

# ARTICLE

## MAVERICKS, MERGERS, AND EXCLUSION: PROVING COORDINATED COMPETITIVE EFFECTS UNDER THE ANTITRUST LAWS

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*Antitrust law has long been concerned that the loss of a firm, through merger or exclusion, may improve the prospects for tacit or express collusion in a concentrated market. In merger law, this perspective has been codified as a presumption of anticompetitive effect arising from high and increasing market concentration. Antitrust's structural presumption has been eroding in the courts, however, in part because its economic underpinnings increasingly are seen as unsettled. This Article explains how coordinated competitive effects analysis can be reconstructed around the role of a maverick firm that constrains prices when industry coordination is incomplete. Doing so helps distinguish procompetitive mergers from anticompetitive ones, and may aid in the analysis of alleged exclusion. It also provides a new economic justification for the structural presumption and points toward a continuing role for that presumption when the maverick cannot be identified or when it is not possible to determine the effect of a merger on the maverick's incentives. The resulting approach to coordinated competitive effects analysis is illustrated with an extended example involving oligopoly conduct in the U.S. passenger airline industry.*

### INTRODUCTION

The proposed passenger airline merger between United and US Airways, abandoned in mid-2001,<sup>1</sup> would have reduced the number of major U.S. airlines from seven to six.<sup>2</sup> Following a traditional anti-

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<sup>1</sup> DOJ Opposes Airline Consolidation; United and US Airways Cancel Deal, 81 *Antitrust & Trade Reg. Rep.* 96 (2001) (noting that merger agreement terminated shortly after Justice Department opposition was announced on July 27, 2001).

<sup>2</sup> See Trial Brief of the United States at 13 n.15, *United States v. N.W. Airlines Corp.*, No. 98-74611 (E.D. Mich. filed Oct. 23, 2000) ("Major airlines at most include United Airlines, Delta Airlines, American Airlines, Northwest, Continental, US Airways and TWA."); see also Frank Swoboda & Don Phillips, *United to Acquire US Airways*, *Wash. Post*, May 24, 2000, at A1 (measuring size by number of miles flown by paying passengers,

trust analysis of the nationwide interaction among these carriers, a court would be expected to conclude that, with fewer firms, tacit collusion among the sellers to raise prices above competitive levels would have become more likely had the merger proceeded.<sup>3</sup> But support for the traditional analysis in both the case law and the economics literature has been eroding.<sup>4</sup> Another way to analyze the possibility of tacit collusion is to observe that another firm, Northwest, has acted in recent years as the industry *maverick*—the firm that keeps the major carriers' systemwide price increases lower than they otherwise would have been.<sup>5</sup> A merger analysis centered on the role of the maverick would ask whether the transaction affects Northwest's incentives or ability to constrain systemwide price increases.<sup>6</sup> This Article argues that such an analysis has a critical role to play in the evaluation of both merger and exclusion cases, and explains when and why the mav-

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six largest airlines were American, Continental, Delta, Northwest, United and US Airways). The merger also would have led the number of major carriers offering nonstop service to decline from two to one on various city-pair routes, making the proposal a merger to monopoly in those markets (at least with respect to business travelers, who may have had no other practical alternatives). See Press Release, Department of Justice, Department of Justice and Several States Will Sue to Stop United Airlines from Acquiring US Airways (July 27, 2001) (on file with the *New York University Law Review*) (identifying routes on which US Airways and United are one another's only nonstop competitors). This Article ignores this aspect of the proposed transaction, notwithstanding its potential significance in a regulatory review of the merger, in order to focus on the possibility of coordinated competitive effects. For history of the failed United/US Airways merger, see generally Keith L. Alexander, *US Airways and United Extend Merger Deadline*, Wash. Post, Mar. 7, 2001, at E1; Neil Irwin, *Fate of Airlines' Merger Cloudy*, Wash. Post, July 29, 2000, at E2.

<sup>3</sup> A reduction in the number of sellers from seven to six likely leads to an increase in concentration in excess of the safe harbor levels of the current Merger Guidelines, although those levels are based on the Herfindahl-Hirschman Index (HHI), which takes into account the size distribution of the sellers as well as the number of firms. See U.S. Dep't of Justice & FTC, *Horizontal Merger Guidelines* § 1.5 (1992), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,104 [hereinafter 1992 Merger Guidelines] ("Market concentration is a function of the number of firms in a market and their respective market shares."). The efficiency section of these Guidelines (§ 4) was revised in 1997; in all other respects the 1992 Guidelines are still in force. See Introduction, U.S. Dep't of Justice Merger Guidelines, 4 Trade Reg. Rep. (CCH) ¶ 13,100. Throughout this paragraph, the discussion assumes that the airline industry environment is conducive to collusion, in the sense that entry would not undermine higher than competitive prices and that the market structure would not preclude the firms from reaching a consensus and detecting and responding to cheating on it. See *infra* notes 148-58 and accompanying text. It also assumes that it is sensible to analyze airline industry competition in terms of the nationwide interaction among hub-and-spoke network carriers, each of which implements price changes in a common way over its entire route system. See *infra* notes 142-45 and accompanying text.

<sup>4</sup> See *infra* Part I.

<sup>5</sup> The role of Northwest is considered more fully *infra* at notes 134-47 and accompanying text. Strategies for identifying a maverick are discussed more fully *infra* at Part II.D.

<sup>6</sup> See *infra* Part III.

erick-centered approach should be preferred to the traditional approach.

The antitrust laws long have been concerned that the loss of a firm, through merger, foreclosure or exclusion,<sup>7</sup> may facilitate coordinated competitive effects (tacit or express collusion).<sup>8</sup> The “ultimate issue” in reviewing a merger under the antitrust laws, according to Judge Richard Posner, is “whether the challenged acquisition is likely to hurt consumers, as by making it easier for the firms in a market to collude, expressly or tacitly, and thereby force price above or farther above the competitive level.”<sup>9</sup> Exclusionary conduct, too, may lead to changes in market structure that help create or maintain a collusive agreement.<sup>10</sup>

Yet antitrust jurisprudence and commentary have devoted surprisingly little attention to understanding when and how the loss of a firm will facilitate collusion. During antitrust’s structural era, the decades before the field’s Chicago School revolution began in the mid-1970s,<sup>11</sup> analysis was unnecessary because the linkage seemed obvi-

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<sup>7</sup> Throughout this Article, the terms “exclusion” and “foreclosure” will be employed broadly, to include raising rivals’ costs or reducing rivals’ access to the market. Complete foreclosure is not necessary for exclusionary conduct to confer market power on the remaining firms. See Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals’ Costs to Achieve Power over Price*, 96 *Yale L.J.* 209, 214, 230-42 (1986) (focusing exclusion analysis on cost disadvantage of rivals).

<sup>8</sup> The terms “collusion” and “coordination” are used interchangeably in this Article, although they are technically distinct. Coordination is an economic term describing outcomes resulting from the repeated interaction among the firms in a market. Collusion is an older term employed in both the legal and economic literatures to describe interdependent decisionmaking among the firms in a market. The term collusion sometimes carries with it the legal idea of an agreement. In legal usage, collusion is “tacit” rather than “express” if the firms informally reach a consensus without providing assurances that they will carry out their promises. In practice, however, express collusion often is equated with the logically different concept of an agreement that can be demonstrated through direct rather than circumstantial evidence. The distinction between tacit and express collusion, like the distinction between proof by direct evidence and circumstantial evidence, matters in the legal analysis of challenged practices but is less important to their economic analysis. These and other related concepts are explored more fully in Jonathan B. Baker, *Two Sherman Act Section 1 Dilemmas: Parallel Pricing, the Oligopoly Problem, and Contemporary Economic Theory*, 38 *Antitrust Bull.* 143, 145-46 n.7, 152-53 n.16, 156 n.22, 195-96 (1993).

<sup>9</sup> *Hosp. Corp. of Am. v. FTC*, 807 F.2d 1381, 1386 (7th Cir. 1986) (Posner, J.) (upholding FTC injunction against acquisition reducing number of hospitals competing in Chattanooga market from eleven to seven, and number of major firms to four).

<sup>10</sup> See *infra* Part IV.

<sup>11</sup> Three broad eras of antitrust interpretation can be identified. During antitrust’s classical era, around the end of the nineteenth century, the Sherman Act was understood “as a way to protect natural rights to economic liberty, security of property, and the process of competitive, free exchange from artificial interference.” Jonathan B. Baker, *A Preface to Post-Chicago Antitrust*, in *Post-Chicago Developments in Antitrust Analysis* (Roger van den Bergh et al. eds., forthcoming 2002) (manuscript at 3-8, on file with the

ous. The dominant and largely unquestioned view among economists and antitrust commentators was that when only a few firms competed in an industry, they readily would find a way to reduce rivalry, collude tacitly, and raise prices above the competitive level.<sup>12</sup> During that era, mergers increasing concentration and exclusionary practices generating substantial foreclosure effectively were assumed to create market power.

The question of *how* the loss of a firm would facilitate collusion became important only later, as antitrust law engaged the Chicago School criticisms of the structural approach. Economist George Stigler identified the issue in 1964, explaining that the success of collusion, whether tacit or express, could not be assumed; it requires that the firms find a way both to reach a consensus on price and firm market shares and to deter cheating on that consensus.<sup>13</sup> As Stigler's ideas percolated into antitrust law, the likelihood of collusion became a matter of analysis rather than one of assumption.

Accordingly, courts and enforcement agencies reviewing mergers have become sophisticated in analyzing whether the market has features that will help the remaining firms overcome the impediments to successful collusion.<sup>14</sup> Most of the attention, however, is on this issue; commentators and courts have much less to say about the mechanism by which the loss of a firm makes coordination more likely or more effective. Indeed, in merger law, harm to competition from the loss of a rival is presumed without analysis. The *Philadelphia National*

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*New York University Law Review*). The structural era, around the middle of the twentieth century, was based on the view that when only a few firms competed in an industry, those sellers readily would find a way to mute their rivalry and exercise market power, thereby harming buyers. *Id.* at 8-10. During the last quarter of the twentieth century, the Chicago School took a purely economic approach to antitrust, relaxing or overturning many prior antitrust prohibitions in order to facilitate efficiency-enhancing methods of lowering costs or improving products. *Id.* at 11-24. For further discussion of the evolution of antitrust interpretation since 1890, see William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Economic and Legal Thinking*, *J. Econ. Persp.*, Winter 2000, at 43.

<sup>12</sup> See Baker, *supra* note 8, at 149.

<sup>13</sup> George J. Stigler, *A Theory of Oligopoly*, 72 *J. Pol. Econ.* 44, 44-46 (1964). Cartels must also solve a third problem, deterring entry. Dennis W. Carlton & Jeffrey M. Perloff, *Modern Industrial Organization* 126 (3d ed. 2000) (observing that firms only will join cartel if it can keep prices high, and entry by nonmember firms prevents cartel from raising price).

<sup>14</sup> See *Hosp. Corp. of Am.*, 807 F.2d at 1386-92 (discussing factors that gave Federal Trade Commission (FTC) reason to believe that hospital acquisition would lessen competition substantially); *New York v. Kraft Gen. Foods, Inc.*, 926 F. Supp. 321, 342-52, 363-64 (S.D.N.Y. 1995) (discussing characteristics of ready-to-eat cereal industry that made Kraft's acquisition of Nabisco's cereal assets unlikely to produce anticompetitive coordinated effects); 1992 Merger Guidelines, *supra* note 3, §§ 2.11, 2.12 (discussing market conditions that are conducive to or hinder achievement and maintenance of coordination).

*Bank*<sup>15</sup> presumption, also termed the *structural presumption*, allows a plaintiff challenging a merger to establish a prima facie case by demonstrating that the acquisition increases market concentration substantially, raising it to a high level.<sup>16</sup>

Moreover, when commentators and courts seek to justify the structural presumption, their defense does not go far beyond the inevitability assumption of the structural era, at least for markets with entry barriers and other structural features that reduce the impediments to successful collusion. According to Judge Posner, for example, “[t]he fewer competitors there are in a market, the easier it is for them to coordinate their pricing without committing detectable violations of section 1 of the Sherman Act, which forbids price fixing.”<sup>17</sup> Similarly, Judge Robert Bork explained that merger law “rests upon the theory that, where rivals are few, firms will be able to coordinate their behavior, either by overt collusion or implicit understanding, in order to restrict output and achieve profits above competitive levels.”<sup>18</sup> Posner and Bork are telling what will be referred to as the *dinner party story*: Fewer firms make tacit collusion more likely or more effective for much the same reason that friends arranging a restaurant get-together likely will find it easier to coordinate the calendars of four people than five, and more likely will notice if one person accepts but does not show up. Under this view, coordination technically may not be inevitable when a market becomes highly concentrated, but the odds of success are high and those odds improve as concentration increases. Consequently, the dinner party story does not answer the question of why the particular merger under review is likely to help the industry solve its coordination problems. Rather, it is a probabilistic statement—based on a rough empirical regularity, not an economic model—that suggests competitive problems with *every* significant acquisition in a concentrated market.

This probabilistic claim is widely accepted and deeply embedded in antitrust thinking, but its underlying empirical support is not strong. As will be discussed,<sup>19</sup> the empirical economic literature does not identify reliably any particular threshold level of concentration, common across industries, at which anticompetitive effects are likely to kick in, and that literature makes clear that firm-specific and industry-

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<sup>15</sup> 374 U.S. 321 (1963).

<sup>16</sup> *Id.* at 363 (prohibiting merger of second- and third-largest banks in Philadelphia metropolitan area on basis of structural presumption).

<sup>17</sup> *Hosp. Corp. of Am.*, 807 F.2d at 1387; see also *FTC v. Elders Grain, Inc.*, 868 F.2d 901, 905 (7th Cir. 1989) (Posner, J.).

<sup>18</sup> *FTC v. PPG Indus., Inc.*, 798 F.2d 1500, 1503 (D.C. Cir. 1986) (Bork, J.).

<sup>19</sup> See *infra* notes 85-90 and accompanying text.

specific factors, other than concentration, play an important role in determining whether higher concentration will lead to higher prices. To some observers, these limitations to the dinner party story call into question whether to rely upon the structural presumption at all. "Without more," observes one commentator, "we cannot state that the merger itself will likely cause prices to rise."<sup>20</sup>

With the foundation for a key element of the structure of antitrust law appearing shaky, the doctrinal rules policing mergers could begin to wobble. Both merging firms and government enforcers have cause for concern. Without a strong economic justification, continued reliance on the structural presumption creates a risk that procompetitive mergers will be challenged or deterred. Even if the structural presumption is correct on average, the error costs associated with its application may be substantial. Yet the alternative—jettisoning the structural presumption—creates a risk that harmful mergers will escape successful court challenge. The primary goal of this Article is to shore up the shaky foundation of coordinated competitive effects analysis by reconstructing the antitrust analysis of the loss of a firm, whether through merger or exclusion, around the role played by a maverick seller in constraining coordination. Doing so promises to reduce the error costs of merger enforcement.

The concept of a maverick is not new to antitrust law; it appears in the government's Merger Guidelines, where a maverick firm is described as one with "a greater economic incentive to deviate from the terms of coordination than do most of [its] rivals."<sup>21</sup> The Merger Guidelines provide as an example a firm that has an "unusually disruptive and competitive" influence in the market,<sup>22</sup> but the concept of maverick also encompasses firms that constrain coordination from becoming more likely or more effective without necessarily starting price wars or otherwise appearing observably disruptive.<sup>23</sup> Although the maverick concept appears in the Merger Guidelines, they can be read to treat it as a special case, and mavericks are generally an afterthought in contemporary antitrust practice.

This Article shows that the identification of a maverick that constrains more effective coordination is the key to explaining what the dinner party story does not: which particular changes in market struc-

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<sup>20</sup> Timothy J. Muris, *GTE Sylvania* and the Empirical Foundations of Antitrust, 68 Antitrust L.J. 899, 905 (2001). In June 2001, Muris became Chairman of the FTC. Muris Takes Helm As New FTC Chairman, 80 Antitrust & Trade Reg. Rep. 507, 536 (2001).

<sup>21</sup> 1992 Merger Guidelines, *supra* note 3, § 2.12.

<sup>22</sup> *Id.*

<sup>23</sup> See *infra* Part II.C for a discussion of Northwest's role within the airline industry as the latter type of maverick.

ture from merger or exclusion are troublesome, and why. As will be seen, the concept of a maverick is consistent with the contemporary economic theory of oligopoly conduct,<sup>24</sup> and explains the empirical regularity of the dinner party story. A focus on identifying the industry maverick can increase the precision of the antitrust analysis of mergers and exclusion, allowing courts to understand better when the loss of a firm is likely to promote tacit collusion and when it may not. On average, mergers in concentrated markets protected from entry increase the likelihood of coordination, and the focus on the role of a maverick can help sort out whether any *particular* merger is likely to do so.

Part I of the Article highlights the problem with the current approach in antitrust law in explaining why the loss of a firm improves the prospects for collusion. It describes the erosion of the structural presumption and identifies the empirical weakness behind the dinner party story. Part II illustrates how the identification of a maverick can help courts and enforcers reduce error costs, by reframing the economic analysis of industry coordination around the role of the maverick. This Part explains why coordination is a genuine concern in the marketplace, notwithstanding the legal prohibition against price-fixing and the economic difficulties firms face in reaching a consensus and deterring cheating. It also explains why coordination is commonly imperfect and incomplete, how a maverick firm that constrains coordination emerges naturally in such a setting, and how the maverick may be identified.<sup>25</sup>

Part III demonstrates the use of the concept of a maverick to discriminate between procompetitive and anticompetitive mergers, in part through hypothetical examples involving airlines. Several key cases are analyzed: the loss of a maverick; the loss of a nonmaverick with no incentive effects or with beneficial or harmful incentive effects on the maverick; and the creation of a new maverick. In each scenario, examining the maverick's role yields a more accurate picture of whether and how the merger will harm consumers than does a simple reliance on the structural presumption. Part IV then turns to a different setting to demonstrate how identifying the role of the maverick can aid in the antitrust analysis of alleged exclusion.

The Article concludes in Part V by seeking to rehabilitate the structural presumption: The weak empirical regularity underlying the

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<sup>24</sup> An oligopoly is a market served by a small number of significant rivals.

<sup>25</sup> For a related discussion working out the implications of the contemporary oligopoly theory of coordination for another longstanding problem in antitrust, inferring an agreement on price from parallel pricing and other circumstantial evidence, see Baker, *supra* note 8, at 169-96.

dinner party story is related to the probability, in the absence of specific evidence identifying a maverick, that the loss of a particular firm would remove the industry maverick from the market. This explanation suggests a continuing role for the structural presumption when the maverick cannot be identified or when it is not possible to determine the effect of a merger on the maverick's incentives.

## I

### THE ERODING STRUCTURAL PRESUMPTION IN MERGER ANALYSIS<sup>26</sup>

#### A. *Erosion in the Courts and Enforcement Agencies*

Before the 1970s, the "oligopoly problem" loomed large in the thinking of courts and commentators concerned with the review of horizontal mergers under the antitrust laws.<sup>27</sup> Coordination and supracompetitive pricing commonly were thought to be nearly inevitable when an industry had only a small number of firms.<sup>28</sup> Economists schooled in the "structure-conduct-performance" paradigm emphasized the way market structure (primarily concentration of sellers, but also entry conditions, product differentiation, vertical integration, and other factors) affected firm conduct (including pricing, advertising, investment, product variety, and research and development) and market performance (including firm profits and economic welfare).<sup>29</sup>

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<sup>26</sup> Some of the discussion in this section was adapted from Jonathan B. Baker & Steven C. Salop, *Should Concentration Be Dropped from the Merger Guidelines?*, in *Am. Bar Ass'n, Section of Antitrust Law, Perspectives on Fundamental Antitrust Theory* 339 (2001).

<sup>27</sup> Mere supracompetitive pricing (that is, pricing above the competitive level) by a dominant firm or by firms in an oligopoly market is not illegal under the Sherman Act. A dominant firm must engage in anticompetitive acts to obtain or maintain its market power in order to violate section 2 of the Sherman Act, 15 U.S.C. § 2 (1994), and the oligopolistic firms must reach an agreement that requires or facilitates higher than competitive prices in order to violate section 1 of the Sherman Act, 15 U.S.C. § 1 (1994). The possibility that the firms in a market might exercise market power beyond the reach of the Sherman Act is sometimes termed the "oligopoly problem." Baker, *supra* note 8, at 149. For further discussion of these and related issues, see *id.* at 149, 171-80.

<sup>28</sup> See, e.g., Edward Hastings Chamberlin, *Theory of Monopolistic Competition* 7-8, 30-55 (5th ed. 1946) ("[T]here must be a large number of buyers and sellers so that the influence of any one or of several in combination is negligible."); William Fellner, *Competition Among the Few* 3-54 (1949) (analyzing how "fewness" of firms in industry changes economic relations with results such as spontaneous coordination). This is not to say that antitrust law violations were thought to be inevitable. Coordination might be reached through price leadership or other methods that might not constitute a violation of section 1 of the Sherman Act, 15 U.S.C. § 1 (1994).

<sup>29</sup> See, e.g., Joe S. Bain, *Barriers to New Competition* 1-2, 19-20, 180-81 (1956) (developing systematic theory on potential importance of condition of entry as influence on business conduct and performance); Mark Allen Eisner, *Antitrust and the Triumph of*

In this intellectual environment, antitrust scholars and practitioners accepted a strong presumption of economic harm from high market concentration.<sup>30</sup> This view, combined with noneconomic concerns, such as the protection of small business and the prevention of adverse political consequences thought to arise from the aggregation of economic power, led Congress and the Supreme Court to look to merger law as a vehicle for preventing increased market concentration in its incipiency.<sup>31</sup> Oligopoly conduct might have to be tolerated in industries that were already concentrated,<sup>32</sup> but it could be kept from spreading to contaminate the rest of the economy through a tough merger policy.<sup>33</sup> These concerns were highlighted by the Supreme Court's extensive discussion of the legislative history of the 1950 amendments to the antimerger provisions of the Clayton Act in *Brown Shoe Co. v. United States*.<sup>34</sup>

*Brown Shoe* arguably set forth inconsistent themes. On the one hand, the Court noted congressional recognition of "the stimulation to competition that might flow from particular mergers," such as a merger of two small firms that would allow those sellers "to compete more effectively with larger corporations dominating the relevant market . . . ."<sup>35</sup> When pursuing this theme, the Court emphasized congressional concern with "the protection of *competition*, not *competitors* . . . ."<sup>36</sup> On the other hand, the Court acknowledged that "Congress appreciated that occasional higher costs and prices might result from the maintenance of fragmented industries and markets."<sup>37</sup> Thus, the Court's focus on preventing a trend toward concentration in an industry could also be understood as a mandate to protect competitors—particularly small businesses—from being swallowed up in the

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Economics 100-03 (1991) (describing views of adherents of "structure-conduct-performance" paradigm).

<sup>30</sup> See, e.g., G.E. Hale & Rosemary D. Hale, *Market Power: Size and Shape Under the Sherman Act* 122-23, 131-37 (1958) ("[T]he theory of monopolistic competition finds oligopoly almost as objectionable as monopoly itself.").

<sup>31</sup> See *United States v. Phila. Nat'l Bank*, 374 U.S. 321, 363-64 (1963) (applying structural presumption based on market concentration); *Brown Shoe Co. v. United States*, 370 U.S. 294, 317-18 (1962) (finding that Congress amended merger statute in 1950 in order to arrest trends toward concentration in their incipiency).

<sup>32</sup> See *supra* note 27.

<sup>33</sup> See 6 Phillip E. Areeda, *Antitrust Law* ¶ 1432d5, at 205 (1986) (describing "containment" approach of prohibiting concentrating mergers and practices facilitating collusion).

<sup>34</sup> 370 U.S. at 311-23. *Brown Shoe* prohibited a merger between the nation's third- and eighth-largest shoe sellers. Neither firm made or sold more than four percent of the country's shoes, but the acquired firm was the largest shoe retailer handling brands produced by shoe manufacturers not integrated into retailing. *Id.* at 297, 303.

<sup>35</sup> *Id.* at 319.

<sup>36</sup> *Id.* at 320.

<sup>37</sup> *Id.* at 344.

market for corporate control, even at the price of an efficiency loss to the economy.

*United States v. Philadelphia National Bank*,<sup>38</sup> handed down one year after *Brown Shoe*, highlighted the second theme in creating the structural presumption that has since framed horizontal merger analysis in the courts:

[The] intense congressional concern with the trend toward concentration warrants dispensing, in certain cases, with elaborate proof of market structure, market behavior, or probable anticompetitive effects. Specifically, we think that a merger which produces a firm controlling an undue percentage share of the relevant market, and results in a significant increase in the concentration of firms in that market, is so inherently likely to lessen competition substantially that it must be enjoined in the absence of evidence clearly showing that the merger is not likely to have such anticompetitive effects.<sup>39</sup>

Two Supreme Court cases decided in 1966, three years after *Philadelphia National Bank*, represent the high-water mark of judicial efforts to halt industrial concentration. In both *United States v. Von's Grocery Co.*<sup>40</sup> and *United States v. Pabst Brewing Co.*,<sup>41</sup> the Court prohibited mergers among firms which, by present-day standards, had small market shares in largely unconcentrated markets. In *Von's*, the merging firms had market shares of 4.7% and 4.2% in the year before the merger, and together accounted for 7.5% of the market during the year after the merger.<sup>42</sup> The largest firm in the market had only an 8% market share.<sup>43</sup> In *Pabst*, the Court held that the structural presumption was triggered in three relevant markets, including one in which the merging firms together held a market share of only 4.49%.<sup>44</sup> The message of these horizontal merger decisions was clear: The structural presumption was virtually conclusive. Similarly, exclusive-dealing cases in antitrust's structural era closely scrutinized the long-term foreclosure of even a small fraction of the market, though the

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<sup>38</sup> 374 U.S. 321 (1963).

<sup>39</sup> *Id.* at 363.

<sup>40</sup> 384 U.S. 270 (1966). *Von's* prohibited the merger of two Los Angeles area grocery chains in the market where the number of individually owned stores had decreased from 5365 to 3818 over the past decade, while the number and size of chains was increasing. *Id.* at 273, 277-78.

<sup>41</sup> 384 U.S. 546 (1966). The decision barred Pabst, the nation's tenth-largest brewer, from acquiring Blatz, the eighteenth-largest. *Id.* at 547.

<sup>42</sup> 384 U.S. at 281 (White, J., concurring).

<sup>43</sup> *Id.* at 281.

<sup>44</sup> 384 U.S. at 551-52.

presumption of harm to competition from such conduct was less conclusive than the corresponding presumption in merger cases.<sup>45</sup>

*United States v. General Dynamics Corp.*,<sup>46</sup> a Supreme Court case decided in 1974, was a transitional decision that, in retrospect, looks more like a modern case than it likely did at the time. After years of litigation under Clayton Act section 7,<sup>47</sup> during which, as Justice Stewart famously wrote in dissent in *Von's*, “the Government always wins,”<sup>48</sup> the Supreme Court decided a merger case in favor of allowing the acquisition, with Justice Stewart writing the majority opinion. Moreover, the holding in *General Dynamics* established a legal point that was not clear after *Von's* and *Pabst*: that the presumption of anticompetitive effect derived from concentration is, in fact, rebutta-

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<sup>45</sup> In *Standard Oil Co. v. United States*, 337 U.S. 293 (1949) (*Standard Stations*), exclusive supply contracts with 16% of independent service stations accounting for almost 7% of retail gas sales were held unlawful. *Id.* at 295. (Other major gasoline refiners had similar contracts, however, collectively foreclosing independent stations from a much larger fraction of the market. *Id.*) The Supreme Court's next major exclusive dealing decision, *Tampa Electric Co. v. Nashville Coal Co.*, 365 U.S. 320 (1961), appeared less concerned with low levels of foreclosure. In holding that the long-term foreclosure of less than one percent of the affected commerce was insubstantial, the *Tampa Electric* majority distinguished *Standard Stations* by emphasizing the “industry-wide practice of relying upon exclusive supply contracts” in the latter case, *id.* at 334, and recognized, using language more suggestive of reasonableness analysis than strong presumption, that it was necessary to analyze “the probable immediate and future effects” of that foreclosure “on effective competition” within the market. *Id.* at 329. But five years later, the Court arguably returned to skepticism about even low levels of market foreclosure. In *FTC v. Brown Shoe Co.*, 384 U.S. 316 (1966), the Court upheld an FTC decision, under FTC Act section 5, 15 U.S.C. § 45 (1994), objecting to exclusive dealing contracts by a shoe manufacturer with 650 retail stores, 384 U.S. at 319-20. These stores accounted for roughly 11% of the manufacturer's retail customers, and the manufacturer itself accounted for no more than 6% of wholesale shoe sales nationally. See *Brown Shoe Co. v. FTC*, 339 F.2d 45, 47, 49 (8th Cir. 1964), *rev'd*, 384 U.S. 316 (1966) (providing sales figures).

As with the levels of concentration that raised concern in early horizontal merger analysis, the market share thresholds suggested by *Standard Stations* and *FTC v. Brown Shoe Co.* are stringent by contemporary standards. Since the Supreme Court's decision in *Jefferson Parish Hospital District v. Hyde*, 466 U.S. 2 (1984), courts rarely have condemned exclusive dealing on market share foreclosure below 30%. See ABA Section of Antitrust Law, *Antitrust Law Developments* 223 & n.1242 (4th ed. 1997) (citing lower court cases permitting exclusive dealing at market shares of up to 40% but not exceeding 50%). Moreover, again in parallel with developments in merger law, modern-day courts consider a wide range of factors in determining the reasonableness of exclusive dealing contracts. See *Omega Envtl., Inc. v. Gilbarco, Inc.*, 127 F.3d 1157, 1162 (9th Cir. 1997) (holding that challenges to exclusive dealing should be analyzed under rule of reason); *U.S. Healthcare, Inc. v. Healthsource, Inc.*, 986 F.2d 589, 595, 597 (1st Cir. 1993) (requiring “careful weighing of alleged dangers and potential benefits” under rule of reason but declining to consider whether plaintiff must demonstrate likely impact on consumers).

<sup>46</sup> 415 U.S. 486 (1974).

<sup>47</sup> 15 U.S.C. § 18 (1994).

<sup>48</sup> 384 U.S. at 301 (Stewart, J., dissenting).

ble.<sup>49</sup> But the successful rebuttal in *General Dynamics* was on narrow grounds. The market shares from which the government sought to claim a presumption of harm to competition were measured in terms of past production. The majority recognized that shares measured in these units were unlikely to capture the future competitive significance of market participants in the coal industry.<sup>50</sup> The Court concluded that the acquired coal producer's apparent market share vastly overstated its future competitive significance because the company had virtually no reserves and no reasonable prospect of obtaining any. "[T]he finding of inadequate reserves went to the heart of the Government's statistical prima facie case based on production figures and substantiated the District Court's conclusion that [the acquired firm], even if it remained in the market, did not have sufficient reserves to compete effectively for long-term contracts."<sup>51</sup>

At the time *General Dynamics* was decided, the Court's ruling could be interpreted as not questioning the continuing vitality of *Von's* and *Pabst*: Had market concentration in *General Dynamics* been measured correctly, in terms of coal reserves rather than past coal production, the acquiring firm's market share would have increased by less than one percent, a very small increase in concentration.<sup>52</sup> The structural-era presumption that higher market concentration invariably increased the likelihood of tacit collusion was called into question only later, beginning in the mid-1970s, by developments in economics that began to affect legal doctrine during anti-trust's Chicago School revolution.<sup>53</sup> High prices were no longer seen as the inevitable result of high market concentration; the success of tacit collusion instead was understood to depend upon whether the firms were able to overcome the difficulties of identifying a consensus

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<sup>49</sup> See *Gen. Dynamics*, 415 U.S. at 503-04 (upholding district court conclusion that merger would not harm competition, notwithstanding merging firms' high shares of past production).

<sup>50</sup> *Id.* at 501-02.

<sup>51</sup> *Id.* at 508.

<sup>52</sup> *Id.* at 502.

<sup>53</sup> The first Supreme Court decisions reflecting a Chicago-school perspective were not decided until the late 1970s. See *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 19-24 (1979) (holding agreement among rivals affecting price is not illegal per se if it substantially lowers costs); *Cont'l T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 59 (1977) (holding that vertical nonprice restraints are tested under rule of reason); *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 488-89 (1977) (holding damages remedy unavailable to rival challenging merger under antitrust laws because its injury would not be of type that claimed violations would be likely to cause). But the Chicago School influence appeared as early as 1975 in appellate decisions taking supply substitution into account in market definition. See generally Jonathan B. Baker, *The Problem with Baker Hughes and Syufy: On the Role of Entry in Merger Analysis*, 65 *Antitrust L.J.* 353, 354-56 (1997) (discussing appeals court decisions).

on price and market shares and deterring cheating on that consensus.<sup>54</sup>

When a Chicago-oriented legal scholar, William Baxter, was appointed by President Reagan to head the Antitrust Division of the Department of Justice, he confronted the problem of harmonizing the existing horizontal merger precedent with the economic approach of the Chicago School.<sup>55</sup> The 1982 Merger Guidelines<sup>56</sup> issued by Baxter did so by declaring that concentration was highly influential but not outcome-determinative in evaluating acquisitions among horizontal rivals. On the one hand, the 1982 Merger Guidelines stated that the analysis of a horizontal merger would “focus first” on the postmerger market concentration and the market shares of the merging firms.<sup>57</sup> In addition, they indicated that the Justice Department was “unlikely” to challenge horizontal mergers where the postmerger market structure had the equivalent of at least ten equally sized firms, and “likely” to challenge acquisitions of all but the smallest rivals if the postmerger market had the equivalent of no more than approximately five or six equally sized firms.<sup>58</sup> On the other hand, the Guidelines noted that the Department would also examine a variety of other factors<sup>59</sup> rele-

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<sup>54</sup> See *infra* notes 102-05 and accompanying text.

<sup>55</sup> See William F. Baxter, *Responding to the Reaction: The Draftsman's View*, 71 Cal. L. Rev. 618, 618 (1983) (noting that Baxter aimed “to bring the Guidelines into line with subsequent developments in antitrust law and economics”); cf. Thomas E. Kauper, *The 1982 Horizontal Merger Guidelines: Of Collusion, Efficiency, and Failure*, 71 Cal. L. Rev. 497, 498-99 (1983) (claiming that 1982 Guidelines were timed appropriately to incorporate new economic consensus that emerged in years immediately prior to their issuance).

<sup>56</sup> U.S. Dep't of Justice, *Merger Guidelines* (1982), reprinted in 42 *Antitrust & Trade Reg. Rep.* 1069, § III, at S6 (Supp. 1982) [hereinafter 1982 Merger Guidelines]. The 1982 Guidelines replaced those that had been promulgated in 1968, before *General Dynamics*. A similar approach to harmonizing structural antitrust doctrine with Chicago School economic thinking had previously been suggested for the measurement of single-firm market power in an influential article by Landes and Posner. William M. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 Harv. L. Rev. 937, 947 (1981).

<sup>57</sup> See 1982 Merger Guidelines, *supra* note 56, § III, at S6.

<sup>58</sup> *Id.* § III.A.1, at S6. Both the 1982 and 1992 Merger Guidelines use the HHI as a measure of industry concentration in evaluating horizontal mergers. *Id.*; 1992 Merger Guidelines, *supra* note 3, § 1.5. The index is calculated by summing the squares of individual market shares of all the participants. Under the 1982 Guidelines, an agency challenge was “unlikely” if the postmerger HHI was below 1000, between 1000 and 1800 and not rising by more than 100 points as a result of the merger, or above 1800 and not rising by more than 50 points. An agency challenge was “more likely than not” if the postmerger HHI was between 1000 and 1800 and the HHI increased by more than 100 points, and “likely” if the postmerger HHI exceeded 1800 and rose by 100 points or more. 1982 Merger Guidelines, *supra* note 56, § III.A.1, at S6.

<sup>59</sup> These included a list of factors that “will create, enhance, or facilitate the exercise of market power.” 1982 Merger Guidelines, *supra* note 56, § III.C, and this discussion has been amplified in later Guidelines revisions. See 1992 Merger Guidelines, *supra* note 3, §§ 2.1, 2.11, 2.12 (discussing factors relevant to analyzing lessening of competition through coordinated interaction).

vant to whether the transaction posed a significant threat to competition, even when concentration was high.

To be sure, as the 1992 Merger Guidelines make clear, coordination is no longer the sole concern of merger analysis.<sup>60</sup> The federal enforcement agencies, in particular, now recognize that mergers may harm competition without increasing the likelihood of coordination by making it profitable for the merging firms to raise prices unilaterally.<sup>61</sup> But the rise of unilateral competitive effects analysis has complemented the traditional concern about coordination without replacing it in the deliberations of the courts and agencies.<sup>62</sup>

The same problem Baxter confronted—harmonizing the older structural-era decisions with contemporary economic thinking—remains central to horizontal merger analysis today. Although the Supreme Court has not revisited its approach to the question since the time of *General Dynamics*,<sup>63</sup> several appeals courts have done so. The D.C. Circuit opinion in *United States v. Baker Hughes Inc.*<sup>64</sup> may be the most influential, as it was written by one future Supreme Court Justice (Clarence Thomas) and joined in by another (Ruth Bader Ginsburg) from the opposite wing of many present-day Court divi-

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<sup>60</sup> See 1992 Merger Guidelines, *supra* note 3, § 2.2 (noting that, even in absence of coordination, “[u]nilateral competitive effects can arise”).

<sup>61</sup> *Id.*; Jonathan B. Baker, *Unilateral Competitive Effects Theories in Merger Analysis*, Antitrust, Spring 1997, at 21.

<sup>62</sup> See, e.g., *New York v. Kraft Gen. Foods, Inc.*, 926 F. Supp. 321, 363-66 (S.D.N.Y. 1995) (rejecting challenge to merger alleging both coordinated and unilateral competitive effects theories); Memorandum in Support of Plaintiff's Motion for Preliminary Injunction at 32-37, *FTC v. Swedish Match, Inc.*, 131 F. Supp. 2d 151 (D.D.C. 2000) (No. 1:00CV1196-R) (alleging both coordinated and unilateral effects from challenged transaction); Plaintiff's Memorandum of Points and Authorities in Support of Motion for Preliminary Injunction at 16-20, *FTC v. Kroger Co.*, No. 3-00CV1196-R (N.D. Tex. June 6, 2000) (same).

<sup>63</sup> The Court issued substantive antitrust merger decisions in three bank cases shortly after *General Dynamics*, in *United States v. Marine Bancorporation, Inc.*, 418 U.S. 602 (1974), *United States v. Connecticut National Bank*, 418 U.S. 656 (1974), and *United States v. Citizens & Southern National Bank*, 422 U.S. 86 (1975). *General Dynamics* is, nevertheless, generally treated as the last major Supreme Court interpretation of Clayton Act section 7, 15 U.S.C. § 18 (1994). Neither *Marine Bancorporation* nor *Connecticut National Bank* was concerned with the scope of the structural presumption in horizontal merger analysis: *Marine Bancorporation* addressed potential competition doctrine, a basis for challenging conglomerate mergers, 418 U.S. at 623-41, and *Connecticut National Bank* was a fact-intensive analysis of the district court's market definition in a potential competition setting, 418 U.S. at 659-60. Although *Citizens & Southern* was a horizontal merger case, its brief discussion of Clayton Act doctrine follows *General Dynamics*. *Citizens & Southern*, 422 U.S. at 120-22.

<sup>64</sup> 908 F.2d 981 (D.C. Cir. 1990). Elsewhere, I have criticized a different aspect of *Baker Hughes*, its analysis of when entry can rebut the plaintiff's *prima facie* case based on market concentration. Baker, *supra* note 53, at 365-68.

sions. *Baker Hughes* itself relies upon a Seventh Circuit opinion written by Judge Richard Posner, a highly regarded antitrust scholar.<sup>65</sup>

*Baker Hughes* treats *General Dynamics* as the start of a new era in merger analysis: *General Dynamics* “differ[ed] markedly in emphasis” from cases like *Philadelphia National Bank*, *Pabst*, and *Von’s* because the Supreme Court no longer “accept[ed] a firm’s market share as virtually conclusive proof of its market power,” but instead “carefully analyzed defendants’ rebuttal evidence.”<sup>66</sup> *General Dynamics* is read as doing more than merely permitting rebuttal “by discrediting the data underlying the initial presumption in the government’s favor;” it also is said to permit rebuttal “by affirmatively showing why a given transaction is unlikely to substantially lessen competition.”<sup>67</sup> The broader interpretation of *General Dynamics* by this and other lower courts opened the door to a full range of rebuttal evidence.<sup>68</sup>

*Baker Hughes* emphasizes that the presumption of harm to competition that arises from a showing of high and increasing market concentration has eroded substantially since the days of *Philadelphia National Bank*. The structural presumption no longer is seen as virtually conclusive. Rather, according to *Baker Hughes*, “[t]he Supreme Court has adopted a totality-of-the-circumstances approach” to Clayton Act section 7, under which “[e]vidence of market concentration

<sup>65</sup> The *Baker Hughes* decision quoted this passage from Judge Posner:

The most important developments that cast doubt on the continued vitality of such cases as *Brown Shoe* and *Von’s* are found in other cases, where the Supreme Court, echoed by the lower courts, has said repeatedly that the economic concept of competition, rather than any desire to preserve rivals as such, is the lodestar that shall guide the contemporary application of the antitrust laws, not excluding the Clayton Act. . . . Applied to cases brought under Section 7, this principle requires the district court . . . to make a judgment whether the challenged acquisition is likely to hurt consumers, as by making it easier for the firms in the market to collude, expressly or tacitly, and thereby force price above or farther above the competitive level.

908 F.2d at 990 n.12 (quoting *Hosp. Corp. of Am. v. FTC*, 807 F.2d 1381, 1386 (7th Cir. 1986) (Posner, J.)).

<sup>66</sup> *Id.* at 990.

<sup>67</sup> *Id.* at 991. The *Baker Hughes* court found in favor of the merging firms after considering rebuttal evidence involving ease of entry, volatile and shifting market shares, and the sophistication of buyers. See *id.* at 986.

<sup>68</sup> See *id.* at 986; *United States v. Waste Mgmt., Inc.*, 743 F.2d 976, 981-83 (2d Cir. 1984) (concluding that ease of entry may rebut showing of prima facie illegality under *Philadelphia National Bank*). Moreover, in *FTC v. University Health, Inc.*, 938 F.2d 1206 (11th Cir. 1991), the court concluded that “in certain circumstances, a defendant may rebut the government’s prima facie case with evidence showing that the intended merger would create significant efficiencies in the relevant market.” *Id.* at 1222; accord *FTC v. H.J. Heinz Co.*, 246 F.3d 708, 720 (D.C. Cir. 2001) (recognizing efficiency defense in principle).

simply provides a convenient starting point for a broader inquiry into future competitiveness.”<sup>69</sup>

The most recent appellate decision on the antitrust analysis of mergers, issued by the D.C. Circuit in *Federal Trade Commission v. H.J. Heinz Co.*,<sup>70</sup> highlights the continued role of concentration in horizontal merger analysis. The decision nevertheless confirms that the structural presumption is rebuttable and accepts the continued authority of *Baker Hughes* and its analytic framework.

Consistent with *Baker Hughes*, the *Heinz* panel expressly rejected the Federal Trade Commission’s (FTC) contention that high concentration in a market with entry barriers alone entitles the government to a preliminary injunction,<sup>71</sup> and held that a successful rebuttal requires evidence showing that market share statistics provide “an inaccurate account of the [merger’s] probable effects on competition.”<sup>72</sup> Yet *Heinz* also decisively rejected the view that concentration is irrelevant once the merging firms proffer evidence to rebut the government’s prima facie case, at least in a merger-to-duopoly setting congenial to reliance on an inference of anticompetitive effect from market concentration. According to the court, a rebuttal premised on the presence of “structural barriers to collusion” in a merger to duopoly requires identification of barriers unique to the industry under review and proof that tacit collusion is more difficult to achieve or maintain than in other industries.<sup>73</sup> Although the concentration levels in *Heinz* were quite high, they were not much higher than those found in *Baker Hughes*, where the government’s prima facie case was successfully rebutted.<sup>74</sup>

The more substantial weight accorded concentration in *Heinz* relative to *Baker Hughes* appears to derive from a special factor, the court’s skepticism about the particular efficiency defense proffered by the merging firms,<sup>75</sup> and thus should not be interpreted as a rejection

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<sup>69</sup> 908 F.2d at 984.

<sup>70</sup> 246 F.3d 708 (D.C. Cir. 2001). This case is discussed further infra at notes 197-219 and accompanying text.

<sup>71</sup> 246 F.3d at 716 n.11.

<sup>72</sup> *Id.* at 715 (quoting *United States v. Citizens & S. Nat’l Bank*, 422 U.S. 86, 120 (1975)). *Heinz* also recognized the possibility that, on other facts, an efficiencies defense—one asserting that the proposed merger would result in a more efficient firm to the benefit of consumers—could prevail. *Id.* at 720-22.

<sup>73</sup> See *id.* at 724-25.

<sup>74</sup> The *Heinz* transaction was characterized by the appeals court as a merger to duopoly, after which the HHI would have increased by 510 points to 5285. *Id.* at 716. *Baker Hughes* involved an increase in the HHI of 1425 points to 4303. 908 F.2d at 983 n.3.

<sup>75</sup> The merging firms argued that the efficiencies made tacit collusion unlikely, as they would give the merged firm an incentive to expand its market share at the industry leader’s expense. See *Heinz*, 246 F.3d at 724. Efficiencies also were analyzed as an independent

of *Baker Hughes* or a reversion to a 1960s interpretation of the structural presumption. When *Baker Hughes* was decided, proof of ease of entry, the main defense in that case, was a well-established route to rebutting the prima facie case based on concentration.<sup>76</sup> In contrast, the merging firms in *Heinz* raised a less conventional rebuttal, relying primarily on evidence of efficiencies to explain why the merger would not harm competition.<sup>77</sup> Once the appeals court concluded that the district court's acceptance of that defense was unwarranted, it was left with the unrebutted inference of harm to competition arising from the reduction in the number of sellers. The focus on concentration in *Heinz* thus appears more related to the ongoing development of the doctrinal standards related to the efficiency defense than to any rethinking of the totality-of-the-circumstances approach to merger analysis set forth in *Baker Hughes*.

Merger analysis at the federal antitrust enforcement agencies under the current Merger Guidelines is similar to the modern approach of the courts. So long as the merger exceeds safe-harbor concentration levels, market concentration is incorporated along with all other relevant factors into a broad economic analysis of the likely competitive effects of the transaction.<sup>78</sup> Although higher market concentration has been associated with a greater likelihood of agency challenge (at least if entry likely would not solve the competitive problem), the Merger Guidelines allow for the possibility that a merger may not harm competition, even an acquisition in a highly concentrated market.<sup>79</sup>

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means of rebutting the government's prima facie case. See *id.* at 720-22. To the extent *Heinz* raises the bar to defendants making an efficiency defense when concentration is high, its practical effect may be to delegate efficiency analysis in such cases to the unreviewable prosecutorial discretion of the antitrust enforcement agencies.

<sup>76</sup> See, e.g., *United States v. Waste Mgmt., Inc.*, 743 F.2d 976, 982-83 (2d Cir. 1984) (establishing that ease of entry may rebut prima facie showing of illegality under *Philadelphia National Bank*).

<sup>77</sup> In reversing the district court and granting a preliminary injunction barring the merger pending appeal, the D.C. Court of Appeals noted: "This is a novel defense, which the Supreme Court has not addressed since the 1960s (and then, unfavorably) . . . and as to which the antitrust enforcement agencies have only recently clarified their views." *FTC v. H.J. Heinz*, No. 00-5362, 2000 WL 1741320, at \*2 (D.C. Cir., Nov. 8, 2000).

<sup>78</sup> See 1992 Merger Guidelines, *supra* note 3, § 1.51. If the postmerger concentration levels and the increase in concentration from merger both do not exceed certain minimum thresholds, the agency is unlikely to investigate the transaction. These safe harbors include postmerger HHI below 1000, postmerger HHI between 1000 and 1800 with an increase in the HHI of less than 100 points, and postmerger HHI above 1800 with an increase in the HHI of less than 50 points. See *id.*

<sup>79</sup> 1992 Merger Guidelines, *supra* note 3, § 4 (revised 1997); ABA Section of Antitrust Law, *Mergers and Acquisitions: Understanding the Antitrust Issues 92-95* (Robert S. Schlossberg & Clifford H. Aronson eds., 2000).

### B. *Economic Underpinnings of the Structural Presumption*

With the general acceptance of economist George Stigler's identification of cartel problems,<sup>80</sup> antitrust commentators lost faith in the inevitability of a connection between high market concentration and high price. Still, a wide range of economic theories of oligopoly conduct is consistent with the view that fewer firms and more concentrated markets, on average, are associated with higher prices.<sup>81</sup> In general, the smaller the number of firms, the more likely they will be able to reach a mutually satisfactory outcome at a higher-than-competitive price, and, as will be emphasized below,<sup>82</sup> the less likely that one firm will act as a maverick to limit or undermine that possibility. Accordingly, a horizontal merger reducing the number of rivals from four significant firms to three would be more likely to raise competitive concerns than one reducing the number from ten to nine, all else equal.<sup>83</sup>

Notwithstanding the development of these theories, the loss of faith in the inevitability of a tacit collusion in concentrated markets made the existence and strength of the structural presumption an empirical question. The original attempts of economists to find such a relationship by relating market concentration to firm profits were sub-

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<sup>80</sup> See *supra* note 13 and accompanying text (describing difficulties of coordination).

<sup>81</sup> Not all of the theories involve coordinated competitive effects. Other economic models suggesting that mergers may lead to higher prices presume a static (nonrepeated) oligopoly interaction, generating unilateral competitive effects. See generally Raymond Deneckere & Carl Davidson, *Incentives to Form Coalitions with Bertrand Competition*, 16 *Rand J. Econ.* 473 (1985) (analyzing horizontal mergers in price-setting and quantity-setting games with product differentiation); Joseph Farrell & Carl Shapiro, *Horizontal Mergers: An Equilibrium Analysis*, 80 *Am. Econ. Rev.* 107 (1990) (analyzing horizontal mergers in Cournot oligopoly model). These and other unilateral competitive effects possibilities provide a theoretical basis for the structural presumption independent of the coordinated competitive effects possibilities highlighted in this Article, but they do not provide a justification for relying upon the dinner party story to explain why coordinated competitive effects are likely to occur.

<sup>82</sup> See *infra* notes 285-92 and accompanying text.

<sup>83</sup> An economic basis for this empirical regularity when industry conduct is coordinated is set forth *infra* at Part V. The significance of increases in market concentration from any particular merger for how a court should rule depends upon the competitive effects theory advanced in that case. Concentration matters least in predicting the consequences of an acquisition when the competitive concern involves the loss of localized competition among sellers of differentiated products—a “unilateral” competitive-effects theory different from those referenced in the previous note, which has come to play a major role in merger analysis at the federal enforcement agencies during the past decade. See 1992 Merger Guidelines, *supra* note 3, § 2.21 (describing unilateral effects among sellers of differentiated products); Baker, *supra* note 61, at 23 (describing localized competition theory of competitive effects). In this situation, market shares and concentration matter primarily to the extent that market shares are related to diversion ratios or demand cross-elasticities.

ject to devastating criticism.<sup>84</sup> Empirical economists, led by Leonard Weiss, sought to address these problems by relating market concentration to price with some success, particularly in analyses of different markets within the same industry.<sup>85</sup> Although these studies, too, have been questioned,<sup>86</sup> they appear to find a relationship between market concentration and industry price. Richard Schmalensee properly concluded in 1989 that “[i]n cross-section comparisons involving markets in the same industry, seller concentration is positively related to the level of price.”<sup>87</sup> More recent studies, using empirical methodologies and data unavailable to Weiss, have reinforced Schmalensee’s conclusion and have made clear that increases in concentration, particularly substantial ones, may generate large increases in prices.<sup>88</sup>

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<sup>84</sup> The most important problem with empirical studies of the relationship between concentration and profits was emphasized by economist Harold Demsetz: If firms with high market shares have high price-cost margins (and thus high profits), is it because the large firms are able to exercise market power or because the large firms have obtained efficiencies that allow them to lower both costs and prices relative to their rivals? See Harold Demsetz, *Two Systems of Belief About Monopoly*, in *Industrial Concentration: The New Learning* 164, 176-81 (Harvey J. Goldschmid et al. eds., 1974). A modern review of the results of these studies finds: “The relation, if any, between seller concentration and profitability is weak statistically, and the estimated concentration effect is usually small. The estimated relation is unstable over time and space and vanishes in many multivariate studies.” Richard Schmalensee, *Inter-Industry Studies of Structure and Performance*, in *2 Handbook of Industrial Organization* 951, 976 (Richard Schmalensee & Robert D. Willig eds., 1989) [hereinafter *Handbook of Industrial Organization*] (Stylized Fact 4.5).

<sup>85</sup> See Leonard W. Weiss, *Conclusion, in Concentration and Price* 268 (Leonard W. Weiss ed., 1989) (concluding that majority of economic studies find significant positive relationship between concentration and price); see generally Gregory J. Werden, *A Review of the Empirical and Experimental Evidence on the Relationship Between Market Structure and Performance* (U.S. Dep’t of Justice, Econ. Analysis Group Discussion Paper 91-3, May 8, 1991) (providing survey of price-concentration studies).

<sup>86</sup> The critics emphasize two problems. First, the studies may not always specify the model appropriately. This problem would create measurement error—the concentration variable would be measured poorly—and would be expected to lead the statistical analyses to understate any relationship between price and concentration that does exist. (Note that this criticism bolsters, rather than undermines, the structural presumption). Second, the studies may not account adequately for the reverse effect of price on concentration. For discussion of these and other criticisms, see Timothy F. Bresnahan, *Empirical Studies of Industries with Market Power*, in *Handbook of Industrial Organization*, supra note 84, at 1011, 1042-44; Carlton & Perloff, supra note 13, at 257-59; William M. Evans et al., *Endogeneity in the Concentration-Price Relationship: Causes, Consequences, and Cures*, 41 *J. Indus. Econ.* 431, 431-34 (1993).

<sup>87</sup> Schmalensee, supra note 84, at 988 (Stylized Fact 5.1).

<sup>88</sup> For example, the results reported in Timothy F. Bresnahan & Valerie Y. Suslow, *Oligopoly Pricing with Capacity Constraints*, 15/16 *Annales D’Economie et de Statistique* 267 (1989), suggest that a merger in the North American aluminum industry during the 1960s and 1970s would have led to a price increase of 2.7% during cyclical downturns, when the firms were operating at excess capacity, for every one-hundred point increase in the HHI of market concentration. See id. at 278, 282, 284 (reporting empirical data used by present author for this computation). Similarly, the FTC’s econometric evidence showed that the proposed merger between Staples and Office Depot—which would have

But the empirical economic evidence does not support the older view that high market concentration makes tacit collusion inevitable. While market concentration appears related to price, and improved prospects for tacit collusion offer one possible explanation, concentration is far from the only factor relevant to the assessment of whether the disappearance of a firm, through merger or exclusion, will facilitate coordination. Other industry-specific and market-specific factors beyond concentration also are important in determining price and the competitive effects of mergers.<sup>89</sup> Moreover, the empirical research does not reliably identify any particular level of concentration, common across industries, at which price increases kick in or raise particular competitive concerns. That is, there is no well-established “critical” concentration ratio.

Accordingly, the contemporary economic learning on the relationship between market concentration and price suggests employing concentration in much the way that the Merger Guidelines do so today: as an important factor in competitive effects analysis, appropriately considered in conjunction with other factors suggested by the competitive effects theory, but far from the only factor relevant to understanding firm conduct and market performance.<sup>90</sup> Economists have learned much about the other factors that may make an industry environment more or less conducive to coordination.<sup>91</sup> The legal analysis of coordinated competitive effects of mergers has followed by

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reduced the number of firms from three to two in some markets and from two to one in others—would have raised price by about eight percent on average. Jonathan B. Baker, *Econometric Analysis in FTC v. Staples*, 18 J. Pub. Pol’y & Marketing 11, 13-17 (1999). These studies make careful efforts to account for differences in the competitive roles played by various firms, and to distinguish between high costs and market power as the explanation for high prices.

<sup>89</sup> These factors may include the determinants of firm cost and demand other than market concentration, such as input prices, the extent of scale and scope economies, and the price of demand substitutes, as well as determinants of oligopoly conduct other than market concentration, such as factors facilitating or frustrating coordination.

<sup>90</sup> The theoretical possibility that concentrated markets could perform competitively, combined with the limitations to the empirical studies identifying a relationship between concentration and price, have led some to question whether any presumption should be applied. Ky P. Ewing Jr., *The Soft Underbelly of Antitrust: Some Challenging Thoughts for the New Millennium*, Antitrust Rep., Sept. 1999, at 2, 2-4; Barry C. Harris & David D. Smith, *The Merger Guidelines vs. Economics: A Survey of Economic Studies*, Antitrust Rep., Sept. 1999, at 23, 24-25. This proposal goes too far, as the concluding Part of this Article explains. Moreover, if concentration poorly predicts harm to competition, there is no basis for giving a free pass to mergers in unconcentrated markets or to acquisitions of small rivals, as is done commonly today.

<sup>91</sup> For a recent survey of an extensive economic literature, see Simon J. Evenett & Valerie Y. Suslow, *Preconditions for Private Restraints on Market Access and International Cartels*, 3 J. Int’l Econ. L. 593 (2000).

emphasizing an investigation of whether the industry structure is conducive to solving cartel problems.<sup>92</sup>

The economic literature leaves the antitrust analysis of coordinated competitive effects in a troubled state. Even in a market in which it appears feasible for sellers to solve the cartel problems of reaching a consensus and deterring cheating, that observation about the industry environment does not go far in explaining why the loss of a particular firm, through merger or exclusion, makes coordination more likely or more effective. The dinner party story—a probabilistic prediction with some but not overwhelming empirical grounding—fills the gap, but without providing a deep understanding of why any particular merger likely would or would not improve the prospects for coordination.

In order to understand the latter problem properly, two types of uncertainty must be distinguished: the uncertainty involved in knowing whether a particular economic model applies in an empirical setting, and the uncertainty involved in relying on an empirical regularity without a model. An analogy may clarify the distinction. Until some time during the twentieth century, perhaps the best predictor of the weather tomorrow in a given location was the weather today. One might imagine weather forecasters calling this a presumption, based on an empirical regularity. With more data and computers, it might be possible to improve on the simple empirical prediction. One could imagine correlating weather in various cities with the previous day's weather, not just in that city, but in other cities at varying distances, controlling for predictable seasonal variation, and coming up with a complex regression equation for predicting the weather based on empirical regularities.<sup>93</sup>

This approach only can go so far in helping meteorologists make weather forecasts because, while it relies on some empirical regularity, it does not do much to help them understand *why* the weather changes in order to improve their predictive capability. To do better at forecasting the weather, meteorologists have developed scientific models of weather system formation and movement. They have developed concepts like air masses, fronts, and the jet stream, and have used those concepts to structure models of the atmosphere. Those

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<sup>92</sup> See, e.g., *Hosp. Corp. of Am. v. FTC*, 807 F.2d 1381, 1386 (7th Cir. 1986) (Posner, J.) (upholding FTC determination that merger of hospital chains is likely to harm competition in Chattanooga by facilitating coordination).

<sup>93</sup> In a similar spirit, one commentator has proposed relying on an empirical relationship between increased market concentration and higher prices as a basis for merger analysis if that relationship is specific to the industry under review. Muris, *supra* note 20, at 904-06.

models have helped to shape the collection of data, and observed prediction errors help meteorologists come to a deeper understanding of the way weather works, leading to model improvements and even better predictions.<sup>94</sup> While weather forecasting is by no means perfect today, meteorologists using models can do something astounding from the perspective of weather forecasting a half-century ago: They can predict when a storm not presently in existence will develop, forecast its likely path, and locate the areas of greatest risk for heavy winds and precipitation.<sup>95</sup>

The analogy suggests the difficulty with basing antitrust doctrine and enforcement policy upon the dinner party story.<sup>96</sup> When it comes to understanding coordination, antitrust law can do better in discriminating between anticompetitive and procompetitive changes in market structure by going beyond the empirical regularity of the structural presumption to incorporate insights from contemporary economic theory. The following Part turns to the development of this Article's central thesis: that the identification of a maverick who constrains more effective coordination is the key to explaining what the dinner party story does not, namely, which particular changes in market structure from merger or exclusion are troublesome, and why.

## II

### THE ROLE OF MAVERICKS IN OLIGOPOLISTIC COORDINATION

The concept of a maverick is not new to antitrust. As noted above, it appears in the government's Merger Guidelines, where a maverick firm is described as one with "a greater economic incentive to deviate from the terms of coordination than do most of [its] rivals."<sup>97</sup> However, the Merger Guidelines can be read to suggest that

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<sup>94</sup> Mark Monmonier, *Air Apparent: How Meteorologists Learned to Map, Predict, and Dramatize Weather* 97 (1999).

<sup>95</sup> See, e.g., Michael William Carr, *Weather Predicting Simplified* 22-23 (1999) (describing prediction of explosive cyclones or rapidly intensifying lows).

<sup>96</sup> The analogy is not perfect. The dinner party story is consistent with numerous economic models, though many of these are not models of coordinated behavior. See *supra* note 81 and accompanying text. It is also worth noting that the absence of theory is not the usual problem in empirical economics. More commonly, economists are unable to distinguish among a number of theories, each of which may be consistent with empirical regularities, or else have so much data as to make it difficult to accept empirically any specific theory. See Clive W.J. Granger, *Empirical Modeling in Economics: Specification and Evaluation* 30-31, 41 (1999) (discussing problems of large data set and absence of unique explanations).

<sup>97</sup> 1992 Merger Guidelines, *supra* note 3, § 2.12.

the presence of a maverick is a special case,<sup>98</sup> and, consistent with this perspective, mavericks are generally an afterthought in contemporary antitrust practice. Courts and agencies focus on the dinner party story and rarely appeal to the maverick idea to explain the likely competitive effects of a merger.<sup>99</sup> This Part explains why the idea of a maverick instead should play a central role in the analysis of coordinated competitive effects.

### A. *Competition vs. Coordination*

One way to understand coordination is to begin by asking why the firms in a market ever compete. After all, however profitable competition is for sellers, they each can expect to do better if all agree to work together, for example, to maximize and split the joint profits from acting as though they were a single firm.

It is tempting to point to the antitrust laws in response, and argue that firms compete because, legally, they are required to do so. The antitrust laws undoubtedly do encourage competition, as by proscribing many forms of conduct that would facilitate coordination. But this answer is neither legally nor empirically satisfactory. As a legal matter, the antitrust laws promote competition but they do not mandate it. A firm able to charge a monopoly price for its product, for example, is permitted to do so; the Sherman Act's bar against monopolization objects to acts to obtain or maintain monopoly power, not its exercise. Rivals are not permitted to agree on price, but if, through price leadership or otherwise, they reach a supracompetitive price without engaging in conduct that can be enjoined as an agreement, they are not prohibited from doing so.<sup>100</sup> Empirically, moreover, the antitrust laws are not a necessary precondition to competition. Before the enactment of the Sherman Act, firms in a market did not necessarily succeed in acting collectively as if they were a monopolist, even when they were few in number.<sup>101</sup>

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<sup>98</sup> Id. ("*In some circumstances*, coordinated interaction can be effectively prevented or limited by maverick firms . . ." (emphasis added)).

<sup>99</sup> See *supra* notes 17-18 and accompanying text. But see Memorandum in Support of Plaintiff's Motions for Preliminary Injunctions at 24, *FTC v. Cardinal Health, Inc.*, 12 F. Supp. 2d 34 (D.D.C. 1998) (No. CIV. A.98-595) (describing one of four merging firms as "the maverick"). Professor Michael Jacobs reports that during 1998-1999, the Australian Competition and Consumer Commission prohibited several proposed mergers on the ground that the target firm was "a useful—indeed an indispensable—maverick." Michael S. Jacobs, *Second Order Oligopoly Problems with International Dimensions: Sequential Mergers, Maverick Firms, and Buyer Power*, 46 *Antitrust Bull.* 537, 548-49 (2001).

<sup>100</sup> See Baker, *supra* note 8, at 173-74 (discussing problems with deeming agreement "conscious parallelism").

<sup>101</sup> For example, the empirical economic literature on the Joint Executive Committee, an 1880s U.S. railroad cartel, highlights the inability of the firms to deter price wars. See

The main reason firms compete is economic, not legal: Firms are led to compete rather than collude by their motive to maximize profits. By lowering price,<sup>102</sup> a firm can increase the quantity it sells. If the additional profit from selling more exceeds the lost profit from cutting price, a firm will find that lowering price raises its profits. This motive to compete may be particularly powerful if sellers have been charging a price in excess of the competitive level.<sup>103</sup> When price exceeds the competitive price, a firm that slightly undercuts its rivals' price often can expect to earn a high margin of price over cost on the additional sales it makes by lowering price. If the firm can increase its own sales a great deal through a small price reduction, its lost profits (from lowering price on the quantity it would otherwise have been able to sell) likely will be small relative to this gain.<sup>104</sup>

In order for the firms in a market to coordinate successfully to achieve and maintain a higher-than-competitive price in the face of individual seller incentives to compete by lowering price, the firms must find a way to make the higher price more attractive to each than price cutting. To do so, they must find a way to solve what economists term "cartel problems."<sup>105</sup> First, they must *reach consensus* and identify the cartel outcome they will seek to achieve. They must select a supracompetitive market price and allocate output (market shares) among the sellers. Second, the firms must *discourage cheating* by de-

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Glenn Ellison, *Theories of Cartel Stability and the Joint Executive Committee*, 25 *RAND J. Econ.* 37, 37-38 (1994) (noting that "cartel was only partially successful" in setting prices and suffered "occasional price wars"); Robert H. Porter, *A Study of Cartel Stability: The Joint Executive Committee, 1880-1886*, 14 *Bell J. Econ.* 301, 312-13 (1983) (noting "reversions to noncooperative behavior. . .with a significant decrease in market price in these periods").

<sup>102</sup> The analysis would not change if competition also or instead occurs on other dimensions such as improved product quality or new product features.

<sup>103</sup> This is likely in a number of industries, including airlines. See *infra* notes 112, 149-55 and accompanying text.

<sup>104</sup> When the firms in an industry are charging a price in excess of the competitive price, the benefit of price cutting accruing to an individual firm may derive mainly from profits shifted from its rivals. If so, the total profits earned by the sellers may collectively shrink as the market price falls, yet profits may increase for the firm that lowers price. Competition can thus be understood as a product of what game theorists term a "prisoners' dilemma." If all firms could refrain from competing aggressively, all would benefit, but each firm has an individual incentive to reduce price when the market price exceeds the competitive level. These individual incentives to cut price lead to an outcome in which all firms charge the competitive price, and no firm ends up doing as well as it would if all charged a higher price.

<sup>105</sup> This discussion assumes that industry participants compete in a well-defined market protected from new competition. Thus, no attention will be paid to the problems of solving a third "cartel problem" of discouraging entry. For analytical convenience, the problems of reaching a consensus and deterring cheating are treated as separate steps, though the two are interrelated. For example, a firm's preference as to the coordinated outcome will depend upon how likely it is to be punished for cheating.

terrering every one of their number from expanding output and cutting price.

Firms compete when they cannot solve these problems; collusion is not inevitable even in a market with only a handful of rival sellers.<sup>106</sup> Firms may disagree on how far to raise the cartel price, and even if they agree on that, they may be unable to agree on market shares because each would profit from having a larger share of the cartel output. They also may be unable to deter cheating, perhaps because they cannot detect and punish such behavior before the price cutter has made substantial sales and profits, or perhaps because they cannot punish the price cutter with sufficient severity to make cheating unprofitable.

Moreover, the antitrust laws prohibit some of the most obvious tactics firms might employ to solve their cartel problems. Firms cannot agree to act together as though they were a monopolist. That would involve an agreement to reduce output collectively from the competitive output to the monopoly output, allowing producers with high marginal costs to bear the brunt of the reduction in sales, and allocating the resulting profits among the firms (with profit shares not necessarily equal to production shares). Yet firms cannot negotiate and sign a binding agreement setting forth the prices they charge and the output each will sell; a naked price-fixing agreement would violate the Sherman Act and potentially subject the firms to criminal penalties.<sup>107</sup> For similar reasons, firms cannot make what economists term "side payments" to rivals to induce them to shut down or reduce output;<sup>108</sup> and they cannot make enforceable commitments to respond to a rival's price cutting by increasing output and reducing price, thus punishing the cheater.<sup>109</sup>

In the wake of Stigler, some influential Chicago-oriented commentators were persuaded that these cartel problems are nearly insurmountable. Under this view, tacit collusion is far from inevitable in an oligopoly; it is virtually impossible. For example, Judge Bork wrote:

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<sup>106</sup> See Stigler, *supra* note 13, at 44, 50-51 (noting that oligopoly behavior must be deduced, not assumed, and that gains from cheating may exist even with as few as two sellers).

<sup>107</sup> Sherman Act § 1, 15 U.S.C. § 1 (1994) (deeming violators "guilty of a felony" and subject to fines or imprisonment).

<sup>108</sup> Side payments are ways of sharing profits. With side payments, some firms will pay others, so a firm's profits are not necessarily equal to the difference between its sales revenues and production costs.

<sup>109</sup> Even if such commitments do not take the form of agreements among rivals, they may facilitate horizontal collusion. See Jonathan B. Baker, *Vertical Restraints with Horizontal Consequences: Competitive Effects of "Most-Favored-Customer" Clauses*, 64 *Antitrust L.J.* 517, 520-23 (1996) (discussing anticompetitive effects of most-favored-customer provisions).

“The difficulty of maintaining small-number cartels based upon detailed communication and agreement should . . . make us dubious that concerted action without explicit collusion is likely to be at all common or successful.”<sup>110</sup>

Such extreme skepticism about the possibility of coordination has not worn well. Oligopolists often appear able to surmount these cartel problems and coordinate successfully. The active criminal enforcement program of the U.S. Department of Justice’s Antitrust Division demonstrates that firms, even well-counseled corporate giants, do indeed fix prices.<sup>111</sup> Moreover, empirical research suggests that there is a great deal of market power in some concentrated industries, and that anticompetitive conduct is a significant cause of high price-cost margins.<sup>112</sup> In addition, academic business strategists teach firms actively to facilitate coordination, as by adopting practices unilaterally to address the industry’s cartel problems.<sup>113</sup> Finally, the contemporary economic understanding of coordination, based on game-theoretic models of repeated interaction, actively shows that higher-than-competitive pricing is plausible in many oligopolies, even if the firms do not reach an agreement on price.<sup>114</sup>

Firms can employ a number of methods to solve their cartel problems without running afoul of the antitrust laws. The first cartel problem, reaching consensus, arises because cooperating firms typically must select among a large number of outcomes—different market prices and market shares—each of which is more profitable than competition for all. These outcomes may yield different splits of joint profits, so the firms may fail to agree on which should be chosen.

For example, the firms may sell a family of products in a wide array of styles and sizes, as with automobile manufacturers. Suppose that some of these firms primarily sell small cars while others primarily sell large ones. The small-car specialists would like to arrange for small-car prices to rise above the competitive levels, and they would like to see large-car prices increase even more (in order to shift auto-

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<sup>110</sup> Robert H. Bork, *The Antitrust Paradox: A Policy at War with Itself* 175 (1978).

<sup>111</sup> See, e.g., *United States v. Andreas*, 216 F.3d 645, 651-54 (7th Cir. 2000) (describing cartel to raise price of food additive).

<sup>112</sup> Bresnahan, *supra* note 86, at 1052-53.

<sup>113</sup> See, e.g., Michael Porter, *Competitive Strategy* 93-95 (1980) (encouraging unilateral signaling announcements, selective advertising to discipline recalcitrant rivals, and price leadership). A common pedagogical device for teaching business students how to facilitate coordination, based on the strategies followed by General Electric and Westinghouse during the 1960s, is described in Jonathan B. Baker, *Identifying Horizontal Price Fixing in the Electronic Marketplace*, 65 *Antitrust L.J.* 41, 46 (1996).

<sup>114</sup> See Baker, *supra* note 8, at 154-55 (discussing antitrust implications of “folk theorem” for infinitely repeated games with observable actions).

mobile demand to small cars). Conversely, the large-car specialists would likely desire a lower large-car price and higher small-car price than would the small-car specialists. It may be difficult for the firms to harmonize their divergent interests, and thus to decide whether the small- or large-car specialists will gain most of the profits from exercising market power. Given that auto makers differ on multiple important dimensions (not just whether they emphasize large or small cars), one might expect their negotiation problems to become insurmountable, particularly given antitrust law's prohibition against agreements to raise price, and that coordination would fail because the firms would be unable to solve the cartel problem of reaching a consensus.

Yet, this problem can be solved if some noncompetitive outcome becomes "focal" (natural and obvious). If this does not occur naturally, the firms can make an outcome focal without reaching an agreement in violation of Sherman Act section 1, for example through price leadership or other forms of information exchange.<sup>115</sup> In the automobile case, one large firm might announce a common dollar or percentage price increase for all models (or perhaps one price increase for small cars and a different one for large cars). Once a new set of prices has become focal in this way, the others might follow naturally. Even if there is some price jockeying—for example, the first firm raises prices for all cars by five percent, the second raises large car prices four percent and small car prices eight percent, and all firms match the second firm—the use of across-the-board price increases (or common price increases for large classes of products) can simplify the task of reaching a consensus and make coordination practical for firms that cannot communicate with each other about price.<sup>116</sup>

The airlines can be thought of as employing such general rules to reach a consensus when they alter systemwide prices by a common dollar amount or percentage.<sup>117</sup> The result might not maximize joint profits of all the firms, and it could differ substantially from what any firm would choose were it allowed to dictate prices for the industry, but it may well lead to an outcome more profitable than competition

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<sup>115</sup> See, e.g., Svend Albæk et al., Government-Assisted Oligopoly Coordination? A Concrete Case, 45 J. Indus. Econ. 429, 440-41 (1997) (reporting that Danish government action to gather and publish firm-specific transaction prices in concrete industry appeared to facilitate coordination by inhibiting secret discounts).

<sup>116</sup> See generally Baker, *supra* note 8, at 162-69 (discussing use of focal rules as basis of coordination). This is an example of the use of what economists call "cheap talk" (non-binding announcements) to facilitate selection of one outcome when many are possible.

<sup>117</sup> See *infra* notes 134-47 and accompanying text. Firms also can adopt practices, unilaterally, that make it easier to reach consensus in this way, as business students are taught. See *supra* note 113.

for each (if the firms can also successfully deter cheating) and thus to supracompetitive pricing.

Firms also can find ways to deter coordinating firms from cheating on the consensus high prices they identify. As with reaching a consensus, this cartel problem is not necessarily insoluble, even by firms careful to avoid violations of the Sherman Act. For example, industry practices that encourage rapid detection of price cutting by rivals and allow rapid rival response may deter cheating, as may information sharing that clarifies whether price reductions result from cheating, misunderstanding, or external factors.<sup>118</sup> Moreover, one of the primary insights that emerged during the last two decades from the mathematical reconstruction of industrial organization theory using game-theoretic arguments, is that repeated interaction among oligopolists can discourage cheating.<sup>119</sup> In a one-time interaction, it typically would be profitable for a firm, having reached a consensus with its rivals to charge a high price, to undercut that consensus. By cutting price slightly, the firm can expect a great increase in sales, with little reduction in the margin of price over cost.<sup>120</sup>

If, however, the interaction is repeated over time, the cost of cheating in one period now includes the lost monopoly profits from the likely breakdown of coordination in the future. Recognizing this additional cost, the firm no longer may think it is worthwhile to steal some extra profits by price cutting in the short run. Thus, when the oligopoly interaction is viewed as dynamic rather than static, what once appeared to be a powerful incentive to cheat on a higher-than-competitive price may disappear, and high-price outcomes, once achieved, are more readily sustainable.<sup>121</sup>

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<sup>118</sup> See generally David Genesove & Wallace P. Mullin, *Rules, Communication and Collusion: Narrative Evidence from the Sugar Institute Case*, 91 *Am. Econ. Rev.* 379 (2001) (highlighting practices adopted by sugar-refining cartel to detect and police cheating). As another example, firms can adopt facilitating practices unilaterally, like “most-favored-customer” provisions in contracts with their customers, that raise their own costs of cheating and so discourage deviation. For a general discussion of most-favored-customer provisions see Baker, *supra* note 109, at 520-23.

<sup>119</sup> See Luis M.B. Cabral, *Introduction to Industrial Organization* 130-31 (2000) (explaining that repeated interaction among firms promotes cartel stability by making long-term losses from punishment large relative to short-term gains from cheating); Carl Shapiro, *Theories of Oligopoly Behavior*, in 1 *Handbook of Industrial Organization*, *supra* note 84, at 329, 363-66 (same).

<sup>120</sup> All firms recognize that every competitor has an incentive to undercut a high price, and that once any seller does, the rest must charge a lower price as well. Hence, no firm will be willing to follow through on the high-price consensus in a one-time interaction. The cartel price is not sustainable; the firms are led by individual profit-maximization to compete rather than collude. See *supra* notes 102-05 and accompanying text.

<sup>121</sup> See Baker, *supra* note 8, at 154-56 (describing “folk theorem” explaining how repeated interaction gives firms incentives to coordinate on supracompetitive pricing).

### B. *Incomplete Coordination and Mavericks*

The devices that make coordination work in this contemporary economic perspective do not necessarily allow the coordinating firms to achieve an outcome that would maximize the joint profits of the sellers. Relative to what a monopolist would achieve, coordination is likely to be imperfect and incomplete. This is the reason that certain firms—mavericks—are likely to play a more significant role than their rivals in constraining its effectiveness.<sup>122</sup> The term maverick may be misleading, to the extent that it suggests that the firm must be a price-cutter. The maverick indeed could be an observably disruptive force, taking the lead in starting price wars or sales, but it also could keep price from rising merely by refusing to follow rival attempts to raise price. It is possible that the maverick would not be recognizable as a holdout to the outside observer, as rivals would be expected not to attempt to increase price unless they had reason to think that industry conditions had changed in a way that would lead the maverick to go along. As long as the maverick refuses to go along, there will be no coordinated price increases, and all firms' prices will remain competitive.

Coordination may be partly successful but nevertheless fall short of joint-profit maximization—replicating the price a monopolist would charge and the output it would sell—for a number of reasons, including the following four.<sup>123</sup> First, coordinating firms may not be able to punish cheating rivals as strongly as would be necessary to support a fully collusive price.<sup>124</sup> The punishment can include output expansion, matching the cheater's price, or even larger price cuts. In

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<sup>122</sup> See generally Baker, *supra* note 8, at 202-07.

<sup>123</sup> This discussion presumes that the maverick is nearly indifferent between going along with a high coordinated price and cheating on that price. It ignores the possibility that the maverick instead may constrain coordination because it is nearly indifferent to participating in the punishment of cheaters necessary to deter deviation from the coordinated arrangement. In addition to the reasons discussed in the text, the possibility that it is costly for decisionmakers to analyze information and make choices could make coordination less than fully successful. Cf. Ariel Rubenstein, *Modeling Bounded Rationality* 137-64 (1998) (analyzing consequences of complexity in decisionmaking).

<sup>124</sup> See John Haltiwanger & Joseph E. Harrington Jr., *The Impact of Cyclical Demand Movements on Collusive Behavior*, 22 *RAND J. Econ.* 89, 98 (1991) (providing model in which coordinating firms reduce price when demand is high but decreasing in order to prevent cheating); Julio J. Rotemberg & Garth Saloner, *A Supergame-Theoretic Model of Price Wars During Booms*, 76 *Am. Econ. Rev.* 390, 390 (1986) (providing model in which coordinating firms cannot sustain high collusive prices when demand is high); see also Genesove & Mullin, *supra* note 118, at 391-94 (reporting that sugar-refining cartel typically responded to cheating with price matching); cf. Joseph Farrell, *Renegotiation in Repeated Oligopoly Interaction* 3-4 (Mar. 2000) (unpublished manuscript, on file with the *New York University Law Review*) (arguing that steep punishments may not be credible when firms can renegotiate, e.g., by agreeing to ignore transgressions "this time").

some cases, the necessary punishment may require that the punishing firms charge prices below their marginal costs, yet this strategy may require the firms to absorb substantial losses so the threat may not be credible. For example, the major airlines generally appear to rely upon prolonged price matching as a method of disciplining rivals rather than employing deeper price reductions,<sup>125</sup> except when facing small entrants who may have limited access to the capital markets.<sup>126</sup> The colluding firms instead may be willing to engage in a lesser punishment, such as responding to a cheating rival by merely returning price to the competitive level, as would happen in any event were the cartel to break down. While the threat of a lesser punishment for cheating may be sufficient to induce all the firms to charge a price substantially in excess of the competitive level (without cheating), it may be insufficient to induce the firms to charge the price that a monopolist would set.

Second, coordinating firms may not be able to allocate the monopoly rents they achieve in a manner satisfactory to all the participants, because they may be unable to compensate each other directly.<sup>127</sup> In theory, for example, if most cartel members wanted to charge a price of 150 while one refused to raise price above 125, the other firms could induce the recalcitrant rival to accept a price above 125 by paying it to do so. In practice, however, such "side payments"<sup>128</sup> could be difficult to negotiate and impossible to enforce given the risk that a prosecutor and court would infer an unlawful (even criminal) agreement to fix price.

Third, when firms are uncertain as to the strategies their rivals are pursuing and have difficulty inferring cheating from marketplace observations (e.g., against a "noisy" background in which prices fre-

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<sup>125</sup> In the airline price-fixing case from the early 1990s, however, the government identified stronger forms of punishment involving retaliation in other markets. See *United States v. Airline Tariff Publ'g Co.*, 59 Fed. Reg. 15,225 (Mar. 31, 1994) (competitive impact statement) (describing alleged collusive scheme); *United States v. Airline Tariff Publ'g Co.*, 58 Fed. Reg. 3971 (Jan. 12, 1993) (competitive impact statement) (same).

<sup>126</sup> Major carriers allegedly have responded to small carrier entry by introducing service into new markets, expanding capacity, and matching prices. See *Transp. Research Bd., Nat'l Research Council, Entry and Competition in the U.S. Airline Industry 171-85* (1999) [hereinafter *Entry and Competition*] (listing informal complaints to DOT by new entrant airlines about unfair exclusionary practices, March 1993 to May 1999). But see *United States v. AMR Corp.*, 140 F. Supp. 2d 1141, 1218 (D. Kan. 2001) (awarding American Airlines summary judgment against predatory-pricing and conduct claims).

<sup>127</sup> Margaret Levenstein interprets the largest price wars among U.S. bromine producers between 1885 and 1914 as breakdowns of collusion resulting from disagreements among cartel participants regarding the distribution of rents from collusion. Margaret C. Levenstein, *Price Wars and the Stability of Collusion: A Study of the Pre-World War I Bromine Industry*, 45 *J. Indus. Econ.* 117, 135 (1997).

<sup>128</sup> See *supra* note 108.

quently fall for other reasons like unexpected declines in demand), the coordinating firms may find it necessary to undertake expensive strategies for deterring cheating.<sup>129</sup> For example, they may reduce the gains to cheating by lowering the price below the joint profit-maximizing level, or respond to the mere possibility of cheating by engaging in a price war for some time before returning to higher prices. Indeed, one of the surprising discoveries of the modern economic theory of coordinated behavior is that occasional price wars—seemingly, the essence of competition—are not inconsistent with coordination and may even be part of the mechanism by which cheating is deterred during high-price periods.<sup>130</sup> But collusive pricing punctuated by occasional price wars falls short of perfect coordination.

Fourth, the firms may have difficulty in identifying the joint-profit maximizing outcome, especially when they must coordinate pricing and output over a large number of products or markets without communicating. The coordination task could be a substantial one for the airlines, for example, given the number of flights and ticketing options each offers. Accordingly, it is not surprising that the airlines change fares systemwide, using simple rules like a common percentage or dollar price increase applied to a large class of routes and tickets, rather than fine tuning price changes route by route and carrier by carrier to maximize joint profits.

These difficulties of reaching joint profit maximization do not necessarily make coordination impossible. They may instead lead to occasional price reductions or price wars in response to shocks,<sup>131</sup> and

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<sup>129</sup> For example, Genesove and Mullin note that the sugar-refining cartel they studied employed quasi-judicial internal dispute resolution procedures to reduce uncertainty and detect cheating. Genesove & Mullin, *supra* note 118, at 387.

<sup>130</sup> For theoretical and empirical perspectives relating price wars to uncertainty, see generally Jonathan B. Baker, *Identifying Cartel Policing Under Uncertainty: The U.S. Steel Industry 1933-1939*, J.L. & Econ., Oct. 1989, at S47 (Empirical Approaches to Market Power Conference issue, part two of the second part of volume 32) (interpreting 1930s steel industry price wars as cartel policing in face of uncertainty); Ellison, *supra* note 101 (analyzing 1880s rail industry price wars in context of imperfect information); Edward J. Green & Robert H. Porter, *Noncooperative Collusion Under Imperfect Price Information*, 52 *Econometrica* 87 (1984) (providing pioneering theory suggesting price wars may not rule out collusive behavior); Porter, *supra* note 101 (examining 1880s rail industry price wars for evidence of collusive behavior under uncertainty); Margaret E. Slade, *Cheating on Collusive Agreements*, 8 *Int'l J. Indus. Org.* 519 (1990) (suggesting that uncertainty is driving force behind cartel cheating).

<sup>131</sup> Cf. Meghan R. Busse, *Firm Financial Condition and Airline Price Wars* 22, 25 (Apr. 2000) (unpublished manuscript, on file with the *New York University Law Review*) (finding that carriers in poor financial condition are more likely than others to start airline price wars). The price declines in response to shocks need not be large. See, e.g., Baker, *supra* note 130, at S65, S66 n.66 (finding unanticipated four percent decline in demand prompted one percent fall in price in 1930s steel industry); Levenstein, *supra* note 127, at 133 (reporting price declines of 4.4% and 6% in two price-war periods, and larger declines in others);

to prices that are maintained above competitive levels but fall short of monopoly levels. Of particular importance for antitrust analysis, they also make it likely that incomplete coordination will be constrained by a maverick firm.<sup>132</sup> Incomplete coordination leads naturally to mavericks because coordination is not successful unless every significant firm in the market prefers coordination to cheating. But when firms differ, any firm that is nearly indifferent between coordination and cheating will constrain efforts by its rivals to make coordination more effective. Such a firm is the industry's maverick.<sup>133</sup> A numerical example presented in an appendix to this Article illustrates how a maverick can constrain coordination under repeated play when coordination is incomplete.

### C. *What Is a Maverick? An Airline Industry Example*

The role of mavericks in constraining coordination among oligopolists is suggested by the systemwide interaction among the major U.S. passenger air carriers.<sup>134</sup> One Friday in mid-February 2000, Continental Airlines, which had led implementation of a twenty dollar per roundtrip fuel surcharge successfully three weeks earlier, raised prices between twenty dollars and forty dollars per round trip (applying the

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cf. Genesove & Mullin, *supra* note 118, at 393 (finding cheating on sugar-refining cartel occurred without destroying coordinated arrangement).

<sup>132</sup> Cf. Chaim Fershtman & Ariel Pakes, *A Dynamic Oligopoly with Collusion and Price Wars*, 31 *RAND J. Econ.* 207, 222 (2000) (discussing examples in which smallest or largest firm in market would prefer to cheat while rivals would prefer to collude); Joseph E. Harrington Jr., *The Determination of Price and Output Quotas in a Heterogeneous Cartel*, 32 *Int'l Econ. Rev.* 767, 783 (1991) (arguing that when coordinated equilibrium is selected to satisfy Nash bargaining solution, equilibrium price may decline as high-cost firm's costs increase); Julio J. Rotemberg & Garth Saloner, *Collusive Price Leadership*, 39 *J. Indus. Econ.* 93, 94 (1990) (noting that firms producing differentiated products constrained to adopt common price typically have different preferences about what that price should be).

<sup>133</sup> If all firms were identical, they presumably would want the same coordinated industry price. Under such circumstances, all would be mavericks simultaneously. But this limiting case is unlikely; as with the airlines, firms in most markets are different in ways that affect their costs and matter to their customers. So long as firms cannot avoid the constraints that make coordination incomplete—here, their inability to reach a consensus on multiple dimensions (like market share or quality of service as well as price), and their inability to pay rivals to raise price or shut down—some firms can be expected to stop wanting to improve coordination before its rivals are ready to do so, creating a maverick.

<sup>134</sup> The author was an expert witness on behalf of the United States in *United States v. Northwest Airlines Corp.*, No. 98-74611 (E.D. Mich. Oct. 23, 1998). The case involved a government challenge to Northwest's ownership of voting control of Continental, which was dismissed after Northwest sold most of the contested shares. Press Release, Dep't of Justice, *Department Announces Tentative Settlement in Northwest-Continental Lawsuit* (Nov. 6, 2000) (on file with the *New York University Law Review*). The author also served on the Committee for a Study of Competition in the U.S. Airline Industry that authored *Entry and Competition*, *supra* note 126. The views expressed here are not necessarily those of the Justice Department or the Transportation Research Board committee.

highest increase to trips of more than 1000 miles).<sup>135</sup> Five other major carriers—American, Delta, TWA, United, and US Airways—matched Continental’s price increase over the weekend, but Northwest, America West, and Southwest did not. Beginning Sunday night, the airlines that had raised prices began to roll back the increases, and the attempted price increase was aborted.<sup>136</sup>

Three weeks later, once more on a Friday, Continental tried again to implement the same schedule of price increases. By Sunday, six other carriers—America West, American, Delta, TWA, United, and US Airways—had matched the price increase, but Northwest and Southwest had not. *The Wall Street Journal* observed that such price increases generally are “doomed” if other major airlines do not match quickly.<sup>137</sup> Southwest might go its own way, the *Journal* noted, but “the other airlines could lose their nerve and roll back their fares if they believe Northwest won’t go along by [Monday] morning.”<sup>138</sup> In fact, Northwest never went along. The price increases were rescinded, so the attempt to raise prices “fizzled.”<sup>139</sup>

The following Thursday, Northwest “reversed course” and raised prices.<sup>140</sup> Its price increase was similar in dollar magnitude to Continental’s earlier proposals but was distributed differently. While Continental had sought to raise prices based on distance traveled, Northwest implemented a price increase of up to twenty dollars on most leisure tickets (those with substantial purchase restrictions) and up to forty dollars on (unrestricted) business tickets. By Monday, Northwest’s price rise had been matched by all the big airlines except Southwest, and was not rescinded.<sup>141</sup>

This story illustrates several well-known features of airline-industry pricing. First, many price changes are implemented in a similar manner over a carrier’s entire route system. Such systemwide price changes are long lasting. While some price setting is managed on a route-by-route basis, systemwide price increases typically are not followed by a flurry of route-specific price adjustments undermining the

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<sup>135</sup> Scott McCartney, Major Airlines Retreat from Attempt to Raise Fares to Cover Higher Fuel Cost, *Wall St. J.*, Feb. 22, 2000, at A28.

<sup>136</sup> *Id.*

<sup>137</sup> Northwest, Southwest Hold Out on Increases in Round-Trip Fares, *Wall St. J.*, Mar. 13, 2000, at A12.

<sup>138</sup> *Id.*; see also *infra* note 144 (describing Southwest’s special circumstances).

<sup>139</sup> Melanie Trottman, Airlines Back Away from Fare Increase as Northwest Holds Its Prices Steady, *Wall St. J.*, Mar. 14, 2000, at A6.

<sup>140</sup> Susan Carey, Northwest, in Reversal, Increases Fares, a Move That Rivals Likely Will Follow, *Wall St. J.*, Mar. 17, 2000, at A13.

<sup>141</sup> Airline Fare Increase Started by Northwest Holds After Failures, *Wall St. J.*, Mar. 20, 2000, at B19.

systemwide price rise.<sup>142</sup> Second, the carriers match each other's price changes, and do so quickly.<sup>143</sup> Unless all major hub-and-spoke carriers go along, a systemwide price increase will not be carried out nationally.<sup>144</sup> Third, even though the airlines typically match systemwide price changes, they all do not necessarily want the same price change.<sup>145</sup> Fourth, a single carrier, here Northwest, constrains industry pricing. In recent years, Northwest has done so frequently, and as a result has been called the "industry maverick" or "spoiler."<sup>146</sup> Over

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<sup>142</sup> It is likely cost effective to change prices in multiple city-pair markets simultaneously, given the large number of routes and ticketing options that each hub-and-spoke carrier must price, and the frequency with which changing conditions affect some or all city-pair markets in a carrier's system simultaneously. Accordingly, it is appropriate to consider the possibility of systemwide competitive effects of an airline industry merger, even if the underlying markets involve passenger travel on individual city-pair routes. Doing so does not necessitate broadening the relevant market. In merger analysis generally, when coordinated competitive effects are alleged, the significance of demand, supply, and transactions complements should be taken into account in the competitive effects analysis rather than during market definition. See Jonathan B. Baker, *The Antitrust Analysis of Hospital Mergers and the Transformation of the Hospital Industry*, L. & Contemp. Probs., Spring 1988, at 93, 123-40 (discussing problems with cluster approach to market definition and suggesting pragmatic approach to product clusters).

<sup>143</sup> The carriers match fares because they fear that passengers would switch in response to a fare differential, at least if the rival is a significant one. While most passengers will not change their travel plans if all carriers raise prices a small amount, enough will switch from one carrier to another in response to a small price difference to make it unprofitable for any carrier to allow a significant rival to undercut it, even slightly. Rapid price matching is not unique to airlines. For example, it was commonplace in the sugar industry around 1930, during the heyday of the sugar refining cartel managed by the Sugar Institute. See Genesove & Mullin, *supra* note 118, at 392 (pointing to existence of Sugar Institute reports that "permitted quick, nearly contemporaneous [price-matching] responses").

<sup>144</sup> Southwest, America West, Alaska, and smaller carriers need not go along for the price increase to succeed. Southwest is as large as some of the major hub-and-spoke carriers, but it offers primarily low-cost, point-to-point service, often to secondary airports in major metropolitan areas. America West and Alaska have smaller and more regionalized networks than the major hub-and-spoke carriers.

<sup>145</sup> Different preferences are not surprising because the carriers tend to differ on a number of dimensions potentially relevant to pricing, including market shares; capacity utilization rates (load factors) and their determinants (such as national and regional economic conditions); costs of service (including labor issues such as the possibility of a strike); mix of business and leisure passengers; mix of local and connecting passengers; route structure; airport presence; service timing, quality, and frequency; frequent flyer programs; travel agent incentive programs; financial strength; and reputation for service and safety. Many of these factors may vary over time.

<sup>146</sup> See, e.g., Susan Carey, *Airlines' Fare Increase Is Imperiled as Delta, American Air Rescind Boost*, Wall St. J., Nov. 29, 1999, at A4; Susan Carey, *Northwest Follows Suit on Fare Rise*, Wall St. J., Feb. 1, 1999, at A3; Scott McCartney, *Northwest Air Undermines Attempt to Raise Fares*, Wall St. J., Aug. 11, 1998, at A3; Melanie Trotman, *Fare Increase by Major Airlines Stalls with Northwest, Delta Not Being Aboard*, Wall St. J., May 22, 2001, at A16. In earlier years, however, other carriers may have played the role of systemwide maverick. Similarly, when prices are altered on specific city-pair routes—the underlying markets—the identity of the route-specific maverick can vary by route. Cf. *Entry and Competition*, *supra* note 126, at 70 (noting that majority of passengers fly on routes

the same time period, no other carrier has played a similar role consistently in the systemwide competition among the major airlines.

With price matching but different preferences, the systemwide price rise that is established will have the scope and magnitude that is preferred by the carrier that seeks the smallest (meaning lowest and narrowest) price increase.<sup>147</sup> It is as though every significant carrier were polled as to which price increase it would select for all to adopt, and the industry price rise were set at the lowest price boost announced by any firm. The firm that prefers the lowest price increase can prevent prices from rising further merely by refusing to match a larger price increase; it need not initiate a price war. That carrier, Northwest in the example, is the industry maverick.

The interpretation placed on Northwest's conduct—that Northwest is constraining airline industry coordination—presumes that industry behavior reasonably can be understood as coordinated. Yet, based solely on the above description, which emphasizes parallel pricing, airline conduct would not necessarily be termed coordinated, and the resulting prices would not necessarily be expected to exceed competitive levels. As has long been understood, parallel pricing could reflect competition or collusion.<sup>148</sup> Other evidence must be used to discriminate between competition and market power, and determine whether market power is achieved through coordination or unilaterally.

The competitive benchmark for airline pricing, against which the possibility of market power must be measured, is not carrier marginal cost, as this is an industry where marginal-cost pricing likely would be insufficient to cover fixed and common costs. Rather, carriers can be expected to charge some or all passengers a price in excess of margi-

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served by no more than two carriers). For example, competition from Southwest has lowered fares in many city-pair markets. While the firm might be a maverick with respect to competition within those markets, it does not participate in the systemwide competition among the carriers and thus does not play the maverick role in that competition. See *id.* at 30-35, 49-55 (highlighting role of Southwest as low-fare carrier, and firm's strategy of emphasizing point-to-point service on dense short-haul routes rather than creating hub-and-spoke route network).

<sup>147</sup> In the example, Northwest changed the structure of the price increase and delayed its implementation. Had Northwest merely moved first in implementing an industrywide price rise, it would not have been clear whether Northwest was constraining industry price increases.

<sup>148</sup> Coordinating firms might raise prices simultaneously in order to exercise market power. Competing firms also might raise prices simultaneously, in response to a common cost increase or an increase in market demand. Accordingly, "conscious parallelism" has not yet read conspiracy out of the Sherman Act entirely." *Theatre Enters., Inc. v. Paramount Film Distrib. Corp.*, 346 U.S. 537, 541 (1954).

nal cost even under competition.<sup>149</sup> If the airlines are constrained by competitive forces from exercising market power, it is by the threat of rapid and inexpensive entry.<sup>150</sup>

If the airline industry were performing competitively, industry outcomes thus would be understood best as consistent with what economists would term a "contestable" market.<sup>151</sup> This competitive benchmark, however, is implausible as a description of actual airline pricing. Industry conduct is, instead, better understood as the product of some form of oligopoly conduct that generates market power.<sup>152</sup> The primary evidence against the contestable-market hypothesis comes from the many economic studies generating results inconsistent with the free-entry requirement for contestability.<sup>153</sup> Other implica-

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<sup>149</sup> Free entry is not necessarily inconsistent with price discrimination, so long as the entrant's products are not perfect substitutes for those of incumbents. See Severin Borenstein, *Price Discrimination in Free-Entry Markets*, 16 *Rand J. Econ.* 380, 394 (1985) (arguing that free entry alone generally will not prevent price discrimination when brand preferences are strong); cf. Lars A. Stole, *Nonlinear Pricing and Oligopoly*, 4 *J. Econ. & Mgmt. Strategy* 529, 550, 555 (1995) (noting conditions under which uniform pricing is not an equilibrium when nonlinear pricing is possible).

<sup>150</sup> In a market in which competitive outcomes are generated by free entry, the competitive price is effectively the entrant average cost, which could exceed incumbent marginal cost. Thus, a recent report advocates policies designed to generate outcomes closer to what would be produced by free entry with price discrimination. *Entry and Competition*, supra note 126, at 24-26.

<sup>151</sup> In a contestable market, the potential for rapid and inexpensive entry would deter or counteract any exercise of market power, no matter how small the number of incumbent firms.

<sup>152</sup> The authors of the contestability theory have observed that their "initial enthusiasm" for viewing the airline industry this way required "reconsideration," and that the "industry does not conform perfectly to the contestability model." William J. Baumol & Robert D. Willig, *Contestability: Developments Since the Book*, in *Strategic Behaviour and Industrial Competition* 9, 24-27 (D.J. Morris et al. eds., 1986).

<sup>153</sup> First, entry into city-pair markets often fails, the exception being entry by Southwest. Measuring success by the maintenance of new origin/destination pairs with at least a five percent share one year after entry, Bamberger and Carlton find that over forty percent of new service offered by major carriers failed during the 1990-1997 period, and an even higher fraction of low-fare carrier entry failed. Gustavo E. Bamberger & Dennis W. Carlton, *An Empirical Assessment of Predation in the Airline Industry 4-6* (Nov. 10, 1999) (unpublished manuscript, on file with the *New York University Law Review*). Taken at face value, these estimates suggest a substantial failure rate for entry. Moreover, they likely understate that rate. Bamberger and Carlton employ a definition of entry that likely is dominated by expansion of service by incumbent carriers, either nonstop carriers adding more nonstop flights or connecting carriers adding more connecting flights. In either case, the carriers may have had established reputations in a city-pair market before they expanded service, giving them survival advantages not enjoyed by de novo entrants. They also may be participating already in the oligopoly interaction in that market. Accordingly, the failure rate for the introduction of daily nonstop service by a carrier not presently offering it—the kind of entry most likely to compete away supracompetitive oligopoly pricing—likely is higher than the rate Bamberger and Carlton observe.

Second, studies of a number of mid-1980s airline industry mergers, including TWA/Ozark and Republic/Northwest, have found that those deals led to higher fares, and price

tions of the competitive benchmark story also seem implausible,<sup>154</sup>

increases were not deterred or competed away by new entrants. See E. Han Kim & Vijay Singal, *Mergers and Market Power: Evidence from the Airline Industry*, 83 *Am. Econ. Rev.* 549, 550 (1993) (finding airline merges between 1985 and 1988 led to higher fares); see also Severin Borenstein, *Airline Mergers, Airport Dominance, and Market Power*, 80 *Am. Econ. Rev.* 400, 404 (1990) (finding only small price increases at St. Louis following TWA/Ozark combination but significant price hikes at Minneapolis after Republic/Northwest deal); Gregory J. Werden, Andrew S. Joskow & Richard L. Johnson, *The Effects of Mergers on Price and Output: Two Case Studies from the Airline Industry*, 12 *Managerial & Decision Econ.* 341, 348 (1991) (same).

Third, contrary to the prediction of the contestability theory, high fares do not induce entry, prices and output are not always at competitive levels but are affected by the number and size of actual and potential rivals on a route, and hub networks create entry barriers. See Severin Borenstein, *Hubs and High Fares: Dominance and Market Power in the U.S. Airline Industry*, 20 *RAND J. Econ.* 344, 345 (1989) (noting factors permitting airport-dominant carriers to deter entry); Gloria J. Hurdle et al., *Concentration, Potential Entry, and Performance in the Airline Industry*, 38 *J. Indus. Econ.* 119, 137 (1989) (finding that prices are best explained by measures of concentration incorporating number and size distribution of incumbents and number of potential entrants); Andrew S. Joskow et al., *Entry, Exit, and Performance in Airline Markets*, 12 *Int'l J. Indus. Org.* 457, 469 (1994) (observing that high cost-corrected prices on given city-pair do not generally induce entry); Steven A. Morrison & Clifford Winston, *Empirical Implications and Tests of the Contestability Hypothesis*, 30 *J.L. & Econ.* 53, 60 (1987) (showing that in one study both number of potential entrants and number of actual competitors affected welfare per traveler-mile); Steven A. Morrison & Clifford Winston, *The Dynamics of Airline Pricing and Competition*, 80 *Am. Econ. Rev.* 389, 392 (1990) (citing finding that "fares are higher on routes with greater carrier concentration at airports"); Robert A. Sinclair, *An Empirical Model of Entry and Exit in Airline Markets*, 10 *Rev. Indus. Org.* 541, 542 (1995) (noting that entry is less likely at airports that are part of incumbent's large hub system).

Fourth, entry by nonmajor carriers will be discouraged by the entrant's reasonable expectation of an aggressive competitive response by incumbents. See Patrick Bolton et al., *Predatory Pricing: Strategic Theory and Legal Policy*, 88 *Geo. L.J.* 2239, 2261-62 (2000) (discussing locally dominant airlines' predatory pricing strategies in response to new entry of independent carriers); Scott McCartney, *Upstart's Tactics Allow It to Fly in Friendly Skies of a Big Rival*, *Wall St. J.*, June 23, 1999, at B1 (reporting that aggressive competition by small carrier was discouraged by dominant carrier's pricing strategy). Incumbent airlines face limited antitrust risk in mounting such a response, given the high legal hurdles impeding successful proof of monopolization through predatory pricing. See, e.g., *United States v. AMR Corp.*, 140 F. Supp. 2d 1141, 1193-96 (D. Kan. 2001) (acknowledging high standard of proof for predatory pricing in context of airline case); cf. *Brooke Group v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 231-32 (1993) (rejecting predatory pricing claim on basis that evidence failed to show defendant had "a reasonable prospect of recovering its losses from below-cost pricing"); Jonathan B. Baker, *Predatory Pricing After Brooke Group: An Economic Perspective*, 62 *Antitrust L.J.* 585, 599 (1994) (noting that *Brooke Group* majority presumed predatory pricing was implausible, ignoring record evidence arguably demonstrating it).

Finally, entry by foreign carriers into domestic U.S. markets generally is prohibited by statute. See 49 U.S.C. § 40102(a)(2), (a)(15) (1994) (defining air carrier to exclude corporations in which non-U.S. citizens own more than twenty-five percent of voting stock); § 41102 (providing mechanism by which U.S. citizen air carriers may obtain air transportation authority).

<sup>154</sup> First, if free entry is protecting consumers from high prices in a market in which firms sell multiple products and the prices on many individual products exceed marginal cost, then the entry constraint essentially is capping the total contribution to profits (revenues

and the structure of passenger airline markets likely would not preclude the firms from reaching a consensus and detecting and responding to cheating on it.<sup>155</sup>

Moreover, carrier behavior is understood better as coordinated rather than unilateral.<sup>156</sup> That is, the firms interact repeatedly and ap-

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less variable costs) derived from each incumbent firm's products taken as a group. The implausible implication is that if prices for some product (here airline tickets) rise, other prices must simultaneously be cut to preserve the total contribution.

Second, the competitive benchmark story does not allow the firms to interact strategically, considering the likely response of rivals when making pricing and other competitive decisions. Yet strategic behavior is commonly presumed by industry analysts. It is consistent with the empirical evidence, see James A. Brander & Anming Zhang, *Dynamic Oligopoly Behaviour in the Airline Industry*, 11 *Int'l J. Indus. Org.* 407, 433 (1993) (finding "substantial implicit coordination" among airlines during 1984-1988 period), and it was central to the conduct alleged by the Justice Department in its early 1990s price-fixing case against the major airlines. See *United States v. Airline Tariff Publ'g Co.*, 59 Fed. Reg. 15,225, 15,230-32 (Mar. 31, 1994) (competitive impact statement) (describing strategic pricing behavior among airlines); *United States v. Airline Tariff Publ'g Co.*, 58 Fed. Reg. 3971, 3976-79 (Jan. 12, 1993) (competitive impact statement) (same). In one type of agreement alleged by the Justice Department, "[t]he soliciting airline would use fare basis codes, last ticket dates and footnote designators to communicate to the disruptive competitor, and other interested airlines, the limited reason (punishment) for the soliciting airline's discount and its willingness to eliminate the discount in exchange for the competitor eliminating the original discount." *Airline Tariff Publ'g Co.*, 59 Fed. Reg. at 15,231.

<sup>155</sup> The prospect of entry likely would not deter coordination. See *supra* note 153 and accompanying text. The carriers also have tools potentially available to help them solve the other cartel problems. They may be able to reach a consensus through leader-follower behavior on price, while preventing destabilizing shifts in market shares by refraining from major alterations in service frequencies and equipment on the routes they serve. (In the airline industry, where prices are routinely matched rapidly, the carriers regularly forecast market-share shifts on individual routes based primarily on variation in the capacity (frequency and seats) of the aircraft devoted to the route.) See Barry C. Smith et al., *Airline Planning and Marketing Decision Support: A Review of Current Practices and Future Trends*, in *Handbook of Airline Marketing* 117, 120-21 (Gail F. Butler & Martin R. Keller eds., 1998) [hereinafter *Handbook of Airline Marketing*] (explaining that common type of market-share forecast employs Quality of Service Index (QSI)); Benson B. Yuen & Michael E. Irrgang, *The New Generation of Revenue Management: A Network Perspective*, in *Handbook of Airline Marketing*, *supra*, at 319, 327-28 (explaining that airline can estimate competitors' load factors using QSI data). The carriers can detect rival price cutting rapidly through the information exchange required to make prices available to travel agents and passengers, and can respond quickly. See *Airline Tariff Publ'g Co.*, 59 Fed. Reg. at 15,232 (competitive impact statement) (explaining how computerized fare dissemination system makes possible prompt punishment of price cutter); *Airline Tariff Publ'g Co.*, 58 Fed. Reg. at 3977 (competitive impact statement) (noting that electronic fare-dissemination "ensures that any airline's fare changes can be detected easily and rapidly"). Moreover, the most attractive methods available to the carriers for cheating—expanded Internet discounts, expanded corporate discounts, and adding leisure seats (rather than holding those seats for last-minute business travelers)—would not allow any firm to steal much of the market rapidly without detection and response. This is because only a fraction of the passengers served annually by the carriers are in the market seeking to purchase tickets during any plausible time period for undetected cheating.

<sup>156</sup> A maverick also constrains airline pricing under the most plausible unilateral theory, "quick response." Under this form of oligopoly conduct, firms respond to rival price cut-

pear to follow competitive strategies that take into account past conduct by rivals.<sup>157</sup> But coordination appears to be imperfect and incomplete, leaving prices well below what the airlines would charge were they maximizing joint profits. Industry participants generally consider the demand for business tickets to be inelastic, suggesting that prevailing prices are below what perfectly colluding carriers would charge. It is not surprising that the carriers would fall short of acting collectively as if they were a monopolist. Carriers may have difficulty credibly committing to the severe punishment of rivals who might be tempted to cheat on a coordinated outcome. Moreover, antitrust concerns would inhibit both communications aimed at preventing rivals from misinterpreting as cheating efforts to negotiate complex patterns of price changes, and side payments to induce the maverick to raise price more than it is willing to do on its own.<sup>158</sup>

Parallel pricing in the airline industry thus is interpreted best as resulting from imperfect coordination, rather than competition, the unilateral exercise of market power, or complete coordination. This is the setting in which a maverick firm would be expected to constrain coordination from becoming more effective or complete. With respect to systemwide pricing interaction of the major carriers, that role has in recent years commonly been played by Northwest.

#### D. Identifying the Maverick

Three strategies are available for antitrust enforcers and courts to employ to identify the maverick in an industry in which firms are co-

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ting without delay, but they do not follow pricing or output strategies that recognize repeated interaction. See Robert M. Anderson, Quick-Response Equilibrium 11-12 (Inst. of Bus. & Econ. Research, Univ. of Cal., Berkeley, Working Paper IP-323, 1984) (explaining that "the strategy of matching price cuts is a quick-response equilibrium, that supports an outcome that is . . . the most collusive possible"); V. Bhaskar, The Kinked Demand Curve: A Game-Theoretic Approach, 6 *Int'l J. Indus. Org.* 373, 374-75 (1988) ("The ability of firms to respond without delay to undercutting ensures that the unique noncooperative equilibrium is collusive . . ."); Severin Borenstein, Rapid Price Communication and Coordination: The Airline Tariff Publishing Case (1994), in *The Antitrust Revolution: Economics, Competition, and Policy* 310, 313-14 (John E. Kwoka Jr. & Lawrence J. White eds., 3d ed. 1999) (discussing quick-response model in context of airline pricing); Robert H. Gertner, The Rule of Firm Asymmetries for Tacit Collusion in Markets with Immediate Competitive Responses 5-6, 23 (Apr. 1993) (unpublished manuscript, on file with the *New York University Law Review*) (same). Accordingly, the implications of the quick-response unilateral theory for antitrust enforcement are similar to those of the coordination theory.

<sup>157</sup> See *supra* note 154 (discussing strategic behavior in airline industry).

<sup>158</sup> The consent settlements of the Justice Department's airline price-fixing from the early 1990s limit some of the tools the carriers allegedly employed to make complex cross-market bargains. See *Airline Tariff Publ'g Co.*, 59 Fed. Reg. at 15,227 (proposed final judgment) (prohibiting, e.g., dissemination of first-ticket dates, last-ticket dates, and superfluous footnote designators); *Airline Tariff Publ'g Co.*, 58 Fed. Reg. at 3972 (proposed final judgment) (same).

ordinating, though none is guaranteed to succeed.<sup>159</sup> The first such strategy might be termed *revealed preference*: The maverick might be identified by observing that it actually constrains industry pricing. This was how Northwest was found to be the maverick in the airline industry example, and how the maverick was identified in *JTC Petroleum Co. v. Piasa Motor Fuels, Inc.*<sup>160</sup> When Northwest, alone among significant firms, failed to raise prices in the airline example, the other carriers were forced to rescind the price increases. Moreover, Northwest played the maverick role for a period of years,<sup>161</sup> while no other carrier acted similarly in the systemwide competition among the major airlines, suggesting that Northwest likely would continue in that role.<sup>162</sup>

The second approach looks for *natural experiments* to identify the firm that constrains industry pricing. Some factors likely affecting the market price preferred by the maverick are firm specific. For example, a firm's marginal costs may rise or fall for reasons related to the nature or location of its production processes, and in consequence may not be paralleled by cost changes affecting its rivals.<sup>163</sup> If that firm is a maverick, the market price will change; if another firm is the maverick, the market price will not.<sup>164</sup> This idea can be exploited to

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<sup>159</sup> This discussion ignores the possibility that colluding firms have boosted price up to the level at which a new competitor would be expected to enter the market. If so, the potential entrant, rather than any incumbent firm, is effectively the maverick.

<sup>160</sup> 190 F.3d 775 (7th Cir. 1999). This case is discussed *infra* at notes 244-56 and accompanying text. Another possible example of a maverick thought to constrain coordination by virtue of its observable marketplace conduct is a century old. Professor Scherer considers Andrew Carnegie to have been the steel industry's "most aggressive competitor" at the end of the nineteenth century, and in essence explains the creation of the United States Steel Corporation in 1901 as an effort by Carnegie's rivals to end steel industry price competition by buying him out. F.M. Scherer, *Industry Structure, Strategy, and Public Policy* 148-50 (1996).

<sup>161</sup> See *supra* note 146.

<sup>162</sup> The inference that a recent maverick, even one that has played the maverick role for a while, will continue to do so in the future could be strengthened by tying the firm's incentive to constrain industry coordination to features of firm or market structure that are unlikely to change over time. Such features are termed *a priori* factors in the discussion below. See *infra* notes 166-73 and accompanying text. Even without such links, a consistent pattern over several years, as in airlines, leads reasonably to the inference that the past maverick is likely to continue in that role, and thus provides a reasonable basis for policy analysis. In contrast, if the identity of the industry maverick may change frequently and unpredictably, the analysis of coordinated competitive effects is addressed better through the structural presumption than through the identification of a maverick. See *infra* Part V.

<sup>163</sup> Other potential sources of natural experiments involve firm-specific variation in the *a priori* factors discussed *infra* at notes 166-73 and accompanying text.

<sup>164</sup> This discussion ignores the possibility that a firm-specific cost reduction (or other source of natural experiment) may turn a nonmaverick into a maverick, and the possibility that a firm-specific cost reduction may change a nonmaverick firm's behavior in a way that affects maverick incentives (as by altering punishment threats).

“test” which firm is the maverick if the necessary data are available and sufficiently numerous natural experiments occur within the sample period.<sup>165</sup>

The third approach, which may be termed the *a priori factors* approach, relies on understanding the reasons a firm would prefer a high or low price in the particular market under investigation. For example, documentary evidence cited by the district court in a recent merger case indicated that in the drug wholesaling industry, excess capacity creates price pressure.<sup>166</sup> If this is indeed the driving force behind firm preferences as to the industry price, and the firms are coordinating, a firm with substantially greater excess capacity than most of its rivals (either absolutely or relative to sales) is likely to be the industry maverick. Another example of the use of *a priori factors* to identify a maverick comes from the cigarette industry: Liggett may have been a maverick during the 1980s and 1990s in part because, uniquely among the major cigarette manufacturers, it had a primary commitment to the discount segment of the cigarette market.<sup>167</sup>

A variety of structural characteristics might give a firm a greater economic incentive to prefer a lower coordinated price than do its rivals or otherwise deviate from terms of coordination when its rivals would not.<sup>168</sup> One intuition comes from thinking about the forces favoring a higher coordinated price versus a lower one from the perspective of an individual firm. The increased profits that would result from a higher coordinated price come from increasing the price-cost margin on the output that the firm would continue to sell. This bene-

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<sup>165</sup> For a description of how to undertake such a test under the assumption that the same firm is the maverick throughout the sample period, see Jonathan B. Baker & Daniel L. Rubinfeld, *Empirical Methods in Antitrust Litigation: Review and Critique*, 1 *Am. L. & Econ. Rev.* 386, 404-05 (1999). If the identity of the maverick could change over the sample period, the statistical analysis would require a selection equation as well. Other empirical methods of identifying coordination or collusion do not focus on the role of the maverick but do share with this approach the idea of comparing industry behavior to a competitive benchmark. See Robert H. Porter & J. Douglas Zona, *Detection of Bid Rigging in Procurement Auctions*, 101 *J. Pol. Econ.* 518, 530 (1993) (proposing examination of behavioral differences between cartel and competitive bidders); Robert H. Porter & J. Douglas Zona, *Ohio School Milk Markets: An Analysis of Bidding*, 30 *RAND J. Econ.* 263, 264-65 (1999) (concluding that bidding behavior of alleged colluders differed from that of other firms); Patrick Bajari & Lixin Ye, *Competition Versus Collusion in Procurement Auctions: Identification and Testing 2* (Feb. 20, 2001) (unpublished manuscript, on file with the *New York University Law Review*) (explaining conditions of “conditional independence” and “exchangeability” as competitive benchmark for evaluating bidding).

<sup>166</sup> *FTC v. Cardinal Health, Inc.*, 12 F. Supp. 2d 34, 63-64 (D.D.C. 1998).

<sup>167</sup> See *infra* notes 257-79 and accompanying text.

<sup>168</sup> 1992 Merger Guidelines, *supra* note 3, § 2.12; see Baker, *supra* note 8, at 203-04 n.21 (discussing structural characteristics that might make firm’s incentive to cheat greater than that of its rivals).

fit likely will be greater, among other things, the larger the firm's market share. The increased profits that would result from instead lowering the coordinated price come from increasing the quantity sold. If industry sales would rise substantially, and if the firm gets a significant proportion of the increased industry sales, then the firm's profits might rise, notwithstanding a reduction in its price-cost margin. The increase in profits likely will be greater, among other things, the greater the firm's ability to expand sales inexpensively.<sup>169</sup> Thus, in identifying its preferred coordinated price for the industry, each firm will weigh the benefits of a higher coordinated price, which may be related importantly to its market share, with the benefits of a lower coordinated price, which may be related importantly to its ability to expand sales inexpensively.<sup>170</sup>

The Merger Guidelines provide two examples of a priori factors tending to identify a likely maverick. The examples compare industry participants on dimensions suggested by the above intuitions. First,

in a market where capacity constraints are significant for many competitors, a firm is more likely to be a maverick the greater is its excess or divertible capacity in relation to its sales or its total capacity, and the lower are its direct and opportunity costs of expanding sales in the relevant market.<sup>171</sup>

Second, "[a] firm also may be a maverick if it has an unusual ability secretly to expand its sales in relation to the sales it would obtain if it

<sup>169</sup> Firms also might prefer a lower industry price during times of financial distress in order to shift revenues from the future to the present, or to reassure lenders by improving the predictability of cash flows. Cf. Busse, *supra* note 131, at 22-25 (finding that carriers in poor financial condition are more likely than others to start airline price wars).

<sup>170</sup> As this discussion emphasizes, in identifying a maverick through a priori factors, the primary focus generally should be on the question of whether a higher or lower coordinated price likely would be profitable for the firm, not on whether cheating would be profitable. But cf. Baker, *supra* note 8, at 203 (suggesting that unusual ability to attract sales away from rivals through price cuts also could encourage firm to play role of maverick). Under some circumstances, however, it is possible that a firm's preference for a lower coordinated price would instead be driven by factors that affect its incentives to go along with the punishment that would be required by the terms of the coordinated arrangement in the event deviation were to occur, as previously noted at *supra* note 123.

<sup>171</sup> 1992 Merger Guidelines, *supra* note 3, § 2.12. The Guidelines explain:

This is so because a firm's incentive to deviate from price-elevating and output-limiting terms of coordination is greater the more the firm is able profitably to expand its output as a proportion of the sales it would obtain if it adhered to the terms of coordination and the smaller is the base of sales on which it enjoys elevated profits prior to the price cutting deviation.

*Id.* The author is aware of two nonpublic merger investigations, one at each federal anti-trust agency, where a firm with relatively high excess capacity was viewed by some as a maverick constraining coordination. In one case, the merger did not involve the maverick, and was not challenged; in the other case the merger would have removed a maverick, and the transaction was abandoned after agency opposition became clear.

adhered to the terms of coordination,” as might arise “from opportunities to expand captive production for a downstream affiliate.”<sup>172</sup> In some cases, however, the a priori factors might not point exclusively in one direction. Firms that are high in one factor encouraging low prices may be low in others, making it difficult to identify the maverick in this manner.<sup>173</sup>

### III

#### MAVERICKS AND MERGERS

The airline example illustrates how a focus on identifying the maverick can allow antitrust to go beyond the structural presumption by providing a mechanism that explains why the loss of a firm through merger or exclusion will improve coordination. Moreover, the concept of a maverick can operate as sword or shield in merger review, helping distinguish anticompetitive mergers from procompetitive ones. A range of possible competitive consequences of mergers will be treated in the discussion below.

#### *A. Mergers Involving the Maverick*

##### *1. Removing the Maverick's Constraint on Coordination*

If Northwest is indeed the airline industry maverick, constraining more effective coordination, that observation should be central to the antitrust analysis of horizontal mergers or exclusionary practices in the airline industry. With respect to mergers involving the maverick, the concern is that a hypothetical merger involving Northwest may harm competition by removing the maverick from the marketplace. Absent cognizable efficiencies from the transaction,<sup>174</sup> the merged firm most likely would prefer higher fares than Northwest desired on its own (though presumably lower fares than its merger partner previously would have sought). If so, the merger could remove a constraint

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<sup>172</sup> 1992 Merger Guidelines, *supra* note 3, § 2.12; cf. *B.F. Goodrich Co.*, 110 F.T.C. 207, 329-38 (1988) (discussing effects of asymmetric vertical integration relative to rivals on firm's incentive to deviate from coordinated understanding limited to upstream market).

<sup>173</sup> In the airline industry, a wide range of factors potentially could lead a firm to prefer a smaller route-specific or systemwide price increase than that favored by its rivals. These factors may include lower market share, lower variable costs, lower demand, lower load factor (capacity utilization rate), less financial strength, less attractive route structure, lesser airport presence, lower service quality, less attractive frequent flyer programs, and weaker reputation (as from crashes or strikes).

<sup>174</sup> Under the Merger Guidelines, efficiencies are cognizable if they are verified, merger specific, and not a disguised anticompetitive effect. 1992 Merger Guidelines, *supra* note 3, § 4 (revised 1997).

on more effective coordination, and lead to higher fares nationwide.<sup>175</sup>

Here, the concept of a maverick could operate as a sword, explaining precisely why the particular increase in market concentration generated by merger is likely to lead to higher prices. In the absence of the constraint on coordination posed by the airline industry maverick, which often has been Northwest in recent times, prices would be expected to rise. How far would depend on the preferences of the carrier who would become the maverick in Northwest's place. If this potential maverick favored keeping industry prices nearly as low as Northwest did, then prices would not rise a great deal. That outcome, however, would be unlikely. The major airlines with hub-and-spoke route networks are sufficiently few in number, and sufficiently different in their characteristics, as to make it plausible that prices would rise substantially following the disappearance of the maverick.

A simple numerical example may clarify why prices would rise. Assume that Northwest is the maverick with respect to systemwide competition, and that an airline's prices can be summarized with a single index number. Premerger airline prices are at 100, the level preferred by the maverick, Northwest. Had the other carriers been polled as to their preferred price level, Continental would have favored an industry price index of 125 while all other major carriers, including Delta, would have preferred to allow the industry price index to rise to 150.<sup>176</sup> If Delta were to acquire Northwest, the merged firm would be expected to prefer an industry price level in between what Northwest and Delta individually favored premerger, for example, 120. Under such circumstances, and assuming that the merger has no effect on the industry price level preferred by any other carrier, the price index would be expected to rise from 100, the level at which Northwest kept it at before being acquired, to 120, the level the

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<sup>175</sup> See, e.g., *United States v. ALCOA*, 377 U.S. 271, 280-81 (1964) (Rome Cable) (upholding challenge to loss of small "aggressive competitor" in market dominated by three large firms); *B.F. Goodrich Co.*, 110 F.T.C. 207, 329-38 (1988) (prohibiting merger involving firm with incentive to deviate from upstream coordination as result of asymmetric vertical integration relative to its rivals); *United States v. Premdor Inc.*, 66 Fed. Reg. 45,326, 45,336-37 (Aug. 28, 2001) (competitive impact statement) (alleging harm to competition from merger involving firm with incentive to deviate from downstream coordination as result of asymmetric vertical integration relative to its rivals); *Mahle GmbH*, 62 Fed. Reg. 10,566, 10,567 (FTC Mar. 7, 1997) (analysis to aid public comment on proposed consent agreement) (finding that merger substantially lessened competition in four-firm market by giving control of "an aggressive and innovative competitor" to "one of only two firms that together have dominated the market").

<sup>176</sup> Recall that when coordination is imperfect, the remaining firms cannot employ side payments and punishment strategies sufficient to induce Northwest and Continental to prefer a price closer to 150.

merged firm now prefers. Here the merged firm remains the maverick, but the merger raises the industry price by increasing the maverick's preferred price. Had the merged firm instead preferred an industry price index of 130, prices still would have risen, but only to 125, the index level preferred by Continental, the firm that then would become the new industry maverick.

## 2. *Tightening the Maverick's Constraint on Coordination*

It is also possible, though markedly less likely, that a merger involving Northwest may enhance the maverick's incentives to keep price low. This secondary possibility is less likely because it requires the transaction to generate large variable cost savings for the merged entity (or other substantial efficiencies capable of benefiting buyers, such as providing the merged firm with the ability to launch new products). If it were unusually costly for Northwest to expand output premerger, and were it thus plausible that an acquisition would lower its variable costs substantially, it would be unlikely that Northwest would have chosen to constrain coordination premerger; its premerger incentive more likely would have been to go along with higher prices. Moreover, this possibility also requires that the merged firm's incentive to lower price, resulting from those variable cost savings, dominate any incentive to increase price that arises from combining the maverick with a firm that previously would have sought higher fares.<sup>177</sup> Under such circumstances, the merger would be procompetitive, as it would lead the maverick to seek even lower prices than before.<sup>178</sup> Because the acquisition of a maverick appears substantially more likely to harm competition than to promote it, the courts plausibly might develop a rebuttable presumption that such a transaction would harm competition.<sup>179</sup>

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<sup>177</sup> For this possibility to be credible, the efficiencies must be so large as to make the expected postmerger profits exceed the sum of the premerger profits for the two firms, taking into account the likelihood that industry prices will fall.

<sup>178</sup> In terms of the numerical example in the previous subsection, it is as though the efficiencies from the acquisition cause the merged firm's preferred industry price to fall to ninety. Under such circumstances, the merged firm would lower prices and the other firms would follow.

<sup>179</sup> Such a rule would be unlikely to have adverse second-order incentive effects. It is implausible, for example, that a firm that would otherwise find it individually profitable to keep prices from rising, instead would decide to allow industry prices to increase, at a sacrifice of short term profits, in order to avoid being identified as a maverick by antitrust enforcers when making a future horizontal acquisition. Moreover, to the extent second-order effects are important, they may be equally procompetitive: A firm may choose to lower prices and constrain coordination in order to appear to be a maverick as a part of a regulatory strategy to fend off a threatened hostile takeover.

## B. Mergers Involving Nonmavericks

The assumption that Northwest is the industry maverick, constraining more effective coordination, would also bear on the analysis of industry mergers not involving that firm. Consider, for example, a merger that was proposed in the spring of 2001 between United and US Airways.<sup>180</sup> In theory, and without taking a view as to the likely competitive effects of the actual transaction,<sup>181</sup> that merger could have affected the industry price in several ways. These possibilities will be used to frame the analysis below. However, it is not the purpose of this Article to evaluate the actual United/US Airways merger proposal, or to determine which, if any, of these theories would have captured best its likely competitive significance.

### 1. No Effect on the Maverick's Incentives

In the most straightforward scenario involving a merger of nonmavericks, the transaction may have no effect on competition. If Northwest is the industry maverick, it may continue to constrain prices after the merger, much as it did before.<sup>182</sup> If so, the concept of a maverick would operate as a shield to undermine an antitrust challenge to a merger that increases market concentration. A litigated example is provided by *New York v. Kraft General Foods, Inc.*<sup>183</sup>

The *Kraft* case involved a challenge by the Attorney General of New York to an acquisition in the breakfast cereal industry. Kraft, the acquiring firm, was the third-largest seller of ready-to-eat cereals, with about twelve percent of nationwide sales; most of its products were sold under the Post brand.<sup>184</sup> At the beginning of 1993, Kraft acquired the breakfast cereal assets of the sixth-largest firm, Nabisco, whose brand accounted for about three percent of the market.<sup>185</sup> Two other firms, Kellogg and General Mills had the largest national mar-

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<sup>180</sup> See *supra* notes 1-2 and accompanying text.

<sup>181</sup> Any analysis of the competitive effects of the actual transaction also would need to consider the potential loss of competition on individual city-pair routes served primarily by the merging carriers, such as routes connecting their hubs, and whether the proposed divestiture of routes and gates to a spinoff partially owned by American Airlines will be sufficient to solve any competitive problems.

<sup>182</sup> Another alternative that might have been relevant to the analysis of the actual United/US Airways merger has been excluded by this assumption. The identity of the airline industry maverick has changed over the years, as market conditions and business fortunes vary. With some probability, absent the merger, either United or US Airways could become the industry maverick in the future. This merger could have removed that possibility, leading to higher prices than otherwise would occur, through the mechanism discussed *supra* at Part III.A.1, or lower prices as discussed *supra* Part III.A.2.

<sup>183</sup> 926 F. Supp. 321 (S.D.N.Y. 1995).

<sup>184</sup> *Id.* at 325.

<sup>185</sup> *Id.* at 325-26.

ket shares in the industry, approximately thirty-seven and twenty-five percent, respectively.<sup>186</sup>

New York charged that the merger would harm competition in two ways: facilitating coordination among the leading breakfast-cereal manufacturers, and giving the merged firm unilateral incentives to raise prices for products of the two firms that were close substitutes.<sup>187</sup> Judge Kimba Wood rejected both theories, but only the coordinated competitive effects allegations are of interest here.<sup>188</sup> In support of that allegation, New York relied on the dinner party story claim that “any time that you reduce the major sellers in a market from six to five, you increase the likelihood of anticompetitive coordinated conduct.”<sup>189</sup> Judge Wood acknowledged that this view “reflects economists’ conventional wisdom” and that it was consistent with the testimony of the court-appointed economic expert, Professor Alfred Kahn.<sup>190</sup>

But Judge Wood did not stop her analysis with the dinner party story. She pointed out the necessity of considering “whether the increase in concentration that results from this Acquisition is, in fact, likely to lessen competition.”<sup>191</sup> Accordingly, she evaluated the plausibility of the proposed mechanism by reviewing the “two scenarios offered by the State as more competitive than the scenario produced as a result of the Acquisition:”<sup>192</sup> forcing Nabisco to retain its breakfast cereal assets with the hope that it would “decide both to resume manufacturing [ready-to-eat] cereal and to be an industry ‘maverick,’” or allowing Nabisco to sell these assets to a new entrant who, the state believes, would “find it in its interest to be more of an industry maverick than Kraft.”<sup>193</sup>

Judge Wood concluded, based substantially on the views of Professor Kahn, that the transaction was not the acquisition of a firm that constrains more effective coordination: “In the past, Nabisco was no maverick. Instead, it followed the same competitive practices as its larger competitors . . . .”<sup>194</sup> The state did not allege, and Judge Wood

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<sup>186</sup> *Id.* at 335.

<sup>187</sup> *Id.* at 363-66.

<sup>188</sup> The two theories may be understood as alleged in the alternative.

<sup>189</sup> *Kraft Gen. Foods*, 926 F. Supp. at 364. Based on the market share figures that Judge Wood found the most probative, the acquisition would have raised the HHI by 66 points to 2281. *Id.* at 336.

<sup>190</sup> *Id.* at 364.

<sup>191</sup> *Id.*

<sup>192</sup> *Id.*

<sup>193</sup> *Id.*

<sup>194</sup> *Id.* at 364-65. The court also concluded that enjoining a merger would not create a maverick firm. Judge Wood found that neither Nabisco nor a new entrant would be likely to compete differently from, or more effectively than, Kraft. *Id.*

did not consider, anticompetitive scenarios predicated on the possibility that a merger among nonmaverick firms would harm competition by excluding a maverick or inducing the maverick to prefer higher prices. Accordingly, and notwithstanding the increase in industry concentration, New York's challenge to the merger failed because the state could not explain why the loss of the acquired firm, Nabisco, would remove a constraint on coordination.

## 2. *Merger Creates a Maverick*

A merger involving firms that are not mavericks, such as United and US Airways, could benefit competition by creating a new industry maverick. In particular, it could confer such large efficiencies on the merging parties as to lead them to prefer a much lower price than either did before the transaction, one below the price desired by Northwest, the current industry maverick.<sup>195</sup> This possibility is recognized by the Merger Guidelines.<sup>196</sup>

The district court's decision in *Federal Trade Commission v. H.J. Heinz Co.*,<sup>197</sup> a case growing out of the FTC's challenge to Heinz's acquisition of another baby food producer, Beech-Nut, suggests how a merger can undermine the possibility of coordination by creating a maverick. Although the D.C. Circuit disagreed with the district court's conclusion that the record evidence was sufficient to prove that possibility, and ordered the district court to enter a preliminary injunction barring the merger, the appeals court recognized that on a different record, an efficiencies defense to the government's coordinated competitive effects could prevail.<sup>198</sup> Accordingly, the district court's analysis is instructive as to the kind of facts that, if successfully demonstrated in another case, would tend to show that a merger could benefit competition by creating an industry maverick.

The basic facts about market structure were, for the most part, not in dispute. The district court found that the relevant market, jarred baby food in the United States, was highly concentrated.<sup>199</sup>

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<sup>195</sup> If the possibility that this merger would generate a maverick seems far-fetched, consider instead a hypothetical combination of three largely regional hub-and-spoke carriers—TWA, America West, and Alaska—to create a more national carrier.

<sup>196</sup> 1992 Merger Guidelines, *supra* note 3, § 4 (revised 1997) (“In a coordinated interaction context . . . , marginal cost reductions may make coordination less likely or effective by enhancing the incentive of a maverick to lower price or by creating a new maverick firm.”).

<sup>197</sup> 116 F. Supp. 2d 190 (D.D.C. 2000), *rev'd*, 246 F.3d 708 (D.C. Cir. 2001). The author testified as an expert economic witness on behalf of Heinz in this proceeding.

<sup>198</sup> *Heinz*, 246 F.3d at 720-22.

<sup>199</sup> *Heinz*, 116 F. Supp. 2d at 195. Defendants argued that retail competition should be evaluated in local geographic markets, which were often more concentrated than the national averages, and the FTC's economic expert also accepted localized markets for analyz-

Gerber had a market share of at least 65%, Heinz accounted for 17.4%, and Beech-Nut's share was 15.4%.<sup>200</sup> Thus, the merger would raise the Herfindahl-Hirschman Index (HHI) by more than 500 points to a level in excess of 5000; this would represent a substantial increase in concentration in an already concentrated market,<sup>201</sup> reducing the number of significant sellers from three to two. The district court also quickly concluded that entry was not easy.<sup>202</sup>

"Nearly all" supermarkets carry two of the three major brands of baby food.<sup>203</sup> Gerber, the dominant firm, is in virtually every supermarket, while Heinz and Beech-Nut compete to be the second brand on supermarket shelves. Heinz is carried in about forty percent of grocery stores, while Beech-Nut is found in about forty-five percent.<sup>204</sup>

The FTC's primary competitive effects theory was that the transaction would facilitate tacit collusion.<sup>205</sup> The Commission alleged that Heinz and Beech-Nut could not collude successfully with Gerber premerger because the two second brands would have too great an incentive to cheat through more aggressive shelf-space competition.<sup>206</sup> If Heinz went along with a high price, for example, Beech-Nut would approach supermarkets with a sweet offer to replace Heinz on the shelf, presumably expecting to profit by taking business away from Gerber through a lower retail price. After the merger, however, there would be only two significant firms in the market, and the wholesale competition between Heinz and Beech-Nut, which the FTC saw as the key impediment to tacit collusion, would be removed.<sup>207</sup>

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ing retail competition. Record at 212-21, *Heinz*, 116 F. Supp. 2d. 190 (D.D.C. 2000) [hereinafter *Heinz* Transcript].

<sup>200</sup> *Heinz*, 116 F. Supp. 2d at 192. In this discussion, each firm is referred to by its familiar brand name rather than the name of its corporate parent.

<sup>201</sup> *Id.* at 196.

<sup>202</sup> *Id.*

<sup>203</sup> *Id.* at 193.

<sup>204</sup> *Id.* at 193-94. Moreover, Heinz and Beech-Nut each had geographic areas of strength (metropolitan areas where each was the second brand in most supermarkets while the other brand had little presence). *Id.* at 194.

<sup>205</sup> The FTC also alleged a unilateral competitive effects theory, and argued on appeal that the loss of wholesale competition between the merging firms should be an independent basis for finding a violation. The appeals court rejected this argument, while accepting that the merger's effects on wholesale competition "are important to a determination of whether the merger is likely to reduce competition in the baby food market overall." *Heinz*, 246 F.3d at 719 n.17.

<sup>206</sup> *Heinz*, 116 F. Supp. 2d at 196-97.

<sup>207</sup> *Id.*

Heinz claimed, in contrast, that the merger would destabilize the possibility of postmerger coordination by creating a maverick.<sup>208</sup> The district court explained that “[d]efendants argue that their merged baby food business will be much more efficient, and that the efficiencies will be used to compete with Gerber.”<sup>209</sup> Substantial efficiencies would be obtained in the production of current products. Heinz and Beech-Nut also contended that “with the best of the two brands’ recipes, Heinz’s value pricing strategy, and Beech-Nut’s brand equity, they will have a more attractive and attractively priced product.”<sup>210</sup> Moreover, the transaction would give combined firm shelf space in most supermarkets, enabling “serious efforts to innovate.”<sup>211</sup>

The district court rejected the FTC’s argument that further concentration in the baby food industry would increase the likelihood of tacit collusion, based on trial testimony that emphasized two coordination problems: the difficulty of deterring cheating, given the time it would take for rivals to detect and respond to price cutting, and the difficulty the merged firm would have in reaching a consensus with Gerber given the combined firm’s incentive to disrupt coordination by expanding share at Gerber’s expense.<sup>212</sup> The court held that the de-

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<sup>208</sup> Heinz’s economic expert testified that “the merged firm . . . would disrupt coordination, make it more difficult for the firms to coordinate.” *Heinz* Transcript, supra note 199, at 1013.

<sup>209</sup> *Heinz*, 116 F. Supp. 2d at 198. Heinz’s efficiency expert testified that the manufacturing cost savings from shifting the Beech-Nut production to Heinz’s modern, low-cost plant were “extraordinary” and “among the largest I have ever seen . . .” *Id.* at 199. Heinz could handle the combined production in its plant “and still have 20 percent capacity available for future growth.” *Id.*

<sup>210</sup> *Id.* at 198. Unlike Beech-Nut and Gerber, which had premium brands, the Heinz brand was a value brand, which buyers purchased mainly because of its low price (on average roughly 15% below that of Gerber and Beech-Nut). Heinz indicated that it would sell the premium Beech-Nut brand at the Heinz value price, thus reducing average price by up to 15% for Beech-Nut customers, reducing the quality-adjusted price by up to 15% for Heinz customers, and giving Gerber customers the option of switching to another premium brand at up to a 15% lower price. See *Heinz* Transcript, supra note 199, at 1005-06. Defendants’ economic expert testified that the merged firm would be expected to pass through at least 50% and quite possibly all of the efficiencies from merger to consumers, *id.* at 997-1000, and that a 100% pass-through rate would be the equivalent of a 15% price reduction to consumers (or equivalent benefit in terms of quality improvement). *Id.* at 1005.

<sup>211</sup> *Heinz*, 116 F. Supp. 2d at 198.

<sup>212</sup> *Id.* at 198 n.7. Heinz’s economic expert explained that Gerber likely exercised market power in the premerger setting, not by colluding tacitly with Beech-Nut and Heinz but because of its dominance of a market in which its two smaller rivals were unable easily to expand. *Heinz* Transcript, supra note 199, at 985-89. The district court viewed Beech-Nut and Heinz as competing for supermarket shelf space, but not as significantly competing at retail, based in part on an empirical analysis introduced by defendants’ expert showing no difference in the price of baby food between cities in which all three firms had a significant presence and cities in which only two did. *Heinz*, 116 F. Supp. 2d at 196.

defendants had rebutted the FTC's prima facie case, based on market concentration, "with proof that the proposed merger will in fact increase competition," and that "the Commission responded to the rebuttal case essentially with only structural theory."<sup>213</sup> The district court also accepted Heinz's contention that the efficiencies from merger would promote competition in the market, crediting evidence "about the efficiencies realized by the merger, and about the enhanced prospects of the merged entity to introduce innovative products to compete with Gerber."<sup>214</sup> Accordingly, the court found it "more probable than not" that the merger "will actually increase competition in jarred baby food in the United States."<sup>215</sup>

The D.C. Circuit disagreed, and remanded the case with an order that a preliminary injunction be entered.<sup>216</sup> With respect to the efficiencies, the appeals court held that the lower court's analysis fell "short of the findings necessary for a successful efficiencies defense in the circumstances of this case."<sup>217</sup> According to the D.C. Circuit, the district court failed to consider the reduction in total variable costs (rather than merely the variable costs of manufacturing), failed to analyze cost reductions over the merged firm's combined output, and did not explain satisfactorily why the merger partners could not obtain the efficiencies through means short of merger.<sup>218</sup> Moreover, the appeals court rejected the district court's conclusion that postmerger collusion was unlikely on the ground that defendants had failed to show that the difficulties of overcoming "cartel problems," including the difficulty an incumbent firm would face in reaching a consensus as to a coordinated price and market shares with a maverick, "are so much greater in the baby food industry than in other industries that they rebut the normal presumption" of anticompetitive effect that would apply in reviewing a "merger to duopoly."<sup>219</sup>

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<sup>213</sup> *Id.* at 200.

<sup>214</sup> *Id.* at 198. According to the district court, the efficiencies "will enable Heinz to provide the best of the two companies' recipes . . . and to apply its value pricing strategy to the combined production volume." *Id.* at 199. The resulting consumer benefits will be "immediate and virtually automatic." *Id.* When these efficiencies are combined with the "new platform for product innovation" that results from giving Heinz shelf space in most supermarkets, "it appears more likely than not that Gerber's own predictions of more intense competition . . . will come true." *Id.*

<sup>215</sup> *Id.* at 200.

<sup>216</sup> *FTC v. H.J. Heinz*, 246 F.3d 708, 727 (D.C. Cir. 2001).

<sup>217</sup> *Id.* at 721.

<sup>218</sup> In reaching these conclusions, the appeals panel appears to have overlooked trial testimony indicating that Beech-Nut's total variable costs would fall by fifteen percent as a result of the merger and predicting significant benefits to consumers. See *supra* note 210.

<sup>219</sup> *Heinz*, 246 F.3d at 724-25. The appellate panel relied in part on evidence of past price leadership to support its view that postmerger coordination was likely, *id.* at 724 &

### 3. *Merger of Nonmavericks Affects the Maverick's Incentives*

The United/US Airways merger also could have affected the incentives of the industry maverick, Northwest, even though Northwest would not have been involved directly. This theory likely would be difficult to prove, and the resulting price effects could go either way.

One possibility is that the maverick would act more competitively than before, lowering price. For example, the combination may improve the attractiveness of the combined firm's frequent flyer program, and give the merged firm a dominant share in more airports than before. This could make the demand curve facing Northwest both lower and more elastic. If the change in demand would encourage the industry maverick to prefer a lower industry price than it previously favored, the merger would be procompetitive, and cause price to fall.<sup>220</sup>

Alternatively, a merger of nonmaverick carriers instead could lead the industry maverick to act less competitively than before, raising price. For example, the combined United/US Airways may compete head to head with Northwest in many more cities than either merger partner did on its own. This could affect the severity of the punishment the merged firm would be expected to inflict in the event any rival, including Northwest, cheated on the coordinated outcome. If the likelihood of tougher punishment were to increase, the price at which the maverick, Northwest, is indifferent between cheating and cooperating might rise, leading to a higher industry price post-merger.<sup>221</sup> Remarkably, the expansion of United's route network and

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n.23, even though that evidence did not distinguish the panel's economic theory from the dominant-firm model endorsed by Heinz's economic expert. See *supra* note 210.

The appeals court also rejected two other rebuttal arguments that had been accepted by the district court. It found that the lower court had erred in concluding that Heinz and Beech-Nut did not really compete against each other at retail, 246 F.3d at 718-19, and in concluding that the merger would promote innovation. *Id.* at 722-23. In analyzing retail competition, the appeals panel implicitly found clear error in the district court's reliance on systematic empirical evidence, in the form of econometric studies of pricing and demand introduced by defendants' expert, *Heinz*, 116 F. Supp. 2d at 196; *Heinz* Transcript, *supra* note 199, at 952-85, 1117-22, notwithstanding that the FTC's witnesses presented no systematic empirical evidence, econometric or otherwise, concerning retail competition. The "record evidence" cited by the appellate panel as "undermin[ing] the district court's factual finding" on retail competition under the clearly erroneous standard, *Heinz*, 246 F.3d at 718, included anecdotal testimony that one trial observer concluded had been "effectively challenged" as not based on the direct knowledge of the witness. David Marcus, Two and Three, Sponsored by the FTC, Corp. Control Alert 11, Sept. 2000, at 13.

<sup>220</sup> United and US Airways presumably would not, however, be willing to go forward with a merger likely to lower price absent substantial efficiencies from the transaction.

<sup>221</sup> If punishment instead would become less severe, the gains to cheating might increase, causing the maverick to become more aggressive and the industry price to fall. Punishment methods are discussed *supra* at notes 124-26 and accompanying text.

service offering in this example represents an efficiency to the merging firms, but is also anticompetitive: It permits the firms to coordinate more effectively, thus also enhancing their market power and leading to higher prices.

#### 4. *Merger of Nonmavericks That Excludes the Maverick*

Finally, a merger not involving the maverick could harm competition by excluding the maverick. With respect to the United/US Airways merger, this possibility might have arisen through changing the nature of the systemwide coordinated interaction among the firms.

At the beginning of 2001, for example, seven major airlines competed systemwide. If any of these seven firms did not go along with a price increase, the increase was withdrawn. Smaller carriers with hub-and-spoke route networks may have chosen to follow, but if they did not, the routes they served were carved out of the systemwide fare increases implemented by the major airlines. It is possible that the United/US Airways merger, together with American's just-completed acquisition of TWA, could have changed this regularity. After these two transactions, American and United both would have enhanced their attractiveness to business travelers,<sup>222</sup> and both likely would have controlled more gates and airport takeoff and landing slots at congested East Coast airports.<sup>223</sup> Under such circumstances, it might have become profitable for American and United to raise price together systemwide, even if the remaining large hub-and-spoke carriers—Continental, Delta, and Northwest—chose not to go along. Northwest, formerly the maverick, would be excluded from the systemwide competition. It would become a less significant regional player in the interaction among the leading carriers, much as America West and Alaska are today. Coordination on systemwide fares would no longer require the participation of the other large hub-and-spoke

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<sup>222</sup> They each might have increased the scope of their route networks, making their frequent flyer programs more attractive and allowing more businesses to make corporation-wide air travel deals with a single carrier. Each also might have become a dominant presence at more airports. As a result, American and United each would attract more customers for their flights, and their business passengers in particular would become less willing to switch to other hub-and-spoke carriers, including such large carriers as Continental, Delta, and Northwest. If demand were to shift away from Continental, Delta, and Northwest, that could deny these rival carriers scope economies, further reducing their ability to compete successfully on many routes with postmerger American and United.

<sup>223</sup> See Hearing on American Airlines Acquisition of TWA Before Sen. Comm. on Commerce, Sci. and Transp., 107th Cong. 4-6 (2001) (statement of Michael E. Levine, Adjunct Professor, Harvard Law School and former Executive Vice President, Northwest Airlines, Inc.) (unpublished manuscript, on file with the *New York University Law Review*).

carriers; it would become limited to American and United.<sup>224</sup> Although one of these firms would become the new industry maverick, it likely would prefer to allow systemwide fare increases that were prevented by the old maverick, Northwest.<sup>225</sup> If so, these mergers among firms that are not now mavericks would lead to a market structure in which only two firms, American or United, would be significant players in the systemwide pricing interaction, and the new maverick, one of those two, likely would raise industry prices above the level at which Northwest keeps them today.<sup>226</sup>

#### IV

#### EXCLUSION OF THE MAVERICK

The problem of determining the competitive effect of losing a firm also arises when exclusion is alleged. Not every exclusion case would be expected to raise this question. In monopolization settings, for example, all rivals are excluded, and it is not hard to understand why the one seller that remains can exercise market power unilaterally. But when the theory of the case is that a group of firms obtained market power by excluding (or hobbling)<sup>227</sup> one or more rivals, that theory presumes that the removal of the excluded firms makes it easier for the remaining firms to exercise market power, perhaps through coordination.

Recent airline industry events suggest a number of methods by which the leading airlines may be able to exclude rivals to create or protect market power. These possibilities include limitations on rival access to airport facilities controlled by a dominant carrier;<sup>228</sup> preda-

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<sup>224</sup> See *id.* at 6-8 (discussing predicted dominance of proposed “Big Two” airlines). Under this theory, the merger effectively would exclude all but the two largest firms from systemwide coordination; theory thus involves both exclusion and collusion, as with *JTC Petroleum*, discussed *infra* at notes 244-56 and accompanying text.

<sup>225</sup> Before the merger, American and United likely both would have preferred price increases in excess of what Northwest had permitted.

<sup>226</sup> The outcome could differ, however, if these mergers confer substantial efficiencies, and in consequence give one of the merged firms—the new maverick in the interaction between American and United—a strong incentive to cut prices relative to today.

<sup>227</sup> Recall that in this Article, the terms “foreclosure” and “exclusion” are used in the general sense of “raising rivals’ costs” or reducing rivals’ access to the market. *Supra* note 7.

<sup>228</sup> See, e.g., *Continental Airlines, Inc. v. United Airlines, Inc.*, 126 F. Supp. 2d 962 (E.D. Va. 2001), vacated, 2002 WL 53920 (4th Cir. 2002) (enjoining restrictions on size of carry-on baggage at hub airport for United that benefited United at expense of rival Continental); *Entry and Competition*, *supra* note 126, at 109-23 (discussing potential for competitive problems from incumbent carrier control of takeoff and landing slots at crowded airports and gates at hub airports).

tory pricing to exclude aggressive rivals;<sup>229</sup> and the limitations on rival access to travel agents and computerized reservations systems.<sup>230</sup> If such practices were used to exclude Northwest, the industry maverick—whether alone or along with other carriers—they could lead the maverick to prefer higher industry prices, and thus cause prices to rise. Here the maverick concept would operate as a sword, helping identify when the exclusion of a rival would lead to higher prices. Again, the maverick concept can be a shield as well as a sword: Exclusionary practices that do not alter the maverick's business situation or pricing incentives may not harm competition, and may be understood better as motivated by an opportunity to achieve efficiencies.

Building on this insight, this Part highlights why, as a matter of economic theory, the loss of a firm through exclusion may have similar economic consequences to the loss of a firm through merger. Here, again, the maverick concept plays a central role in evaluating the competitive effects of a range of business practices.

#### A. *Voluntary and Involuntary Cartels*

From an economic perspective, the merger question (whether the disappearance of a firm through acquisition by a rival makes tacit collusion more likely or more effective) and the exclusion question (whether the loss of a firm through exclusionary conduct by its rivals permits the remaining sellers to achieve or maintain market power through tacit collusion) raise similar issues. Both practices facilitate tacit collusion by removing or changing the incentives facing a maverick firm. When comparing the acquisition of a maverick with the exclusion of a maverick, the key difference is in how the maverick is induced to go along with its rivals: voluntarily in the case of a merger, and involuntarily when it is foreclosed from access to key inputs or customers.<sup>231</sup>

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<sup>229</sup> See Entry and Competition, *supra* note 126, at 171-77 (listing informal complaints to DOT by new entrant airlines about unfair exclusionary practices, March 1993 to May 1999); see generally Bolton et al., *supra* note 153, at 2261-62 (discussing application of theories of price predation to airlines). But cf. *United States v. AMR Corp.*, 140 F. Supp. 2d 1141, 1218-19 (D. Kan. 2001) (awarding American Airlines summary judgment against predatory pricing and conduct claims).

<sup>230</sup> See Entry and Competition, *supra* note 126, at 124-29 (discussing regulatory action to prevent computer reservation system biases, and exclusionary concerns arising from travel agent incentives); John R. Wilke, *Twenty States Oppose Airlines' Proposal for Joint Venture in Online Reservations*, *Wall St. J.*, Jan. 11, 2001, at A10 (highlighting exclusionary as well as collusive concerns with planned industrywide Internet airline reservation system).

<sup>231</sup> In theory, exclusionary conduct also can generate market power through a second route, by "dampening competition" among firms that are not coordinating (much as a merger among rivals can harm competition through unilateral as well as coordinated com-

Suppose, for example, that firms A and B would like to collude with firm C, their only rival in a market protected from entry. But they cannot do so because C is the industry maverick; it would increase output were A and B to raise price, and prevent the industry price from rising above the level C prefers. The acquisition of firm C by firm A could remove this constraint. The merged AC firm presumably would prefer a price higher than what the maverick, firm C, accepts on its own. If so, the merger would harm competition by facilitating tacit collusion—a voluntary cartel—between the merged firm and its remaining rival, firm B. However, a merger is not the only way firm A could remove the constraining influence of the industry maverick, firm C. If firm A (alone or in conjunction with firm B) somehow could raise firm C's marginal costs or otherwise make it more difficult for firm C to sell more, then C would be led to do what it would not have done previously: reduce its output and go along with a higher price. Firm A might be able to accomplish this end by foreclosing C from access to low-cost sources of supply or distribution, perhaps through exclusive contracts, or by making it more difficult for firm C to attract customers, perhaps by denying firm C access to complementary products. Under such circumstances, competition is harmed because the maverick would be coerced to go along with what could be termed an involuntary cartel.<sup>232</sup>

As in the merger setting, the concept of a maverick can operate in exclusion cases as sword or shield. The foreclosure of a maverick would be expected to lead to higher prices through enhanced coordination among its rivals. Any efficiencies from the transaction would need to be very large to overcome this anticompetitive force and to generate a price decline on balance. Here the maverick concept explains why the particular exclusionary conduct would be expected to harm competition. But practices excluding nonmaverick firms would not make coordination more likely or more effective (unless the harm to those rivals changes the incentives facing the industry maverick).

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petitive effects). For example, a most-favored-customer provision can constitute a commitment to less aggressive action, dampening competition if rivals can be expected to respond by becoming less aggressive as well. Baker, *supra* note 109, at 528-30. This Article will focus on the involuntary cartel possibility, as the dampening competition theory "represents something of a frontier for antitrust enforcement." *Id.* at 530.

<sup>232</sup> The involuntary cartel intuition emphasizes that mere foreclosure of some rivals (or, more generally, raising rivals' costs) is not enough for exclusion to generate harm to competition. It is necessary also to show that the remaining rivals could and would take advantage by reducing output and raising price too, as by removing the constraint on coordination previously posed by a maverick, and that, in consequence, the market price would rise. For some examples of agency actions predicated on a raising rivals' costs theory, see Jonathan B. Baker, Policy Watch: Developments in Antitrust Economics, 13 J. Econ. Persp. 181, 187-88 (1999).

The identification of the maverick firm here would help shield the excluding firms from liability.<sup>233</sup>

### *B. Mavericks and the Case Law on Exclusion*

Antitrust law relies on a number of doctrinal categories to police harmful exclusionary conduct, including rules concerning exclusive dealing, tying, group boycotts, predatory pricing, vertical nonprice agreements, and resale price maintenance. But the underlying economic problem is often the same,<sup>234</sup> and, in consequence, the doctrinal rules in these categories may be converging on a common reasonableness analysis.<sup>235</sup>

Under the influence of the Chicago School, modern courts tend to approach exclusion cases with skepticism.<sup>236</sup> One common judicial strategy for throwing out an exclusion case is to conclude that the alleged exclusion was too small to harm a rival (given the limited scope or duration of the foreclosure).<sup>237</sup> It is rare to find a court analyzing whether the structure of the market is conducive to coordination,<sup>238</sup> even absent the excluded rival, or whether the loss of the particular excluded firm would make coordination more likely or more effective.<sup>239</sup>

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<sup>233</sup> This discussion again assumes away unilateral (dampening competition) theories of how that conduct may harm competition, discussed *supra* at note 231.

<sup>234</sup> Krattenmaker and Salop explain how exclusionary conduct raises similar economic issues regardless of doctrinal categories. Krattenmaker & Salop, *supra* note 7, at 215-19. Of course, raising rivals' costs is not the only explanation for these forms of business conduct, or even the only anticompetitive explanation. Other anticompetitive possibilities may include, for example, dampening competition theories, *supra* note 231, or anticompetitive price discrimination.

<sup>235</sup> See, e.g., *State Oil Co. v. Khan*, 522 U.S. 3, 22 (1997) (vertical maximum price fixing); *Northwest Wholesale Stationers, Inc. v. Pac. Stationary & Printing Co.*, 472 U.S. 284, 297 (1985) (exclusionary group boycott); *Cont'l T.V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36, 59 (1977) (vertical nonprice restraints); *U.S. Healthcare, Inc. v. Healthsource, Inc.*, 986 F.2d 589, 595 (1st Cir. 1993) (exclusive dealing).

<sup>236</sup> Cf. Baker, *supra* note 109, at 518 (describing contemporary antitrust law's "vertical good, horizontal bad" maxim as "deceptively simple" characterization).

<sup>237</sup> See, e.g., *Omega Envtl., Inc. v. Gilbarco, Inc.*, 127 F.3d 1157, 1162-65 (9th Cir. 1997) (applying strategy to manufacturer's exclusive dealing arrangements with distributors); *U.S. Healthcare*, 986 F.2d at 597 (applying strategy to HMO's exclusive dealing contracts with physicians).

<sup>238</sup> But see *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 238 (1993) (concluding that structure of cigarette market in 1980s would have made tacit coordination unmanageable). This case is discussed *infra* at notes 257-79 and accompanying text.

<sup>239</sup> But see *JTC Petroleum Co. v. Piasa Motor Fuels, Inc.*, 190 F.3d 775, 778 (7th Cir. 1999) (Posner, C.J.) (noting that maverick firm threatened cartel). This case is discussed *infra* at notes 244-56 and accompanying text.

Exclusion often is challenged retrospectively, making it unnecessary for courts to analyze the mechanism by which exclusion of a rival may facilitate coordination. Under such circumstances, direct evidence of the exercise of market power may be available—for example, price may have risen—so identification of the mechanism facilitating coordination may not be a pressing question. But exclusion also may be challenged *before* the effects have become clear in the marketplace.<sup>240</sup> Then the question of the mechanism by which exclusion leads to improved coordination may become important to the resolution of the case.<sup>241</sup>

The remainder of this Part highlights two cases that suggest how the idea of a maverick can be relevant to the analysis of the likely competitive effects of exclusionary conduct. In *JTC Petroleum v. Piasa Motor Fuels, Inc.*,<sup>242</sup> the Seventh Circuit undertook the kind of analysis that, this Article argues, should be employed generally to analyze coordinated competitive effects in exclusionary conduct cases. In *Brooke Group v. Brown & Williamson Tobacco Corp.*, a predatory pricing case where oligopoly recoupment was alleged, the Supreme Court found coordination was unlikely.<sup>243</sup> Had the Court concluded otherwise, as it probably should have done, given the record and the procedural posture of the case, its analysis could have been sharpened by focusing on identifying the industry maverick.

## 1. JTC Petroleum

The litigation that led to the Seventh Circuit's *JTC Petroleum* decision began when JTC, a road-repair contractor and asphalt applicator, complained in the district court about two alleged conspiracies.<sup>244</sup> JTC alleged two violations of section 1 of the Sherman Act: first, that

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<sup>240</sup> Merger analysis commonly has been prospective since premerger notification was introduced in 1976, under the Hart-Scott-Rodino Antitrust Improvements Act, Pub. L. No. 94-435, § 201, 90 Stat. 1383, 1390-94 (codified as amended at 15 U.S.C. § 18a (1994)).

<sup>241</sup> See, e.g., *Brooke Group*, 509 U.S. at 243 (rejecting predatory pricing claim as matter of law because evidence failed to demonstrate likelihood of oligopoly pricing); see also FTC Staff, *Entering the 21st Century: Competition Policy in the World of B2B Electronic Marketplaces*, Part 3, at 16 (Oct. 2000) (noting "little evidence of current exclusion" from business to business electronic marketplaces, but issuing "warnings regarding the potential" of and expressing "widespread concern about possibilities" for such conduct).

<sup>242</sup> 190 F.3d at 775.

<sup>243</sup> 509 U.S. at 238, 243. Predatory pricing is not rational unless the predators have a reasonable prospect of maintaining monopoly power (after the period of low prices ends) for long enough to recoup the predator's losses from below-cost pricing and to harvest some additional gains. *Id.* at 231-32. If the predator is not a monopolist, but is part of an oligopoly, it must engage in tacit coordination with its rivals to assure recoupment. This would be termed "oligopoly recoupment."

<sup>244</sup> 190 F.3d at 776-77.

rival applicators had agreed not to compete with one another, and second, that the three asphalt firms producing a key input for applicator firms had agreed not to compete among each other as well.<sup>245</sup> JTC settled with the asphalt producers and three of the six applicator defendants, but Piasa and two other applicators fought the case in court. The district court awarded summary judgment to Piasa and the other defendants.<sup>246</sup> The appellate panel was asked to decide whether, on evidence construed in a light most favorable to plaintiff, JTC had come up with an economic theory by which Piasa and the two other non-settling applicator firms harmed both competition and JTC, thus giving JTC standing to litigate the case.<sup>247</sup>

Writing for the Seventh Circuit panel, Chief Judge Richard Posner said JTC had such a theory.<sup>248</sup> Posner recognized that the applicators could achieve market power in two ways. First, they could collude among themselves. This would require the cooperation of all seven applicators, including JTC. JTC's theory, according to Posner, was that Piasa and the other applicators wanted to reach such a collusive agreement, but could not because JTC would not go along. JTC preferred competition to collusion. To exercise market power, therefore, the applicators other than JTC were required to adopt a second method: forcing JTC to reduce output and raise price. With JTC compelled to go along, the remaining applicators could succeed in raising price by colluding among themselves. According to this theory, the applicators would exercise market power by creating an involuntary cartel to exclude the maverick.<sup>249</sup>

The appeals court panel posited that Piasa and the other colluding applicator firms could force JTC to reduce output and raise price by removing a maverick from the market to create an involuntary cartel. The other firms recognized, according to Judge Posner, that "JTC, a maverick, was a threat to the cartel—but only if it could find a source of supply of emulsified asphalt."<sup>250</sup> Accordingly, the remaining applicators could remove that threat by organizing an asphalt-produc-

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<sup>245</sup> *Id.* at 777.

<sup>246</sup> *Id.* at 776.

<sup>247</sup> *Id.* at 778; cf. *Gen. Leaseways, Inc. v. Nat'l Truck Leasing Ass'n*, 744 F.2d 588, 597 (7th Cir. 1984) (finding that disruptive competitor is appropriate plaintiff to challenge its expulsion from industry association because otherwise, association may "use expulsion as a sanction against any member who refuses to abide by its anticompetitive restrictions").

<sup>248</sup> *JTC Petroleum*, 190 F.3d at 778-79.

<sup>249</sup> The appeals court likely understood these facts as describing a horizontal collusion case (involving cartel policing). The involuntary cartel intuition emphasizes that they equally can be interpreted as describing an exclusion case. Nothing of significance in the economic analysis turns on the fact that JTC was competing with several colluding applicator firms, rather than with an applicator monopolist.

<sup>250</sup> *JTC Petroleum*, 190 F.3d at 778.

ers boycott of JTC, thereby “deny[ing] JTC this essential input . . . .”<sup>251</sup> They could enlist the asphalt producers’ help in one of two ways. Perhaps the applicators “coerc[ed]” the asphalt producers “by threatening to buy less product from them or pay less for it,” Posner suggested.<sup>252</sup> Or, more likely, the applicators “may have been paying the producers” to police the cartel.<sup>253</sup> This is plausible because cartel profits “create a fund out of which the cartel can compensate” the asphalt producers “in the form of a higher price” for asphalt “for their services to the cartel.”<sup>254</sup> In short, “[t]he producer was the cat’s paw; the applicators were the cat.”<sup>255</sup> Judge Posner summed up the theory in colorful language: “[T]he reason for the producers’ refusal to deal with JTC was that they were in cahoots with the cartel to discourage competition in the applicator market.”<sup>256</sup>

## 2. Brooke Group

*Brooke Group v. Brown & Williamson Tobacco Corp.*,<sup>257</sup> a 1993 Supreme Court predatory pricing decision, was a missed opportunity to exploit the concept of a maverick in the analysis of exclusionary conduct. The case grew out of a price war in generic cigarettes. In 1980, the original plaintiff, Liggett,<sup>258</sup> created a new segment in the cigarette market, low-priced generic products, and spearheaded its growth. By 1984, the generic segment accounted for four percent of domestic cigarette sales, Liggett was the largest producer of generics, and the vast majority of Liggett’s own sales were of generic cigarettes.<sup>259</sup> Rival Brown & Williamson had added generic cigarettes to its product line, but, unlike Liggett, Brown & Williamson was also a significant player in the branded segment of the cigarette market.<sup>260</sup> The other major cigarette manufacturers, including Phillip Morris and R.J. Reynolds, were primarily sellers of branded products, although they too produced generics. (Brown & Williamson, though larger than Liggett, accounted for no more than twelve percent of the cigarette market.)<sup>261</sup> Beginning in 1984, the two firms engaged in an eigh-

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<sup>251</sup> *Id.*

<sup>252</sup> *Id.*

<sup>253</sup> *Id.*

<sup>254</sup> *Id.*

<sup>255</sup> *Id.*

<sup>256</sup> *Id.* at 779.

<sup>257</sup> 509 U.S. 209 (1993).

<sup>258</sup> The Court consistently refers to the plaintiff as “Liggett,” rather than Brooke Group Ltd., to reflect Brooke Group’s former corporate name. *Id.* at 212.

<sup>259</sup> *Id.* at 212-15.

<sup>260</sup> *Id.* at 214-15.

<sup>261</sup> *Id.* at 213.

teen-month generic price war, and the generic segment grew dramatically.<sup>262</sup>

Liggett claimed that the generic price war resulted from predatory pricing by Brown & Williamson.<sup>263</sup> Price predation occurs when a firm sets a low price, below an appropriate measure of its own costs, in order to eliminate or reduce competition, and thereby gain or preserve the ability to exercise market power.<sup>264</sup> According to Liggett, Brown & Williamson introduced its own line of generic cigarettes and cut the price of generics dramatically in order to impose losses on Liggett, thereby inducing Liggett to raise the price of generics above Liggett's original price to a level closer to that of branded cigarettes. Brown & Williamson would profit from this strategy, according to Liggett, by avoiding the otherwise-inevitable loss of profits in the branded segment of the market that would result from a persistent large price gap between brandeds and generics. An increase in the price of generics sufficient to preserve a supracompetitive price for brandeds formed the "linchpin" of the alleged predatory scheme.<sup>265</sup> For this to occur, Liggett would need to raise the price of generics, but so, too, would the other firms through "tacit price coordination" among the members of the cigarette oligopoly.<sup>266</sup>

After trial in federal district court, a jury returned a verdict in favor of Liggett and awarded damages.<sup>267</sup> The district court judge overruled that verdict, holding that defendant Brown & Williamson was entitled to judgment as a matter of law.<sup>268</sup> The Fourth Circuit affirmed,<sup>269</sup> and the Supreme Court also upheld the district court's award of judgment as a matter of law.<sup>270</sup> The Court concluded that the record evidence, examined in the light most favorable to Liggett, would not support the conclusion that the alleged predation had a reasonable prospect of causing the price of generics to rise sufficiently to

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<sup>262</sup> *Id.* at 215-16, 231. As of 1989, the generic segment accounted for fifteen percent of cigarette sales. *Id.* at 234.

<sup>263</sup> *Id.* at 216-17. Although Liggett's complaint was brought under a provision of the Robinson-Patman Antidiscrimination Act, 15 U.S.C. § 13(a) (1994), the Supreme Court suggested that it would have analyzed the case similarly under section 2 of the Sherman Act, 15 U.S.C. § 2 (1994). *Brooke Group*, 509 U.S. at 221-22.

<sup>264</sup> *Brooke Group*, 509 U.S. at 222-26.

<sup>265</sup> *Id.* at 232.

<sup>266</sup> *Id.* at 238.

<sup>267</sup> *Id.* at 218.

<sup>268</sup> *Liggett Group, Inc. v. Brown & Williamson Tobacco Corp.*, 748 F. Supp. 344, 348 (M.D.N.C. 1990).

<sup>269</sup> *Liggett Group, Inc. v. Brown & Williamson Tobacco Corp.*, 964 F.2d 335, 342 (4th Cir. 1992).

<sup>270</sup> *Brooke Group*, 509 U.S. at 219, 230.

make the predation strategy profitable to the predator, Brown & Williamson, by allowing the predator to recoup the costs of predation.<sup>271</sup>

The Court reached this conclusion in part because it saw tacit collusion as unlikely. It acknowledged that a reasonable jury could have found that generic prices rose in fact, but did not accept that tacit collusion among the cigarette oligopoly, including a successfully disciplined Liggett, was the cause.<sup>272</sup> The Court argued, based on four aspects of market structure, that tacit collusion was unlikely in the cigarette industry. First, it noted that “declining demand and . . . substantial excess capacity . . . tend to break down patterns of oligopoly pricing and produce price competition.”<sup>273</sup> Second, it argued that the large “number of product types and pricing variables” in the industry creates a complex and difficult coordination task.<sup>274</sup> Third, it pointed out that firms with differing incentives might have difficulty reaching an oligopolistic consensus.<sup>275</sup> Finally, it observed that uncertainty could make such a consensus unstable, capable of falling apart in “a chain reaction of competitive responses.”<sup>276</sup> In short, the Court concluded that the structure of the cigarette industry was not conducive to solving the cartel problems of reaching a consensus and deterring deviation; these problems facing the cigarette oligopoly were intractable. Accordingly, the Court did not need to go further by analyzing how coordination would work and identifying the maverick.

Each of these arguments can be questioned based on the contemporary economic understanding of coordination.<sup>277</sup> Briefly, excess capacity could facilitate coordination by increasing the ability of the

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<sup>271</sup> *Id.* at 232.

<sup>272</sup> *Id.* at 237. In its alternative holding, the Court found that the evidence did not necessarily show that the alleged predation caused the generic price increase. In particular, it could not rule out the possibility that the price rose in a competitive market through the demand for generics shifting out along a rising marginal cost curve. *Id.* This conclusion is surprising given that the cigarette market was not growing (suggesting that market demand had not shifted out, notwithstanding that many buyers were shifting between segments, from brandeds to generics) and that the leading firms had excess capacity (suggesting that the industry marginal cost curve was not rising). Because generics and brandeds are likely supply substitutes, the relevant capacity measure is for cigarettes as a whole. Hence, a shift in tastes to favor generics, the Court’s proposal, would be unlikely to lead to an increase in the price of cigarettes in either segment. Baker, *supra* note 153, at 599 & n.68.

<sup>273</sup> *Brooke Group*, 509 U.S. at 238.

<sup>274</sup> *Id.* at 239.

<sup>275</sup> *Id.* at 239-40.

<sup>276</sup> *Id.* at 240.

<sup>277</sup> See Baker, *supra* note 153, at 600-02 (“The majority’s discussion of . . . industry structure was not informed by post-Chicago developments in oligopoly theory. . . .”); FTC Staff, Competition and the Financial Impact of the Proposed Tobacco Industry Settlement 3-9 (Sept. 1997) [hereinafter *Impact of the Tobacco Settlement*] (citing “structural and behavioral evidence . . . consistent with the possibility of coordination among the major cigarette producers,” while noting that “any such coordination is far from complete”).

firms to punish cheating rivals; the firms could have employed focal rules to simplify what the Court termed their “multivariable coordination” problem;<sup>278</sup> divergent incentives may make coordination imperfect and incomplete without necessarily making it impossible; and occasional price wars are not inconsistent with the possibility of coordination. Had the Court seen the industry environment as not barring successful coordination given the insights of recent economic theory, it would have recognized that Liggett was the likely constraint on more effective coordination, and that the cigarette oligopoly intended the alleged predation to improve coordination by changing Liggett’s incentives.<sup>279</sup>

## V

### CONCLUSION:

#### REHABILITATING THE STRUCTURAL PRESUMPTION

As this Article has demonstrated, the concept of a maverick may permit antitrust enforcers and courts to distinguish between mergers or exclusionary conduct that improve coordination and mergers or exclusionary conduct that do not. Doing so may provide a more compelling basis for antitrust enforcement than the traditional reliance upon the presumption of anticompetitive effect from changes in market structure.

In many settings, regulators reliably can identify an industry maverick that prevents or limits coordination. Northwest likely has been the maverick with respect to recent systemwide airline competition,<sup>280</sup> Liggett likely played that role in the cigarette industry during the 1980s,<sup>281</sup> and JTC Petroleum likely was the maverick asphalt applicator in its market.<sup>282</sup> Mavericks can be identified by revealed prefer-

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<sup>278</sup> *Brooke Group*, 509 U.S. at 239; see also *supra* notes 115-17 and accompanying text.

<sup>279</sup> *Baker*, *supra* note 153, at 601 n.76.

Liggett’s incentives to deviate from a coordinated outcome came from its relatively small allegiance to the branded segment of the market and its relatively large commitment to the generic segment. The divergence of interest among the remaining major cigarette producers was likely small, although R.J. Reynolds, with its economy-priced Doral brand, may have been the firm most likely to have constrained coordination in the absence of Liggett. *Id.* Similarly, more than a decade after the alleged predation that was the subject of *Brooke Group*, a FTC staff report concluded, “Liggett remains the only firm of significant size that has an appreciably older brand portfolio in terms of premium-brand life cycles and a primary commitment to the discount segments of the cigarette market. This likely makes Liggett one of the most significant constraints on higher industry pricing today.” *Impact of the Tobacco Settlement*, *supra* note 277, at 13. (The author was Director of the FTC’s Bureau of Economics when this report was issued.)

<sup>280</sup> See *supra* note 146 and accompanying text.

<sup>281</sup> See *supra* note 279 and accompanying text.

<sup>282</sup> See *supra* note 249 and accompanying text. Judge Posner also may have identified a maverick in the truck-leasing market. See *Gen. Leaseways, Inc., v. Nat’l Truck Leasing*

ence, through observation of natural experiments, or based upon a priori factors.<sup>283</sup> Against this background, one might ask whether antitrust law could discard the structural presumption as a relic of an earlier era with little contemporary relevance.

The best response is that, even as antitrust comes to focus on the role of the maverick in analyzing coordinated competitive effects, the structural presumption should continue to play an important role, because it will not always be possible to identify the maverick with precision or to determine with confidence how the loss of a firm affects the maverick's incentives. For example, the difference between the district court and appellate court in *Heinz* can be understood as a dispute about whether the record in that case permitted identification of a postmerger maverick with reasonable precision. The district court concluded that the merger would create a firm willing and able to compete more aggressively with Gerber, rather than collude with the market leader, and refused to enjoin it. The appeals court found that the lower court should not have relied upon the efficiencies evidence that led the lower court effectively to identify the merged firm as a maverick, and was left with no option but to rely upon a presumption of anticompetitive effect from the increase in market concentration.<sup>284</sup> As this decision suggests, when the maverick and its role cannot be identified, the structural presumption will remain the best available basis for enforcement policy.

Moreover, the structural presumption now can be justified by more than the weak empirical regularity embodied in the dinner party story. The role of the maverick in the modern economic perspective on incomplete oligopoly coordination provides a theoretical connection between market concentration and more effective coordination: In the absence of specific evidence identifying a maverick, the fewer the number of significant sellers, the more likely it is that the loss of any one would be the loss of a firm that constrains coordinated conduct.<sup>285</sup> This point can be demonstrated through a simple calculation. In the absence of other information about the relative positions of the firms or the motive for acquisition, a merger combining at random

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Ass'n, 744 F.2d 588, 597 (7th Cir. 1984) (Posner, J.) ("If the [National Truck Leasing] Association is a cartel, still General Leaseways appears determined to disrupt it.").

<sup>283</sup> See supra Part II.D.

<sup>284</sup> See supra notes 70-77, 197-219 and accompanying text.

<sup>285</sup> Cf. Porter, supra note 113, at 18 ("When firms are numerous, the likelihood of mavericks is great and some firms may habitually believe they can make moves without being noticed."). Moreover, if the differences among firms are randomly drawn, a reduction in the number of firms likely would make greater the differences between the maverick and the firm that would next assume the maverick role, and thus increase the likely price rise if the maverick disappears from the market.

two firms in a three-firm market has a two-thirds probability of involving a maverick, most likely creating a new seller with less incentive to keep industry prices low. In contrast, a merger combining at random two firms in a ten-firm market has only a twenty-percent probability of involving a maverick.<sup>286</sup> Accordingly, judicial reliance on the structural presumption when the maverick and its role cannot be identified reliably is consistent with the modern economic analysis of coordination.

The tradeoff at stake in preserving the structural presumption is a familiar one for antitrust law. The maverick-centered approach advanced in this Article promises to allow courts and antitrust enforcers more effectively to distinguish changes in market structure that improve industry coordination from those that do not. This advantage is grounded in the value of increasing the precision of judicial determinations, by reducing the likelihood of error costs from erroneous convictions or false acquittals. Concern with error costs historically has pushed antitrust doctrine away from bright-line rules and toward unstructured reasonableness standards.<sup>287</sup> Thus, the structural presumption has weakened substantially since the days of *Von's* and *Pabst*, and properly so.<sup>288</sup>

But minimizing error costs is not the only important policy consideration relevant to the formulation of doctrinal rules. Other policy concerns—minimizing enforcement costs and providing clear guidance for generalist judges who must enforce those rules—have historically pushed antitrust doctrine toward “bright-line” rules, such as per se rules and truncated or “quick-look” analyses.<sup>289</sup> These latter

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<sup>286</sup> Within firms, the probability is  $2/n$ ; thus a random merger in an industry with five significant firms (HHI at least 2000) has a forty percent chance of involving a maverick. The random exclusion of a firm in an  $n$ -firm industry (as opposed to an acquisition, which changes the structure of two firms) has half that probability,  $1/n$ , of excluding a maverick. However, if mergers or exclusionary conduct have a higher-than-random chance of involving mavericks, because the gains from acquiring or excluding a maverick may include enhanced market power, then these probabilities understate the relevant odds.

<sup>287</sup> See, e.g., *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 23-25 (1979) (declining to apply per se prohibition against price-fixing to “blanket-license fee” structure for copyrighted material, remanding for consideration under rule of reason standard); *Cont'l T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 57-58 (1977) (overruling per se prohibition against exclusive distribution territories to avoid deterring efficiency-enhancing restraints).

<sup>288</sup> See *supra* notes 63-79 and accompanying text.

<sup>289</sup> See, e.g., *United States v. Addyston Pipe & Steel Co.*, 85 F. 271, 284 (6th Cir. 1898) (noting that courts adopting reasonableness analysis have “set sail on a sea of doubt” by assuming power to say “how much restraint of competition is in the public interest”), *aff'd*, 175 U.S. 211 (1899). For discussions of the relevant tradeoffs from an economic perspective, see generally Jonathan B. Baker, *Per Se Rules in the Antitrust Analysis of Horizontal Restraints*, 36 *Antitrust Bull.* 733 (1991); C. Frederick Beckner III & Steven C. Salop,

concerns provided an important underpinning for the development of the structural presumption in *Philadelphia National Bank*.<sup>290</sup> They continue to weigh in favor of retaining a structural presumption, in the weaker form the presumption now takes,<sup>291</sup> but only in limited circumstances: when it is difficult to identify the maverick or determine the effects of merger or exclusion on the maverick's preferences.<sup>292</sup>

Accordingly, the continuing vitality of the structural presumption turns on its role as a fallback from a more precise identification of the maverick and the effect of the merger on the maverick's incentives to constrain coordination. Under this approach, the structural presumption, in its weakened modern form, remains appropriate for courts and enforcers to rely upon, but only when it is not possible to provide a more compelling explanation of the mechanism by which competition would be harmed. This nuanced and limited defense of the structural presumption harmonizes antitrust doctrine with contemporary economic analysis.

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Decision Theory and Antitrust Rules, 67 *Antitrust L.J.* 41 (1999); Timothy J. Muris, The Federal Trade Commission and the Rule of Reason: In Defense of Massachusetts Board, 66 *Antitrust L.J.* 773 (1998). Although most of the discussion of truncated rules has focused on section 1 of the Sherman Act, 15 U.S.C. § 1 (1994), similar issues may also arise under section 2 of the Sherman Act, 15 U.S.C. § 2 (1994). See generally Jonathan B. Baker, Promoting Innovation Competition Through the Aspen/Kodak Rule, 7 *Geo. Mason L. Rev.* 495 (1999).

<sup>290</sup> The Court explained:

[A] prediction [that a merger will harm competition] is sound only if it is based upon a firm understanding of the structure of the relevant market; yet the relevant economic data are both complex and elusive. And unless businessmen can assess the legal consequences of a merger with some confidence, sound business planning is retarded. So also, we must be alert to the danger of subverting congressional intent by permitting a too-broad economic investigation. And so in any case in which it is possible, without doing violence to the congressional objective embodied in § 7, to simplify the test of illegality, the courts ought to do so in the interest of sound and practical judicial administration.

*United States v. Phila. Nat'l Bank*, 374 U.S. 321, 362 (1963) (citations omitted).

<sup>291</sup> See *supra* notes 63-79 and accompanying text.

<sup>292</sup> Moreover, the error costs of basing merger enforcement decisions on a structural presumption can be reduced if an empirical relationship between market structure and higher prices can be demonstrated for the specific industry under review. See Muris, *supra* note 20, at 903-07 (reviewing use of modern oligopoly theory and industry-specific inquiry in merger analysis); see generally FTC Bureau of Economics Staff Report, Transformation and Continuity: The U.S. Carbonated Soft Drink Bottling Industry and Antitrust Policy Since 1980 (Nov. 1999) (providing empirical study of relationship between concentration and price in soft drink bottling industry). For discussion of an example of the use of an industry-specific empirical study in merger litigation, albeit not with respect to analyzing a coordinated competitive effects theory, see Baker, *supra* note 88, at 13-17.

## APPENDIX

This Appendix provides a numerical example to clarify how a maverick constrains coordination when coordination is incomplete. In the example, the firms in the market other than the maverick would do best if the industry price were 10. But the maverick is able to insist that the industry charge a lower price, 9, which the maverick prefers. Either coordinated price, 10 or 9, would exceed the price absent coordination, 5.

The single-period payoffs facing the maverick are set forth in Table 1. The best price for the maverick, assuming its rivals match, is 9; at that price, the maverick earns a single period profit of 150. The maverick can do much better in any period if it cheats (profit of 1000) while its rivals price at a high level. But cheating will make coordination break down; if that were to occur, the maverick's single period profit would drop drastically, to only 10.<sup>293</sup>

TABLE 1

Description	Price	Maverick's single-period profit
Coordinated price favored by rivals	10	100
Coordinated price favored by maverick	9	150
Price maverick sets if it cheats on a coordinated price	8	1000
Industry price if coordination breaks down	5	10

The example assumes that the products of the firms are sufficiently similar, and the maverick has sufficient ability to expand (capacity), as to make it unprofitable for the other firms to charge a high price if they are undercut by the maverick. The maverick is effectively too important to carve out of a coordinated arrangement.<sup>294</sup> But the example also assumes that the products of the firms are sufficiently differentiated or consumer search costs are sufficiently high as to lead the maverick, in recognition of the structure of demand and costs, to prefer to undercut the coordinated price substantially rather than by a

<sup>293</sup> Ten might represent firm profits if the firms compete in each period without taking into account the possibility that their interactions are repeated.

<sup>294</sup> Cf. Rotemberg & Saloner, *supra* note 132, at 94 (arguing that price matching emerges endogenously in model in which firms sell differentiated products). Nothing in the example would change if some firms charged different prices to compensate for differences in perceived product quality, so long as those price differentials were fixed. Moreover, even if rivals were not forced to match the maverick's price, cheating by the maverick would still be expected to lower the profits to the others from continued coordination, pulling rivals' prices down.

tiny amount. The single period profit assumptions in Table 1 are thus compatible with some product or geographic differentiation. The maverick's preference for a coordinated price lower than that preferred by its rivals could derive, for example, from more elastic firm-specific demand than that faced by the others.<sup>295</sup>

In deciding what strategy to follow—whether to cooperate or cheat—the firm evaluates the present value of the future stream of profits that results. Future profits are discounted at an annual rate of ten percent; this can be thought of as the firm's cost of capital or its hurdle rate on new investments.<sup>296</sup> To make the calculations simple, cheating is assumed to last for a full year before detection and response; with this assumption, the “period” of the model is interpreted as one year.<sup>297</sup> If the firm selects the coordinated price, then coordination lasts forever. If the firm instead decides to cheat, coordination breaks down in the next period and is never achieved again.

To see why the maverick insists upon a price of 9, consider first its incentives to cheat if the firms set the higher price that the others prefer, 10. The maverick computes the present value of its profit stream that follows from cheating. (Table 2 sets forth the present value of the various payoff alternatives.) If the maverick cheats, it sets the price at 8 and earns 1000 in the first period, but coordination breaks down so it earns only 10 in every period that follows. The present value of this profit stream equals 1090.<sup>298</sup> The maverick compares this payoff to the present value of going along with the coordinated price of 10, and earning 100 annually forever. The latter profit stream has a present value of 1000, which is less than the present value of the profit stream with cheating. Cheating is more profitable than cooperating because the punishment available to the other firms in the example is limited to the breakdown of coordination, and

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<sup>295</sup> Structural factors tending to lead firms to prefer a lower coordinated price than do its rivals are discussed *supra* at notes 168-73 and accompanying text.

<sup>296</sup> Some firms decide whether to pursue proposed investment projects by testing their expected profitability against a minimum required rate of return, termed a “hurdle rate.”

<sup>297</sup> This time period is unrealistically long for the airline industry, but is more plausible for industries in which firms sign long-term contracts with customers. A similar example could be constructed for shorter periods by varying the discount rate and the payoffs. For example, the analysis would be similar under the assumption that a period lasts a month and the monthly discount rate is one percent, if the single-period payoff column of Table 1 is replaced by the following numbers: [10, 15, 1000, 1]. In this revised example, the maverick will still prefer to cheat at a price of 10—as the present value of cheating (1099) will exceed the present value of cooperation (1000)—but will cooperate at a price of 9, as then the present value of cooperation (1500) exceeds the present value of cheating (1099).

<sup>298</sup> The present value of a profit stream of  $X$  every year forever at an annual discount rate of ten percent is  $10X$ . If the profit stream starts after one year's delay, its present value is  $X$  less, or  $9X$  in total.

because the other firms cannot raise the maverick's single-period profit at the price of 10 through side payments.

On the other hand, the maverick would not find cheating profitable if the coordinated price were 9, the level it prefers. At that price, assuming that the single period profits from cheating remain 1000,<sup>299</sup> the present value of cheating remains 1090. But that payoff is less than the present value of cooperation, which is now 1500.

TABLE 2

Price set by rivals	Present value of profit stream from cooperation	Present value of profit stream from cheating
10	1000	1090
9	1500	1090

If Table 1 were expanded to allow the maverick to earn single-period profits of 110 at a coordinated price of \$9.10, the maverick also would prefer coordination to cheating at \$9.10. Then, coordination at \$9.10 would also be an equilibrium outcome.<sup>300</sup> But the maverick does even better by insisting on a coordinated price of \$9, so that is the price it will select. It can insist on a price of \$9 because its rivals will lose too many sales by remaining at the \$9.10 price without the maverick going along.

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<sup>299</sup> The example would not change markedly if the maverick's preferred cheating price varied with the cooperative price set by its rivals, so long as the single period payoff from cheating remains similar to 1000. Cf. Steven L. Puller, Pricing and Firm Conduct in California's Deregulated Electricity Market 18-20 (Jan. 2001) (unpublished manuscript, on file with the *New York University Law Review*) (providing model in which cheating firm's output decisions vary with cooperative output level).

<sup>300</sup> Thus, the example may permit multiple coordinated equilibria.