Cartels as Two-Stage Mechanisms: Implications for the Analysis of Dominant-Firm Conduct

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> Apart from selling finished products made from carbon, such as carbon brushes, members of the cartel also sold "blocks" of carbon, which have been pressed but not yet cut and tooled into brushes or other products. A number of third-party "cutters" purchase these blocks of carbon, cut and work them into final products and sell them to customers. These cutters, while customers of the cartel members, also represent competition to them for finished products. Such cutters are typically located in the Middle East or Eastern Europe, but a number of them are located in the EEA [European Economic Area]. The policy of the cartel consisted in fixing the prices of carbon blocks sold to cutters in such a way that competition from them for the finished products made out of those blocks would be limited. As a result, cutters would usually only obtain small customers that were of no interest to the large suppliers. Ideally, at least in the view of some members, cutters should be eliminated altogether by refusing to supply to them.[1]

I. Introduction

Discussions about the relationship between European and US competition policy today focus extensively on standards for evaluating the conduct of

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1 *Electrical and Mechanical Carbon and Graphite Products*, Case COMP/E-2/38.359, 2004/420/EC, ¶154 (Dec 3, 2003), available online at <http://ec.europa.eu/comm/competition/antitrust/cases/decisions/38359/en.pdf> (visited Apr 5, 2009).

dominant firms. In both jurisdictions, there is awareness that various forms of dominant firm behavior present both anticompetitive and procompetitive possibilities. In a number of cases there appear to be procompetitive motivations for conduct that may also have anticompetitive effects.

Economic theory is sometimes ambiguous about whether and under what conditions a particular type of conduct is on balance pro- or anticompetitive. For example, slotting allowances and exclusive-dealing contracts are two practices that may be anticompetitive in some situations but not in others. Slotting allowances are fixed fees paid by manufacturers to retailers ostensibly to obtain access to shelf space, defray upfront costs, and support downstream promotional activities.[2] A prominent theory of competitive harm posits that a large manufacturer may abuse its dominance when it uses upfront payments to bid up the price of scarce shelf space in order to raise its rivals' costs.[3] An alternative view is that slotting allowances enhance social welfare by giving retailers an efficient way to allocate scarce retail shelf space.[4] In antitrust law,

2 See Federal Trade Commission ("FTC"), *Report on the Federal Trade Commission Workshop on Slotting Allowances and Other Marketing Practices in the Grocery Industry* 1 (Feb 2001), available online at <http://www.ftc.gov/os/2001/02/slottingallowancesreportfinal.pdf> (visited Apr 5, 2009); FTC, *Slotting Allowances in the Retail Grocery Industry: Selected Case Studies in Five Product Categories* iv–viii (Nov 2003), available online at <http://www.ftc.gov/os/2003/11/slottingallowancerpt031114.pdf> (visited Apr 5, 2009); David Balto, *Recent Legal and Regulatory Developments in Slotting Allowances and Category Management*, 21 J Pub Poly & Mktg 289, 292–94 (2002) (all discussing the modern use and competitive implications of slotting allowances).

3 See Canadian Bureau of Competition, *The Abuse of Dominance Provisions (Sections 78 and 79 of the Competition Act) as Applied to the Canadian Grocery Sector* Section 5.2.1 (Nov 2002), available online at <http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/01642.html> (visited Apr 8, 2009); FTC, *Report on Slotting Allowances* at 37 (2001) (cited in note 2); Paul N. Bloom, Gregory T. Gundlach, and Joseph P. Cannon, *Slotting Allowances and Fees: Schools of Thought and the Views of Practicing Managers*, 64 Mktg 92, 96 (2000). See also Leslie M. Marx and Greg Shaffer, *Upfront Payments and Exclusion in Downstream Markets*, 38 Rand J Econ 823, 824 (2007) (slotting allowances may arise in environments with buyer power and may result in exclusion of some retailers); Greg Shaffer, *Slotting Allowances and Resale Price Maintenance: A Comparison of Facilitating Practices,* 22 Rand J Econ 120, 121 (1991) (slotting allowances can benefit retailers because by not seeking a lower wholesale price, a retailer "essentially announces its intention to be less aggressive in its pricing").

4 The typical story posits that each manufacturer possesses private information about whether its product will be a "success" or "failure" in the marketplace, and that by offering slotting fees the manufacturer can credibly convey this information to retailers. See, for example, Martin A. Lariviere and V. Padmanabhan, *Slotting Allowances and New Product Introductions*, 16 Mktg Sci 112, 113–14 (1997); Kenneth Kelly, *Antitrust Analysis of Grocery Slotting Allowances: The Procompetitive Case*, 10 J Pub Poly & Mktg 187, 187–88 (1991). See also Mary W. Sullivan, *Slotting Allowances and the Market for New Products*, 40 J L & Econ 461, 461 (1997) (slotting fees are "consistent with competitive behavior" and could have been caused by an increase in the supply of new products). Alternatively, by demanding upfront payments, retailers can effectively screen which manufacturers' products are better than others. See Wujin Chu, *Demand Signalling and Screening in Channels of Distribution*, 11 Mktg Sci 327, 327–29 (1992).

exclusive-dealing contracts are judged by the rule of reason.[5] Some authors have shown that exclusive dealing sometimes can enhance efficiency,[6] while others have demonstrated that exclusive dealing may enable one firm to monopolize the market.[7]

A number of difficulties have hampered empirical efforts to determine which reasoning applies in a particular circumstance.[8] In trying to assess market effects and assess economic harm in terms of deadweight loss, the behavior of a single dominant firm is difficult to analyze since there is often neither a clear beginning date nor a clear termination date for the conduct in question. Thus, it is hard to find a reliable benchmark against which to assess the conduct. In addition, the counterfactual world in which the relevant behavior does not occur may be structurally different from the observed situation, making welfare comparisons difficult.

In the debate over the appropriate standards for analysis under antitrust proscriptions against dominant-firm misconduct, many have observed that

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5 If a substantial fraction of the retail market has been foreclosed, exclusive dealing may be found to 1) "substantially lessen competition" under § 3 of the Clayton Act, 15 USC § 14 (2000); 2) be "an unfair method of competition" under § 5 of the FTC Act, 15 USC § 45 (2000); and 3) be conduct in violation of § 2 of the Sherman Act, 15 USC § 2 (2000 & Supp 2004).

6 See Tim R. Sass, *The Competitive Effects of Exclusive Dealing: Evidence from the U.S. Beer Industry*, 23 Intl J Indust Org 203, 204 (2005); Ilya R. Segal and Michael D. Whinston, *Exclusive Contracts and Protection of Investments*, 31 Rand J Econ 603, 609 (2000); Howard P. Marvel, *Exclusive Dealing*, 25 J L Econ 1, 2 (1982).

7 Works in this vein include Eric B. Rasmusen, J. Mark Ramseyer, and John S. Wiley, *Naked Exclusion*, 81 Am Econ Rev 1137, 1137–38 (1991) (demonstrating that exclusion can arise when there are economies of scale in upstream production and coordination failures at the downstream level); Philippe Aghion and Patrick Bolton, *Contracts as a Barrier to Entry*, 77 Am Econ Rev 388, 398–99 (1987) (showing that exclusive-dealing contracts that contain penalty-escape clauses can lead to inefficient exclusion); G. Frank Mathewson and Ralph A. Winter, *The Competitive Effects of Vertical Agreements: Comment*, 77 Am Econ Rev 1057, 1057–58 (1987) (giving conditions under which a dominant manufacturer can profitably induce a retailer to agree to exclusive dealing by offering a lower per-unit price that compensates the retailer for its lost revenue from not selling excluded manufacturers' products). For extensions of Mathewson and Winter to allow nonlinear pricing, see B. Douglas Bernheim and Michael D. Whinston, *Exclusive Dealing*, 106 J Pol Econ 64, 65–68 (1998); Daniel P. O'Brien and Greg Shaffer, *Nonlinear Supply Contracts, Exclusive Dealing, and Equilibrium Market Foreclosure*, 6 J Econ & Mgmt Strategy 755, 755–58 (1997). See generally Ilya R. Segal and Michael D. Whinston, *Naked Exclusion: Comment*, 90 Am Econ Rev 296 (2000); David Besanko and Martin K. Perry, *Equilibrium Incentives for Exclusive Dealing in a Differentiated Products Oligopoly*, 24 Rand J Econ 646 (1993); Marius Schwartz, *The Competitive Effects of Vertical Agreements: Comment*, 77 Am Econ Rev 1063 (1987).

8 Sass analyzes data on US beer distributors and obtains results that support the view that exclusive dealing serves to minimize manufacturer-dealer incentive conflicts and enhances social welfare. Sass, 203 Intl J Indust Org at 220 (cited in note 6). For other empirical work, see generally Jan B. Heide, Shantanu Dutta, and Mark Bergen, *Exclusive Dealing and Business Efficiency: Evidence from Industry Practice*, 41 J L & Econ 387 (1998); Margaret E. Slade, *Beer and the Tie: Did Divestiture of Brewer-Owned Public Houses Lead to Higher Beer Prices?*, 108 Econ J 565 (1998).

conduct that generates potential concern under Section 2 of the Sherman Act or Article 82 of the Treaty of Europe is common in competitive industries. In these industries there is little hope of successfully monopolizing the market, and therefore the behavior must have legitimate business justifications.[9] By extension, this observation is used to cast doubt on claims of anticompetitive effects of similar practices by dominant firms.

A contrasting observation derived from the study of cartels may be used to make the opposite point. Conduct that an illegal cartel orchestrates to suppress competition might be reasonably suspected of having an anticompetitive rationale. For example, suppose that cartel members engage in no monopolization conduct before forming the cartel but implement the conduct after the establishment of a common scheme has increased their market power. Such a change in behavior suggests that the conduct benefits the cartel members only in the presence of market power and may suggest that the conduct seeks to extend or preserve the cartel's monopoly power rather than to promote efficiency.

This observation has implications for the programs undertaken by competition authorities in Europe, the United States, and other jurisdictions to challenge cartels and improper exclusionary behavior by dominant firms.[10] Rather than viewing enforcement against cartels and firms engaged in monopolization as discrete, self-contained endeavors, enforcement policy should recognize connections between the two. It seems likely that one can find definitive proof of the pro- or anticompetitive nature of a cartel's monopolization behavior by examining the evidentiary record yielded by a cartel inquiry. If, as we suspect, cartels undertake these activities in trying to extend or preserve their monopoly, this insight would be useful to determine whether or not the same conduct should be viewed with suspicion when engaged in by a dominant firm in a similar industry.

In this Article we propose that monopolization conduct be analyzed through the lens of cartel behavior. Although cartels typically suppress interfirm rivalry, in many instances this is not their sole focus. Many cartels operate as

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9 See, for example, *Antitrust Modernization Commission*, *Report and Recommendations* 95 (Apr 2007), available online at <http://govinfo.library.unt.edu/amc/report_recommendation/amc_final_report.pdf> (visited Apr 5, 2009).

10 Throughout the remainder of this Article we use the term monopolization to refer to behaviors that would that would be candidates for monopolization under US antitrust law and to behavaviors that would be candidates for abuse of dominance under European Commission ("EC") competition law. For a discussion of the differences between the US monopolization doctrine and the EC abuse-of-dominance position law, see Einer Elhauge and Damien Geradin, *Global Competition Law and Economics* 300–14 (Hart 2007).

two-stage mechanisms.[11] The first stage consists of reaching a consensus on a plan to restrict output or otherwise curb rivalry. For many cartels, once interfirm rivalry is addressed, the cartel moves to the second stage of activity, in which it uses exclusionary behavior often featured in monopolization cases to ensure the effectiveness of its efforts to restrict output. To illustrate this phenomenon, we draw upon the records of cartel inquiries to provide examples of cartels engaging in overt predation against non-cartel rivals, leveraging into both downstream and horizontally-related markets, exclusively dealing, blocking entry, bundling, tying, raising rivals' costs, and other conduct typically associated with allegations of monopolization.

The analytical approach outlined in this Article illuminates the competitive significance of conduct by which individual dominant firms are claimed to have monopolized or attempted to monopolize markets. A focus on cartel applications of monopolization behavior has significant advantages for empirical investigation. First, cartel inquiries often generate a rich evidentiary record. Moreover, in the case of a leniency applicant, this record may include information provided with the active cooperation of the subject firm, a situation that does not arise in the context of a monopolization or dominance investigation. Even if much of this information is nonpublic, economists and lawyers in the public antitrust agencies may be able to analyze such data to inform policy decisions about monopolization matters. Second, unlike a single dominant firm whose market power may evolve gradually through time, cartels often begin and end at discrete moments, and for cartels that are prosecuted the beginning and end dates are typically known. As a result, some of the more complicated inference problems that arise when analyzing the behavior of a single dominant firm are avoided when focusing on a cartel. Specifically, a benchmark period can be more readily identified when analyzing cartels than single dominant firms. Third, the discovery record provides detail regarding the time span for certain kinds of monopolization behavior, such as predation or exclusive dealing. Thus, the incremental inference burden of endogenously determining when the monopolization conduct began and ended is largely eliminated when analyzing the behavior as an extension of cartel conduct.

Despite the benefits of viewing cartel behavior through the lens of monopolization behavior, cartel behavior currently tends to be viewed as something distinct from anticompetitive behavior by a dominant firm. Enforcement agencies tend to follow the Sherman Act in categorizing anticompetitive behavior as either a horizontal agreement between competitors to suppress interfirm rivalry (Section 1) or monopolization behavior by a single

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11 The mix of collusive and exclusionary strategies employed by a cartel is emphasized in Andrew I. Gavil et al, *Antitrust Law in Perspective* 45–53 (West 2d ed 2008).

dominant firm (Section 2).[12] However, it may be more appropriate to view the behavior by some cartels as a combination of the two types of anticompetitive behavior. The historical record suggests that cartels often act like a single dominant firm, moving from the suppression of competition within the cartel (interfirm rivalry) to the suppression of competition from outside the cartel.

We address the topic in three parts. In Section II, we extend a well-known existing framework for analyzing the competitive forces that work against industry profitability, Michael Porter's "Five Forces," to obtain a structure for understanding both the suppression of interfirm rivalry and monopolization conduct by a cartel. In Section III, we show that monopolization behaviors are common in practicing cartels. In Section IV, we pose a number of open questions and identify public-policy implications regarding the potential lessons from cartel behavior for understanding monopolization conduct.

As shown by our data, cartels do in fact engage in monopolization conduct, although the types of behaviors and extent of that conduct vary across cartels. We adapt Porter's classic "Five Forces" competitive industry analysis framework to categorize monopolization conduct. The adapted framework provides guidance to antitrust authorities investigating such conduct by cartels. Insights on the pro- versus anticompetitive effects of such conduct derived from cartel investigations can be applied to monopolization investigations in industries characterized by similar competitive structure.

II. PORTER'S "FIVE FORCES" AND SECTIONS 1 AND 2

The "Five Forces," as defined by Michael Porter in his book *Competitive Strategy* (1980), are a fundamental component of management education.[13] These "Five Forces," which act against, or in support of, an industry's profitability, are depicted in Figure 1.

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12 15 USC §§ 1–2 (2009).

13 Michael E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* 4 (Free Press 1980).

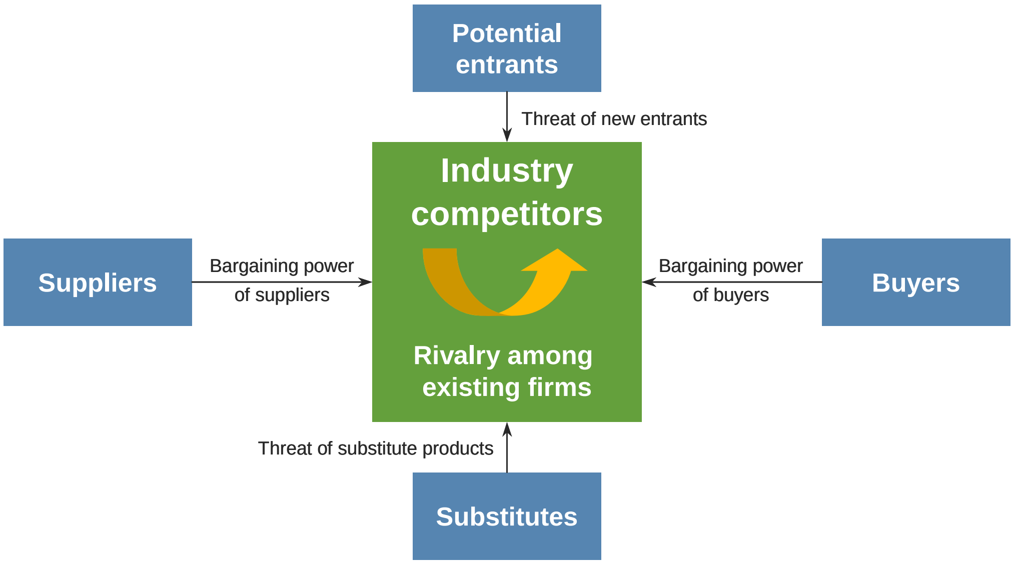

Figure 1: Michael Porter's "Five Forces"[14]
An industry's profit depends on the "Five Forces."

At the center of the diagram is a box representing interfirm rivalry. On the perimeter are boxes representing the threat of entry, bargaining power of suppliers, bargaining power of buyers, and the threat of substitute products. All of these forces work against the profitability of an industry. Although the focus of Porter's analysis is on the profitability of an industry as a whole, those profits are just the sum of the profits of the individual firms, so we can view the "Five Forces" as applying to individual firms as well.

Consider a cartel that includes all the firms in an industry. In the context of Figure 1, if the cartel is effective it eliminates—or at least reduces—the anti-profit forces associated with the "rivalry among existing firms" at the center of Porter's diagram. The incentive for such collusion may be powerful if interfirm rivalry is the primary drain on industry and firm profits. When is interfirm rivalry the primary drain on profits? We can answer this using Porter's diagram. Interfirm rivalry is the primary drain on profit when the perimeter forces depressing profit are not strong—that is, if the threat of entry is small, demand for the industry's product is relatively inelastic (meaning that there exist few substitutes), there are many small buyers, and factor inputs are largely acquired in a highly competitive marketplace. In addition, because collusion is designed to eliminate or at least reduce interfirm rivalry, collusion is especially valuable if

[14] Id at 4.

firms' products are close to perfect substitutes and if interfirm competition is largely based on price, because then interfirm rivalry has a strong depressing effect on industry and firm profits.

The factors described in the previous paragraph have been characterized by Posner as those favorable to collusion.[15] Consistent with how these factors are viewed in antitrust cases, if the perimeter forces working against profit are weak but the center force of interfirm rivalry is strong, the industry is ripe for collusion. Thus, Porter's "Five Forces" framework provides an immediate way to view Section 1 violations.

To adapt the diagram for use in the study of monopolization conduct, we make a slight modification. In Figure 2, we provide the same illustration of Porter's "Five Forces" except that firms in the industry are divided into two groups, the cartel firms and the non-cartel firms, which are those that have either chosen not to participate in the cartel or have not been invited to join the cartel. In addition, we denote with separate arrows the relation of the cartel and non-cartel firms with the buyers and suppliers. Relations with potential entrants and substitutes continue to be represented with one arrow because one would expect these to affect both cartel and non-cartel firms in similar fashion.

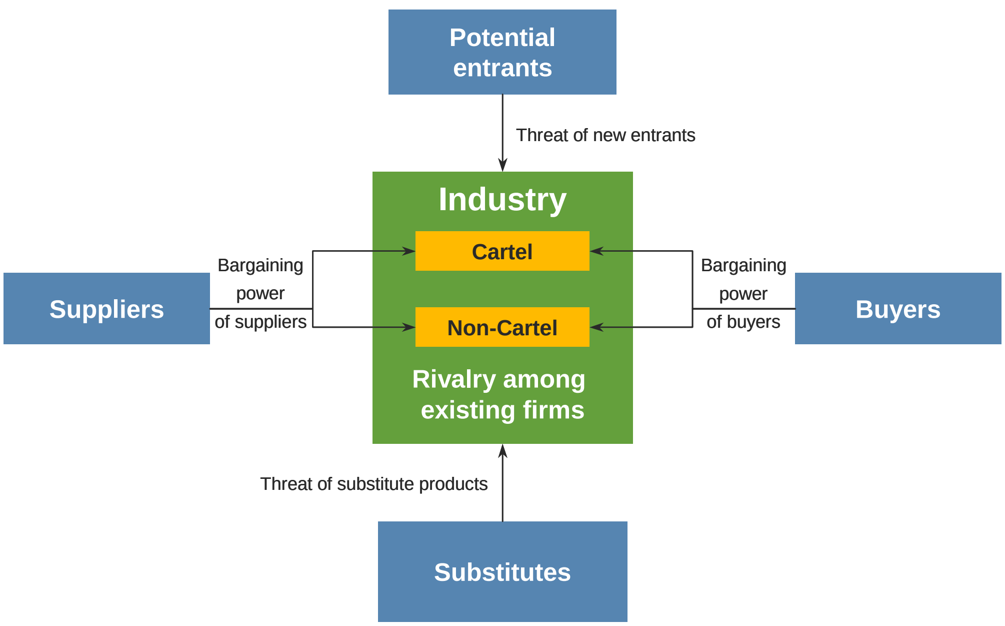

Figure 2. Section 1 and Section 2 in the "Five Forces."

15 Richard A. Posner, *Antitrust Law* 51–100 (Chicago 2d ed 2001).

As depicted in Figure 2, the firms in the cartel have suppressed interfirm rivalry among themselves, but non-cartel firms continue to act as rivals with one another, as well as with the cartel firms. If the cartel firms only suppress rivalry among themselves, and take no additional actions in the market, then the non-cartel firms benefit since they can earn supra-normal profits as a consequence of the conspiracy yet incur none of the costs associated with operating a cartel.

However, viewing the cartel as a single dominant firm, we can now pose the question of what conduct the cartel could engage in that would be above and beyond the suppression of rivalry among the firms in the cartel. There are many possibilities in this regard but we envision four broad categories. The first category, which includes behavior designed to harm non-cartel rivals, can be disaggregated into five different types of behavior.

1. Behavior designed to harm non-cartel rivals.
    a. The cartel firms may take actions directed at non-cartel firms, such as initiating anti-dumping complaints with the goal of preventing foreign non-cartel firms from being able to undercut the artificially increased cartel price[16] or withholding cost-reducing or quality-improving technology. The cartel may also put pressure on non-cartel firms to accommodate certain cartel actions.
    b. The cartel firms may enter into contracts with their own buyers that are designed to harm the ability of the non-cartel firms to negotiate with those buyers. For example, the use of fidelity discounts, tying, or bundling by the cartel reduces buyers' ability to substitute between firms in the industry. Non-cartel firms are harmed because these contracts increase buyer bargaining power vis-à-vis non-cartel firms.
    c. The cartel firms may take predatory actions directed at the non-cartel firms' buyers, such as undercutting the non-cartel prices and otherwise targeting the non-cartel firms' buyers.
    d. The cartel firms may deprive the non-cartel firms of supply or increase what the non-cartel firms must pay for inputs (raising rivals' costs) through contractual arrangements, such as exclusivity, with cartel input suppliers.
    e. The cartel firms may deprive the non-cartel firms of supply or increase what the non-cartel firms must pay for inputs (raising rivals' costs) through interference with the non-cartel firms' input suppliers.

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16 Non-cartel firms that are within the same country or trading area as the cartel firms may benefit from anti-dumping tariffs imposed on foreign producers.

For example, if cartel firms are vertically integrated into a downstream market, and if they supply their downstream competitors, they may increase prices to disadvantage competitors in the downstream market.

2. The cartel firms may engage in actions designed to deter entry. Entry deterrence may help non-cartel firms as well as cartel firms. Examples of anticompetitive behaviors that raise entry costs include exclusive or excessively long contracts with customers, large-volume long-term contracts with suppliers, capacity expansions, and tying. This behavior, along with other monopolization behaviors, may prolong the duration of a cartel.
3. The cartel firms may engage in actions intended to reduce the attractiveness and/or availability of substitutes, or to bundle or tie its products together with complements. Examples may include investing in research that demonstrates the advantages of the cartel's products and the hazards of the substitute products.
4. Finally, to reduce rivalry, one of the cartel firms may purchase one of the non-cartel firms or a competitive asset of one of the non-cartel firms.

We can relate this taxonomy of monopolization behaviors to Figure 2. Behaviors in Category 1.a, actions directed at a cartel's horizontal competitors, are behaviors among firms that are inside the "Industry" box shown in Figure 2, although they may also involve a government authority as in the case of the abuse of anti-dumping provisions. Behaviors in Category 1.b are those implemented between the cartel and its own buyers, although they can affect the relation between those buyers and the non-cartel firms. Referring to Figure 2, this behavior affects the "Buyers" box shown in the figure as well as the relationships represented by the arrows shown in the figure between the cartel and non-cartel firms and the buyers. Behaviors in Category 1.c are those that focus on the relation between the non-cartel firms and *their* buyers. In Figure 2, this behavior affects the "Buyers" box and the arrow between the non-cartel firms and buyers. Behaviors in Category 1.d are those implemented between the cartel and its own suppliers, although they can affect the relation between those suppliers and the non-cartel firms. This behavior affects the "Suppliers" box and the arrows between the cartel and non-cartel firms and the suppliers. Behaviors in Category 1.e focus on the relation between the non-cartel firms and *their* input suppliers. They affect the "Suppliers" box and the arrow between the non-cartel firms and suppliers.

Behaviors in Category 2 relate to potential entrants. Referring to Figure 2, these behaviors act on the "Potential Entrants" box shown there. Behaviors in Category 3 relate to substitutes. These behaviors affect the "Substitutes" box in

Figure 2. The fourth category includes behavior that changes which firms are included in the cartel. These behaviors affect the division between "Cartel" and "Non-Cartel" firms within the "Industry" box in Figure 2. Thus, all aspects of Figure 2 are captured in these categories. Thus, the source of industry profits as identified by Michael Porter are often fully recognized and addressed by cartels, starting with the groundwork of interfirm rivalry suppression and then spreading out to the four spokes in Figure 2.

A cartel's first step is to control intra-cartel rivalry through Section 1 behavior. The other four forces that influence industry profit are also potential targets for anticompetitive manipulation, either by a single dominant producer or by a cartel that has successfully turned itself into a dominant producer through its Section 1 behavior. Exclusive dealing, predatory behavior directed at non-cartel firms, entry deterrence, tying, and other similar conduct can be used to suppress competition that might threaten the dominance of the cartel.

One conjecture is that once a cartel controls intra-cartel rivalry, it moves on to implement practices designed to diminish competition from existing and potential non-cartel rivals. Such conduct would constitute Section 2 violations when practiced by a dominant firm. Thus, cartel conduct can provide a window to understanding anticompetitive monopolization conduct.

III. Cartels Engaged in Monopolization Conduct

This section provides a number of examples of cartels engaged in monopolization conduct. We do not attempt to provide a complete enumeration of such conduct over all known cartel cases. Instead, we focus on cases from two sources. First, we consider the European Commission ("EC") cartel and price-fixing decisions related to manufactured products from 2000 to the present.[17] Second, we consider the cartels for non-agricultural products described in the 1945 book *Cartels in Action* by Stocking and Watkins ("SW").[18] Table 1 below provides specific citations to monopolization behaviors described in these sources. We give the relevant paragraph number for EC decisions and the relevant page number for SW.[19]

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17 Non-manufacturing cases excluded from our analysis include EC Decisions in *Fine Art Auction Houses*, Case COMP/E-2/37.784, 30/07/2005 (Oct 30, 2002); *Austrian Banks—'Lombard Club*,' Case COMP/36.571/D-1, 2004/138/EC (June 11, 2002); *Bank Charges for Exchanging Euro-Zone Currencies—Germany*, Case COMP/E-1/37.919, 2003/25/EC (Dec 11, 2001).

18 George W. Stocking and Myron W. Watkins, *Cartels in Action* (Hein 1945).

19 The paragraphs from the EC decisions cited here are available at Randal D. Heeb et al, *Cartels as Two-Stage Mechanisms: Implications for Analysis of Dominant-Firm Conduct* (Jan 2009) appendix, available online at <http://faculty.fuqua.duke.edu/~marx/bio/papers/CATSM_Appendix.pdf> (visited Apr 5, 2009).

European Commission cartel and price-fixing decisions for manufacturing industries (2000-2006) (paragraph numbers)	**Conduct**							
	Harming non-cartel rivals							
		Through buyers		**Through suppliers**				
	Direct	**Using contracts with *cartel* buyers**	**Targeting *non-cartel* buyers**	**Using contracts with *cartel* suppliers**	**Targeting *non-cartel* suppliers**	**Harming potential entrants**	**Harming substitutes**	**Purchase of non-cartel rivals**
Vitamins		714	257		322			288
Specialty Graphite						305		29, 178
Choline Chloride								
Soda-Ash – Solvay	49	53, 114, 115, 171						
Copper Plumbing Tubes	116	137						
Sorbates	117					118, 281		
Amino Acids (Lysine)								
Methionine	141		146					
Electrical and Mechanical Carbon and Graphite Products	167		2, 157, 167, 171, 241		2, 154, 157, 241			167
Plasterboard								
Interbrew and Alken-Maes			73				137, 143	
Citric Acid	116, 166		119, 166					
Graphite Electrodes	2, 106							
Organic Peroxides								271
Zinc Phosphate								
Carbonless paper								
Industrial and Medical Gases								
Methylglucamine								
Food Flavour Enhancers								
Industrial tubes								
Rubber chemicals								
Stocking and Watkins (1945) (page numbers)								
Steel		195	190, 201, 202			196, 213		
Aluminum	259		225	225	225, 259	225, 227		259
Magnesium						283, 284, 297, 303		
Incandescent Electric Lamps	310	306	306	306		306, 327, 343	335	306
Chemicals		403				402, 403	402, 403	409
Explosives	447				448	458		447, 448
Examples	anti-dumping, refusal to transfer technology, pressure into cooperation	loyalty rebates, tying	price undercutting	exclusivity	buying up supply, raising prices to downstream competitors	barriers to entry, long-term contracts	marketing to differentiate products	buy non-cartel rival

Table 1: Cartels and Monopolization Conduct

When analyzing the table, it is important to note that just because we have no indicator for a particular monopolization behavior does not mean the behavior did not occur. It simply means the behavior was not described in the EC case or SW chapter.

Also, it is important to note that the conducts described for the EC decisions are not restricted to the European Community. Many of these cartels are international and the conducts described had impact throughout the world, including the United States. Examples include the *Vitamins* cartel[20] and the *Citric Acid* cartel.[21] Furthermore, the monopolization conducts described in SW are largely international in nature.[22]

The columns correspond to the points enumerated in Section II regarding Figure 2.

We begin by mentioning some behaviors that are not included in the table since they are not clearly monopolization behaviors, yet these forms of conduct go beyond the suppression of intra-cartel rivalry. First, in *Vitamins*,[23] the cartel purchased the product of non-cartel rivals to prevent that supply from disrupting the cartel agreement and the cartel's attempts to increase price. Second, a number of cases mention coordinated attempts to control the behavior of distributors. These include *Specialty Graphite*,[24] *Choline Chloride*,[25] *Amino Acids*,[26] *Plasterboard*,[27] *Steel*,[28] and *Incandescent Electric Lamp*.[29]

Returning to Table 1, a number of features stand out. First, every column in Table 1 has an entry. Cartels engage in a broad range of dominant-firm behaviors. It is interesting that there are no entries among the EC cases involving the cartel's use of exclusivity or other contractual agreements with its suppliers designed to deprive non-cartel rivals of supply, although such behavior is described in SW. This observation may indicate that EC analysis tends not to focus on the effect of a cartel on input suppliers. Overall, a fundamental point that emerges from this paper is that enforcement authorities should be looking

20 *Vitamins*, Case COMP/E-1/37.512, 2003/2/EC, ¶¶ 287–88 (Nov 21, 2001) (describing the purchase of a US producer of vitamin B2).

21 *Citric Acid*, Case No COMP/E-1/36 604, 2002/742/EC, ¶¶ 116, 166 (Dec 5, 2001) (describing predatory conduct against Chinese producers that was not regionally restricted).

22 Stocking and Watkins, *Cartels in Action* at 3–6 (cited in note 18).

23 *Vitamins*, Case COMP/E-1/37.512, ¶¶ 287, 432, 447.

24 *Specialty Graphite*, Case COMP/E-2/37.667, ¶¶ 137, 147, 383 (Dec 17, 2002).

25 *Choline Chloride*, Case COMP/E-2/37.533, ¶¶ 69, 75, 99, 138 (Dec 9, 2004).

26 *Amino Acids*, Case COMP/36.545/F3, OJ (L152), ¶ 162 (June 7, 2000).

27 *Plasterboard,* Case COMP/E-1/37.152, C(2002)4570 Final, ¶ 364 (Nov 27, 2002).

28 Stocking and Watkins, *Cartels in Action* at 190–91 (cited in note 18).

29 Id at 307.

past the narrow issue of the suppression of interfirm rivalry in cartel investigations, expanding the scope of their investigations to monopolization conducts of all sorts and varieties that cartels may subsequently adopt once the cartel begins to function as a single dominant firm. For example, when addressing amnesty applicants and in depositions, antitrust authorities could ask whether there were any monopolization conducts and inquire about the specific conducts listed in Table 1. Parties damaged could also be asked about the presence of monopolization conduct.

Second, some rows have no entries. In other words, for some cartels there is nothing in the record that we reviewed that suggests monopolization-like conduct. This observation does not imply the absence of such behaviors by these cartels, but rather that there was nothing reported regarding such conduct. One might hypothesize that some cartels did not engage in monopolization because they were having difficulties with the basic suppression of rivalry and so the cartel was unable to achieve the market power necessary to function as a dominant entity and engage in monopolization. Such a hypothesis suggests that we would observe less monopolization behavior from relatively ineffective cartels and more from effective cartels. There are examples in our data that support this, such as the cartel in *Carbonless Paper*,[30] which appears to have been relatively ineffective, and for which there is no evidence of monopolization conduct. However, our data are insufficient to allow us to make a firm conclusion. For example, the *Food Flavour Enhancers* cartel appears to have been relatively effective,[31] but we find no evidence in the record of monopolization conduct.[32]

Third, for the EC cases, behavior directed specifically at deterring entry is relatively uncommon while, in contrast, this same conduct is pervasively reported in SW. This difference may reflect the fact that SW reports the historical evolution of an industry, and the cartels within it, so it would be more natural for long-term conduct such as entry deterrence to be reported by SW than by the EC, where the latter is analyzing a specific violation.

30 *Carbonless Paper*, Case COMP/E-1/36.212, 2004/337/EC, ¶¶ 166, 106 (Dec 20, 2001) (including discussion of how certain attempted price increases were ineffective and concerns about cheating).

31 *Food Flavour Enhancers*, Case COMP/C.37.671, 2004/206/EC, ¶ 64 (Dec 17, 2002). The execution of "counterpurchase agreements" by the cartel suggests few problems with monitoring and enforcement within the cartel.

32 With regard to *Food Flavour Enhancers*, the leading firm in this cartel is Ajinomoto ("Aji"). Aji produces a full range of amino acids and was a member of the Lysine cartel. See id, ¶ 136. The absence of monopolization conduct for Aji-cartels is perhaps suggestive of the EC's inability to gain access to a Japanese firm's company records through investigatory processes.

Fourth, there are some EC decisions that give attention to monopolization behavior such as those in *Vitamins*,[33] *Graphites* (including *Specialty Graphites*,[34] *Electrical and Mechanical Carbon and Graphite Products*,[35] and *Graphite Electrodes*[36]), *Incandescent Electric Lamps*,[37] and *Chemicals*.[38] Firms in industries with a history of successful cartel activity that includes a relatively full portfolio of monopolization conduct may warrant extra attention from enforcement authorities.[39]

Depending on how one is using these data, alternative ways of categorizing the behaviors may be useful. For example, it might be useful to organize the data in terms of whether the monopolization behavior was implemented through contracts or negotiations, such as exclusive dealing, bundling, tying, conditional rebates, and certain vertical restraints, or perhaps whether it relied on governmental process, such as patent abuse, innovation suppression, standards abuse, or other torts or extortion as part of an attempt to monopolize. In particular, a well-designed taxonomy could be of great assistance to antitrust enforcement authorities.

In this light, finally, it is important for antitrust enforcement authorities to realize that the initiation of monopolization conduct by non-dominant firms in a concentrated industry may be an indicator of cartel activity, especially when observed following a period of unexpected price increases. This potential cartel detection mechanism has three advantages. First, monopolization conducts may be more observable than the suppression of interfirm rivalry (for example, exclusive dealing is easier to observe than bid rigging). Second, the enforcement investigation is triggered by a combination of observable changes in firm behavior and data analysis. Third, once firms understand that such conduct increases the likelihood of a cartel investigation, firms engaged in cartel activity will be deterred from such conduct, the payoff to collusion will drop through the mitigation of some cartel monopolization conducts, and cartel conduct will be somewhat deterred.

In summary, monopolization conduct by cartels is relatively common, but there appears to be substantial variation between cartels in the extent and nature

33 *Vitamins*, COMP/E-1/37.512, 2001 OJ (L6), ¶ 2.

34 *Specialty Graphite*, Case COMP/E-2/37.667, ¶¶ 1–3.

35 *Electrical and Mechanical Carbon and Graphite Products*, Case C.38.359, 2004/420/EC, ¶¶ 1–3 (Dec 3, 2003).

36 *Graphite Electrodes*, Case COMP/E-1/36.490, 202/271/EC, ¶¶ 1–2 (July 18, 2001).

37 Stocking and Watkins, *Cartels in Action* at 304–62 (cited in note 18).

38 Id at 363–429.

39 The cartels in *Incandescent Electric Lamps* and *Alkalies, Explosives, and the Grand Alliance*, as described by Stocking and Watkins, are good examples. See id at 304–62, 430–48.

of this conduct. It is important that public enforcement authorities, when investigating specific cartels, gather exhaustive information about monopolization conduct, including the motivations and intents for these conducts as revealed by cartel participants, so as to advance our understanding of monopolization.

IV. CONCLUSION: POLICY IMPLICATIONS

Recognition of the analytical and behavioral links between the historically separate areas of cartel and dominant-firm behavior suggests a number of future directions for public enforcement policy and research by competition authorities. First, competition agencies should more fully explore and catalogue evidence of monopolization conduct on the part of cartels. Economists and lawyers within the public agencies in Europe and the United States have incomparably large bodies of data involving cartels, and other competition agencies have access to an increasingly broad range of information regarding the conduct of cartels. This information has the potential to extend well beyond the kind of standard descriptions that are found in EC decisions or in published case reports in the United States.[40] If this work is undertaken effectively inside public agencies that traditionally have placed cartel and monopolization matters in discrete compartments, then perhaps the artificial nature of this compartmentalization will become obvious and the experience of those who have focused on cartel cases will add to the analyses of those addressing monopolization concerns.

Second, we need to understand better the information reported in EC decisions and other official accounts of cartels. Decisions written narrowly to describe only Section 1 violations may truncate many monopolization behaviors. In other words, the omission of Section 2 conduct in a description of a Section 1 violation does not necessarily imply the absence of Section 2 conduct.

Third, we need to understand under what circumstances cartels extend past the suppression of intra-cartel rivalry and move into the realm of monopolization conduct. A number of conjectures arise in this regard. If a cartel struggles to suppress interfirm rivalry among its members, then it seems unlikely the cartel can undertake monopolization conduct. In other words, a cartel has to function as a single dominant firm in order to move forward with some kind of monopolization conduct.

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40 Many of the cases included in Table 1 have US counterparts involving many of the same market participants. Examples include: *Amino Acids* (Lysine), *Citric Acid*, *Choline Chloride*, *Graphite Electrodes*, and *Vitamins*.

Fourth, some cartels engage in a full range of monopolization behaviors. As Table 1 shows, examples include *Vitamins*, *Specialty Graphites*, *Incandescent Electric Lamps*, and *Chemicals*. Other cartels engage only in a limited set of monopolization conduct. What accounts for this heterogeneity? There are many ways for a cartel to increase its members' profits. It is reasonable to assume that cartels select those behaviors that offer the greatest expected return. Thus, heterogeneity in the use of monopolization behavior may be explained by heterogeneity in the expected returns from those behaviors across different cartels. It remains an open question what features of an industry, product, and marketplace help explain these differences.

Fifth, as a direct lesson for the study of monopolization conduct, we argue that when a successful cartel engages in such activities there may be a presumption that the activity is not procompetitive. Cartels exist to suppress competition. When a cartel goes past the suppression of intra-cartel rivalry to initiate or coordinate additional conduct known to be potentially anticompetitive, it seems reasonable to assert that such conduct is anticompetitive in this situation. This observation is valuable because it suggests that cross-industry comparisons can help us understand the procompetitive and anticompetitive nature of such conduct. For example, if we see a particular form of exclusive dealing by cartel firms in the auto industry, then the same kind of exclusive dealing by a single dominant firm in the truck industry may be of much greater concern than one might have thought before understanding the conduct in the auto case.

To give another example, loyalty rebates are one practice that, theoretically speaking, can sometimes be procompetitive and sometimes anticompetitive.[41] We see evidence of the anticompetitive use of loyalty discounts by cartels in *Vitamins*[42] and *Soda Ash—Solvay*.[43] Further examination of these cases may shed light on general circumstances in which loyalty discounts should be of concern to antitrust authorities.

Sixth, what is the incremental social harm that a cartel could do by moving past the suppression of interfirm rivalry and toward monopolization conduct? This question is relevant for merger policy. Coordinated effects analyses typically do not address the possibility of monopolization conduct arising from post-

41 Loyalty rebates are retrospective rebates awarded based on meeting targets for sales, purchases, market shares, etc. over a fixed period of time. For a discussion of legal issues surrounding loyalty rebates, see generally Elhauge and Geradin, *Global Competition Law and Economics* at 570–79 (cited in note 10).

42 *Vitamins*, COMP/E-1/37.512, ¶ 714.

43 *Soda Ash—Solvay*, COMP/33.133-C, OJ (L10), ¶ 53 (Dec 13, 2000).

merger coordination. However, such conduct is a potential social harm, so the antitrust agencies should consider this when reviewing a merger.

Seventh, the study of cartel monopolization conduct has implications for determining the standing of non-cartel firms to bring private suits against the cartel. Courts sometimes deny non-cartel participants in the industry standing to sue the cartel on the ground that the suppression of interfirm rivalry within the cartel yields price-raising benefits to non-participants. However, if a cartel is engaged in predation or in other anticompetitive conduct that damages horizontal non-cartel producers, then perhaps consideration should be given to allowing those firms to have standing to challenge the monopolization behavior. The logic would be that exclusionary conduct undertaken by the cartel may damage non-cartel rivals. Without a guilty plea or a criminal finding of both collusion and attempted monopolization, a non-cartel firm may find the task of appearing before a court to seek damages from such predation daunting and the court unreceptive.

Eighth, the time series nature of the evolution of the conduct can be informative.[44] Cartel meetings that previously were dedicated to coordinating the suppression of rivalry may start to have new agenda items related to monopolization conduct.[45] These are perhaps put into place slowly. The costs of implementing them may be divided among the cartel participants.[46] Although the discovery records for cartels are not often read from the perspective of Section 2 violations, we argue that these records provide insights into monopolization conduct within industries where there is a single dominant firm.

Ninth, suppose there is an oligopolistic industry with no dominant firm and with no known cartel, yet some firms, perhaps smaller ones, are subject to predatory conduct and other behavior associated with Section 2 violations. The initiation of such conduct might provide evidence that a cartel exists. Consider the predatory conduct enumerated in Table 1. The cartels seem to have undertaken this conduct only after the cartel was formed. We are not aware of instances in which antitrust agencies have used the emergence of alleged

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44 See William E. Kovacic et al, *Lessons for Competition Policy from the Vitamins Cartel* in V. Ghosal and J. Stennek, eds, *The Political Economy of Antitrust, Contributions to Economic Analysis Series* 149, 150–152 (Elsevier 2007) (providing an analysis of cartel beginning and ending dates in *Vitamins*).

45 See generally Robert C. Marshall, Leslie M. Marx, and Matthew E. Raiff, *Price Announcements: The Vitamins Industry*, 26 Intl J Ind Org 762 (2008) (discussing how timing of cartel price announcements in *Vitamins* can be related to timing of cartel meetings).

46 For example, in the EC's *Copper Plumbing Tubes* decision, the Commission noted the costs of "advertising campaigns and related activities" were shared among cartel members "on the basis of sold tonnage." *Copper Plumbing Tubes*, COMP/E-1/38.069, ¶ 141 (Sept 3, 2004).

monopolization conduct in an oligopolistic industry to begin an inquiry for the presence of a cartel.

Tenth, the abuse of government regulations by cartels to thwart entry and damage non-cartel firms is well chronicled. A cartel may pursue and win an anti-dumping claim against a foreign competitor, essentially using the government process as an entry deterrent and/or predatory device.

In summary, we hope the type of analysis proposed here can be useful in guiding antitrust authorities as to where they should direct monopolization resources. One implication of this Article is that antitrust authorities should not segregate the analysis of Section 1 and Section 2 cases. A second implication is that antitrust authorities pursuing Section 1 violations should aggressively investigate the presence or absence of monopolization behaviors by the cartel, including the deliberations among cartel members associated with these behaviors.

For many monopolization behaviors there are tradeoffs between the procompetitive and anticompetitive aspects of the behavior. This justifies the use of a rule-of-reason standard in these cases. But because the rule of reason is applied, a deep understanding of the motivations for and implications of monopolization conduct is required in order to successfully prosecute and deter anticompetitive behavior. We argue that one way to move in the direction of that deeper understanding is to maximize the information gained from cartel prosecutions regarding monopolization conduct and to use that information to inform the analysis of monopolization cases.

In our ongoing research, we will continue to investigate the issues discussed here and the features of cartel structure more generally. Our investigation of the structure of cartels has the potential to help us understand the additional tradeoffs relevant for cartels considering monopolization behavior. For example, there may be monopolization behaviors that are profitable for the cartel but that leave smaller cartel members in a precarious position should the cartel dissolve.[47] In this case, there may not be consensus within the cartel to engage in the behavior. Thus, a cartel's structure can be expected to influence the conduct in which it engages. We hope our investigations of cartel structure will shed light on these issues, and, as emphasized in this Article, potentially benefit our understanding of the behavior of single dominant firms.

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47 An example would be establishing the largest cartel member as a buying agent for inputs for the cartel, supported by exclusive dealing provisions between input suppliers and the largest cartel member.