

[57] Sokol & Sullivan, *supra* note 2, at 271 ("For decades, mergers risking coordinated effects were challenged, enjoined, and unwound under Section 7 of the Clayton Act. Indeed, coordinated effects challenges were the [principle] focus of merger enforcement before the 1990s." (footnote omitted)).

[58] *See*, *e.g.*, John Kwoka, Reviving Merger Control: A Comprehensive Plan for Reforming Policy and Practice 2 (Oct. 9, 2018) (unpublished manuscript) (on file with the American Antitrust Institute) ("A considerable number of economists, policymakers, and others have come to argue that these dueling perspectives have resulted in antitrust policy and practice that have been too permissive, in particular allowing mergers and other practices that have resulted in significant increases in concentration and considerable harm to consumers."); *see also* Jonathan B. Baker & Joseph Farrell,

result of a "merger to monopoly"[59] or the result of explicit coordination becomes possible and difficult to challenge when it occurs tacitly in highly concentrated industries. As Sokol and Sullivan argue:

> Despite the certain illegality of [explicit collusion, and despite] the risk of jail time for those caught participating in it, the lure of collusive profits is great enough to motivate competitors to take the gamble of joining collusive schemes. If firms are willing to take that big a risk for the chance to coordinate with their competitors, imagine how many more must be willing to take the comparatively riskless path of incrementally concentrating markets until they reach a point where coordination becomes possible without the need for illegal agreements.[60]

Unlike the historical examples discussed above, where firms accomplished through merger what they were not permitted to do through explicit collusion, we now see firms threading a needle—not merging for monopoly or collusion, but rather executing legal mergers that result in tighter oligopolies. According to Sokol and Sullivan:

> Starting around the release of the 1992 Horizontal Merger Guidelines, coordinated effects enforcement quietly faded from merger control. A study of Federal Trade Commission (FTC) investigations suggests that coordinated effects declined from being the primary focus of almost all merger reviews in the 1980s to being the primary concern of agency attorneys in only around 15% of significant investigations in recent years.[61]

EU merger reviews present a similar pattern of reduced coordinated effects challenges. The EU introduced merger policies in 1989, concurrent with the start of the reduced emphasis on coordinated effects in merger reviews in the United States. Stephen Davies' and Professor Matthew Olczak's analysis of 2,400 EU mergers between 1990 and 2004 finds a "non-trivial discussion of . . . collective dominance" in sixty-two merger reports.[62] They find that the "EC actually intervened in only 25 of these mergers: the merger was prohibited in four cases and allowed to proceed in 21 cases (subject to remedies in one or more markets)."[63] Looking forward in time, past their primary sample period, they find the trend continued:

> After the Commission revised its Merger Regulation in May 2004 (up to mid 2007), there were 13 mergers [with a] non-trivial discussion of coordinated effects (which has now displaced collective dominance as preferred terminology) and a remedy imposed in one

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Oligopoly Coordination, Economic Analysis, and the Prophylactic Role of Horizontal Merger Enforcement, 168 U. PA. L. REV. 1985, 1991 (2020).

59 *Competitive Effects*, FED. TRADE COMM'N, https://perma.cc/Y5KJ-9HBN ("A merger may also create the opportunity for a unilateral anticompetitive effect. This type of harm is most obvious in the case of a merger to monopoly—when the merging firms are the only competitors in a market.").

60 Sokol & Sullivan, *supra* note 2, at 285 (footnote omitted).

61 *Id.* at 271 (footnote omitted).

62 Stephen Davies & Matthew Olczak, *Tacit Versus Overt Collusion Firm Asymmetries and Numbers: What's the Evidence?*, 4 COMPETITION POL'Y INT'L 175, 186 (2008).

63 *Id.* at 187.

> or more markets. Strikingly, of the 274 markets covered by these mergers, in only two has the Commission justified an intervention citing the possibility of coordinated effects.[64]

This policy alignment between the United States and the EU has likely been a contributing factor to increases in global concentration in narrowly defined markets that can be susceptible to tacit coordination. Thus, there is a need for vigilance toward coordinated effects in merger reviews: without vigilance, but with strong prohibitions on explicit collusion, firms have an incentive to merge to facilitate tacit collusion.

III. Lessons from Explicit Collusion: Market Mechanisms that May Facilitate Coordination

A. *Information Sharing*

Firms that interact regularly in market-wide organizations or activities are more able to effectively dampen competition. The 2023 Guidelines note that "aligned incentives" may increase the likelihood of coordinated effects following a merger.[65] Sometimes, incentives are aligned because the human beings who run these firms have a shared identity, which is more likely to emerge from multiple interactions.[66] In other cases, industry organizations create market institutions or norms that align economic incentives (e.g., where jointly produced price indexes are used in contracts that limit incentives to cut prices).[67] More generally, shared information, while not entirely aligning incentives, gives firms better information about how competitors may react, which in turn can soften the intensity of competition. An example of the latter may result from research and development joint ventures or the use of the same distribution channels. As noted in the 2023 Guidelines, sharing information can increase market observability and therefore discourage robust competition.[68]

In markets where established practices facilitate information sharing and the formation of a common sense of purpose, mergers should be carefully scrutinized for potential coordinated effects. For example,

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[64] *Id.* at 190.

[65] 2023 MERGER GUIDELINES , *supra* note 1, at 9–10 (listing "Aligned Incentives" as one of the "Secondary Factors" examined by the DOJ and FTC to determine whether "a merger may meaningfully increase the risk of coordination, even absent primary risk factors").

[66] George A. Akerlof & Rachel E. Kranton, *Economics and Identity*, 115 Q.J. ECON. 715, 730 (2000) (modeling "the connection between economic interactions and the psychology of identity").

[67] *See* Danial Asmat, Margaret C. Levenstein, Valerie Y. Suslow & Zhihan (Helen) Wang, *Swimming in Pools: Collusion in the Salmon Market*, 68 ANTITRUST BULL. 137, 145 (2023) (discussing how a public price index can become "the basis for determining state-contingent prices in (some) long-term forward contracts" which may then be manipulated strategically by colluding firms).

[68] 2023 MERGER GUIDELINES, *supra* note 1, at 9 (listing "Market Observability" as a secondary factor).

industry trade associations or export associations share information and provide opportunities for regular interaction. Standard-setting boards or convenings provide similar points of contact. Standards can be welfare-improving if they facilitate technical innovation, but they can also create barriers to entry or constitute an agreement not to compete in some aspect of product quality or innovation.[69]

In the 1990s, the pre-insulated (steel) pipes cartel used standard-setting to control emerging competition in the market. According to the EC decision, cartel leader ABB set up the European District Heating Pipe Manufacturers Association with the purported objective of assuring product quality and providing technical assistance.[70] ABB, in fact, ran the association and required compliance with its stated technical standards, including a prohibition on the use of a new technology introduced by Løgstør, another cartel member, that would have significantly reduced Løgstør's production costs.[71] Once the EC investigation was underway, ABB and other cartel member firms abandoned the standards organization.[72]

Firms may also interact via the development and oversight of price indexes that provide mechanisms for information sharing or coordination.[73] Price indexes can be hardened into contracts in ways that

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[69] This general point relates to the literature on raising rivals' costs. The classic statement of this problem is presented in Steven C. Salop & David T. Scheffman, *Raising Rivals' Costs*, 73 AM. ECON. REV. 267, 267–70 (1983).

[70] 1999 O.J. (L 24) ¶ 19, Case No IV/35.691/E-4—Pre-Insulated Pipe Cartel, Comm'n Decision (Oct. 21, 1998).

[71] *Id.* ¶ 11.

[72] *Id.* ¶¶ 5, 19 (documenting the critical nature of standards in this industry, as "quality norms [are] fixed with the cooperation of manufacturers, customers and standards authorities"). The EC decision goes on to describe how Løgstør, a cartel member, was an innovative company, "the first producer to introduce a continuous production process: it claims to have reduced cost price by some 15 to 20% compared with traditional manufacturing techniques using the batch process." *Id.* ¶ 11. This did not sit well with ABB, the cartel leader, as well as other cartel members who "insisted on the retention of the old standards regarding jacket thickness and foam density." *See Id.* ABB also set up the European District Heating Pipe Manufacturers Association with the purported objective of assuring product quality and providing technical assistance. The association was in fact run by ABB and required compliance with its stated technical standards. Once the EC investigation was underway, ABB terminated its membership as did the other cartel member firms. *Id.* ¶ 19. The graphite electrodes cartel presents a similar example. *See* Margaret Levenstein & Valerie Y. Suslow, *Contemporary International Cartels and Developing Countries: Economic Effects and Implications for Competition Policy*, 71 ANTITRUST L.J. 801, 834 (2004) ("Evidence points to some sharing of technical information between cartel members. According to the Mitsubishi trial documents, there was a 'technological exchange' between SEC and UCAR (an 'agreement' that entailed an exchange of visits of 'technical people' between the two firms' plants).").

[73] Asmat et al., *supra* note 67, at 145 (discussing the design of price indexes to facilitate coordination); *see also* Margaret C. Levenstein & Valerie Y. Suslow, *Strategic Use of Public Price Indexes as a Collusive Device*, CPI ANTITRUST CHRON., July 2023, at 1, 3–9.

align incentives and discourage competition.[74] Price indexes can also make individual firm actions more observable (or inferable).[75] Thus, public price indexes make markets more susceptible to coordinated effects.

In some cases, government regulatory or statistical bodies provide opportunities to share information. In the 1920s, the FTC encouraged firms to use standardized methods to calculate their costs in order to limit competition.[76] Whether public or privately organized, these kinds of collective sharing of practices may set the stage for less intense competition between market players. Mergers in markets where firms have many such opportunities for interaction should be scrutinized more heavily than in cases where firms have acted more autonomously.

As a final example, consider firms with common ownership or common lenders. Common ownership by passive investors may align incentives and has been shown to increase prices in some industries.[77] Analogously, having a common lender may align incentives. Of course, firms benefit from the industry expertise of specialized lenders, investors, or both. Even so, common lenders can facilitate cooperation between firms by receiving and sharing information about strategy and costs even when there is no direct communication between the borrowers.[78]

Each of these activities or practices is perfectly legitimate in and of itself. They do, however, provide employees in these firms with an opportunity to get acquainted and share information about expectations, beliefs, and market trends that make it easier to forecast one another's

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[74] Andrew Verstein, *Benchmark Manipulation*, 56 B.C. L. REV. 215, 217 (2015) ("Once the benchmark is hardwired into legal relationships, manipulating the proxy pays off just as much as manipulating the underlying reality.").

[75] Prices indexes are derived from individual prices submitted by firms. Sharing information about the average value of any number provides some information about the component values of the average. Where there are a small number of firms, the average can provide economically significant information.

[76] MARGARET LEVENSTEIN, ACCOUNTING FOR GROWTH: INFORMATION SYSTEMS AND THE CREATION OF THE LARGE CORPORATION 35 (1998) describes how the "Federal Trade Commission . . . advocated the use of uniform cost accounting systems in order to prevent 'cut-throat competition.'" By 1920 there were sixty-nine industry-wide uniform cost accounting systems created as part of this initiative. *Id.* "The Interstate Commerce Commission and the Federal Reserve Board also promoted the adoption of uniform accounting systems in their respective fields." *Id.* at 221 n.30.

[77] *See, e.g.*, José Azar, Martin C. Schmalz & Isabel Tecu, *Anticompetitive Effects of Common Ownership*, 73 J. FIN. 1513, 1518, 1553 (2018). Passive investors have less opportunity for the development of a shared purpose. Common ownership by passive investors may present less of a threat to competition than where owners interact frequently. *Id.*

[78] *See, e.g.*, Amory Invs. LLC v. Utrecht-America Holdings, Inc., 74 F.4th 525, 526 (7th Cir. 2023). In *Amory Investments*, "[t]hird-party discovery . . . turned up evidence that Rabobank, a lender to several broiler-chicken producers, urged at least two of them to cut production." *Id.* Ultimately, the Seventh Circuit Court of Appeals affirmed the judgment in favor of Rabobank because Rabobank acted unilaterally. *Id.* at 527. No evidence indicated that Rabobank explicitly coordinated the chicken producers' behavior. *Id.* at 526–27. Its unilateral actions gave each producer parallel guidance, which can reduce the intensity of competition, even without explicit collusion. *Id.*

reactions to market movements. These activities create a bond among the sellers. As articulated by a member of the lysine cartel, "Our competitors are our friend. Our customers are the enemy!"[79]

B. *Multi-Market Contact*

The 2023 Guidelines raise the point that in some markets, "incentives might be aligned or strengthened when firms compete with one another in multiple markets ('multi-market contact')."[80] Multi-market contact can align incentives by creating the potential for reciprocity. As the 2023 Guidelines acknowledge, "[F]irms might compete less aggressively in some markets in anticipation of reciprocity by rivals in other markets."[81] Economists have shown that this type of mutual forbearance can help to sustain collusion when firms interact in multiple markets because "a deviator in one market is punished in all markets."[82]

Multi-market contact also provides multiple mechanisms to support collusion or coordination. For example, cartels may choose to target markets that are particularly valuable for deviators and less costly for punishers, rather than punishing in all markets.[83] In the citric acid cartel,

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[79] *See, e.g.*, Scott D. Hammond, Dir. of Crim. Enf't, Antitrust Div., U.S. Dep't of Just., Speech for the International Law Congress 2001: The Fly on the Wall Has Been Bugged—Catching an International Cartel in the Act 1 (May 15, 2001) (https://perma.cc/Z9KP-RFC8) (describing video tapes of the lysine cartel).

[80] 2023 MERGER GUIDELINES, *supra* note 1, at 10.

[81] *Id.*

[82] John Asker & Volker Nocke, *Collusion, Mergers, and Related Antirust Issues* 27 (Nat'l Bureau of Econ. Rsch., Working Paper No. 29175, 2021) (emphasis omitted). For the classic theoretical article on this topic, *see generally* B. Douglas Bernheim & Michael D. Whinston, *Multimarket Contact and Collusive Behavior*, 21 RAND J. ECON. 1 (1990).

[83] For examples of empirical case studies investigating the effects of multimarket contact, see generally William N. Evans & Ioannis N. Kessides, *Living by the "Golden Rule": Multimarket Contact in the U.S. Airline Industry*, 109 Q.J. ECON. 341 (1994). *See also* Federico Ciliberto & Jonathan W. Williams, *Does Multimarket Contact Facilitate Tacit Collusion? Inference on Conduct Parameters in the Airline Industry,* 45 RAND J. ECON. 764, 764 (2014); Srabana Gupta, *The Effect of Bid Rigging on Prices: A Study of the Highway Construction Industry*, 19 REV. INDUS. ORG. 453, 453 (2001); Margaret C. Levenstein, *Do Price Wars Facilitate Collusion? A Study of the Bromine Cartel Before World War I,* 33 EXPLS. ECON. HIST. 107, 127 (1996) (quoting a 1906 letter from Herbert Dow, founder of the Dow Chemical Company, describing geographic retaliation by German chemical manufacturers: "Formerly the Germans had the monopoly of the business of the whole world outside of the United States, and . . . [Dow] went after that trade, as it was quite profitable. The Germans resented it and . . . reduced their price throughout Europe to 27 cents. . . . [B]ut when they found that our foreign business was increasing they took the very radical step of making a 15 cent price in the United States, on which they paid a 7 cent import duty, and also had considerable selling expense.") (second ellipses in original); Ajay Bhaskarabhatla, Chirantan Chatterjee & Bas Karreman, *Hit Where It Hurts: Cartel Policing Using Targeted Sales and Supply Embargoes*, 59 J.L. & ECON. 805, 805–09 (2016) (discussing asymmetric punishment strategies employed by a cartel composed of retail pharmaceutical traders in India and an overview of findings in prior empirical cartel research on targeted punishments).

for example, cartel members took action "against Chinese manufacturers, who had increased their exports to the European market . . . . The cartel participants tried to regain some of the customers lost to the Chinese suppliers through a concerted and carefully targeted price war."[84] Cartels operating in multiple markets have also been known to share profits or absorb fluctuations in demand across markets, such as different geographic regions, that might otherwise disrupt a collusive equilibrium.[85]

C. *Large Customers*

Collusive firms that interact with competitors in multiple markets (geographic or product) may be insulated from disruption even from large customers that could otherwise demand lower prices. Section 4.2.C. of the 2023 Guidelines notes that mergers that reduce the number of firms bargaining for a customer's business may be problematic.[86] Firms interacting with *customers* in multiple product markets may have significantly greater leverage than single-product firms. Customers are less likely to replace a supplier who increases its price if they depend on that supplier for a range of products. This helps explain why—in our studies of explicit collusion—we have found that even large customers are often ineffective disruptors to collusion.[87] For example, very large multiproduct food manufacturers were important customers of the members of the vitamin cartel.[88] They purchased several different products, not just vitamins, from the large chemical manufacturers that supplied vitamins. The cost of vitamins was a small portion of the total input costs for manufacturing food. Thus, even though the structure of the market may have suggested that these customers should have had significant bargaining power, they made no attempt to disrupt the cartel.[89]

In other cases, large customers, who are themselves oligopolistic producers, are willing to share rents with colluding suppliers (by paying a higher input price) because colluding suppliers engage in price discrimination that favors their large customers. In the sorbates cartel, composed of several large chemical firms, producers set a separate cartel "price for the largest, or 'ultrabig,' purchasers."[90] This, in turn, gave those oligopolistic customers an advantage relative to their own smaller competitors or potential entrants. While this is distinct from multi-

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84 European Commission Press Release IP/01/1743, Commission Fines Five Companies in Citric Acid Cartel at 2 (Dec. 5, 2001).

85 Levenstein & Suslow, *Cartel Duration*, *supra* note 4, at 475–76.

86 2023 MERGER GUIDELINES , *supra* note 1, at 37–38.

87 Levenstein & Suslow, *Cartel Success*, *supra* note 4, at 61–64.

88 *Id*. at 61–62.

89 *See id*. at 61–64; Levenstein & Suslow, *Cartel Duration*, *supra* note 4, at 460–61, 480–82.

90 Levenstein & Suslow, *Cartel Duration*, *supra* note 4, at 460.

market contact, it offers an additional explanation as to why large customers of cartels often do not act as a disruptive force.

D. *Vertical Relationships*

As mentioned in the introduction, our studies of explicit collusion have also identified vertical relationships as important tools in supporting collusion. This suggests that horizontal mergers in markets with vertically integrated firms, or firms with strong vertical ties, can raise unique challenges for sustaining competition. Vertically integrated firms can provide critical monitoring of collusive behavior, both tacit and explicit, making coordinated effects more likely in highly vertically integrated markets.[91] Successful coordinated effects require a barrier to entry which vertical relationships can help to create through brand reputation, information about and relationships with customers, and, more broadly, distribution channels.[92] These vertical information streams can create the observability and incentive alignment discussed in the 2023 Guidelines.

Conclusion

Under current law, once an industry is highly concentrated, competition authorities have few instruments to prevent coordinated effects.[93] Tacit collusion without explicit communication has rarely been

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[91] *See* Margaret C. Levenstein & Valerie Y. Suslow, *Vertical Mergers and Coordinated Effects: Implications for Merger Policy*, CPI ANTITRUST CHRON., Nov. 2022, at 4 ("The specialty graphites cartel also used distributors to monitor sales, making visible transactions, and discouraging cheating that might otherwise limit a cartel's ability to raise price.").

[92] *See, e.g.*, *id.* ("[I]n the haberdashery products cartel, a downstream distributor (Coats) and a vertically integrated producer (Prym) colluded, using the distributors' reputations with customers to prevent entry/expansion by a non-vertically integrated producer (Entaco).").

[93] In some markets or historical circumstances, the government does have opportunities to encourage entry and competition. These include rules around licensing, patents, procurement policies, and government auctions. In some cases the government creates new competition, such as in the post-World War II aluminum industry, as described by F.M. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 533 (2d ed. 1980) (detailing how "the primary [aluminum] ingot supply industry was transformed from a monopoly to a triopoly through the sale of integrated facilities to Reynolds Metals and Kaiser Aluminum" following the monopolization conviction of Alcoa in 1945). Although such structural remedies are rare, antitrust agencies employ other mechanisms to promote a more competitive market environment. For example, the FTC has limited the specificity of signals that firms can use in their public announcements and earnings calls, restricting firms' ability to set shared expectations without explicit communication. *See, e.g.*, *Analysis of Agreement Containing Consent Order to Aid Public Comment*, FED. TRADE COMM'N, https://perma.cc/7ZJR-C4PR ("Previous FTC actions challenging invitations to collude generally have addressed private conversations between the respondent and its competitor. The complaint here alleges that Valassis chose to communicate its offer through a public means. The Commission has concluded that the fact of public communication should not, without more, constitute a defense to an invitation to collude, particularly where market conditions suggest that collusion, if attempted, likely would be successful

challenged successfully under the Sherman Act. Merger reviews are thus often the best opportunity that competition authorities have to protect competition from these coordinated effects.[94] As Professor Carl Shapiro notes: "Merger enforcement is especially important since a wide range of interdependent conduct by oligopolists, i.e., conduct whereby the oligopolists refrain from vigorous competition, is not considered to be illegal if it does not involve an agreement among those oligopolists."[95]

Our analyses of explicit collusion offer insights into when it is most critical for competition authorities to prohibit mergers. Where firms have contact over multiple products or geographic areas, markets are vulnerable to coordinated effects, as are markets where firms share or make public significant information. Vertical ties, whether within or across firms, can facilitate coordination and deter entry. Thus, competition authorities should consider each of these when evaluating potential coordinated effects of a proposed merger.

Industries with histories of collusion are particularly suspect. Experience with explicit collusion facilitates tacit collusion, and cartels have used mergers to stabilize their anti-competitive efforts. In light of this, we recommend a presumption against permitting mergers among firms that have engaged in explicit collusion within the last five years, no matter the existing level or impact of the proposed merger on concentration.[96] This presumption would not ban such mergers, but would require the market and relevant firms to be thoroughly investigated. This would also have the salutary effect of creating an additional disincentive to engage in collusive activity. Even mergers involving non-cartel participants should be carefully investigated for the possibility that the merger is motivated by anticompetitive aims. As we have shown, cartels sometimes engage in strategic acquisitions to maintain control over the market, and these must be prevented.

(here, a durable duopoly)." (footnote omitted)); FED. TRADE COMM'N, FILE NO. P221202, POLICY STATEMENT REGARDING THE SCOPE OF UNFAIR METHODS OF COMPETITION UNDER SECTION 5 OF THE FEDERAL TRADE COMMISSION ACT 12–13 n.71 (2022) (mentioning "invitations to collude" with a listing of FTC challenges and consent orders).

94 Sokol & Sullivan, *supra* note 2, at 277–78 ("[T]he immediate danger of highly concentrated, oligopolistic markets is that they can facilitate [anticompetitive] behavior .... Cooperation can replace competition. But ... antitrust law cannot generally remedy coordinated conduct after it emerges.... Because antitrust can do little to remedy coordination once it takes hold, a fallback strategy has long been to try to prevent coordination from arising in the first place." (footnote omitted)).

95 Carl Shapiro, *Antitrust in a Time of Populism*, 61 INT'L J. INDUS. ORG. 714, 738 (2018).

96 We advocate for this extended period of "merger probation" because a large gap can exist between when a firm engages in collusive activity and when collusion is discovered and punished.