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COLLOQUIUM ON ANTITRUST AND REGULATION

Jonathan B. Baker and **William H. Stallings** examine the boundaries of antitrust and sectoral regulation.

A SYMPOSIUM ON VERTICAL RESTRAINTS

Damien Geradin, Caio Mario da Silva Pereira Neto, Seth B. Sacher, Paulo Furquim de Azevedo, David S. Evans, Vinicius Marques de Carvalho, Marcos Paulo Verissimo and **Paulo Burnier da Silveira** consider the proper approach to the antitrust analysis of vertical restraints.

CURRENT CASES AND ISSUES

Ernesto Estrada, Samuel Vazquez, Dennis Lu and **Guofu Tan** on the use of economic evidence in private litigation in China.

THE CLASSICS

Lee Benham's The Effects of Advertising and the Price of Eyeglasses with an introduction by **Bruce H. Kobayashi** and **Timothy J. Muris**.

Edited by Elisa V. Mariscal

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From the Editor

The group of articles that make up our Spring 2013 issue take a candid approach to some of the complex problems that antitrust practitioners and scholars have faced and still face today. They consider antitrust's relationship with regulation and the relative risks of capture between these two public policies; the usefulness of guidance documents for antitrust authorities, particularly when faced with relatively complex conducts to assess harm—namely, vertical restraints; and experiences with price screens in Mexico and the use of economic evidence in private antitrust cases in China.

Our colloquium on antitrust regulation presents two articles that look at the difficult interplay between antitrust and sectoral agencies' concurring mandates. In his article Baker discusses how concurrent jurisdiction may help protect competition using as an example the US communication industry. He suggests that capture is a threat when the regulated industry can manage information and consequently shape an agency's point of view. Nevertheless, when looking at the FCC, Baker notes that it has been better positioned to deal with fast-moving markets than an antitrust agency would have been, taking "a more expansive view of potential and future competition."

Stallings discusses some of the recent enforcement actions in the electricity sector, a highly regulated sector, where government has played an important role in enforcing competition policy. The recent "New York Capacity" cases involving a power generator and its financial services firm, includes the use of a derivative agreement to bypass merger regulation and restrain trade. As Stalling notes, this is an example of a novel liability theory used by the Antitrust Division of the US DOJ and of disgorgement as an appropriate remedy in enforcement actions for these types of industries.

This issue also presents a group of articles centering on the use of guidance documents for the analysis of vertical restraints. Geradin and Pereira Neto's paper compares the European and Brazilian experience in this area. According to the authors, while Europe has made headway in writing guidelines that clearly incorporate modern economic methods to the analysis, the continued use of formalistic approaches by Courts may lower the bar for these types of analysis. In the case of Brazil, while the law does leave enough flexibility for the use of these methods, the authority has tended not to rely on quantitative methods but has instead used qualitative information to make determinations. This, they consider, leads to uncertainty.

Two different papers comment on Geradin and Pereira Neto: Sacher and Azevedo. Azevedo, while praising the paper's contribution to the analysis of vertical restraints in a developed and emerging jurisdiction (the E.U. and Brazil), notes some of the more practical problems that may arise with their reliance on a "rigorous effects-based analysis", using an important Brazilian case on exclusive dealings to make his point. Sacher, on the other hand, questions the need for the drafting of formal guidance on vertical restraints as suggested by Geradin and Pereira Neto. His focus is mostly on explaining the complexity involved in analyzing vertical restraints and noting that it is important for authorities to use economic analysis flexibly when these types of conducts are involved.

Evans discusses the pro and anticompetitive uses of vertical restraints in multi-sided platforms. His paper notes that vertical restraints can assist in creating value, for example, by aiding in demand consolidation in a single platform or by ensuring a greater supply of liquidity to platform participants. Evans goes on to describe how certain types of restraints can lead to procompetitive benefits or instead be used in an anticompetitive fashion, for example, by preventing a platform from attaining enough demand (critical mass) on one side.

Carvalho, Verissimo, and da Silveira's paper argues for an administrable standard to analyze vertical restraints. They consider that the discussion of whether these types of conducts ought to be reviewed under a rule of reason or *per se* approach is mostly academic and not helpful for authorities. They note that "competition analyses will always make some sort of rule of reason approach. What may radically change is how to weigh the presumption of legality, or illegality, of a particular conduct." Based on a recent 2013 RPM case by CADE, they suggest that these conducts should be considered presumably illegal and that the burden of proof about their likely efficiencies be shifted to the defendants.

As is our custom, we include a couple of papers that look at current issues and cases. We start with a paper that describes the use of screens by the Mexican antitrust authority to uncover bid rigging in medicine procurement, arguably one of the most important cases to date. Estrada and Vazquez describe the methods used to uncover this conspiracy using publicly available data for insulin and saline solutions. Our other article is by Lu and Tan who look at the evolution of private antitrust litigation in China, describing both the legal standards and the economic evidence that courts seem to require based on three private action cases taken under the law. An interesting conclusion of theirs is that while plaintiffs do not seem to rely on economics, courts seem perfectly capable of understanding these concepts.

Our classic this time is Lee Benham's empirical analysis on the effects of advertising restrictions in the prices of eyeglasses. Kobayashi and Muris provide the context in which this article was written and note its continued importance over the 40 years since its publication. As the authors note, the results challenged conventional economic wisdom and provided empirical evidence that addressed two important theoretical controversies: the pro-competitive versus anticompetitive effects of advertising, and the public versus private interest theories of the regulation of licensed occupations. It also heralded an era of antitrust analysis based on empirical foundations—it is a must read for any antitrust practitioner.

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Colloquium on Antitrust & Regulation

Antitrust Enforcement And Sectoral Regulation: The Competition Policy Benefits Of Concurrent Enforcement In The Communications Sector

Jonathan Baker[1]

The US competition agencies – the Antitrust Division of the Department of Justice (DOJ) and the Federal Trade Commission (FTC) – often share jurisdiction with sectoral regulators also charged with fostering competition, including the Federal Communications Commission (FCC), the Federal Energy Regulatory Commission (FERC), and several agencies that regulate financial institutions. This article highlights how this institutional structure – concurrent jurisdiction – helps protect competition through the lens of recent US experiences involving the communications industry.

I. THE ROLE OF POLITICS

In my experience, the FCC pays more attention than the antitrust agencies to political considerations[2]. One window into why this occurs comes from comparing the FCC and FTC. These agencies have a similar formal structure: each is an independent agency with Commissioners from both political parties, and each has both rulemaking and adjudicative powers. Despite these similarities, the agencies have different internal atmospheres, with politics mattering more at the FCC. My sense is that there are two main reasons.

First, the FCC focuses on a single sector of the economy: communications. This focus puts the FCC in "repeated play" with providers of wireless, wireline, video distribution, and satellite services. In consequence, large communications firms like AT&T and Comcast devote substantial "Washington office" resources to monitoring FCC activities and interacting with agency officials, as well as engaging with other governmental actors in Congress and the Executive Branch that influence communications policy. By contrast, the antitrust agencies' jurisdiction is economy-wide and, most firms, even large ones, tend to view their interactions with the competition agencies as episodic not routine.[3] This difference means that, on average, the FCC confronts more concentrated interest groups, which tend to be able to organize politically (by solving collective action problems) more effectively than "diffuse" groups.[4]

The second reason that the FCC seems more political than the FTC comes from differences in the nature of each agency's work. The typical FTC matter is adjudicative, whether on the competition side of the house or the consumer protection side.[5] Accordingly, the FTC is guided by judicial norms. Agency decisions are based on law and policy, not politics, and the agency describes itself as performing a law enforcement function.[6] By contrast, the typical FCC matter is a rulemaking, which is often a quasi-legislative activity. As a result, legislative norms guide at the FCC: the agency pays attention to the views of interested parties and groups (not just the arguments those parties proffer), and at times aims, at least in part, to work out an interest group bargain.[7] These broad generalizations brush over much of the fine detail by which individual matters are decided at the two agencies, but they capture an important difference.

II. CAPTURE

The greater role of politics at the FCC does not necessarily mean that the agency's performance is better or worse than that of the FTC. It may be sensible use of governmental resources, for example, for Congress in effect to delegate to an agency the identification and ratification of interest group bargains[8]; under such circumstances, the agency itself would be performing as intended, and any concerns about agency outcomes would properly be attributable to the legislature, not the agency.[9] As with legislation itself, though, there is no guarantee that outcomes based on interest group bargains will serve the public good – most obviously if some affected groups are systematically underrepresented in political processes, but even if all groups are at the table.[10]

Still, single sector agencies like the FCC are often considered more prone to "capture" by regulated industries than generalist agencies with a broad cross-industry purview like the competition agencies. Agencies are described as "captured" when they appear to favor the interests of the regulated industries over public interest concerns like promoting competition.[11] This charge has at times been leveled at the FCC.[12] By contrast, when the FTC is criticized, it is generally not for capture but for other occasional failings, like lethargy,[13] taking "cheap consents"[14] or its general approach to antitrust.[15]

Agency capture is largely not about direct political influence.[16] If an agency makes a bad decision because it has little insulation when the affected industry complains to Congress, the problem is the capture of the legislature, not the capture of the agency. Capture is also not mainly the product of the "revolving door" (the movement of personnel between regulatory agencies and regulated firms, in both directions). In my experience, industry jobs go to agency veterans largely because they are seen as effective and have developed expertise, not because of the positions they took as agency officials.[17] Moreover, the revolving door helps bring good people into agencies, both at the start of their careers, when they may value the option of leaving later, and later in their careers, when they can use skills and experience developed outside on behalf of the public interest.

IF AN AGENCY MAKES A BAD DECISION BECAUSE IT HAS LITTLE INSULATION WHEN THE AFFECTED INDUSTRY COMPLAINS TO CONGRESS, THE PROBLEM IS THE CAPTURE OF THE LEGISLATURE, NOT THE CAPTURE OF THE AGENCY.

My sense is that capture is a threat at the FCC mainly when the regulated industry can manage the agency's information.[18] When an industry speaks with one voice, and has privileged access to the relevant information, it can shape how the agency sees an issue. The FCC's engineering and economic expertise in critically reviewing the information submitted by industry only goes so far without data. Moreover, the competition agencies typically obtain more information using compulsory processes than the FCC obtains through voluntary submissions and routine data collection from regulated firms, particularly in a political environment in which the latter activity may be questioned as imposing unnecessary burdens on industry.

Many FCC decisions are not subject to biases resulting from information asymmetry. In 2011, when the FCC reviewed AT&T's proposed acquisition of T-Mobile, it was in a strong position to avoid regulatory capture notwithstanding AT&T's extensive lobbying effort:[19] the concurrent DOJ review gave it access to the type of information that the antitrust agencies obtain through use of compulsory process, and the industry did not speak with one voice (as one major wireless provider expressed concerns about the acquisition). To the extent capture is nevertheless a concern with the FCC today, it could be addressed in part by expanding the range of information the FCC requires regulated firms to submit on a routine basis.

III. TAKING A LONG TERM PERSPECTIVE

In the U.S. system, sectoral regulators have an advantage over the competition agencies in protecting potential competition, particularly when dealing with fast-moving markets. It is difficult for the competition agencies to take a long term focus in their enforcement actions because the generalist district court judges they must convince rarely have prior industry expertise and may in consequence tend to view predictions about industry evolution as speculative. By contrast, the FCC is the fact-finder in its decisions and can bring more expertise and sustained attention to understanding industry evolution.

As a practical consequence, the FCC can take a longer view than the competition agencies. It has used that power to stop or impose conditions of some mergers that the Justice Department could not easily challenge because the firms involved were potential rivals rather than current competitors. The FCC stopped the 1997 merger talks between AT&T, then a long distance company, and SBC, a large local telephone service provider and regional Bell operating company.[20] The FCC also imposed competition-related conditions on the 1997 merger between Bell Atlantic and NYNEX, two local telephone service providers in adjoining territories, when the Justice Department declined to sue.[21] The Justice Department's position on that matter was likely colored by the difficulty it would have faced in proving a potential competition case to a federal judge.[22] Similarly, it likely would have been more difficult for the Justice Department to address potential competition issues involving online video distribution raised by the recent Comcast/NBCU transaction had the FCC not also been involved.[23] Moreover, the FCC was better situated than an antitrust agency to address the long-term potential competition issues that were the subject of the FCC's Open Internet (net neutrality) rules.[24] The FCC rejected the alternative of relying solely on ex-post competition review, the approach that competition agencies would have taken,[25] on the view that review after problems arise would be ineffective and too late.[26]

IN THE U.S. SYSTEM, SECTORAL REGULATORS HAVE AN ADVANTAGE OVER THE COMPETITION AGENCIES IN PROTECTING POTENTIAL COMPETITION, PARTICULARLY WHEN DEALING WITH FAST-MOVING MARKETS.

I am not arguing that sectoral regulators are either more or less likely to make good decisions than competition agencies. Rather, my point is that in the US system, the sectoral regulator is better able to act consistent with a long-term view of industry evolution. The two examples from 1997 involving telephone sector mergers show that doing so can be important when policy-makers seek to develop competitive markets in formerly regulated sectors. The Open Internet example distinguishes sectoral and competition agencies only if the latter decline to use rulemaking on competition matters.[27] In short, as the FCC explained in a recent order, the FCC's competitive analysis under its public interest standard is "somewhat broader" than competition review under the antitrust laws in that the FCC "considers whether a transaction will enhance, rather than merely preserve, existing competition," and the FCC "often takes a more expansive view of potential and future competition" than the antitrust agencies in analyzing that issue.[28]

IV. PURSUING MULTIPLE GOALS

The close cooperation between the FCC and DOJ in reviewing the Comcast/NBCU transaction, and the similarity in the remedies the two agencies adopted, points to another benefit of concurrent merger review by a competition enforcement agency alongside a sector-specific regulator: a type of "production efficiency" in generating governmental outcomes. Concurrent review can improve overall outcomes by allowing the two agencies to exploit their complementary strengths.

The FCC and the antitrust agencies approach merger review in different ways.[29] One difference is in the allocation of the burden of proof: at the FCC, the merging firms must show that their deal is in the public interest, while the antitrust agencies must show harm to competition in federal court. Another is in how evidence is collected and tested: the FCC relies mainly on submissions from the parties and interested third parties in a rule-making record, while the antitrust agencies contact potential witnesses and use discovery tools like depositions to test evidence. Concurrent enforcement can enhance competition enforcement as a whole by drawing on the strengths of each agency.

One advantage of the FTC and DOJ lies in their focus: the Antitrust Division concentrates on competition issues only, and the FTC addresses only competition and consumer protection. Focus is beneficial because it is easier to make decisions when pursuing a single goal. But government is about pursuing multiple goals. Congress has asked the FCC to promote communications industry competition, but also to pursue non-competition public interest goals. These may include, for example, protecting consumers when the communications industry contains natural monopoly sectors, where competition will not succeed; preventing interference when allocating spectrum;[30] assuring a diversity of information sources and voices; and subsidizing broadband access to customers that are very costly to serve.[31]

> THE RECENT TREND AT THE SUPREME COURT TO AWARD JURISDICTION OVER COMPETITION ISSUES TO SECTOR REGULATORS, RATHER THAN EMBRACING CONCURRENT JURISDICTION, IS TROUBLING.

Some critics of the FCC's merger reviews find it unseemly that the FCC's orders frequently address public interest issues that go beyond competition.[32] Yet so long as sector regulators are instructed by Congress to pursue a broader range of concerns, their merger orders will properly and necessarily include conditions related to non-competition goals. Under such circumstances, concurrent review ensures that competition concerns are not downplayed. For that reason, it is important to protect the antitrust focus of the competition agencies, either by housing that function in a separate agency (as with the FTC) or a separate division with practical independence (as with the Antitrust Division at DOJ). From this institutional perspective, the recent trend at the Supreme Court to award primary jurisdiction over competition issues to sector regulators, rather than embracing concurrent jurisdiction, is troubling.[33]

Concurrent jurisdiction requires cross-agency coordination. If coordination is much easier within agencies than across them, then a single agency pursuing multiple goals can achieve significant scope economies unavailable to multiple agencies. I do not believe that to be the case: in my experience, coordination across agencies can work well, and coordination within agencies can be difficult. During the first term of the Obama Administration, the FCC and DOJ worked together closely on a number of transaction reviews, including two high-profile ones: Comcast/NBCU and AT&T/T-Mobile. One reason for the cooperative relationship is that the FCC's Chairman and the Assistant Attorney General for Antitrust selected senior staff who in many cases knew each other, and knew how the other agency worked. Another is that these merger reviews occurred close in time, so the agencies had recent experience working together on a complex transaction when the second merger came along. This anecdote shows that coordination can succeed, not that it invariably will. But the same is true about coordination within agencies, where different components may jockey for the ear of decision-makers, the lion's share of the budget, and control of shared matters.

V. CONCLUSION

The recent US experience in the communications arena shows how the nation's system of awarding concurrent jurisdiction on antitrust questions to sectoral regulators and competition agencies works to protect competition. That system is likely most effective when the communications regulatory has independent access to industry information to limit capture, when the communications regulator can take a long-term perspective, when the antitrust agency can focus on competition as its sole goal, and when senior appointments at the two agencies are made with coordination between them in mind. ◀

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1. Professor of Law, American University Washington College of Law. This article is informed by my government service in economic policy-making positions at the FCC, FTC, DOJ and the Council of Economic Advisers. At all of these agencies, I worked, at least in part, on communications industry issues, including some of the matters discussed here. None of my views are necessarily those of any government agency.

2. Cf. Policy Statement on Comparative Broadcast Hearings, 1 F.C.C. 2d 393 (1965) (recognizing that the FCC will change its views as its membership changes); STUART MINOR BENJAMIN ET. AL, TELECOMMUNICATIONS LAW AND POLICY 412 (3d ed. 2012) (describing the politics of the FCC's 2003 Triennial Review Order and the "bluntness" of statements by two Commissioners in revealing that they had to compromise on some matters to obtain the results they desired on others). I cannot recall comparable statements by the FTC or its Commissioners, or by senior officials at the Antitrust Division.

3. Some large firms, including Cisco, General Electric, and Microsoft, employ senior competition counsel

in-house. But those positions are not always in Washington, and they typically involve antitrust counseling and litigation supervision (as well as working with the competition agencies).

4. Cf. James Q. Wilson, BUREAUCRACY 79 (1989) ("A client agency will have to struggle mightily to avoid having its work influenced by the single, organized group with which it must deal on a daily basis. Many do not succeed, a few do not even try.") The FCC can be understood as a "client agency' in Wilson's four part typology, though it might better be viewed as what Wilson terms a "interest group agency" with respect to issues that pit one sector of the communications industry against another. Id. at 75-83.

5. This broad generalization does not capture every FTC activity. The FTC also occasionally issues consumer protection rules, and makes competition advocacy filings before other government agencies, for example.

6. Ideological perspectives do matter in antitrust enforcement. See generally Jonathan B. Baker, Economics and Politics: Perspectives on the Goals and Future of Antitrust, 81 FORDHAM L. REV. 2175 (2013); cf. Steven C. Salop, What Consensus? Ideology, Politics and Elections Still Matter (April 2013) (unpublished manuscript) (arguing that politics is less of a driving force in antitrust today than ideology). While ideology might be thought of as politics at a distance, the discussion of issues and cases at the FTC is largely about ideas and arguments, not the positions of interest groups.

7. See, e.g., Schurz Commc'n., Inc. v. FCC, 982 F.2d 1043, 1050 (7th Cir. 1992) (Posner, J.) (describing an FCC rule as creating an impression "of unprincipled compromises of Rube Goldberg complexity among contending interest groups viewed merely as clamoring supplicants who have somehow to be conciliated" and observing that "[t]he possibility of resolving a conflict in favor of the party with the stronger case, as distinct from throwing up one's hands and splitting the difference, was overlooked"). Cf. Preserving the Open Internet, Broadband Industry Practices, 25 F.C.C. Rcd. 17,905 (2010) (statements of Chairman Genachowski and Commissioners Copps, Clyburn and Baker) (in statements accompanying the release of the FCC's Open Internet order, the Commission's Chairman cited the support key groups gave to its framework, one concurring Commissioner noted that he had spent three weeks in intensive discussions with all interested parties, another concurring Commissioner thanked the stakeholders that had engaged with the FCC in crafting a framework, and a dissenting Commissioner argued that the FCC had acted improperly as a quasi-legislative body by adopting as its rules the provisions in a draft bill under consideration in Congress).

8. This role is explicit when the agency engages in "negotiated rulemaking," though it also may be implicit. See Jeffrey S. Lubbers, Achieving Policymaking Consensus: The (Unfortunate) Waning of Negotiated Rulemaking, 49 S. Texas L. Rev. 987 (2008).

9. Congress has multiple levers for influencing agency outcomes. It can, for example, hold oversight hearings, overrule specific decisions, force an agency to take into account certain considerations, extract promises from nominees before confirmation, and shape an agency's budget.

10. See generally Daron Acemoglu, Why Not a Political Coase Theorem? Social Conflict, Commitment and Politics, 31 J. COMP. ECON. 620 (2003).

11. The term "agency capture" refers to settings in which regulatory decisions favor the interests of regulated firms relative to the public interest. See generally Ernesto Dal Bó, Regulatory Capture: A Review, 22 OXFORD REV. ECON. POL'Y 203 (2006); Theodore E. Keeler & Stephen E. Foreman, Regulation and Deregulation, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 213 (Peter Newman, ed. 1998); cf. Dorit Rubinstein Reiss, The Benefits of Capture, 47 WAKE FOREST L. REV. 569 (2012) (discussing differences between harmful capture of agencies by regulated firms and beneficial collaboration between agencies and regulated firms).

12. See, e.g., Stanley M. Besen & Robert W. Crandall, The Deregulation of Cable Television, 44 L. & CONTEMP. PROBS. 77 (1981) (during the 1960s and 1970s, the FCC regulated cable television in order to protect the broadcasting industry).

13. E.g. EDWARD F. COX, ROBERT C. FELLMETH & JOHN E. SCHULTZ, 'THE NADER REPORT' ON THE FEDERAL TRADE COMMISSION 37-95 (1969) (Nader report).

14. See William J. Baer, Director, Bureau of Competition, Fed. Trade Comm'n, Report from the Bureau of Competition: Looking Forward and Going Forward (Mar. 28, 1996), available at http://www.ftc.gov/speeches/other/ababaer.shtm (criticizing past practice of accepting quick and limited consent settlements of mergers before the FTC's investigation was complete).

15. Eleanor Fox & Robert Pitofsky, Antitrust Policy, in CHANGING AMERICA: BLUEPRINTS FOR THE NEW ADMINISTRATION 319 (Mark Green ed. 1992).

16. Lobbying may help improve legislative and agency outcomes to the extent it operates as a means of informing government decision-makers about the costs and benefits of their actions when the decision-makers would not have obtained that information inexpensively in other ways. Cf. Dorit Rubinstein Reiss, The Benefits of Capture, 47 Wake Forest L. Rev. 569, 595 (2012) (discussing benefits of collaboration between agencies and regulated firms). But other lobbying activity is undoubtedly wasteful rent-seeking.

17. See Ed de Haan, Simi Kedia, Kevin Koh & Shivara Rajgopal, Does the Revolving Door Affect the SEC's Enforcement Outcomes? (July 2012), available at http://ssrn.com/abstract=2125560 (revolving door induces agency lawyers to exert more enforcement effort to showcase their expertise). In both the antitrust and communications fields, moreover, the professional culture generally does not encourage lawyers to "take sides" for their entire career; the culture in some other legal fields, like labor law, appears to differ.

18. See generally Mark Armstrong & David E.M. Sappington, Recent Developments in the Theory of Regulation, in 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 1557 (Mark Armstrong & Robert Porter, eds. 2007) (analyzing the consequences for regulatory outcomes when regulators have limited knowledge of the firms they regulate); Ernesto Dal Bó, Regulatory Capture: A Review, 22 OXFORD REV. ECON. POL'Y 203, 220 (2006) (the "main lesson[]" of prevailing theories is that "capture is possible because firms have private information that is hard for citizens or their political representatives to obtain"). Cf. Dorit Rubinstein Reiss, The Benefits of Capture, 47 WAKE FOREST L. REV. 569, 599-601 (2012) (discussing problems that arise when regulatory agencies rely on regulated firms for information).

19. See, e.g., Tony Romm, Lobbying a Bust in AT&T T-Mobile Bid, POLITICO, Dec. 20, 2011, http://www.politico.com/news/stories/1211/70701.html; Todd Shields & Jonathan Salant, AT&T Dealt Deal Defeat After $12M in Lobbying, BLOOMBERG, Sept. 1, 2011, http://www.bloomberg.com/news/2011-09-01/at-t-s-12-million-lobbying-spree-fails-to-prevent-rare-antitrust-setback.html.

20. I recount this story in Jonathan B. Baker, Sector-Specific Competition Enforcement at the FCC, 66 N.Y.U. ANN. SURV. AM. L. 413, 417-18 (2011).

21. See id. at 418-20.

22. Id. at 420

23. Compare Applications of Comcast Corporation, General Electric Company, and NBC Universal, Inc., For Consent to Assign Licenses and Transfer Control of Licensees, Memorandum Opinion and Order, 26 FCC Rcd. 4238 ¶¶ 78-86 (2011), available at transition.fcc.gov/FCC-11-4.pdf (describing online video distribution as mainly offering potential competition for multichannel video distribution (cable television), while also noting current competition between the two types of firms) with Competitive Impact Statement, United States v. Comcast Corp., No. 1:11-cv-00106 18-18 (D.D.C. Jan. 18, 2011), available at http://www.justice.gov/atr/cases/f266100/266158.pdf (highlighting existing competition, while also recognizing the potential for online video distributors to have greater competitive significance in the future).

24. Preserving the Open Internet, Broadband Industry Practices, 25 F.C.C. Rcd. 17,905 (2010).

25. See Fed. Trade Comm'n, Broadband Connectivity Competition Policy (FTC Staff Report 2007), http://www.ftc.gov/reports/broadband/v070000report.pdf.

26. Preserving the Open Internet, Broadband Industry Practices, 25 F.C.C. Rcd. 17,905 ¶41 (2010).

27. The FTC has competition rule-making power but has rarely used it. Jonathan B. Baker, Two Sherman Act Section 1 Dilemmas: Parallel Pricing, the Oligopoly Problem, and Contemporary Economic Theory, 38 ANTITRUST BULL. 143, 207-19 (1993); C. Scott Hemphill, An Aggregate Approach to Antitrust: Using New Data and Rulemaking To Preserve Drug Competition, 109 COLUM. L. REV. 629, 673-82 (2009). Under some circumstances, competition agencies can successfully address nascent problems without rulemaking, using adjudication. See United States v. Microsoft Corp., 253 F.3d 34, 54, 79 (D.C. Cir. 2001).

28. Applications of Comcast Corporation, General Electric Company, and NBC Universal, Inc., For Consent to Assign Licenses and Transfer Control of Licensees, Memorandum Opinion and Order, 26 FCC Rcd. 4238 ¶24 (2011), available at transition.fcc.gov/FCC-11-4.pdf.

29. The differences noted below and others are discussed in Jonathan B. Baker, Sector-Specific Competition Enforcement at the FCC, 66 N.Y.U. ANN. SURV. AM. L. 413, 414-16 (2011).

30. Market-based alternatives for addressing interference, such as relying on bargaining among spectrum users in the shadow of nuisance litigation, may often have higher transaction costs.

31. Nearly two-thirds of the pages devoted to conditions in the FCC's Comcast/NBCU order addressed competition issues. Yet the FCC's order also included a number of non-competition conditions, including requirements to increase local news coverage, expand children's programming, broadcast public service announcements, enhance the diversity of programming available to Spanish-speaking viewers, offer discount broadband services to low-income Americans, and provide high-speed broadband to schools, libraries and underserved communities. Applications of Comcast Corporation, General Electric Company, and NBC Universal, Inc., For Consent to Assign Licenses and Transfer Control of Licensees, Memorandum Opinion and Order, 26 FCC Rcd. 4238 at Appendix A (2011), available at transition.fcc.gov/FCC-11-4.pdf.

32. E.g. Joint Concurring Statement of Commissioners Robert M. McDowell and Meredith Attwell Baker, Applications of Comcast Corporation, General Electric Company, and NBC Universal, Inc., For Consent to Assign Licenses and Transfer Control of Licensees, Memorandum Opinion and Order, 26 FCC Rcd. 4238 (2011), available at, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-304134A4.pdf ("License transfer approvals should not serve as vehicles to extract from petitioners far-reaching and non-merger specific policy concessions that are best left to broader rulemaking or legislative processes.")

33. Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398 (2004); Credit Suisse Sec. (USA) LLC v. Billing, 551 U.S. 264 (2007). See Howard A. Shelanski, The Case for Rebalancing Antitrust and Regulation, 109 MICH. L. REV. 683 (2011).

The Continuing Role For Antitrust Enforcement In the Electricity Sector

By William H. Stallings[1]

Regulated industries present challenges for antitrust enforcement, including complex products and fact patterns, difficult theories of liability, and, at times, limited remedial options.

I. INTRODUCTION

One of the more demanding challenges involves the question of when regulation may displace the antitrust laws. The debate on this issue is as old as the Sherman Act itself and continues to this day, with recent Supreme Court cases refining the contours of the relationship between antitrust and sectoral regulation.

The Antitrust Division of the United States Department of Justice has a long history of enforcing the antitrust laws in regulated industries, complementing regulatory structures to protect against anticompetitive conduct that harms consumers. This history is particularly evident in the highly-regulated electricity sector[2], in which the Antitrust Division has asserted – and the courts have recognized – an important role for governmental enforcement of the competition laws.

Recent enforcement activity builds on this history, demonstrating the Antitrust Division's continued willingness to pursue novel liability theories and unprecedented remedies to address anticompetitive harm in the electricity sector.

In the "New York Capacity" cases[3], the Antitrust Division sued a large power generator and a financial services firm for entering into a financial swap agreement[4] that caused an anticompetitive effect on a regulated energy product called "capacity." The theory of harm was that the swap – in conjunction with a hedge agreement that the financial services firm entered into with the generator's direct competitor – acted to transfer a significant economic interest in the output of one of the competitors to the other, much like a merger or acquisition would have done. The New York Capacity cases reflect the first time that the United States based a Sherman Act Section 1 complaint on the use of a financial derivative agreement to cause harm in an underlying market.

THE NEW YORK CAPACITY CASES REFLECT THE FIRST TIME THAT THE UNITED STATES BASED A SHERMAN ACT SECTION 1 COMPLAINT ON THE USE OF A FINANCIAL DERIVATIVE AGREEMENT TO CAUSE HARM IN AN UNDERLYING MARKET.

The remedy was equally unprecedented. The parties settled the charges, with each defendant agreeing to disgorge profits earned under the swap agreement. These cases marked the first time in the history of the Sherman Act that the United States has sought and obtained disgorgement for a violation of the antitrust laws. This remedial option is likely to play an important role when dealing with antitrust claims arising against regulated firms. In many such circumstances – including in the New York Capacity cases – private antitrust plaintiffs can be legally foreclosed from seeking monetary damages. Accordingly, government antitrust enforcement – and the remedy of disgorgement – can be particularly meaningful to address anticompetitive harm.

This article focuses on the Antitrust Division's activity in the electricity sector, as set in the larger context of enforcing the antitrust laws in regulated industries.

II. ANTITRUST ENFORCEMENT AND SECTORAL REGULATION

The legal landscape governing application of the antitrust laws to regulated entities requires careful analysis to ensure an appropriate balance between antitrust enforcement and sectoral regulation.

There is a rich history of caselaw addressing this issue that dates back to the enactment of the federal antitrust laws.[5] In 1892, two years after the adoption of the Sherman Act, the United States sued to dissolve a joint rate-setting organization among the defendant railroads. In *United States v. Trans-Missouri Freight Ass'n*,[6] the Supreme Court considered the defendants' argument that the recently-enacted Sherman Act could not apply to their conduct given that the defendants were subject to the specific "system of regulations" set forth in the pre-existing Interstate Commerce Act.[7]

The Court, wrestling with arguments that still resonate in today's cases, scrutinized the terms of the Commerce Act, finding that no provision of the regulation "authorized" an agreement such as the one to form the organization at issue.[8] The Court held that there was "no repeal" and that antitrust and regulation could co-exist in that "both statutes [the Sherman Act and the Commerce Act] may stand, as neither is inconsistent with the other."[9] The Court further found that the railroads were properly subject to both the general proscriptions of the antitrust laws as well as the specific regulatory provisions of the Commerce Act.[10] The vigorous dissent considered the antitrust laws inapplicable as the conduct at issue was "sanctioned," "impliedly authorized" by, "in accord with" and "in harmony with" the regulatory construct under the Commerce Act.[11]

Trans-Missouri was only the beginning.[12] As the Supreme Court frequently has considered the application of competition laws to regulated entities,[13] several general principles have emerged. In the most straightforward circumstance, Congress expressly declares the antitrust laws inapplicable to a particular regulated industry or specific practice subject to regulation.[14] In such situations, there is no question about preemption of the antitrust laws provided that the conduct in question falls within the scope of the statutory exemption.[15]

Where regulatory statutes are silent, however, courts must determine whether the regulatory scheme implicitly precludes application of the antitrust laws to the specific claim at issue. The implied immunity analysis depends "upon the relation between the antitrust laws and the regulatory program set forth in the particular statute, and the relation of the specific conduct at issue to both sets of laws."[16] In the 2007 *Credit Suisse* case, the Supreme Court employed the following factors to determine "whether there is sufficient incompatibility to warrant an implication of preclusion":

> "(1) the existence of regulatory authority under the [regulatory] law to supervise the activities in question; (2) evidence that the responsible regulatory entities exercise that authority; ... (3) a resulting risk that the [regulatory] and antitrust laws, if both applicable, would produce conflicting guidance, requirements, duties, privileges, or standards of conduct [, and] (4) ... the possible conflict affect[s] practices that lie squarely within an area of ... activity that the [regulatory] law seeks to regulate."

In applying these factors[17] to the private plaintiff's antitrust claims about certain securities underwriting practices, the Court found the securities laws to be "clearly incompatible" with the application of the antitrust laws "in this context," especially as the specific antitrust action would be accompanied by "a substantial risk of injury to the securities markets and by a diminished need for antitrust enforcement to address anticompetitive conduct."[18]

The Supreme Court's most recent case applying the antitrust laws to a regulated firm involved a state – not federal – regulatory scheme. The state action immunity doctrine serves to preempt application of the antitrust laws when anticompetitive activity occurs pursuant to a state regulatory program.[19] The courts, though, impose strict tests to ensure that only appropriate state action displaces the competition laws.[20] In the 2013 *Phoebe Putney* decision, the Court considered whether a Federal Trade Commission challenge to a hospital merger was precluded by a state law creating hospital authorities and giving those authorities general corporate powers. The Court unanimously held that the law did not "clearly articulate" and affirmatively express a policy "to use those powers anticompetitively."[21] As such, the state regulation did not preclude the FTC's antitrust claims.

Even when implied immunity does not apply (such as if the regulatory statute contains an antitrust-specific savings clause), antitrust claims arising in the context of a regulated industry still may be barred. In *Trinko*, the Supreme Court dismissed a monopolization claim by a private plaintiff alleging that a phone company violated Section 2 of the Sherman Act by refusing to supply competing local exchange carriers with the network elements they needed to provide service to customers.[22] The Court determined that the implied immunity doctrine did not apply because of an antitrust-specific savings clause in the relevant statute. In evaluating the specific refusal to deal claim (which did not fit within an established theory of antitrust liability), the Court nevertheless declined to apply the antitrust laws. It found that the applicable regulatory framework "significantly diminishes the likelihood of major antitrust harm"[23] arising from the conduct at issue, especially given the "existence of a regulatory structure designed to deter and remedy anticompetitive harm."[24]

There is continuing debate about the impact of *Credit Suisse* and *Trinko*.[25] One leading commentator has expressed his concern for the potential for *Trinko* and *Credit Suisse* to adversely impact the role of competition laws when dealing with regulated firms[26]:

"As the law stands today, antitrust will play a diminished role in regulated industries compared to that which it played before 2004. The Supreme Court's decisions in *Trinko* and *Credit Suisse* interpreted the implicit immunizing effect of regulation broadly and read express savings clauses narrowly. This is a change from the past, which the Court disfavored immunity and antitrust often worked as a constructive complement to regulation in the absence of any express statutory savings provision."

The plaintiffs in both *Credit Suisse* and *Trinko* were private firms seeking substantial damages. The opinions, however, do not explicitly exclude government antitrust enforcement actions from their reach.[27] An argument exists, however, that since one factor affecting the immunity analysis is the claim and remedy at issue; as such, a government antitrust claim for equitable relief may be entitled to more deference than a private claim for monetary damages.[28]

IT IS PARTICULARLY NOTEWORTHY, HOWEVER, THAT IN THE RECENT UNANIMOUS PHOEBE PUTNEY OPINION, THE SUPREME COURT'S REITERATED THE PRESUMPTION AGAINST FINDING THAT A REGULATORY SCHEME CREATES AN IMPLIED IMMUNITY FROM COVERAGE OF THE ANTITRUST LAWS.

Credit Suisse and *Trinko* both favored reliance on the regulatory schemes at issue over application of the antitrust laws. It is particularly noteworthy, however, that in the recent unanimous *Phoebe Putney* opinion, the Supreme Court's reiterated the presumption against finding that a regulatory scheme creates an implied immunity from coverage of the antitrust laws. The Court stressed that the antitrust laws reflect the "fundamental national values of free enterprise and economic competition;"[29] as such, immunities – i.e., state-action immunity or immunity based on "repeals by implication" – are "disfavored."[30]

III. GOVERNMENT ANTITRUST ENFORCEMENT IN THE REGULATED ENERGY SECTOR

The Supreme Court repeatedly has recognized the ability of the government to seek redress for antitrust violations committed by regulated entities.[31] In doing so, the Court has endorsed antitrust enforcement actions brought by the United States against firms in regulated industries as diverse as railroads[32], banks[33], radio stations[34], and natural gas distribution[35].

The energy sector – one of the most critical sectors of the economy, affecting every business and consumer in the United States – is no different. Although energy markets are subject to extensive regulatory structures pursuant to the Federal Power Act and related statutes[36], the United States has long played an important role in protecting competition in energy through antitrust enforcement actions.

In the seminal case of *Otter Tail Power Co. v. United States*, the United States brought an action under Section 2 of the Sherman Act to stop *Otter Tail* Power Company from monopolizing the retail distribution of power in its service area by, among other things, refusing to distribute wholesale power to municipally owned distribution systems.[37] The Supreme Court upheld the lower court's order requiring the defendant to transmit power to the municipal utilities despite the defendant's argument that immunity should apply due to Federal Power Commission regulation.[38] The Court scrutinized the regulatory scheme and found no general legislative "purpose to insulate electric power companies from the operation of the antitrust laws."[39] The Court further found that any general remedial powers that the regulator had pursuant to the Federal Power Act would not serve to displace the reach of the antitrust laws: "There is no basis for concluding that the limited authority of the Federal Power Commission to order interconnection was intended as a substitute for, or to immunize *Otter Tail* from, antitrust regulation for refusing to deal with municipal corporations."[40]

In the 1997 *Rochester Gas & Electric* case, the United States filed a civil antitrust complaint alleging that defendant Rochester Gas and Electric ("RG&E") entered into a contract with the University of Rochester ("University"), in which RG&E promised the University a number of benefits, including electricity at reduced rates, in exchange for the University's promise not to compete against RG&E in the sale of electricity to consumers.[41] The case had its origin in the highly regulated electricity rates in New York in the early 1990s. The University, a major customer of RG&E, had decided to build an efficient new power plant to replace a decades-old steam plant used to heat and cool its buildings. The new plant would also produce more electricity than the University needed. The University considered selling the plant's excess electricity to other users, in competition with RG&E. The new plant, however, was never built. Instead, RG&E and the University entered into a supply agreement that also prevented the University from participating in any projects that would provide other current RG&E customers with energy from anyone other than RG&E.[42]

The district court considered and rejected RG&E's claim that the contract with the University was immune under the state action doctrine, finding nothing in the New York Public Service Law to support RG&E's contention that the regulatory scheme authorized it to impose in supply contracts anticompetitive conditions on potential competitors.[43] Moreover, the court, on summary judgment, rejected the defendant's argument that pervasive regulation, including "rigorous review" and acceptance of the contract at issue by the regulator (the Public Service Commission), conferred antitrust immunity[44]:

> "The Public Service Commission, however, is not charged with enforcing federal antitrust law, and did not review the contract to determine whether or not it violates that law. The fact that the New York Public Service Commission has approved the contract at issue does not mean that the State has authorized, and shielded from federal law, allegedly anticompetitive behavior."

COURTS HAVE LONG RECOGNIZED THE ABILITY OF THE ANTITRUST AGENCIES TO REVIEW MERGERS THAT ARE ALSO SUBJECT TO OTHER REGULATORY REVIEW. IN MOST INSTANCES, THE REGULATORY AGENCY AND THE ANTITRUST AGENCY REACH THE SAME RESULT.

Following the court's rejection of RG&E's motion for summary judgment, the Antitrust Division's lawsuit was resolved by a consent decree that prohibited RG&E from entering into such agreements not to compete.[45]

In addition to conduct cases under Sections 1 and 2 of the Sherman Act, the United States repeatedly has challenged mergers in the electric power industry under Section 7 of the Clayton Act.[46] The merger review under Section 7's substantial lessening of competition test occurs even though FERC also reviews mergers and acquisitions under its public interest standard. Courts have long recognized the ability of the antitrust agencies to review mergers that are also subject to other regulatory review.[47] In most instances, the regulatory agency and the antitrust agency reach the same result; there can be circumstances, however, when one agency challenges a merger that the other approves[48] or one agency seeks additional remedies than the other.[49]

IV. THE NEW YORK CAPACITY CASES

Following on this history of antitrust enforcement in the electricity sector, the Antitrust Division recently filed two cases with accompanying settlements – the New York Capacity cases – that together demonstrate the Antitrust Division's continuing enforcement activity in matters involving the electricity sector.

A. "Capacity" – A Regulatory Construct

Electrical power is furnished through a grid of interconnected transmission lines and local distribution lines. Retail utilities, frequently called "load serving entities" or "LSEs," must satisfy their customers' power needs ("load") by either generating their own electricity or purchasing power on the wholesale market to re-sell to customers.

Consumer demand for electricity varies widely from season to season, from day to day, and from hour to hour. Demand can be unpredictable (i.e., an unusually hot day could result in electricity needs far above expectations). As electricity cannot be stored in large amounts, generation of electricity must continuously – and instantaneously – match actual demand.

Because the system as a whole is built to protect against the unexpected loss of a generator even at peak demand, a good deal of generating capacity remains idle – and therefore not earning revenues from power sales – for significant periods of time. In other words, having standby capacity costs money to maintain but may rarely, or never, be used. As a result, over the long run, producers may not provide sufficient investment in power plants, leaving the market with inadequate supply.

Regulatory agencies have created "capacity" payments as a means to address this concern.[50] Technically speaking, "capacity" is simply "[t]he capability to generate or transmit electrical power, measured in megawatts."[51] In New York, FERC and the New York Independent System Operator (NYISO), a regional transmission organization operating under FERC authority, require LSEs to procure sufficient capacity from energy suppliers to cover expected load plus a reserve. The capacity payments provide the suppliers a revenue stream independent of actual power sales in order to encourage the construction of adequate generation capacity to cover demand.

Of course, these capacity payments are a cost to LSEs that are ultimately borne by ratepayers. The selection of the amount of capacity that must be purchased has significant consequences both on power prices in the short-run and the development of generation in the long-run, reflecting a balance between providing enough of a revenue stream to ensure adequate incentives for construction of new generation yet not too high to cause an unnecessary burden to ratepayers.

In New York, the price for capacity is set through FERC-established auctions administered by the NYISO. The auctions match buyers and sellers of capacity using a "clearing price" methodology. Capacity suppliers offer price and quantity bids, which are "stacked" from lowest-priced to highest. The stack is then compared to the amount of demand. The offering price of the last bid in the "stack" needed to meet requisite demand establishes the market price for all capacity sold into that auction.[52] Any capacity bid above this price is unsold, as is any excess capacity bid at the market-clearing price. In this way, suppliers of capacity are competing against each other to sell their capacity to LSEs, thereby forming a capacity market in which market-based rates prevail.

Because of the constrained nature of the transmission system, New York City needs its own local electricity supply to meet all demand (it is a "load pocket"[53]). As a result, regulators require that LSEs in New York City obtain almost all of their capacity requirements (i.e., 80 percent) from suppliers physically located in the city.

During the period at issue in the New York Capacity cases, the New York capacity market was highly concentrated, with three firms – KeySpan, Astoria, and NRG Energy, Inc. (together, the "DGOs"[54]) – controlling a substantial portion of the market's generating capacity. Each DGO was designated as a "pivotal supplier" by FERC, meaning that at least some of each of these three suppliers' capacity was required to satisfy demand. As a result, the DGOs were subject to regulatory caps on the price they could bid their capacity in auctions (known as "mitigation"[55]). The New York capacity market generally cleared at prices at or near the bid caps even though the mitigation bid caps did not apply to other firms or new power plants.

Significant new generation capacity was planning to enter the market in 2006. This additional generation had the potential to impact the auction price for capacity, driving the price below the bid caps as generation firms would need to bid more competitively against each other to ensure sales of their capacity at the auctions.

B. The Swap Agreement

The United States' complaints against *KeySpan* and *Morgan Stanley* set forth the background, circumstances and effects of the *KeySpan* Swap. In brief, the complaints alleged that in 2005, *KeySpan*, concerned about the impact on prices from the impending market entry, studied various options, including the direct purchase of Astoria (which would have increased *KeySpan*'s market share, thereby securing its incentive to bid its capacity at the bid cap). Such an acquisition, however, would have raised significant market power concerns. *KeySpan* decided instead to approach *Morgan Stanley* to arrange a financial

IN 2005, KEYSPAN, CONCERNED ABOUT THE IMPENDING MARKET ENTRY, STUDIED VARIOUS OPTIONS, INCLUDING THE DIRECT PURCHASE OF ASTORIA. SUCH AN ACQUISITION, HOWEVER, WOULD HAVE RAISED SIGNIFICANT MARKET POWER CONCERNS.

transaction that would provide *KeySpan* an indirect financial interest in Astoria's capacity sales. *Morgan Stanley* informed *KeySpan* that such an agreement between *Morgan Stanley* and *KeySpan* would be contingent on *Morgan Stanley* also entering into an agreement with Astoria, the only other generator with sufficient capacity to offset *Morgan Stanley*'s payments to *KeySpan*.

In January 2006, *KeySpan* and *Morgan Stanley* entered into the *KeySpan* Swap. Under the terms of the *KeySpan* Swap, when the market clearing price for capacity was above the fixed strike price ($7.57 per kW-month), *Morgan Stanley* would pay *KeySpan* the difference between the market price and $7.57 times 1,800 MW (the quantity of capacity established in the agreement); if the market price was below $7.57, *KeySpan* would pay *Morgan Stanley* the difference times 1,800 MW.[56]

Morgan Stanley, which faced significant financial risk if capacity prices settled above the Swap's fixed price, immediately entered into an offsetting agreement with Astoria, *KeySpan*'s largest competitor (the "Astoria Hedge"). Under the Astoria Hedge, if the market price for capacity was above $7.07 per kW-month, Astoria would pay *Morgan Stanley* the difference times 1,800 MW; if the market price was below $7.07, Astoria would be paid the difference times 1,800 MW. *Morgan Stanley* received as revenues the differential between the fixed prices in the *KeySpan* Swap and the Astoria Hedge.

The *KeySpan* Swap itself was a purely financial transaction in that it did not transfer any physical control of capacity. *KeySpan*, however, in effect, was purchasing 1,800 MW-month of capacity from *Morgan Stanley* at the fixed price and selling the same quantity back to *Morgan Stanley* at a value close to the spot auction price.[57] As a result, *KeySpan* profited even more when capacity prices were high, earning revenues on its own capacity and the additional capacity in which it had a financial interest. (The 1,800 MW amount in the *KeySpan* Swap was substantial; in effect, *KeySpan* was nearly doubling its existing capacity levels.)

C. The Antitrust Division's Enforcement Actions

On February 22, 2010, the United States filed suit against *KeySpan* for its role in the *KeySpan* Swap[58] and simultaneously entered into a settlement requiring *KeySpan* to pay to the United States $12 million as disgorgement of ill-gotten gains. The United States subsequently filed suit against *Morgan Stanley* for its role in the Swap,[59] along with a settlement requiring Morgan to disgorge to the United States $4.8 million. The United States District Court for the Southern District of New York entered both judgments following the required Tunney Act public interest review.[60]

THE REVENUES FROM ASTORIA'S CAPACITY SALES THAT KEYSPAN OBTAINED THROUGH THE KEYSPAN SWAP ELIMINATED KEYSPAN'S INCENTIVE TO COMPETE FOR SALES IN THE SAME WAY A PURCHASE OF ASTORIA OR A DIRECT AGREEMENT BETWEEN KEYSPAN AND ASTORIA WOULD HAVE DONE.

The theory of the United States' claims was that the likely effect of the *KeySpan* Swap was to increase prices in the New York City capacity market. The revenues from Astoria's capacity sales that *KeySpan* obtained through the *KeySpan* Swap eliminated *KeySpan*'s incentive to compete for sales in the same way a purchase of Astoria or a direct agreement between *KeySpan* and

Astoria would have done. The agreements effectively transferred to *KeySpan* a financial interest in Astoria's capacity, thereby ensuring that *KeySpan* would "economically withhold"[61] substantial output from the capacity market and increase prices. As a result, *KeySpan* consistently bid its capacity into the capacity auctions at the highest allowed price even though that assured it would sell fewer units in the auction. Despite the addition of significant new generating capacity in New York City, the market price of capacity did not decline.[62]

Following the filing of the government's *KeySpan* complaint, private plaintiffs also filed antitrust actions challenging the *KeySpan* Swap. In 2011, Charles Simon, a retail consumer of electricity in New York City, filed suit against *KeySpan* and *Morgan Stanley*, on behalf of a putative class of similarly-situated consumers, alleging claims that were substantially similar to those in the Antitrust Division's New York Capacity cases.[63] On a motion to dismiss the complaint, the district court found that Simon lacked standing and that his claims for monetary damages resulting from higher capacity prices were barred by a legal doctrine that prohibits antitrust courts from awarding damages based on federally regulated rates (the "filed-rate doctrine"[64]). The Court of Appeals for the Second Circuit affirmed.[65]

In addition to court cases, there was also regulatory scrutiny of the *KeySpan* Swap. In 2008, FERC directed its enforcement staff to evaluate whether *KeySpan*'s conduct violated FERC's market manipulation rule. Staff recommended against enforcement.[66] The FERC staff report did not address application of the antitrust laws.[67]

V. CONTINUING ROLE FOR GOVERNMENT ANTITRUST ENFORCEMENT TO REMEDY ANTICOMPETITIVE CONDUCT IN THE ELECTRICITY SECTOR

A. Use of Antitrust Laws to Challenge Anticompetitive Conduct

THE NEW YORK CAPACITY CASES AROSE IN THE CONTEXT OF THE HEAVILY REGULATED CAPACITY MARKET, A MARKET THAT WAS IN EFFECT A CONSTRUCT OF REGULATION. THE ISSUE OF WHETHER THIS REGULATORY STRUCTURE WOULD PRECLUDE THE GOVERNMENT'S ANTITRUST ACTION WAS NEVER LITIGATED BY A COURT.

The New York Capacity cases demonstrate the Antitrust Division's continuing use of government antitrust enforcement to supplement and complement regulatory oversight.

The New York Capacity cases arose in the context of the heavily regulated capacity market, a market that was in effect a construct of regulation. The issue of whether this regulatory structure would preclude the government's antitrust action was never litigated by a court as the parties settled the case prior to contested litigation. In the private Simon case, *KeySpan* and *Morgan Stanley* argued that the antitrust challenge to the *KeySpan* Swap was barred both by the doctrine of implied immunity pursuant to *Credit Suisse* and by *Trinko*'s admonition that antitrust claims should be dismissed if a regulatory framework "significantly diminishes the likelihood of major antitrust harm."[68] The court, however, did not reach the immunity claims.[69]

Accordingly, we do not have a litigated decision regarding the boundary between regulation and antitrust enforcement with regard to the *KeySpan* Swap. That said, the *Otter Tail* decision (finding no implied immunity in the electricity sector) remains good law, and the Supreme Court's recent citations to it in both *Credit Suisse* and *Trinko* strongly suggest that it views this case as rightly decided. It is no surprise then that lower courts are reluctant to find that implied immunity precludes antitrust actions in the energy sector; indeed, it does not appear that any court has applied *Credit Suisse* to do so.[70]

Plainly, the Antitrust Division did not view the underlying regulatory scheme to preclude antitrust enforcement in the New York Capacity cases.

Other recent Antitrust Division activity in the electricity sector similarly demonstrates that it does not view regulation as foreclosing antitrust actions On November 14, 2012, the Antitrust Division issued a public statement regarding its investigation of Entergy Corporation,[71] an integrated energy company engaged primarily in electric power production, transmission and retail distribution operations in a service area covering all or parts of Arkansas, Louisiana, Mississippi and Texas.[72] Entergy operates in a heavily regulated market that has extensive federal, state and local regulatory oversight.[73]

The Antitrust Division's statement noted that it investigated, among other things, whether certain of Entergy's power generation dispatch, transmission planning and power procurement practices constituted exclusionary conduct under Section 2 of the Sherman Act by effectively foreclosing more efficient power suppliers. Entergy's practices allegedly kept these rivals from obtaining certain long-term transmission rights they needed to effectively sell long-term power products to wholesale customers in the Entergy service area. Entergy ultimately publically committed to join an independent regional transmission organization and to divest its transmission assets. Because it was giving up its ability to exclude its power plant competitors, the Antitrust Division decided not to go to court.

The Antitrust Division's statement, without getting into details, specifically noted that it had considered – and rejected "as not persuasive" – regulatory justifications that defendants could have asserted as a defense to the Division's antitrust claims. In short, the Division did not consider the role of antitrust to be foreclosed.

B. Use of Novel Liability Theories and Remedies When Dealing With Regulated Industries

The New York Capacity cases show that the Division is prepared to pursue novel liability theories, as seen by its challenge to financial arrangements that it believed achieved anticompetitive effects analogous to other agreements prohibited by the antitrust laws. In so doing, the fact that an agreement is with a financial intermediary rather than directly with a competitor will not exempt an anticompetitive agreement from scrutiny.[74]

THE ANTITRUST DIVISION ARGUED THAT DISGORGEMENT WAS A MEANINGFUL REMEDY IN *KEYSPAN* IN THAT ANY PRIVATE LAWSUIT FOR DAMAGES FROM INCREASED CAPACITY PRICES WOULD FACE SIGNIFICANT OBSTACLES DUE TO THE FILED-RATE DOCTRINE

The Antitrust Division's pursuit of disgorgement as a remedy was equally novel. The Division argued that disgorgement was a meaningful remedy in *KeySpan* in that any private lawsuit for damages from increased capacity prices would face significant obstacles due to the filed-rate doctrine.[75] That doctrine, annunciated in the 1922 *Keogh* decision, bars a private plaintiff from pursuing an antitrust action seeking treble damages based on rates that have been submitted to and approved by a federal regulatory agency. The Supreme Court held that this "stringent rule" applied in order to protect the "paramount purpose" of Congress in preventing unjust discrimination and ensuring that rates met the requirements of the regulatory structure.[76] The doctrine is a significant hurdle on private plaintiffs seeking damages. Many commentators have called for its modification or repeal, especially in regulated sectors that rely on market-based rates.[77]

The *KeySpan* Court found that disgorgement is available to remedy violations of the Sherman Act.[78] Disgorgement is an equitable remedy designed to deprive the wrong-doer of ill-gotten gains; it is not a substitute for damages.[79] The *KeySpan* Court pointed to the use of this remedy to deter anticompetitive conduct, specifically noting the regulatory context in which the *KeySpan* case arose:

> "Future manipulators of electricity markets or those who seek to leverage derivative products in the restraint of trade now face the prospect of disgorgement in addition to other remedies. This case is an important marker for enforcement agencies and utility regulators alike. Approving disgorgement as part of the Government's arsenal tilts incentives back in favor of competitive bidding and deters the use of derivatives as tools to manipulate a market."[80]

Following the *KeySpan* decision, the United States pursued disgorgement against *Morgan Stanley* for its role in the *KeySpan* Swap.[81] The *Morgan Stanley* Court approved the remedy, noting that its deterrent value on intermediaries who might facilitate anticompetitive conduct: "Approving disgorgement here likely will deter financial services firms from offering derivatives that facilitate anticompetitive behavior. . . . The innovative application of the disgorgement remedy in this action suggests that the settlement will have meaningful deterrent effects."[82]

Disgorgement will be useful in antitrust actions arising in regulated industries as the filed-rate doctrine will commonly apply to limit private damages actions.[83]

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1. The author is Chief of the Transportation, Energy and Agriculture Section of the Antitrust Division of the United States Department of Justice. The views expressed herein do not necessarily reflect those of the United States Department of Justice.

2. Electricity and products relating to electricity are extensively regulated. In general, state regulation typically covers the provision of power from retailers to customers, whereas the Federal Power Act provides the Federal Energy Regulatory Commission ("FERC") authority over wholesale energy markets. See 16 U.S.C. § 824(b)(1). FERC has responsibility for regulating the capacity products at issue in the New York Capacity cases described below.

3. United States v. KeySpan Corp., 763 F. Supp. 2d 633 (S.D.N.Y. 2011) & United States v. Morgan Stanley, 881 F. Supp. 2d 563 (S.D.N.Y. 2012).

4. Swaps are common financial derivative agreements used extensively throughout the economy. In typical circumstances, parties use these arrangements to manage exposure to changing prices for items such as interest rates or currency values.

5. In a sense, the issue actually preceded the Sherman Act. See Gibbs v. Baltimore Gas Co., 130 U.S. 396 (1889) (applying antitrust principles to public utilities under the common law).

6. 166 U.S. 290 (1897).

7. Id. at 302.

8. Id. at 314-15.

9. Id. at 315.

10. Id. at 315-16 & 324-25.

11. Id. at 363 & 370-72 (White, J., dissenting). The dissent argued that antitrust liability would "strike a blow" at the beneficial goals sought to be gained under the existing regulatory framework envisioned under the Commerce Act. Id.at 372.

12. In the early years of Sherman Act enforcement, most of the cases involved agreements among or consolidations of railroads. E.g., United States v. Joint Traffic Ass'n, 171 U.S. 505 (1898); Northern Securities Co. v. United States, 193 U.S. 197 (1904); United States v. Terminal Railroad Ass'n, 224 U.S. 383 (1912). Congress ultimately gave a regulatory agency (first the Interstate Commerce Commission and later the Surface Transportation Board) the exclusive ability to decide upon competitive issues raised by mergers and other specified collective railroad actions. As such, the Antitrust Division can provide only an advisory role in such matters.

13. See generally Dennis W. Carlton and Randal C. Picker, Antitrust and Regulation, Nat'l Bureau of Economic Research Working Paper No. 12902 at 2 (2007) (surveying the history of antitrust and industry-specific regulation in the United States, concluding that the Sherman Act "has turned out to be more enduring than regulation").

14. E.g., Capper-Volstead Act, 7 U.S.C. §§ 291-292 (providing immunity for agricultural joint marketing associations) & Ocean Shipping Act, 46 U.S.C. § 40307 (exempting certain ocean shipping agreements from the antitrust laws).

15. See, e.g., Christine A. Varney, "The Capper-Volstead Act, Agricultural Cooperatives, and Antitrust Immunity," The Antitrust Source, December 2010 at 1-9 (discussing the issue of whether production restrictions between and among agricultural cooperatives and their members fall within the antitrust immunity grant in the Capper-Volstead Act).

16. Credit Suisse Secs. (USA) LLC v. Billing, 551 U.S. 264, 271 (2007).

17. See id. at 275-76.

18. Id. at 284-85.

19. Parker v. Brown, 317 U.S. 341, 352 (1943).

20. See Federal Trade Comm'n v. Phoebe Putney Health System, Inc., 133 S. Ct. 1003, 1010-12 (2013).

21. Id. at 1007.

22. Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko, 540 U.S. 398 (2004).

23. See Trinko, 540 U.S. at 406 & 412 (internal quotations omitted).

24. Id. at 412. "Where such a structure exists," the Court stated "the additional benefit to competition provided by antitrust enforcement will tend to be small, and it will be less plausible that the antitrust laws contemplate such additional scrutiny." Id.

25. See, e.g., Stacey L. Dogan & Mark A. Lemley, Antitrust and Regulatory Gaming, 87 Tex. L. Rev. 685, 685-86 (2009) (Recent Supreme Court cases "have fundamentally altered the relationship between antitrust and regulation, placing antitrust law in a subordinate relationship that, some have argued, requires it to defer not just to regulatory decisions but perhaps even to the silence of regulatory agencies in their areas of expertise."); Richard M. Brunell, In Regulators We Trust: The Supreme Court's New Approach to Implied Antitrust Immunity, 78 Antitrust L.J. 279 (2012); see also ANTITRUST MODERNIZATION COMM'N, REPORT AND RECOMMENDATIONS 360-62 (2007) ("Trinko should not be read to displace the role of the antitrust laws in regulated industries.") & 358 ("When the government decides to adopt economic regulation, antitrust law should continue to apply to the maximum extent possible, consistent with that regulatory scheme.").

26. Howard A. Shelanski, The Case for Rebalancing Antitrust and Regulation, 109 Mich. L. Rev. 683, 684-85, 708 & 731 (2011) (Credit Suisse "marks the first time in the line of implied-immunity cases that the Court has found regulation to imply immunity from legitimate and nonrepugnant antitrust claims.").

27. E.g., id. at 684-85 & 713-14 ("The Supreme Court's decisions, however, affect public and private actions equally. The Court nowhere confined its holdings to private cases and antitrust doctrine draws no distinction between public and private enforcement.").

28. See 1A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 243g1, at 360 ("To be sure, equity actions can effectively overrule an agency and force it prospectively to change course, but purely equity suits are much less often brought by private parties and—because the rewards are smaller—typically are done with closer attention to competitive merits.").

29. Phoebe-Putney, 133 S. Ct. at 1010. The classic iteration of the "fundamental" aspect of the antitrust laws is found in United States v. Topco Assoc., 405 U.S. 596, 610 (1972): "Antitrust laws in general, and the Sherman Act in particular, are the Magna Carta of free enterprise. They are as important to the preservation of economic freedom and our free-enterprise system as the Bill of Rights is to the protection of our fundamental personal freedoms. And the freedom guaranteed each and every business, no matter how small, is the freedom to compete – to assert with vigor, imagination, devotion, and ingenuity whatever economic muscle it can muster."

30. Phoebe-Putney, 133 S. Ct. at 1010 (quoting FTC v. Ticor Title Ins. Co., 504 U.S. 621, 636 (1992)).

31. See Keogh v. Chicago & N.W. Ry. Co., 260 U.S. 156, 161-62 (1922) ("[U]nder the Anti-Trust Act a combination of carriers to fix reasonable and nondiscriminatory rates may be illegal; and, if so, the government may have redress by criminal proceedings . . ., by injunction . . ., and by forfeiture . . . .").

32. E.g., United States v. Pacific & Arctic Railway & Navigation Co., 228 U.S. 87 (1913) (recognizing antitrust violation for attempts by a monopoly carrier to eliminate competition by refusing to deal with other companies).

33. United States v. Philadelphia Nat'l Bank, 374 U.S. 321 (1963).

34. United States v. Radio Corp. of America, 358 U.S. 334 (1959) (holding that exchange of radio stations that had been approved by the Federal Communications Commission as in the "public interest" was subject to antitrust review); see also United States v. AT&T Co., 461 F. Supp. 1314, 1324-28 (D.D.C. 1978) (refusing to find that Federal Communications Commission regulation provided immunity for claims made under the antitrust laws).

35. United States v. El Paso Natural Gas Co., 376 U.S. 651 (1964); see also California v. Federal Power Comm'n, 369 U.S. 482, 489 (1962) (holding that Federal Power Commission approval of acquisition of assets of a natural gas company would not bar antitrust challenge).

36. 16 U.S.C. § 824(b).

37. Otter Tail Power Co. v. United States, 410 U.S. 366 (1973).

38. Id. at 373.

39. Id. at 373-74.

40. Id. at 374-75. In Otter Tail, the Federal Power Commission filed an amicus brief with the Supreme Court supporting the position of defendant Otter Tail. Id. at 392 n.8 (White, J., dissenting).

41. Complaint, United States v. Rochester Gas & Elec. Co., No. 97-6294T (W.D.N.Y. filed June 24, 1997).

42. See United States v. Rochester Gas & Elec. Corp., 4 F. Supp. 2d 172, 173-74 (W.D.N.Y. 1998).

43. Id. at 175.

44. Id. at 176.

45. Press Release, March 4, 1998, Rochester Gas & Electric Agrees to Settle Antitrust Suit, U.S. Dep't of Justice., http://www.atrnet.gov/subdocs/212678.htm.

46. E.g., United States v. Enova Corp., 107 F. Supp. 2d 10 (D.D.C. 2000) (entering consent decree relating to challenge to merger of natural gas utility and electric utility).

47. Mergers or sales of assets by federally regulated utilities have been left open to antitrust challenge even though the merger or sale had been explicitly approved by the regulator. See Northeast Utils. Serv. Co. v. FERC, 993 F.2d 937, 947-48 (1st Cir. 1993) ("Petitioners may rest assured that were FERC to approve a merger of utilities which ran afoul of Sherman Act or other antitrust policies, the utilities would be subject to either prosecution by government officials responsible for policing the antitrust laws, or to suit by private citizens meeting the requirements of standing.").

48. In California v. Federal Power Comm'n and United States v. Philadelphia National Bank, the Federal Power Commission and the Comptroller of the Currency had specifically approved acquisitions under their respective regulatory statutes. In both cases, the Court held the government could subsequently challenge the acquisitions in antitrust suits. See Philadelphia Nat'l Bank, 374 U.S. at 350-52; California, 369 U.S. at 484.

49. See generally Tracy Fisher, Electricity Mergers and Department of Justice Antitrust Division Review, The Threshold (Newsletter of the ABA Mergers & Acquisitions Committee), 3-18 (Summer 2012) (describing merger reviews by the two agencies).

50. See generally Central Maine Power Co. v. FERC, 252 F.3d 34, 36-39 (1st Cir. 2001) (describing the use of capacity payments in wholesale electricity markets); Sithe New England Holdings v. FERC, 308 F.3d 71, 73-74 (1st Cir. 2002) (same).

51. New York ISO FERC Electric Tariff, Original Vol. No. 2, Art. 2, Third Revised Sheet No. 29, § 2.18 (defining "capacity"). All operational generation units connected to the grid have capacity regardless of whether they are actually producing power and thereby earning revenues from power sales.

52. Under such "uniform-price" auctions, all suppliers receive the same market-clearing price which is set at the offer price of the most expensive resource chosen to meet supply. NYISO argues that uniform clearing price auctions are advantageous in that they provide a common price for all buyers and sellers, create an incentive for generators to bid competitively, and provide transparency as all participants are aware of the results. See generally http://www.nyiso.com/public/about_nyiso/understanding_the_markets/clearing_price_auctions/index.jsp . NYISO also argues that uniform-price auctions are superior to other types of models, such as "pay-as-bid" auctions, in which prices paid to winning suppliers are based on their actual bids. See http://www.nyiso.com/public/webdocs/media_room/current_issues/uniformpricing_v_payasbid_tierneyschatzkimukerji_2008.pdf .

53. A "load pocket" is an area in which the total electrical import capacity is insufficient to serve the load and, therefore, local generating units within that area are required to meet demand.

54. As part of New York State's market restructuring in 1998, Consolidated Edison Company (ConEd) divested approximately 6,600 MW of its generating capacity located in New York City to independent firms, referred to as the divested generation owners (DGOs).

55. KeySpan had a bid cap of approximately $8.75 per kW-month.

56. The KeySpan Swap agreement is publicly available as an attachment to KeySpan's January 18, 2006 Form 8-K filing with the SEC in which KeySpan announced that it had entered into the transaction, available at http://www.sec.gov/Archives/edgar/data/1062379/000106237906000004/ex101-8kjan2406.txt.

57. In short, based on the terms of the two agreements, if the price of capacity rose above the fixed price, Astoria would pay Morgan Stanley the difference between them, and Morgan Stanley would pay that amount to KeySpan. On the other hand, if the capacity price fell below the fixed price, KeySpan would pay the difference to Morgan Stanley, which, in turn, would pay Astoria that amount.

58. See Complaint, United States v. KeySpan Corp., No. 10-1415 (S.D.N.Y. Feb. 22, 2010).

59. See Complaint, United States v. Morgan Stanley, No. 11-6875 (S.D.N.Y. Sep. 30, 2011).

60. United States v. KeySpan Corp., 763 F. Supp. 2d 633 (S.D.N.Y. 2011); United States v. Morgan Stanley, 881 F. Supp. 2d 563 (S.D.N.Y. 2012).

61. "Economic withholding" refers to a firm bidding its capacity at prices high enough that it is not taken at the auction. As a result, market clearing prices are higher in that the market must rely on more expensive generation (i.e., "move up the supply curve") to compensate for the withheld capacity.

62. See United States v. KeySpan complaint. The anticompetitive effects of the KeySpan Swap lasted until March 2008, when regulatory conditions eliminated KeySpan's ability to affect the market price of electricity capacity.

63. Complaint, Simon v. KeySpan Corp. and Morgan Stanley Capital Group, 10 Civ. 04537 (filed July 16, 2010).

64. Simon v. KeySpan, 785 F.Supp.2d 120 (S.D.N.Y. 2011); see also infra Section V.B. (discussing filed-rate doctrine).

65. Simon v. KeySpan, 694 F.3d 196 (2d Cir. 1012). In addition to Simon, other similar cases were filed in state and federal court.

66. Office of Enforcement, FERC, Findings of a Non-Public Investigation of Potential Market Manipulation by Suppliers in the New York Capacity Market (Feb. 28, 2008).

67. The fact that FERC staff did not recommend an enforcement action against the KeySpan Swap under its market manipulation rules does not preclude an antitrust action. See RG&E, 4 F. Supp. 2d at 176 (regulator's approval of the contract at issue did not preclude a subsequent antitrust claim).

68. Memorandum of Law in Support of Defendants' Joint Motion to Dismiss, Simon v. KeySpan, 10-CV-5437 (Docket #14) at 17-22 (quoting Trinko, 540 U.S. at 412).

69. The Simon court found that the private plaintiffs did not have standing and, as discussed below, that their claims were barred by filed rate doctrine. 785 F. Supp. 2d (S.D.N.Y. 2011), aff'd, 694 F.3d 196 (2d Cir. 2012).

70. See Energy Marketing Servs., Inc. v. Columbia Gas Transmission Corp., 639 F. Supp. 2d 643, 650-52 (S.D.W.Va. 2009) (finding that FERC's regulatory authority did not immunize antitrust claims relating to natural gas transmission: "[Defendant] has failed to cite any case applying the Credit Suisse framework outside of the securities context."); see also In re W. States Wholesale Nat. Gas Antitrust Litig., 661 F. Supp. 2d 1172, 1183 (D. Nev. 2009) (regulatory scheme pursuant to Commodities Exchange Act did not entitle natural gas providers to

implied antitrust immunity from consumers' antitrust and unfair competition claims).

71. "Justice Department Statement on Entergy Corp.'s Transmission System Commitments and Acquisition of KGen Power Corp.'s Plants in Arkansas and Mississippi," United States Dep't of Justice, Nov. 14, 2012, available at http://www.justice.gov/atr/public/press_releases/2012/288781.htm.

72. http://www.entergy.com/about_entergy/

73. As Entergy has explained, its practices and policies are subject to review and regulation by FERC, state electric utility regulatory commissions and local regulators. "Entergy Corporation Cooperating with the U.S. Department of Justice on Civil Investigation," Entergy Corporation, October 10, 2010, available at http://www.entergy.com/news_room/newsrelease.aspx?NR_ID=1898

74. As the United States explained, "Financial services firms contemplating the use of such anticompetitive agreements will now recognize the prospect of Sherman Act liability and disgorgement, thereby diminishing their appetite for and deterring this illegal conduct." Response to Public Comments, United States v. Morgan Stanley, at 8.

75. Competitive Impact Statement, United States v. KeySpan, at 9.

76. Keough v. Chicago & N.W. Ry. Co., 260 U.S. 156, 163-64 (1922).

77. There have been calls to restrict application of the filed rate doctrine. For example, the Antitrust Modernization Commission recommended that "Congress should evaluate whether the filed-rate doctrine should continue to apply in regulated industries and consider whether to overrule it legislatively where the regulatory agency no longer specifically reviews proposed rates." AMC Rec. No. 68 at p.362.

78. See United States v. KeySpan Corp., 763 F. Supp. 2d 633, 638–41 (S.D.N.Y. 2011). Disgorgement has long been used to resolve contempt of antitrust decrees. E.g., Final Judgment, United States v. Exelon, No. 11-CV-02276 (D.D.C., entered Nov. 27, 2012) (approving $400,000 disgorgement related to contempt of electricity-related merger consent decree), available at http://www.justice.gov/atr/cases/f291700/291722.pdf.

79. To illustrate this point, the United States sought disgorgement of profits that both KeySpan and Morgan Stanley earned directly from the KeySpan Swap agreement itself, i.e., their ill-gotten gains. On the other hand, the private plaintiffs in the Simon case were seeking monetary damages for the allegedly increased capacity prices that they paid as a result of the effect of the KeySpan Swap on the underlying capacity market.

80. KeySpan, 763 F. Supp. 2d at 642.

81. See United States v. Morgan Stanley, 881 F. Supp. 2d 563 (S.D.N.Y. 2012) (finding proposed final judgment that required Morgan Stanley to disgorge $4.8 million to be in the public interest).

82. Morgan Stanley, 881 F. Supp. 2d at 567-68.

83. In the private case following the government's New York Capacity cases, the Court of Appeals for the Second Circuit found that the filed-rate doctrine did bar the private damages claims. Simon v. KeySpan, 694 F.3d 196, 204-08 (2d Cir. 2012).

A Symposium on Vertical Restraints

For A Rigorous "Effects-Based" Analysis Of Vertical Restraints Adopted By Dominant Firms: A Comparison Of EU And Brazilian Competition Law

By Damien Geradin & Caio Mario da Silva Pereira Neto[1]

I. INTRODUCTION

This short paper summarizes the main findings of a comprehensive study the authors conducted on the way "vertical restraints" adopted by dominant firms (with a focus on exclusive dealing, rebates and discounts and tying) have been treated by enforcement agencies and courts in the European Union ("EU") and in Brazil.[2] A comparative analysis of the treatment of vertical restraints in these two jurisdictions is particularly interesting for the following reasons. First, the EU competition law system is mature, but the European Commission (the "Commission")'s approach to vertical restraints has evolved in recent years notably through the Guidance Paper issued in 2008, promoting an effects-based approach to such restraints. The Brazilian competition law system is not as mature as the EU system, but Brazil has established itself as one of the key antitrust players among the fast-growing economies. Although less mature than its EU counterpart, Brazil has adopted an effects-based approach to vertical restraints for a long time, the problem being the inconsistencies that exist in the implementation of that approach. Second, the EU system and the Brazilian system rely on an administrative enforcement agency, and the Brazilian system has been influenced by the European model. The comparative approach is thus likely to be fruitful.

Among the main policy conclusions of our study is that competition authorities and courts should not apply *per se* illegality rules to vertical restraints adopted by dominant firms. Instead, they should adopt tests seeking to identify the pro- and anti-competitive effects of a given conduct and balance them. No vertical restraint should be banned without the demonstration that it affects competition and creates consumer harm. Such effects-based analysis must be developed according to a solid analytical framework in order to establish consistent standards of proof. Indeed, in the absence of such framework, even with an alleged effects-based approach, authorities may end up developing inconsistent standards of proof with decisions outcomes that may come close to a form-based analysis, as the Brazilian experience illustrates.

In this context, although the Guidance Paper adopted by the European Commission in December 2008 contains some shortcomings, it offers a useful conceptual framework for the analysis of vertical restraints adopted by dominant firms. This effects-based approach contained in the Guidance Paper, which relies on modern economic thinking, is largely followed by US agencies and courts, as well as by enforcement agencies and courts in many other nations. It is also supported by the vast majority of competition law and economics scholars around the world.

For rapidly developing jurisdictions like Brazil, which are attempting to leapfrog some of the earlier stages of more mature jurisdictions, the analytical framework proposed by the

Guidance Paper could serve as a starting point to provide a hard edge to an otherwise soft effects-based approach applied by the authorities so far. With some adaptations to the reality of these developing jurisdictions, new guidelines could be used to establish substantive standards to evaluate vertical restraints, leading to a healthy convergence of analytical approaches based on modern economic theory.

Our study also emphasizes the importance of the institutional environment to implement an effects-based analysis, as nicely drafted rules and principles are likely to remain dead letter unless the proper institutions are in place and the members of such institutions are given sufficient training in law and economics.

This short paper is structured as follows: Part II briefly addresses what we understand by vertical restraints. Part III discusses the evolution of the EU approach vis-à-vis vertical restraints, which culminated with the adoption of the *Commission Guidance Paper* in 2008. Part IV analyzes the Brazilian approach to the assessment of vertical restraints, as well as the inconsistencies in the implementation of that approach. Part V discusses the institutional background that must be in place for implementing a robust analytic framework to evaluate vertical restraints. Part VI briefly concludes.

II. VERTICAL RESTRAINTS: PRO-COMPETITIVE PRACTICES THAT MAY CREATE COMPETITION ISSUES

Vertical restraints include commercial strategies that are frequently used by dominant and non-dominant companies, such as:

- Exclusive dealing whereby the dominant firm sells a product on the condition that buyers not buy that same product from its rivals.
- Conditional rebates, whereby the dominant firm offers price incentives to customers buying all or a high percentage of their purchases from it. Rebates may be made over a single product (single-product rebate) or several products (bundled rebate).
- Tying and bundling, whereby the dominant firm agrees to sell one product only on the condition that the buyer also takes a second product from that firm (tying) or where the dominant firm will only sell two products as a package (pure bundling).

While in the vast majority of cases these agreements are pro-competitive in that they are a source of efficiencies, there may be circumstances where they foreclose rivals and create consumer harm. For several decades, vertical restraints have been a subject of debate among lawyers and economists and views as to how such restraints should be assessed have fluctuated. In recent years, however, a consensus has emerged that *per se* rules of illegality (or of legality) should not be applied to vertical restraints. Instead, such restraints should be assessed pursuant to an effects-based analysis balancing their pro- and anti-competitive effects. The difficulty, however, is to devise legal tests that allow this balancing to take place in a coherent and rigorous manner.

III. THE EVOLUTION OF THE EU APPROACH VIS-À-VIS VERTICAL RESTRAINTS

A. The formalistic approach of the Commission and the EU Courts

For the past several decades, a recurring criticism of the decisional practice of the Commission and the case law of the EU courts on exclusionary abuses (including anti-competitive vertical restraints) was that they were not in line with modern economic thinking. The reasons were that (i) cases were often decided on "formal" considerations, such as the nature of a given conduct, rather than its effects on competition and consumer welfare and (ii) that the efficiencies that could be generated by dominant firm conduct were not taken into consideration at all, or insufficiently so. That led to a case law that was highly unfavorable to dominant firms, which in some cases failed to engage in pro-competitive conduct by fear that such conduct may fall afoul of Article 102.

A related criticism was that the Commission and the EU Courts had failed to develop standards that would allow them to distinguish anticompetitive foreclosure from competition on the merits. For instance, Temple Lang and O'Donoghue stated in 2005 that "no currently-applied definition [of exclusionary abuse] has sufficient normative content to be applied ex ante as a normative rule by firms making pricing decisions or embarking on a given course of conduct."[3] As these authors suggest, the case law of the EU courts has been plagued by the application of standards based on vague concepts, such as that exclusionary abuses would amount to adopting "methods different from those which condition normal competition in products or services,"[4] behavior that is not "competition on the merits," or not in compliance with the "special responsibility" that dominant firms hold vis-à-vis their smaller rivals.[5] Reliance to such vague concepts was one of the reasons that led the Commission to adopt its Guidance Paper on Article 102, which, as will be seen below, contains a much more robust definition of exclusionary abuses.

B. The new effects-based approach promoted by the Guidance Paper

Roughly at the time Neelie Kroes became Competition Commissioner, it became clear that the Commission needed to move away from its form-based approach and embrace the effects-based approach it had already adopted with respect to the enforcement of Article 101. The first step in that direction came with the major policy speech given by Commissioner Kroes in September 2005 in which she declared that she was:

> "convinced that the exercise of market power must be assessed essentially on the basis of its effects in the market, although there are exceptions such as the per se illegality of horizontal price fixing. […] Article [102] enforcement should focus on real competition problems: In other words, behavior that has actual or likely restrictive effects on the market, which harm consumers. […] Low prices and rebates are, normally, to be welcomed as they are beneficial to consumers."[6]

Commissioner Kroes' speech was immediately followed by a Commission Discussion Paper on Article 82 EC (now 102 TFEU),[7] which promoted the very effects-based approach announced by the Commissioner. While the new economics-based principles guiding the approach proposed in the Discussion Paper were largely welcomed by commentators, the ways in which the Commission proposed to analyze certain categories of conduct were criticized as too reminiscent of the old formalistic approach. This being said, the Discussion Paper largely met its objective of stimulating debate as it was subject to abundant commentary, conferences, and events.

Almost three years later, the Commission published a Guidance Paper on its enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings (hereafter, the "Guidance Paper").[8] This document is *sui generis* as it "sets out the enforcement priorities that will guide the Commission's action in applying Article [102] to exclusionary conduct by dominant undertakings."[9] The Commission does not therefore state or restate the way in which Article 102 should be interpreted, a task which falls within the exclusive remit of the ECJ, but explains the circumstances in which a given dominant firm's conduct is likely to be subject to enforcement action by the Commission.[10]

The Guidance Paper focuses only on exclusionary abuses leaving aside exploitative abuses and price discrimination. The Guidance Paper seeks to address the two criticisms referred to above. First, the Guidance Paper seeks to provide a definition of anticompetitive foreclosure (which is another formulation of the notion of exclusionary abuse) that carries more substance than the vague and largely unhelpful definitions referred to above. Second, the Guidance Paper signals that the Commission will pursue an effects-based approach in its enforcement of Article 102 TFEU.

The Guidance Paper defines the term "anticompetitive foreclosure" as:

> "a situation where effective access of actual or potential competitors to supplies or markets is hampered or eliminated as a result of the conduct of the dominant undertaking whereby the dominant undertaking is likely to be in a position to profitably increase prices to the detriment of consumers."[11]

This definition suggests that a two-stage test will be relied upon to assess whether a given conduct is anti-competitive. In accordance with such a test, the Commission should first establish the presence of foreclosure and then prove that such foreclosure will likely harm consumer welfare. The reference to consumer welfare is important as it suggests that a conduct that would merely affect the "structure of competition" by, for instance, eliminating less efficient competitors - but that would have no effect on prices, or on the quality of products or innovation, and thus would not harm consumers or lead to enforcement action by the Commission under Article 102. It is thus the presence of (likely) consumer harm that will trigger the intervention of the Commission.

The Guidance Paper then lists a number of factors that will generally be relevant to its assessment of foreclosure, including: the position of the dominant undertaking, the conditions on the relevant market, the position of the dominant undertaking's competitors, the position of the customers or input suppliers, the extent of the allegedly abusive conduct, possible evidence of actual foreclosure, and direct evidence of any exclusionary strategy.[12]

Finally, the Guidance Paper indicates that the Commission will normally intervene under Article 102 where there is "cogent and convincing evidence" that the allegedly abusive conduct "is likely to lead to anticompetitive foreclosure."[13] It also provides that the assessment of a given conduct will "be made by comparing the actual or likely future situation in the relevant market (with the dominant undertaking's conduct in place) with an appropriate counterfactual, such as the simple absence of the conduct in question or with another realistic alternative scenario, having regard to established business practices."[14]

The Guidance Paper also contains a section dealing with price-based exclusionary conduct. It states that to prevent anti-competitive foreclosure, the Commission "will normally only intervene where the conduct concerned has already been or is capable of hampering competition from competitors which are considered to be as efficient as the dominant undertaking."[15] As the objective of competition is not to protect (less efficient) competitors, the "as efficient test" is certainly conceptually correct, although its application may at times raise significant difficulties.

The Guidance Paper states that the cost benchmarks the Commission will normally use to perform the "as efficient competitor" test are the average avoidable cost (AAC) and long-run average incremental cost (LRAIC).[16] In practice, when the price of a product is not sufficient to cover the AAC of producing the good or service in question ($P_e < AAC$),[17] this means that the dominant firm sacrifices profits in the short term and that an "as efficient competitor" will not be able to serve the targeted customers without incurring a loss.[18] Failure to cover LRAIC ($P_e < LRAIC$) indicates that the dominant firm is not recovering all the fixed costs of producing the good or service in question and that an "as efficient competitor" could be foreclosed from the market.[19]

The Guidance Paper provides that if the data clearly suggest that an as efficient competitor can compete effectively with the dominant firm's price conduct, the Commission will "in principle" infer that this conduct is unlikely to adversely impact effective competition, and thus consumers, and will be therefore unlikely to intervene.[20] If, by contrast, the data suggest that the price charged by the dominant firm has the potential to foreclose as efficient competitors, the Commission will integrate this into the general assessment of anti-competitive foreclosure, taking into account other relevant quantitative and/or qualitative evidence (see the foreclosure analysis discussed above).[21] This language is important as it makes clear that, under the Guidance Paper, the performance of a price cost test is necessary, but not sufficient to determine the presence of foreclosure.

UNDER THE GUIDANCE PAPER, THE PERFORMANCE OF A PRICE COST TEST IS NECESSARY, BUT NOT SUFFICIENT TO DETERMINE THE PRESENCE OF FORECLOSURE.

The Guidance Paper indicates that the Commission intends to examine claims by a dominant firm that its conduct is objectively "justified" or that it generates "efficiencies" that are sufficient to guarantee that no net harm to consumers is likely to arise.[22] As far as efficiencies are concerned, the dominant firm that adopted the conduct leading to the foreclosure of competitors must "demonstrate, with a sufficient degree of probability, and on the basis of verifiable evidence" that the following cumulative conditions are met: (i) "the efficiencies have been, or are likely to be, realised as a result of the conduct"; (ii) "the conduct is indispensable to the realisation of these efficiencies"; (iii) "the likely efficiencies brought about by the conduct concerned outweigh any likely negative effects on competition and consumer welfare in the affected markets"; (iv) "the conduct does not eliminate effective competition, by removing all or most existing sources of actual or potential competition."[23] The Commission will thus accept efficiency defenses provided that conditions comparable to those found in Article 101(3) TFEU are met.

IV. THE BRAZILIAN APPROACH TO VERTICAL RESTRAINTS

Although the first full-fledged Competition Act dates back to 1962,[24] a substantial evolution of Brazilian competition law occurred more recently, following the approval of the Competition Act 8.884/94 (BCA) and the implementation of market-oriented reforms during the 1990s. By that time, the modern economic theory on vertical restraints was already well established and there was a consensus that a form-based approach towards this type of conduct was not desirable.

The general framework for analyzing vertical restraints in Brazilian Competition Law was established in the annexes of CADE's Resolution 20, enacted in 1999.[25] Annex I of Resolution 20 establishes an effects-based approach towards vertical restraints, in line with the modern economic theory:

> "(…) in order to be capable of harming competition, vertical restraints usually require [the undertaking] to hold market power in the "original" market, [with the conduct] producing effects on a significant part of a "target" market. Although in theory such restraints might hinder competition [in a given market], they might also present offsetting economic efficiencies that must be balanced against potential anticompetitive effects, according to a rule of reason approach"[26]

The same approach remains in the new Brazilian Competition Act 12.529/11 (NBCA), in force since May 29, 2012. The NBCA implemented significant institutional changes. However, regarding the definition of anticompetitive conducts and the characterization of infringements, the NBCA keeps the system established by BCA basically intact.

THE BRAZILIAN EXPERIENCE HAS BEEN PRAISED FOR AVOIDING SOME OF THE PROBLEMS FACED BY THE RIGID FORM-BASED APPROACHES THAT PREVAILED FOR A LONG TIME IN MATURE JURISDICTIONS, INCLUDING THE EU AND THE US.

Thus, the Brazilian Competition Law System officially adopts an effects-based perspective towards vertical restraints. In this sense, the Brazilian experience has been praised for avoiding some of the problems faced by the rigid form-based approaches that prevailed for a long time in mature jurisdictions,[27] including the EU and the US. However, the casuistic approach adopted by the Brazilian Competition Law System, with an open-ended balance between negative effects and efficiency justifications, has also generated some inconsistencies.

A close look at the case law shows substantial variation in the qualitative analysis implemented by the Brazilian authorities. This variation generates inconsistency, especially when it comes to a definition of standards of proof in the context of the *rule of reason* analysis. Indeed, the relatively clear general framework for the effects-based analysis has not been capable of developing more detailed tests and standards to define when the net effects of a particular vertical restraint would be deemed negative to characterize conduct as illegal.

In particular, Brazilian Competition Law System's initial analysis of effects has been relatively weak, as it has not focused on demonstrating actual foreclosure effects. Such demonstration requires a detailed, fact-based, analysis relying on objective economic criteria, such as, for instance, the "equally efficient" competitor test in the case of rebates. However, the approach used by Brazilian authorities has not gone that far, sometimes limiting itself to observing hypothetical foreclosure to declare certain conduct anticompetitive.

As for the balancing of the pro-competitive and anti-competitive effects, this step in the analysis should only take place once foreclosure effects have been thoroughly demonstrated. In the absence of clear foreclosure effects, there is no need to develop a balancing test. On the other hand, in cases where foreclosure effects are demonstrated, an objective balancing test should then be required. Brazilian Competition Law System has, however, applied a balancing analysis based almost exclusively on qualitative considerations, generating inconsistency of standards applied to different cases.

The original root of this problem can be found in the vague terms of the BCA itself, as Article 20 characterizes as illegal any conduct that may produce certain effects "*even if they are not achieved*" (*potential effects*) or any act "*with the scope*" to produce certain negative effects on competition (*scope of the act*). In practice, these vague terms result in some cases being dismissed with the application of strict standards of proof that require hard evidence of negative effects and other cases being condemned based on relatively relaxed standards of *potential effects* and *the scope of the act*.

For instance, in one precedent addressing exclusive dealing (*Itambé Case*),[28] CADE recognized that a case could not be dismissed based on the lack of evidence of actual effects on competition, stating that:

> "(...) the absence of factual evidence proving the occurrence of anticompetitive effects is insufficient for the dismissal of a case. (...) For any given conviction, initially it is necessary that the authority prove the existence of a given conduct. Afterwards, it must be assessed whether the conduct objectively aimed to produce or had a high probability of producing anticompetitive effects. As explicitly stated in the last part of article 20 [of the BCL], finding that the conduct actually yielded anticompetitive effects is irrelevant for Brazilian Law.
>
> Therefore, even though after 4 years [of the occurrence of the conduct] no damage to the market can be observed, it cannot be stated that the practice did not have the potential to produce such [anticompetitive] effects."[29]

If the lack of effects after four years is not sufficient to dismiss a case, which might still be pursued on grounds of *potential effects* or the *scope of the act,* then the standard of proof to characterize an infringement is in fact extremely low. To characterize the conduct as infringement, it would be sufficient to show a purely theoretical harm to competition or a simple statement of the defendant showing an objective to dominate a market. Such a low standard of proof to refuse the dismissal of a case comes very close to a form-based analysis,

SUCH A LOW STANDARD OF PROOF TO REFUSE THE DISMISSAL OF A CASE COMES VERY CLOSE TO A FORM-BASED ANALYSIS, WHERE A GIVEN COURSE OF CONDUCT IS PRESUMED TO HAVE A NEGATIVE EFFECT.

where a given course of conduct is presumed to have a negative effect. Even though this was not a final decision, which would have probably led to a more detailed analysis by CADE, the reporting commissioner was very clear in emphasizing that "potential effects" could be the sole ground for a conviction even in a context of no actual anticompetitive effects could be observed after four years.

A similar low standard of proof of actual negative effects seems to have been applied in the *Ambev Case,* where an allegedly low level of foreclosure (*i.e.* 10-12 percent of the points of sale served by Ambev) was insufficient to deem the conduct lawful and dismiss the case. Indeed, the perceived potential effects of the conduct in the context of Ambev holding a clear dominant position combined with evidence of an aggressive marking strategy was considered sufficient to declare the conduct anticompetitive. As for the balancing of the conduct's alleged anticompetitive effects with its potential efficiencies, this exercise was superficial and relied on qualitative elements.[30] Here again, CADE's analysis came close to a form-based analysis, as it did not require a clear demonstration of foreclosure nor any actual balancing of potential efficiencies.

However, this is not always the case. For instance, in the *CRT Case* referred to above, another precedent on exclusive dealing, the issue about the standard of proof was put very candidly and led to a split vote of CADE's Commissioners.

In this case, ANATEL, the regulatory agency in the telecommunications sector, had gathered evidence that exclusive agreements of the dominant telecommunications operator with retailers reached high levels of foreclosure (up to 90 percent in some municipalities). Nevertheless, the defendants alleged that, despite the vertical restraint in question, competition was healthy and new entrants gained substantial market share during the period of investigation. Invoking the wording of the BCA, and the available evidence, the Reporting Commissioner suggested the conviction of the defendant:

> "On the other hand, it is important to clarify that, according to the wording of article 20 of Law 8.884/94, a competition infringement may take place if [the conduct] has the scope to or may produce the effects mentioned in items I through IV of article 20, even if these effects are not achieved."
>
> Thus, whether the conduct actually produced [anticompetitive] effects is irrelevant for the characterization of an infringement, as the simple possibility that such effects might occur is considered to be sufficient [for a conviction]. (…) Following such an approach, the question being debated here is not whether the investigated conduct actually harmed competition, but rather if such conduct had a high probability of limiting competition or enabling the abuse of a dominant position (and if such risks were known by the economic agent).
>
> Due to the aforementioned reasons, I consider the defendant in breach of articles 21, V, VI and X c/c article 20, I, II and IV of Law 8.884/94"[31]

Taking an opposing view and applying a much stricter standard of proof, a Dissenting Commissioner argued for the dismissal of the case based on the lack of evidence, in the following terms:

"The evidence contained in the records is not sufficient to indicate that the defendant has the possibility to (a) foreclose the market by requiring retailers loyalty (b) obtain monopoly profits with such strategy, preventing consumers from having access to competitors' products; (c) increase its rival's costs in a way that would be, even potentially, a strong restriction to its rivals' [performance] (...) Due to the aforementioned reasons, I vote for the dismissal of this complaint, as the evidence presented is insufficient to characterize a breach of Brazilian Antitrust Law."[32]

The final decision to dismiss the case because of the lack of evidence was taken in a split vote of three to three Commissioners, with the President untying the vote.

It is very difficult to reconcile the cases discussed above. Indeed, in the *Itambé* case, the unanimous decision was that the case should not be dismissed despite the lack of evidence of actual negative effects four years after a certain course of conduct was adopted. In the *Ambev* case, alleged low levels of foreclosure were also considered insufficient for dismissing the case. On the other hand, in the *CRT* case, despite apparent substantial evidence showing high levels of foreclosure in some municipalities, the majority vote required more evidence of actual negative effects to reach a conviction. Thus, while in the first two cases the standard of proof was set very low, focusing on the "*potential effects*" of the conduct, in the last case the standard was set quite high requiring substantial evidence of the presence of "*actual effects.*" These cases illustrate the inconsistencies generated by shifting standards of proof based on the vague terms of the BCA. Depending on the particular case, and whether CADE puts heavy weight on the language of "*potential effects*" and the "*scope of the act,*" the evidence (or the lack of evidence) considered sufficient to dismiss or convict a case may change dramatically. Some convictions based on lower standards of proof come close to a form-based approach, as they may simply ignore actual foreclosure effects and impose a fine based exclusively on the scope of the conduct or its potential effects.

EFFICIENT ENFORCEMENT CAN ONLY BE REACHED WHERE ADEQUATE SUBSTANTIVE STANDARDS ARE MATCHED BY THE RIGHT INSTITUTIONAL CAPABILITIES.

In conclusion, even though Brazilian Competition Law System's general approach towards vertical restraints seems in line with modern economic theory, it is necessary to develop clearer tests to evaluate actual effects and more consistent standards of proof. In this sense, for different reasons, both the EU and Brazil seem to have a similar challenge ahead: developing an analytical framework capable of translating the modern economic theory into a consistent approach towards concrete cases.

V. NECESSARY INSTITUTIONAL BACKGROUND FOR IMPLEMENTING A ROBUST ANALYTIC FRAMEWORK TO EVALUATE VERTICAL RESTRAINTS

Developing a robust analytical framework for evaluating competitive effects of vertical restraints is one step in the direction of a more efficient level of enforcement. However, the actual implementation of such a framework will generally depend on the institutional endowment of the relevant jurisdiction (competition authorities, courts, antitrust bar, etc.). In other words, efficient enforcement can only be reached where adequate substantive standards are matched by the right institutional capabilities. In particular, it is important to develop an institutional system with rules, guidelines, robust analytic capabilities by the authorities, and well-prepared lawyers and economists on the ground.

A. The EU Institutional Background

As seen above, vertical restraints adopted by dominant firms are to be assessed under Article 102 TFEU, which, as it applies to vertical restraints, has been interpreted by the EU courts in a number of landmark judgments. In its 2008 Guidance Paper, the Commission has also expressed its priorities with respect to the enforcement of Article 102. There is therefore no need to introduce amendments to the TFEU or to adopt interpretative guidelines to allow an effects-based approach to the assessment of vertical restraints.

As far as the institutions in charge of enforcing EU competition rules are concerned, the EU system combines centralized and decentralized elements.[33] Cases presenting a so-called "Community interest" will be dealt with by the European Commission, whereas other cases will be handled by the national competition authorities ("NCAs").[34] Because Article 102 has so-called "direct effect,"[35] it can also be applied by national courts either on their own motion or when it is invoked by the parties. The General Court in Luxembourg hears appeals lodged against Commission decisions, and the European Court of Justice hears appeals lodged against General Court judgments or questions of legal interpretation raised by national courts.[36]

As far as the European level is concerned, DG Competition, the General Directorate in charge of enforcing EU competition rules, is a sophisticated institution. While the majority of Commission officials are lawyers, DG Competition comprises an important number of economists, as well as a Chief Economist that is supported by more than twenty PhD economists. There is therefore no doubt that DG Competition is able to apply the type of effects-based analysis it has itself recommended in its 2008 Guidance Paper.

A more nuanced view has to be taken with respect to the EU courts. The General Court and the European Court of Justice are largely composed of generalist judges who join the Court with little or no background in competition law. Nothing would, of course, prevent the EU Courts from retaining economic experts to help them assess economic arguments, but the EU courts only did this in a limited number of circumstances in the past.[37]

The problem in the field of vertical restraints is not so much that the EU courts are unable to grasp economic reasoning, but that they stick to their formalistic case law, which is no longer in line with economic reasoning. In fact, the legal tests developed by the Court of Justice in the field of abuse of dominance are sometimes so strict that they can almost accommodate any decision of the Commission. In other words, the problem is not one of judicial deference to the Commission, but one of defective decision-making in that the legal standards relied upon by the Court are out of touch with contemporary economics (and even in some cases with basic common sense).

THE PROBLEM IS NOT ONE OF JUDICIAL DEFERENCE TO THE COMMISSION, BUT ONE OF DEFECTIVE DECISION-MAKING IN THAT THE LEGAL STANDARDS RELIED UPON BY THE COURT ARE OUT OF TOUCH WITH CONTEMPORARY ECONOMICS.

The problem is, of course, that this case-law has in turn a negative impact on the decisional practice of the Commission as can be illustrated by the *Intel* decision.[38] While in that decision the Commission carried out an "as efficient competitor" analysis to demonstrate that Intel's rebates were exclusionary, it claimed that this analysis was "not indispensable for finding an infringement under Article 82 of the Treaty [now Article 102 TFEU] according to the case-law."[39] Referring to *British Airways* and *Michelin II*, the Commission indeed notes that "for the purposes of establishing an infringement of Article 82 EC [now Article 102 TFEU], it is not necessary to demonstrate that the abuse in question had a concrete effect on the markets concerned."[40] The Commission thus appears to be saying that no evidence of foreclosure is needed.

While this approach provides the Commission with the advantage that its decisions would become de facto "appeal proof,"[41] it is detrimental to the objectives of the 2008 Guidance Paper. The reason is that this approach hardly gives any incentives to the Commission to carry out a serious effects-based analysis as in any event the case can be won on the basis of the strict case-law of the European Court of Justice.

This does not mean, however, that the Guidance Paper is useless, since it continues to provide a roadmap of the way the Commission will pursue its enforcement of Article 102 TFEU. However, a great step forward in the field of vertical restraints would be for the EU courts to modify the legal standards they apply to this field so as to better accommodate economic reasoning.

B. The Brazilian Institutional Background

In Brazil, the effects-based analysis has been incorporated in the legal system at least since 1994. Both BCA[42] and NBCA[43] define antitrust violations based on actual or potential effects, or on the conduct's scope to generate those effects. Besides the wording of the law itself, there is a general consensus emerging both from the case-law and the Brazilian legal scholarship about the adequacy of the effects-based approach to identify vertical restraints that violate competition laws. Thus, at the statutory level, it is fair to say that Brazil is ready to implement an effects-based analytical framework.

However, the guidelines developed to evaluate anticompetitive conduct under BCA (i.e. CADE's Resolution 20)[44] are still insufficient to serve as the basis of a more detailed effects-based analysis. Indeed, the current guidelines merely suggest, at a very general level, that vertical restraints must be evaluated by balancing their potential negative effects with their possible efficiencies.[45]

In this context, new guidelines, incorporating the recent developments in economic and legal theory discussed in this paper, should be developed. The coming into force of NBCA is the right moment for developing such guidelines, as the authorities are already undergoing a complete overhaul of the regulations needed to implement the new law.

With the normative framework in place, attention must be shifted to the Brazilian Competition Law System's capacity to implement an analytical framework that heavily relies on economic reasoning. On this matter, the authorities composing the Brazilian Competition Law System have received international recognition.[46] Indeed, they have been able to handle an increasing number of cases in recent years with rising complexity, keeping a relatively constant staff.[47] Yet, staff constraints will certainly be a challenge to implement a demanding analytical framework such as the one proposed in this paper.

Indeed, the last peer review published by OECD clearly stated that the total number of people working in Brazilian Competition Law System *"is small for a country of Brazil's size,"*[48] as summarized in the table on the next page.

Brazilian Competition Law System's Staff

	SDE/DPDE	SEAE	CADE	ProCade	MPF
Professionals	**32**	**78**	**49**	**8**	**2**
Support	**27**	**72**	**137**	**-**	**-**
Total	**59**	**150**	**186**	**20**	**2**

Source: OECD Peer Review (2010)

Also, the staff is largely composed of lawyers; hence the need to engage in deeper economic analysis would certainly require a more balanced staff, including a greater proportion of officials with background in economics.

The NBCA, which came into force in mid-2012, presents a good opportunity to boost the staff capacity of the New CADE. Indeed, the NBCA provides express congressional authorization for contracting 200 new permanent staff, especially selected for competition policy enforcement. This is a significant opportunity to select a balanced staff of lawyers and economists to bring Brazilian competition policy to the same level as mature jurisdictions worldwide. In addition, the new law creates an Economic Department within CADE, demonstrating a commitment to economic reasoning in competition policy enforcement.[49]

The staff expansion approved by the NBCA is probably the single most important institutional enhancement in Brazilian competition policy in the past 20 years and should be treated with great priority, as it will certainly give the New CADE the capacity to implement a more analytically complex framework of the type proposed in this paper.

BRAZILIAN COURTS ARE STILL VERY FORMALISTIC WITH JUDGES MASTERING PROCEDURAL RULES, BUT HAVING LITTLE SPECIFIC TRAINING IN COMPETITION LAW AND, USUALLY, NO BACKGROUND IN ECONOMICS.

Besides the authorities, Courts will always play an important role in complex cases as any large fine imposed on a dominant undertaking is likely to be reviewed by Brazilian Federal Courts since the defendant has the alternative to challenge CADE's final decision. The question is whether Courts are prepared to review decisions regarding vertical restraints. The answer to this question is far from clear. On the one hand, Brazilian courts are still very formalistic with judges mastering procedural rules, but having little specific training in competition law and, usually, no background in economics. This makes any review of a complex vertical restraint case a significant challenge. On the other hand, judges may develop a standard of review based on a certain degree of deference to the economic analysis of the authorities, and focused more on procedural guarantees. Here, the challenge in Brazil seems similar to that in the EU, in finding a balance between some degree of deference and the court intervention to require a rigorous analysis from the administrative authorities.

Finally, in order to implement more detailed standards of analysis for vertical restraints, the antitrust community as a whole must be prepared to deal with this type of analysis. On this issue, it is fair to say that the Brazilian antitrust community is quite sophisticated and could certainly take up this challenge. In the past decade, attorneys and economists have been exposed to an increasingly complex array of arguments and economic tools.[50] Should the authorities adopt clear guidelines based on sound economic reasoning, the antitrust community as a whole would be prepared to apply them to concrete cases.

In this context, the Brazilian antitrust environment seems reasonably well prepared to implement a robust effects-based analytical framework, with, however, some important areas for improvement. These areas include: (i) developing more detailed regulations with guidelines to assess vertical restraints under the NBCA, (ii) using the opportunity opened by the NBCA for an expansion of staff that is balanced between lawyers and economists; and (iii) improving the ability of the courts to deal with economic arguments and/or developing standards of judicial review including some deference to the substantive economic analysis.

VI. CONCLUSIONS

Vertical restraints such as exclusive dealing, rebates and tying are common commercial practices adopted by both dominant and non-dominant firms. In the vast majority of instances, these practices are pro-competitive and a source of considerable efficiencies. There may be instances, however, where such practices may produce foreclosure effects. The task of competition authorities and courts in any jurisdiction is therefore to separate pro-competitive from anti-competitive restraints, and only prohibit the latter.

Because vertical restraints can be a source of efficiencies, *per se* rules of illegality should be avoided as they can lead to the over-enforcement of competition rules and thus prohibit some pro-competitive types of conduct. Rules that try to distinguish between pro- and anti-competitive conduct based on the form of such conduct should also be avoided as the form of a measure says little about its impact on competition. The application of form-based rules may therefore lead to significant errors of assessment and affect the credibility of the competition regimes in question, as some examples in mature jurisdictions as the EU and the US have illustrated.

Instead, competition authorities and courts should adopt tests seeking to identify the pro- and anti-competitive effects of a given conduct and to balance them. No vertical restraint should be banned without the demonstration that it affects competition and creates consumer harm. Such effects-based analysis must be developed according to a solid analytical framework in order to establish consistent standards of proof. Indeed, in the absence of such framework, even with an alleged effects-based approach, authorities may end up developing inconsistent standards of proof with decisions outcomes that may come close to a form-based analysis, as the Brazilian experience illustrates.

In this context, the Guidance Paper adopted by the Commission in December 2008 attempts to structure, in a fairly detailed manner, such an effects-based approach. Although the Guidance Paper contains some shortcomings, it offers a useful conceptual framework for the analysis of vertical restraints adopted by dominant firms. This effects-based approach contained in the Guidance Paper, which relies on modern economic thinking, is largely followed by US agencies and courts, as well as by enforcement agencies and courts in many other nations.[51] It is also supported by the vast majority of competition law and economics scholars around the world.

For rapid-developing jurisdictions like Brazil, which are attempting to leapfrog some of the earlier stages of more mature jurisdictions, the analytical framework proposed by the Guidance Paper could serve as a starting point to provide some hard edge to an otherwise soft effects-based approach applied by the authorities so far. With some adaptations to the reality of these developing jurisdictions, new guidelines could be used to establish substantive standards to evaluate vertical restraints, leading to a healthy convergence of analytical approaches based on modern economic theory.

Finally, this article also calls attention to the importance of the institutional environment to implement the proposed analytical framework. We discussed five different institutional elements: legislation, regulations with guidelines to implement the legislation, authorities' capability to develop sound economic analysis, courts' readiness to review this type of analysis and the antitrust community (i.e. in-house and outside counsel and economic consultants). The interplay among these elements is very important for the success of more robust analysis of vertical restraints. Although, both the EU and Brazil seem to be fairly prepared to implement the type of analysis proposed in this article, there is certainly room for improvement, especially in Brazil.

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2. The full study can be found at able at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2173735

3. J. Temple Lang and R. O'Donoghue, "The Concept of Exclusionary Abuse under Article 82", *GCLC Research Papers on Article 82*, July 2005, mimeo.

4. Case 85/76 HoffmanLa Roche v Commission [1979] ECR 461, paragraph 91.

5. Case 322/81, *Michelin* v. Commission [*1983*] ECR *3461*, para. 57.

6. Neelie Kroes, "Preliminary Thoughts on Policy Review of Article 82", Speech at the Fordham Corporate Law Institute New York, 23 September 2005, available at http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/05/537&format=HTML&aged=1&language=EN&guiLanguage=en.

7. DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses, December 2005, available at http://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf.

8. Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings issued in December 2008, [2009] OJ C45/7. Generally, on the Guidance Paper, See Damien Geradin, "Is the Guidance Paper on the Commission's Enforcement Priorities in Applying Article 102 TFEU to Abusive Exclusionary Conduct Useful?" in F. Etro and I. Kokkoris, Eds, *Challenges in the Enforcement of Article 102*, by Oxford University Press, 2010.

9. Id. at § 2.

10. See Commission Decision of 13 May 2009, COMP/37-990 Intel, available at http://ec.europa.eu/competition/sectors/ict/intel.html , at § 916: "The guidance paper is not intended to constitute a statement of the law and is without prejudice to the interpretation of Article [102] by the Court of Justice or the Court of First Instance. As a document intended to set priorities for the cases that the Commission will focus upon in the future, it does not apply to proceedings that had already been initiated before it was published, such as this case."

11. Guidance Paper, supra note 8, at § 19.

12. Id. at § 20.

13. Id. at § 20.

14. Id. at § 21.

15. Id. at § 23.

16. Id. at § 26.

17. P_e is the price effectively paid by the customer (for instance, the list price minus a rebate).

18. Guidance Paper, supra note 8, at § 26.

19. Id.

20. Id. at § 27.

21. Id.

22. Id. at §§ 27-30.

23. Id. at § 29.

24. The first competition act in Brazil was Law 4.137/62. However, the first rules specifically addressing competition issues were enacted even earlier, in the forties (Act 7.666/45).

25. Published in the Official Federal Gazette on June 28, 1999. Although part of Resolution 20 was revoked by CADE's internal rules of procedure, its annexes with the analytic framework for anticompetitive conduct remain in force since 1999, with no amendments.

26. Resolution 20/1999, *Annex* I, Item B.

27. *See* Paulo Furquim de Azevedo, "Restrições Verticais e Defesa da Concorrência: A Experiência Brasileira", (2010) Textos Para Discussão n. 264, FGV-EESP, at 11: "*As already mentioned, the decisions' basis show a surprising consistency in the procedures of analysis [of vertical restraints], especially if considered the significant controversy existent on the subject.*"

28. Administrative Proceeding n. 08012.009312/1998-39. Defendant: CCPR – Cooperativa Central dos Produtores Rurais de Minas Gerais Ltda. ("Itambé"), Reporting Commissioner Abraham Benzaquen Sicsú, DOU May 18, 2007 (the case addressed, among other issues, an exclusive agreement for the sale of a particular brand of milk, and it ended up being dismissed on procedural grounds, although SDE decided to open a new case to deal with the alleged infringements).

29. *Id.* at Reporting Commissioner vote, at page 4.

30. The analysis of efficiencies and the balancing test takes up only one page in the reporting commissioner's vote, concluding that the efficiencies are insufficient to justify the loyalty program. Administrative Proceeding 08012.003805/2004-10, Reporting Commissioner's vote, at 78-79.

31. Administrative Proceeding 53500.000502/2001, Claimant: Telet S.A.. Defendant: Celular CRT S.A., Reporting Commissioner Luís Fernando RigatoVasconcellos, DOU: June, 23, 2008, Reporting Comissioner vote at 25 – 26.

32. *Id.,* Dissenting Opinion of Commissioner Luis Carlos Delorme Prado, at 3.

33. See Damien Geradin, "Competition between Rules and Rules of Competition: A Legal and Economic

Analysis of the Proposed Modernization of the Enforcement of EC Competition Law", 9 (2002) *Columbia Journal of European Law,* 1

34. Commission Notice on cooperation within the Network of Competition Authorities, O.J. 2004, C 101/43, at §15.

35. Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty, O.J. L 1/1, at §4.

36. Article 256 TFEU.

37. Experts were, for instance, used in the Wood Pulp case, Case C-129/85 Ahlström Osakeyhtiö and Others v. Commission, [1993] ECR I-1307.

38. In *Intel*, the Commission considered that the Guidance Paper did not apply on the ground that this document "was published only after Intel had been given the opportunity to make its views known on the 26 July 2007 SO, the 17 July 2008 SSO and the Commission's letter of 19 December 2008." Intel decision, supra note 10, at § 916. The Commission however specified in its decision that it was "in line with the orientations set out in the guidance paper." Id.

39. Id. at § 925.

40. Id. at § 922.

41. The General Court and the ECJ would be most likely to uphold this decision as in line with their case-law.

42. *See* BCA, articles 20 and 21.

43. *See* NBCA, article 36.

44. Resolution 20/1999

45. *See* Resolution 20/1999, *Annex* I, Item B: "(…) *in order to be capable of harming competition, vertical restraints usually require [the undertaking] to hold market power in the "original" market, [with the conduct] producing effects on a significant part of a "target" market. Although in theory such restraints might hinder competition [in a given market], they might also present offsetting economic efficiencies that must be balanced against potential anticompetitive effects, according to a rule of reason approach*".

46. For example, the Global Competition Review awarded CADE the prize of "Agency of the Year, Americas" in 2011.*See* http://www.globalcompetitionreview.com/news/article/29379/gcr-awards-2011-finalists/

47. The latest data released is from 2009 and 2010. CADE held 24 judgments sessions in 2010, judging 765 cases: (i) 660 mergers; (ii) 20 administrative proceedings; (iii) 57 preliminary investigations; (iv) 13 motions to clarify and; (v) 15 other proceedings. (CADE's Annual Report, 2010, p. 109). This represents more than 40% increase from 2009, when CADE held 22 judgments sessions, judging 538 cases: (i) 474 merges; (ii) 18 administrative proceedings; (iii) 40 preliminary investigations; and (iv) 6 consultations (CADE's Annual Report, 2009, p. 57)

48. *See* OCDE, Peer Review 2010, at 48.

49. NBCA, article 5, item III and article 121.

50. For an interesting overview of the cases with more complex economic analysis in Brazil see Cesar Mattos, A Revolução do Antitruste no Brasil: O Papel da Teoria Econômica Aplicada a Casos Concretos, São Paulo, Editora Singular, 2003.. The book (published in Portuguese) is clearly inspired by and adopts a similar format to the book Antitrust Revolution edited by John E. Kwoka Jr. and Lawrence White in the USA, presenting studies in cases where deep economic analysis was required. John E. Kwoka Jr. and Lawrence White, The Antitrust Revolution: Economics, Competition, and Policy, Oxford University Press, 2004.

51. See Einer Elhauge and Damien Geradin, Global Antitrust Law & Economics, 2nd Ed, Foundation Press, 2011, at Chapter III.

To Issue Or Not To Issue Guidance: Comments On Geradin And Pereira Neto

By Seth B. Sacher[1]

I. INTRODUCTION

In a recent working paper, Damien Geradin and Caio Marioda Silva Pereira Neto (hereafter GN) argue that the Brazilian competition system would greatly benefit from the adoption of guidelines like the *European Commission Guidance Paper*,[2] which offers a legal and economic methodology to implement an "effects-based approach" to vertical restraints adopted by a dominant firm.[3] This paper notes that while their proposed effects based analysis is far superior to *per se* treatment of vertical restraints, this framework can be further improved by careful attention to the challenges raised by the so-called "Chicago School" regarding the impact of vertical restraints. Further, whether it would be advisable for Brazil to write formal guidances regarding its policy toward vertical restraints should be evaluated in light of both the nature of Brazilian competition laws and the flexibility of the Brazilian economy.

WHETHER IT WOULD BE ADVISABLE FOR BRAZIL TO WRITE FORMAL GUIDANCES REGARDING ITS POLICY TOWARD VERTICAL RESTRAINTS SHOULD BE EVALUATED IN LIGHT OF BOTH THE NATURE OF BRAZILIAN COMPETITION LAWS AND THE FLEXIBILITY OF THE BRAZILIAN ECONOMY.

II. THE EVOLUTION OF ECONOMIC THINKING

GN begin with an excellent overview of the evolution of economic thinking regarding vertical restraints by a dominant firm. Thus, before the 1950s, vertical relationships between a dominant supplier and its customers that restricted the ability of those customers to deal with the dominant firm's rivals were viewed as unambiguously anticompetitive based on a rather underdeveloped concept of monopoly leveraging or foreclosure. These concepts do not appear to have been well thought out or modeled, but the idea is that the monopolist could somehow leverage its monopoly power in one market into another.

As GN note, a group of thinkers in the 1940s and 1950s criticized this monopoly leveraging theory. There is a tendency to refer to these thinkers as the "Chicago School," and indeed many of the thinkers associated with these critiques were faculty at the University of Chicago Law School or its Economics Department, although certainly not exclusively. For example, two Harvard Scholars - which some proffer as the antithesis of the Chicago School - Donald Turner and Philip Areeda, were responsible for much of the rethinking of enforcement and legal standards in the area of predatory pricing.[4]

These critiques raised two essential challenges for the view that harm would result from vertical restraints. The first is to establish that there is something the monopolist is able to accomplish by placing restraints on his customers' ability to deal with rivals he is not already accomplishing—i.e., the one monopoly profit theorem. The second is to explain why customers would enter into a relationship that ultimately is supposed to make them worse off.

Further, given that these models led to the conclusion that there could not be customer harm from various vertical restraints, many Chicago School thinkers argued these restraints must be efficiency enhancing. Because of this conclusion, these scholars posited a number of ways in which such vertical restraints could be efficiency enhancing, and the paper provides an excellent taxonomy of these efficiencies.

As GN point out, the next phase in the economic modeling of vertical restraints has shown that the conclusion of the so-called Chicago School - that these vertical relations could never be anticompetitive - was rather strong. These models show that by breaking down some of the assumptions of the Chicago School, vertical restraints by a dominant firm can indeed produce anticompetitive results. Nevertheless, while these models showed that these vertical restraints *could* be anticompetitive, they do not imply that they *must* be anticompetitive.[5]

Many antitrust observers tend to group these models, with their more uncertain conclusions regarding the effects of vertical restraints, as the "Post-Chicago School." However, this may be a somewhat misleading description. The term Post-Chicago School may seem to imply that there has been some kind of radical break with the thinking of the so-called Chicago School. There might actually be more continuity between these models and the so-called Chicago School in that these models essentially use many of the propositions of the earlier scholars as a starting point and are merely breaking down some of the assumptions in those models. As will be expanded on further below, this may be a valuable way to think about vertical restraints as one attempts to apply economic models to actual enforcement or to provide guidance.

III. COMPETITIVELY AMBIGUOUS REASONS FOR VERTICAL RESTRAINTS

As noted above, the GN paper provides an excellent listing and description of the efficiency rationales for vertical restraints. However, the so-called Chicago School thinkers also put forward a number of other rationales for the existence of these restraints that are more competitively ambiguous. The paper might benefit from greater discussion of these rationales. One rationale to which greater attention should have been given is what economists and antitrust practitioners refer to as price discrimination—the charging of different prices to different customers for the same good or service. Thus, a number of models by prominent Chicago Scholars have shown that these vertical restraints can enhance a firm's ability to price discriminate.[6]

THUS, A NUMBER OF MODELS BY PROMINENT CHICAGO SCHOLARS HAVE SHOWN THAT THESE VERTICAL RESTRAINTS CAN ENHANCE A FIRM'S ABILITY TO PRICE DISCRIMINATE.

One of the classic examples of how vertical restraints can enhance price discrimination was the use of tying in the International Business Machines (IBM) tabulation card case.[7] As a condition of leasing its machines, IBM required its customers to purchase tabulating cards only from IBM. If customers were caught using non-IBM cards, the lease was canceled. The effect of this tie was essentially to charge those that used the system more intensively (i.e., those that used more tabulation cards) a higher price for the system. By charging for the entire system (i.e., machines and tabulation cards together) IBM could effectively charge these high intensity users a higher price and lower intensity users a lower price.

While in the EU there may be some issues with price discrimination that get tied-up with issues of the common market, the actual welfare implications of price discrimination are highly ambiguous. Thus, while economic models tend to show that price discrimination enhances a firm's profits, it may be doing this by making the good available at a lower price, at least to some consumers, than would otherwise be the case. For example, in the IBM tabulation card case, IBM may have lowered the price of the leases for its machines in order to sell more tabulation cards, thereby increasing their availability to less intensive users.

In general, overall social welfare is higher under price discrimination, and at least some consumers benefit from the practice with the result that overall consumer welfare can be either higher or lower. Given its highly ambiguous welfare effects, price discrimination is generally not a good basis for an enforcement action, but it nevertheless may have a great deal of explanatory power with regard to many vertical restraints, particularly tying and conditional discounts.

For example, the paper describes the *Matec* case, where a supplier of large telephone switchboards was accused of refusing to supply spare parts to independent companies that were interested in providing maintenance services.[8] This case appears to bear many parallels with the US's *Kodak* case, which concerned a large manufacturer of photocopiers that similarly refused to supply spare parts to independent companies that were providing maintenance services.[9] Many would argue that what Kodak was trying to achieve was better price discrimination, although Kodak never raised this as a defense.[10]

Thinking about the possibility that many of these practices may reflect attempts by firms to better engage in price discrimination, and how to deal with it, might help Brazil continue to leapfrog many of the mistakes made by older antitrust regimes as one thinks about how to deal with vertical restraints, and whether - and how - to write guidances.

IV. LEGAL EVOLUTION

After discussing the evolution of economic thinking, GN give a brief overview of legal practice with respect to these restraints. GN note that the EU has moved away from *per se* treatment of such restraints and that countries like Brazil have been able to leapfrog over this *per se* period and straight to an "effects based" approach. The evolution of US law has been slightly different from that of the EU It is true that given the prominence of the monopoly leveraging theory, for a long time vertical restraints were treated very harshly in the US— essentially as being illegal *per se* as was the case in the EU Indeed, the US was probably harshly treating these relationships when very few countries, including those in the Treaty of Rome, even had competition laws of which to speak.

Over time, the conclusions of the Chicago School, with its more benign view of vertical restraints, started to influence legal outcomes as well. As GN note, US law follows a common law approach, so the impact of this thinking was not immediate but rather evolved over a number of years. Eventually, the courts began to take a highly skeptical view of plaintiffs' complaints in such matters (plaintiffs usually consist of the dominant firm's competitors, or spurned distributors or retailers). The antitrust agencies also cut back on their efforts in these areas.

Currently, it is still very difficult for plaintiffs to prevail in private cases in the US, which make up a substantial part of US antitrust enforcement. While the courts continue to take a skeptical view, the agencies recognize that vertical restraints can, in certain circumstances, harm competition. Indeed, with refinements to thinking on these issues, the agencies have challenged a number of instances of vertical restraints in recent years, exemplified by the *Microsoft*, *Dentsply* and *Intel* cases. Nevertheless, while both the US and the EU would appear to adhere to a rule of reason standard for evaluating vertical restraints, there is greater willingness in the EU and similar jurisdictions to condemn many of these behaviors than is the case in the United States.

NEVERTHELESS, WHILE BOTH THE US AND THE EU WOULD APPEAR TO ADHERE TO A RULE OF REASON STANDARD FOR EVALUATING VERTICAL RESTRAINTS, THERE IS GREATER WILLINGNESS IN THE EU AND SIMILAR JURISDICTIONS TO CONDEMN MANY OF THESE BEHAVIORS THAN IS THE CASE IN THE UNITED STATES.

This divergence at least partially results from a different emphasis on what GN referred to as *false positives* and *false negatives*.[11] Thus, the EU would appear more concerned with false negatives—incorrectly permitting anticompetitive practices—whereas US practitioners are more concerned with false positives—incorrectly condemning efficient practices.

There are several theories regarding the reasons behind this divergence. Many would argue these differences result primarily from the differing natures of the US and European economies, as well as their legal systems. Let's consider one argument for why competition authorities *should* be more concerned with false positives put forward by Frank Easterbrook, a prominent scholar strongly associated with the Chicago School.[12] He argues that a false negative (i.e., mistakenly permitting a monopolistic practice) is self-correcting because monopolistic behavior attracts entry. The entry may not occur as quickly as we would like, but he would argue it will nevertheless occur. On the other hand, so the argument goes, if an efficient practice is banned, then any other firm that uses the condemned practice faces sanctions in the name of *stare decisis,* or the legal principle of respecting precedents, no matter the benefits.

This argument probably carries more weight in the United States than other jurisdictions. The US economy has historically exhibited more flexibility for supporting new businesses than others. On the other hand, the US antitrust system may change more slowly than others. The European system, which, as GN note, is largely administrative in nature, can probably take a new direction more easily when new learnings take hold. In the United States, given its common law system, reversing previous precedents is a much slower process.[13]

This may be relevant as jurisdictions continue to develop their own competition laws and enforcement capabilities. The paper indicates that Brazilian law is more of an administrative system, so there may be more flexibility in terms of revising past practice as new learnings arise, suggesting false positives may not be of too great concern. On the one hand, whether one wants to be more aggressive or cautious in bringing enforcement actions against firms may also depend on how flexible one believes the Brazilian economy to be in terms of fostering new entrants. Brazil has certainly had enviable growth rates in a number of the past few years, which suggests it has a very dynamic economy; this may be a very relevant consideration as Brazil attempts to balance the risks of false positives and negatives.

How dynamic an economy is would appear to be relevant to matters like the Iguatemi Shopping Mall cases.[14] These cases involved a luxury shopping mall that had signed exclusive contracts with a number of its tenants. The extent to which the Brazilian economy had the flexibility to support viable new entrants to compete with the established tenants might be a pivotal consideration in such a case.

V. TO ISSUE GUIDANCES OR NOT TO ISSUE GUIDANCES

Regarding policy prescriptions, there are two main issues to address: whether to issue a formal guidance regarding vertical restraints, and what to put in that guidance. Nevertheless, even if Brazil ultimately decides not to issue a new guidance paper, GN's recommendations for what to put in that guidance may be useful for guiding Brazilian vertical restraints policy.

On the issue of whether or not to issue a guidance at all, there is currently no such document issued by the antitrust agencies in the United States despite the existence of guidelines in the merger area for more than 40 years. There have been discussions of issuing such guidances, and one might consider the Section 2 report issued by the Department of Justice in 2008 as a US attempt in this direction.[15] However, the Federal Trade Commission never accepted the report and it was withdrawn less than a year after its issuance following a change in administration. This indicates the challenges in writing guidances in this area when there are divergent views as to when such conduct is unlawful. It is also noteworthy that recently the US Supreme Court had the opportunity to review a case involving conditional rebates,[16] but both of our federal antitrust agencies argued that the court should wait until the state of learning regarding such practices evolved before establishing a precedent,[17] an argument the Supreme Court accepted.

> ON THE ONE HAND, GUIDANCES CAN PROVIDE MORE CERTAINTY FOR FIRMS REGARDING THE TYPES OF CONDUCT THAT ARE LAWFUL AND THOSE THAT MAY BE SUBJECT TO ANTITRUST SCRUTINY. ON THE OTHER, GUIDANCES CAN LEAD TO AN INFLEXIBLE LEGAL APPROACH THAT MAY BE INAPPROPRIATE, ESPECIALLY GIVEN THE STILL FLUID STATE OF LEARNING REGARDING VERTICAL RESTRAINTS.

There are clearly advantages and disadvantages to having guidelines and only a few of those issues are considered here. On the one hand, guidances can provide more certainty for firms regarding the types of conduct that are lawful and those that may be subject to antitrust scrutiny. On the other, guidances can lead to an inflexible legal approach that may be inappropriate, especially given the still fluid state of learning regarding vertical restraints. The absence of guidelines does not mean that one cannot provide *guidance* regarding the treatment of vertical restraints. Thus, a high degree of transparency on actual enforcement actions and investigations can still provide a great deal of information for stakeholders. In terms of being transparent on enforcement actions, this does not only mean being very public on cases where an action was taken. Being transparent in investigations that were ultimately closed can also be very important. Further, public conferences on the issues, inviting relevant stakeholders including academics and business people - something that the US FTC is quite active on - can also provide guidance.

As noted above, one reason to be reluctant to issue guidances is the unsettled nature of the theoretical economic literature regarding the impact of these vertical restraints. The actual empirical economic evidence on the effects of these practices is even more ambiguous, and is clearly an area where much more research would be beneficial. A group of FTC economists have summarized much of the existing empirical literature on vertical restraints.[18] This literature mostly looks at the impact of vertical restraints through: (1) evaluating the impact of various judicial antitrust decisions (usually evaluating impacts through stock market event studies); (2) evaluating the changes over time or differences cross-sectionally resulting from the enactment or removal of various laws regarding the extent of vertical integration allowed (frequently in the gasoline industry); and (3) cross-sectional surveys of the circumstances under which various vertical restraints are used. Most of the evaluations of judicial decisions have focused on resale price maintenance rather than practices such as exclusive dealing or conditional rebates. Overall, they found that the literature indicates that vertical restraints tend to reduce price and/or increase output (i.e., are procompetitive), also suggesting caution is warranted.

VI. GN'S POLICY PRESCRIPTIONS

Broadly speaking, the paper advocates a two-step process for evaluating vertical restraints. The first part is a foreclosure analysis in which the court or agency should first establish the presence of significant foreclosure, and then establish that the foreclosure will likely harm consumer welfare. They then recommend the analysis turn to whether there are efficiencies of such a nature that could offset any anticompetitive effects of the foreclosure.

There is reason to be skeptical of how often such a balancing is done in practice. For example, consider the area of exclusive dealing in the United States. Much of the case law in this area in the US has been made by our so-called Circuit Courts, which are the highest level of appeals courts before reaching the Supreme Court. Under this case law, for the most part, when a vertical arrangement passes antitrust muster, it generally does so on the basis that the foreclosure prong has not been met. There appears to be only one case where a court acknowledged the possibility of anticompetitive foreclosure, but held that the procompetitive efficiencies outweighed the effects of foreclosure. Thus, the Fourth Circuit (which has jurisdiction over a region consisting primarily of the Middle Atlantic States) considered an exclusive contract between a hospital and a radiology practice group to provide radiology services to inpatients at the hospital.[19] In holding that the exclusive contract was legal, the court found that even if the exclusive contract, which accounted for as much as 80 percent of the market for radiology services in the relevant geographic market, represented substantial foreclosure, the procompetitive benefits - including quality control, cost control, ensuring availability of services, and minimizing disruptions from utilizing a number of different providers[20] - justified the exclusive contract.Part of the reason the court held for the plaintiff on this basis, in this matter, is probably because it dealt with the healthcare field. In general, antitrust decision makers in the United States have shown more willingness to credit efficiency claims in the healthcare area than other areas given that most of the claims have to do with morbidity and mortality rather than monetary effects.

VII. ANSWERING THE CHICAGO SCHOOL CHALLENGES

While the proposed quantitative foreclosure analysis is a vast improvement over *per se* treatment of these restraints, at times the various criteria for a finding of anticompetitive behavior may be met, but the analysis would still be incomplete. It may often be helpful to keep some of the Chicago School challenges in mind; doing so can help establish a more complete theory of competitive harm. Specifically, (1) what is it that the dominant firm is seeking to accomplish that it could not already accomplish without the restraint? And (2) why do customers agree to participate in a scheme that would have an adverse effect on them? There are numerous answers to these challenges, but it will often prove helpful to not lose sight of these challenges in an actual investigation. For example, Joe Farrell, certainly no friend of the Chicago School, still refers to these Chicago School challenges as "organizing principles."[21] This would appear to be evidence of the continuity between the so-called Chicago and Post-Chicago schools.

Consider the Windows Media Player (WMP) case in the EU described by the paper.[22] In this case, the Commission found that Microsoft infringed Article 102 by tying the WMP with its Windows PC operating system (Windows). This case would appear to pass the quantitative foreclosure test for tying laid out in the paper. Clearly, Windows had a dominant position in operating systems and the tie foreclosed a significant avenue of distribution. In the absence of significant and compelling efficiencies, the practice would appear to warrant condemnation under this so-called effects based analysis. However, it is not clear these steps alone demonstrate harm to competition as opposed to harm to competitors.

Let us consider the first Chicago School challenge—i.e., the one monopoly profit theorem. Given that Windows had a dominant position in operating systems, what did it hope to accomplish that it was not already able to accomplish through its virtual monopoly in operating systems? Because the WMP and the operating system appear to have been consumed in fixed proportions, it appears to be a classic case where its monopoly power could not be extended.

Now, clearly there are models that show that the one monopoly profit theorem need not hold, including that used by the US Department of Justice in its famous *Microsoft* browser case, with a more formal model of that theory having been developed by Carlton & Waldman[23] and others. Under this theory, the tied product might be a launching pad for entering the tying product market. This gives the monopolist a way in which it can increase (long run) profits through tying.

Alternatively, there is Whinston's theory where the tying product can be used to "organize" competition in the tied good market.[24] Consider a resort on an isolated island with a restaurant. The restaurant is open to other tourists in addition to guests at the resort. By requiring guests at the resort to use the restaurant, the resort monopolist can deny sufficient scale for other restaurants and thereby charge monopoly prices to tourists not staying at the resort.

Alternatively, one might argue that the WMP restraints resulted in a loss of variety and/or innovation and that, therefore, the consumer harm prong of the foreclosure test was met even if Microsoft would not raise prices because of the tie. Overall, it is not clear this argument answers the Chicago School challenge. As noted in the GN paper, the one monopoly profit theorem implies the monopolist should want a more competitive complementary market since this enables it to achieve greater profits on the monopoly good. A more competitive market would certainly include a market with more variety or innovation. Thus, it is not clear that positing a "but for" world that includes more variety and innovation solves the one monopoly profit challenge and is therefore a complete theory of harm.

Moreover, caution is warranted if loss of variety is the sole or primary harm that can be identified. On the one hand, the importance of variety relies heavily on the welfare standard chosen. Under a consumer welfare standard, loss of variety would appear to be an unambiguous bad. On the other hand, it is not clear a competitive market produces the optimal amount of variety. Variety comes at a cost and it is not difficult to develop an economic model that shows the cost of increased variety may not be worth the benefit. Thus, new products that only capture sales from existing competitors are less likely to enhance overall social efficiency than are products that are expected to grow the market. Innovation can be a similarly uncertain standard since the relationship between market structure and innovation is undetermined. That is, it is unclear whether competitive or monopolistic market structures result in more innovation.

THE IMPORTANCE OF VARIETY RELIES HEAVILY ON THE WELFARE STANDARD CHOSEN. UNDER A CONSUMER WELFARE STANDARD, LOSS OF VARIETY WOULD APPEAR TO BE AN UNAMBIGUOUS BAD. ON THE OTHER HAND, IT IS NOT CLEAR A COMPETITIVE MARKET PRODUCES THE OPTIMAL AMOUNT OF VARIETY.

There is at least one exclusive dealing case in the US where the case appears to have been dismissed on the grounds of the one monopoly profit theorem: *E&L Consulting Ltd. v. Doman Industries* (2006). In this matter, the plaintiff was a distributor of the defendant's lumber products in several northeastern states. When another distributor, with which the defendant signed an exclusive dealing contract, replaced the plaintiff, the plaintiff sued. Here the Second Circuit upheld a lower court's dismissal of the case, holding that the plaintiff failed to demonstrate any harm to competition. The court noted that the defendant's 95 percent market share meant that any exclusive dealing arrangement "provides no monopolistic benefit to [the lumber manufacturer] that it does not already enjoy and would not continue to enjoy if the exclusive distributorship were enjoined."

A full consideration of the Chicago challenges could also be beneficial to the standards proposed for the other practices, such as conditional rebates (both single and multiproduct). Thus, conditional rebates involve giving customers lower prices, and clearly that is the essence of what the competition laws are meant to protect. Careful consideration of the Chicago School challenge that customers would not enter into relationships that make them worse off would appear to be warranted in such situations.

First consider the multi-product case. In the case of a multi-product rebate, the customer pays less than the monopoly price for the tying product in exchange for procuring another competitively-supplied good from the monopolist. Assuming the monopolist is not refusing to deal with customers that do not purchase the competitive good from it, the customer has the option of paying the monopoly price on the tying product and procuring the tied product from the competitor. Thus, on a simple level, the customer must be better off if he chooses to procure both goods from the monopolist. Similarly, single product conditional rebates operate in the same way—the customer chooses to obtain some portion of his contestable demand for the good from the dominant firm in order to obtain a discount on the non-contestable portion. Since he has the option of paying the monopoly price for the noncontestable portion and procuring the contestable portion from the monopolist's rivals, he will only accept the dominant firm's conditional rebate if he is better off. Nevertheless, despite the fact that the customer is better off, clearly these situations can violate the "equally efficient competitor" test described by GN in the paper. (This test is also called the *Ortho* test among other names in the US after various Court decisions that have applied similar tests.[25])

There are a number of Post-Chicago models that have answered this Chicago School challenge and shown that customers can be made worse off by these conditional rebates. For example, Nalebuff, among others, has shown that the dominant firm can increase its profits from such an arrangement.[26] Nevertheless, in this model, consumers still benefit from the discount in the short-run; otherwise, they would not accept the deal.[27] The customer harm in this group of models comes in the long-run, when customers may be made worse off as the exit of competitors with difficult re-entry leads to monopolization of formerly competitive markets. The injury of competitors can also dampen incentives to innovate.

One might argue that this is clearly in line with the implications of the equally efficient competitor test. However, it differs in that there is a clear articulation of how consumers can be induced to participate in the scheme. It also clearly indicates that customers are better off in the short-run, which a simple application of the *Ortho* test does not necessarily make explicit. Indeed, under this class of models, conditional rebates are similar to a predatory story, where short-term pricing benefits must be weighed against longer-term harms (although, unlike a predatory story, the dominant firm can actually increase its profits in the short-run). It is noteworthy that GN advocate a predatory pricing type standard for such cases because that is exactly what these models suggest is going on, in a sense. However, there may be effects in terms of how much enforcement there would be in this area from treating such matters as predatory pricing matters. There are relatively few challenges by any global agency regarding predatory pricing matters,[28] so adopting such a standard may be a very stringent one from an enforcement perspective.

Similarly, there is another class of models, for example the one proposed by three economists that were, at the time, affiliated with the US Department of Justice that suggests there need not be such a short run trade-off and consumers *can* be made worse off in the short-run as well as the long-run.[29] Although the argument is complicated, in their model the customer is given a choice between paying a very high price for the monopoly good (e.g., a price even above the monopoly price or simply not being able to procure the good at all unless they purchase the bundle) and procuring both goods from the monopolist. The customer purchases the bundle because this is better choice of those offered to him, but he is worse off relative to a situation where bundling would not be permitted. This model is highly controversial, not least of which because the monopolist's offer may not be "credible."[30]

The point here is not to go through these various conditional rebate and bundling models. It is only to indicate that the *Ortho* test, in and of itself, even in the absence of procompetitive efficiencies, may not be sufficient to establish customer harm. Thus, something of a broader perspective may be needed to avoid false positives.

VIII. EFFECTS AND COUNTERFACTUALS

Certainly, a consideration of possible effects might be a useful part of any analysis. GN refer to a counterfactual analysis as a possible means for getting at the issue of effects; this could be a very useful tool in addition to answering the Chicago challenges for assuring that what is being done is protecting competition, not competitors. However, caution in applying the counterfactual to consumer or social welfare is advisable. On the one hand, there are issues of measurement. For example, ascertaining that prices would have been lower "but for" some vertical restraint cannot generally rely on simple evidence that prices went up after a dominant firm implemented some kind of practice. Such evidence typically requires that anticompetitive effects be isolated from other determinants of price. Thus, price may have gone up due to other supply or demand factors that also changed around the time of the practice's implementation, and these should be controlled for.

PRICE INCREASES IN AND OF THEMSELVES ARE NOT ALWAYS INDICATIVE OF CONSUMER HARM. RECALL THAT MANY OF THE AFOREMENTIONED EFFICIENCIES FROM VERTICAL RELATIONS RESULT IN EITHER GREATER DEALER OR MANUFACTURER EFFORT.

Further, price increases in and of themselves are not always indicative of consumer harm. Recall that many of the aforementioned efficiencies from vertical relations result in either greater dealer or manufacturer effort. In some cases, this will result in price increases that reflect a higher quality product (which may manifest itself in things such as a more pleasant shopping experience through greater dealer service). Similarly, both foreclosure and the possible efficiencies from vertical restraints can increase a firm's market share. Thus, increases in the market share of the dominant firm and a reduction in share for other firms are not necessarily indicative of foreclosure or harm.

Output effects might be the most unambiguous. If the practices are, on net, anticompetitive, output would go down and vice versa. However, measuring output is still subject to the same caveat that output may have changed for reasons unrelated to the practice, and these possible factors should be accounted for.

IX. ANSWERNG THE CHICAGO CHALLENGES DOES NOT NECESSARILY MAKE IT HARDER TO CHALLENGE ANTICOMPETITIVE VETICAL RESTRAINTS

It may seem that arguing for more attention to Chicago principles is equivalent to advocating for more obstacles to bringing cases against vertical restraints. This is not the goal. At times it may be easier to establish harm using such an approach. For example, as noted by GN, the foreclosure approach can be quite difficult to apply. Consider the conditional rebate test. A price-cost test applied to contestable sales involves estimating three magnitudes that can often only be estimated imprecisely: what does the dominant firm believe are the contestable sales; what is the dominant firm's incremental cost of supplying these sales; and what is the alleged dominant firm's revenue from supplying these sales? Estimating each of these magnitudes is likely to be very difficult. A supplier may not know exactly how much sales are at-risk. Incremental costs are sometimes difficult to estimate because it can be difficult to determine the time intervals and volume levels at which some fixed costs become variable. Finally, the financial and non-financial considerations that a supplier offers on at-risk sales can be difficult to quantify.

A recent working paper by two FTC economists seeks to address the Chicago School challenge of why customers would accept an arrangement that appears to hurt them by applying a Post-Chicago model to the *Intel* case.[31] As part of this effort, they contrasted this approach with applying the *Ortho* test to the same case. The information requirements that might be needed to apply their approach to that case appeared considerably less burdensome to both the competition agency and the parties, and appear to have provided a more complete theoretical framework as well.

X. MONOPOLIZATION

FINALLY, ONE THING THE PAPER MIGHT CONSIDER MORE EXPLICITLY ADDRESSING IS THE POSSIBILITY OF MONOPOLY CREATION THROUGH VERTICAL RESTRAINTS AS OPPOSED TO MONOPOLY PRESERVATION.

Finally, one thing the paper might consider more explicitly addressing is the possibility of monopoly creation through vertical restraints as opposed to monopoly preservation. It is not clear where the paper is coming down on this right now, but it is something Brazil competition law stakeholders may want to consider.

This could be an area where US law and practice is actually more "interventionist" than the EU with respect to dominant firm restraints. In the US there is an incipiency standard regarding many vertical restraints. Article 102, which prohibits "abuse of dominance," may have much more difficulty trying to restrain non-dominant firms that are attempting to obtain a monopoly.

The legal standard in the US requires showing the existence of potentially problematic conduct, intent to monopolize, and a "dangerous probability of success." While the monopoly maintenance analysis focuses on evidence that shows the upstream firm's current or potential rivals cannot expand, proving monopolization requires evidence showing that rivals either will shrink, or have shrunk, because of the upstream firm's conduct.

Indeed, monopolization may involve competition for an exclusive - that is, situations in which companies compete to be the sole supplier for a particular distributor (for example, mobile phone manufacturers competing to be the sole or primary supply to a mobile network provider). This opens up an additional area of discussion, but suffice it to say, many economic models indicate competition among firms for an exclusive can be among the most intense forms of competition. Thus, this area might involve evaluating a trade-off between intense competition in the short run versus a less competitive long run.

XI. OTHER RECOMMENDATIONS

Currently there is very little empirical research on the actual effects of vertical restraints. One area Brazilian academics or its competition agency CADE may wish to foster is what are referred to in the United States as retrospectives and what other jurisdictions refer to as impact evaluations. The US FTC has a fairly extensive program looking at past merger actions, and many of the reports are available at the working paper website.[32] Most of these studies have focused on mergers that were close calls but allowed to go through. Price has been the variable of interest in most of these studies. Nevertheless, other issues have been considered, including one study of possible quality effects from a hospital merger, and a study looking at changes over time in an industry where a merger was blocked.

Despite this active program in the merger area, not much has been done in the nonmerger area. Clearly such studies would be difficult and many of the caveats mentioned with respect to evaluating effects would apply here. But this appears to be something potentially quite rewarding and useful, and can make significant contributions to both competition enforcement and the economics literature.

XII. CONCLUSION

The GN paper is a very useful descriptive and prescriptive reference for Brazilian competition stakeholders. Whether its findings should be incorporated into formal guidances, or something less formal, should be decided on the basis of the nature of both Brazilian competition laws and the flexibility of the Brazilian economy. While the proposed effects based analysis are far superior to *per se* treatment of vertical restraints, the framework can be further improved by careful attention to the Chicago School challenges.

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1. Economist, US Federal Trade Commission, Washington, DC 20580, ssacher@ftc.gov. The views expressed in this paper are solely those of the author and do not represent the views of the Federal Trade Commission or any individual Commissioner. This article is based on remarks delivered at the Centre for the Study of Development Strategies (CEDES), Conference on Vertical Restraints Adopted by Dominant Firms, in Brasilia, Brazil, December 6, 2012. Andrew Heimert provided helpful comments and suggestions. Remaining errors are my own.

2. Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings issued in December 2008, [2009] OJ C45/7.

3. See Damien Geradin, For a Rigorous 'Effects-Based' Analysis of Vertical Restraints Adopted by Dominant Firms: An Analysis of the EU and Brazilian Competition Law (June 2012).

4. E.g., see Bill Kovacic, The Antitrust Double Helix, 2007 COLUMBIA BUSINESS LAW REVIEW 1.

5. Often the conclusions of these models are very sensitive to the assumptions behind them as well.

6. E.g., see George Stigler. *A Note on Block Booking,* in Stigler, THE ORGANIZATION OF INDUSTRY (1968).

7. *International Business Machines v. United States* (1936).

8. Administrative Proceeding 08012.000172/1998-42, Claimant: Power-Tech Teleinformática Ltda, Defendant: MatelTecnologia de Informática S/A - MATEC, Reporting Commissioner: Celso Fernandes Campilongo, DOU: May, 13, 2003.

9. *Eastman Kodak Company v. Image Technical Services, Inc.*, 504 US 41 (1992).

10. E.g., see Benjamin Klein, Market Power in Antitrust: Economic Analysis After Kodak, 3 SUP. CT. ECON. REV. 43 (1993).

11. E.g., see Seth Sacher, The Past, Present and Future of Antitrust, 11 GEORGETOWN JOURNAL OF INTERNATIONAL AFFAIRS 115 (2010).

12. Frank Easterbrook, The Limits of Antitrust, 63 Texas Law Review 1 (1984).

13. Another reason the US may be more permissive toward dominant firm conduct has been put forward by Bill Kovacic (*supra* note 4). According to this argument, the US courts have raised liability standards to discourage the excess costs associated with private rights of action. Thus, private antitrust rights of action entail costs associated with mandatory treble damages, asymmetric shifting of costs, broad rights of discovery, class actions and jury trials. The mere threats of such costs could excessively deter legitimate conduct. The courts may have attempted to offset the possibility that the threat of these costs could be used to deter procompetitive conduct by raising liability standards.

14. Administrative Proceeding 08012.009991/1998-82, Claimant: Participações Morro Vermelho Ltda. Defendant: Condomínio Shopping Center Iguatemi and Shopping Centers Reunidos do Brasil Ltda, Reporting Commissioner:Roberto Pfeiffer, DOU: April, 14, 2004 and 113Administrative Proceeding 08012.006636/1997-43, Claimant: Associação dos Lojistas de Shopping do Estado de São Paulo and Procuradoria Geral do CADE, Defendant: Condomínio Shopping Center Iguatemi, Reporting Commissioner: Luís Fernando Rigato Vasconcellos, DOU: September, 19, 2007.

15. See US Department of Justice, *Competition and Monopoly: Single Firm Conduct Under Section 2 of the Sherman Act* (2008) *available at* www.usdoj.gov/atr/public/reports/236681.htm.

16. *LePage's Inc. v. 3M*, 324 F.3d 141 (3d Cir. 2003), *cert. denied*, 124 S. Ct. 2932 (2004).

17. Brief for the United States as Amicus Curiae, *3M v. Lepage's, Inc.*, 2004 WL 1205191 (May 28, 2004).

18. James, Cooper, Luke Froeb, Dan O'Brien and Michael Vita, *Vertical Antitrust Policy as a Problem of Inference*, International Journal of Industrial Organization, September 2005.

19. *The Imaging Center, Inc. v. Western Maryland Health Systems, Inc.*, 158 Fed.Appx. 413 (4th Cir. 2005).

20. *Id.* at 420.

21. Joseph Farrell, Deconstructing Chicago on Exclusive Dealing, 465 Antitrust Bulletin, 50 (2005).

22. Commission Decision, 24 March 2004, Case *COMP/C-3/37.792 Microsoft*.

23. Dennis W. Carlton and Michael Waldman, The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries, 33 rand journal of economics 194 (2002).

24. See, Michael Whinston, Tying, Foreclosure, and Exclusion. 837 American Economic Review 4 (1990).

25. E.g., s*ee Ortho Diagnostics Sys., Inc. v. Abbott Labs., Inc.*, 920 F. Supp. 455.

26. Barry Nalebuff, Bundling as an Entry Barrier, 119 Quarterly Journal of Economics 1 (2004).

27. Thus, a small reduction in price of monopolized good yields a small reduction in profits for the monopolist, but a much larger increase in consumer surplus. Conversely, a small increase in the price of the competitive good yields a large increase in profits for the monopolist, but only a small reduction in consumer surplus. Thus, the monopolist increases profit while consumer surplus increases as well. Essentially, this is a form of price discrimination where the bundle enables the monopolist to "carve out" consumer surplus on the monopolized good.

28. E.g., see *ICN Report on Predatory Pricing* (2008), p.3., "[d]uring the last ten years, responding agencies brought approximately twenty-four cases in which a predatory pricing violation was established and have initiated at least five times as many investigations in which predatory pricing was alleged, but no violation was found."

29. Patrick Greenlee, David Reitman, and David Sibley, *An Antitrust Analysis of Bundled Loyalty Discounts* (October 30, 2006). Economic Analysis Group Discussion Paper No. 04-13 (Revised). Available at SSRN: http://ssrn.com/abstract=600799 or http://dx.doi.org/10.2139/ssrn.600799

30. E.g., see Gregory K. Leonard, The Competitive Effects of Bundled Discounts in Wu, Economics of Antitrust: Complex Issues in a Dynamic Economy, (2007).

Can We Rely Only On Effects-Based Analysis? Comments On Geradin And Pereira Neto

By Paulo Furquim de Azevedo

I. INTRODUCTION

So common and yet so controversial. Vertical restraints are among the contractual forms that Ronald Coase ironically called 'strange forms'; strange, not because they are unusual, but for the lack of a consensual understanding among economists and competition authorities about how to assess their effects on competition and welfare (Menard, 2004).

It was not always like that. During the 1950s, at the Warren Era, economists had a reasonable common understanding, shared with the competition authorities, that vertical restraints were presumably harmful to competition and to consumer welfare (Hovenkamp, 2005). Since then, economics has advanced significantly, first with the Chicago Critique and subsequently with the Post Chicago School. Our understanding about vertical restraints is certainly more comprehensive and rigorous, and while this makes the job of competition authorities more accurate, it does not make it easier. In particular, the theoretical models, even those largely accepted, do not provide a clear guidance for policy implementation, such as determining the degree of foreclosure that is sufficient to harm competition, or evaluating how to quantify efficiency gains from vertical restraints.

Without a common knowledge as to how to translate the theoretical models into practical rules, it is difficult to discriminate lawful and unlawful vertical restraints. Therefore, the rulings of competition authorities may be inconsistent and, hence, unpredictable. As firms are unable to anticipate competition authorities' decisions, antitrust institutions fail to deliver their primary role: to induce behaviors and to deter anticompetitive strategies.

This is one of the conclusions of Geradin and Pereira Neto's article on vertical restraints.[2] Although competition policy is sometimes consistent on the general principles that orient the analysis of vertical restraints – as observed, for instance, in the Brazilian case – the application to concrete cases is mostly inconsistent. Their suggestion is to anchor the antitrust scrutiny in what they call a "rigorous effects-based analysis," grounded mainly in quantitative evidence and economic theory. These short comments aim to discuss this proposition in further detail, and to argue that some presumptions are still necessary in the investigation of vertical restraints. Moreover, the problem of inconsistency – rightly pointed out by the authors – is more appropriately addressed by means of explicit presumptions in the form of safe harbors.

The remainder of these comments is divided into four sections. The next section presents the main features and results from Geradin and Pereira Neto's article. The following section critically discusses the proposition that the enforcement of competition policy towards vertical restraints should abandon presumptions based on qualitative evidence and focus only in the quantitative assessment of the anticompetitive effects of those conducts. An illustrative case (the Madeira River exclusive dealing case) is then presented to exemplify the importance of qualitative evidence and presumptions in the scrutiny of vertical restraints. The last section concludes.

II. GERADIN AND PEREIRA NETO: FOR A RIGOROUS "EFFECTS-BASED" ANALYSIS OF VERTICAL RESTRAINTS

This is a long-awaited article. There are plenty of competent surveys on the economic theory empirical literature of vertical restraints, and about the jurisprudence in several jurisdictions.[3] What was missing was a study on the antitrust praxis that was applicable for both developed and emerging jurisdictions, such as both the EU and Brazil, and, at the same time, combined the positive and normative dimensions of competition policy. With the support of the Center for Studies in Social and Economic Law (CEDES), a Brazilian think tank, Geradin and Pereira Neto fully meet the readers' expectations in an excellent study on the subject. The paper is not restricted to the economic or legal debate, but is oriented to transform and improve public policy.

In a clear and comprehensive analysis, the article identifies the principles that drive the applications of antitrust norms towards vertical restraints by means of a comparative analysis of the antitrust praxis in the EU and Brazil. This was a wise choice since both jurisdictions are similar in their administrative enforcement systems, and in their legal origins, inasmuch continental European law largely influenced the Brazilian judicial system. Their main difference is the stage of economic development, which allows for an interesting discussion about the design of competition policy in developed and emerging economies. Moreover EU and Brazil have become important benchmarks in antitrust enforcement since the mid-1990s; the EU as the most influential jurisdiction, for its implementation within 27 countries and institutional ties with its former colonies; and Brazil as a benchmark for developing countries, whose competition policy systems are still incipient and face various constraints to their development.

The study is also careful to identify the institutional differences between the two jurisdictions that impose non-negligible restraints on the emulation of the European experience as a parameter for the application of antitrust in Brazil. Policy suggestions to the Brazilian jurisdiction take into account not only, as expected, the legal framework for competition policy, but also the resource constraints that the competition authority faces in developing countries like Brazil. The study acknowledges that CADE, the Brazilian authority, consistently observed certain principles of analysis, such as dominant position, market foreclosure and compensatory efficiencies. Nevertheless, the application to concrete cases tends to rely on qualitative evidence, rather than the quantitative assessment of anticompetitive effects, which creates leeway for inconsistencies. In their words:

> "A close look at the case law shows substantial variance in the qualitative analysis implemented by the Brazilian authorities. This variation generates inconsistency, especially when it comes to a definition of standards of proof in the context of the rule of reason analysis."

The European experience illustrates how the scrutiny of vertical restraints grew in accuracy and predictability. The 'rigorous effects-based' analysis, deeply grounded on economic theory and quantitative evidence, is the basis of the evolution of the EU antitrust enforcement on exclusive dealing, bundling, and rebates. This is one of the main suggestions from the authors to competition authorities in general, and to CADE in particular, given that they identify in the Brazilian authority a higher inconsistency in terms of standard of proof.

To reduce the punishment of procompetitive business practices (i.e., type 2 errors or 'false positives'), the authors propose that the antitrust authorities, similar to what occurs in the European Union, use the criterion of 'equally efficient competitor.' In other words, a vertical restraint should be unlawful only if it excludes competitors that are as or more efficient than the company under investigation. Underlying this proposition is the notion that antitrust is not intended to preserve competitors – efficient or not – but to sustain competition, so as to ensure the selection of practices, technologies, and organizational forms that are more efficient.

The authors also argue that the competition authority should rely on quantitative analysis, grounded in economic theory, and avoid qualitative assessments, which, according to the authors, would be more vulnerable to discretionary interpretation of antitrust authorities. By requiring a standard of proof less subject to variations in interpretation, the decision of the antitrust authority would be more predictable and thus could fulfill its role of orienting strategies and deterring anticompetitive conducts.

III. A CRITICAL ASSESSMENT

These proposals are a valuable input for discussion on the design of competition policy. The study not only inspires new thinking about antitrust practice, but also opens up the debate to criticism and counterarguments. In these comments, I highlight two aspects for a more detailed discussion: the unavoidable trade-off between deeper analysis and costs of investigation, and the myth of precision of quantitative models.

IN THESE COMMENTS, I HIGHLIGHT TWO ASPECTS FOR A MORE DETAILED DISCUSSION: THE UNAVOIDABLE TRADE-OFF BETWEEN DEEPER ANALYSIS AND COSTS OF INVESTIGATION, AND THE MYTH OF PRECISION OF QUANTITATIVE MODELS.

Throughout the paper, there is an implicit assumption that a deeper (more rigorous) analysis is always better, irrespectively of resources constraints. This idea is clear in the following excerpt:

> "Modern economic thinking teaches that competition authorities and courts should focus on the effects of vertical restraints on competition in the market. As will be seen below, whether vertical restraints create foreclosure effects may require complex analysis. Yet, failure to engage in such analysis will lead to so-called Type 1 or Type 2 errors. […] There is debate in the literature as to whether Type 1 errors are more frequent, than Type 2 errors, and vice-versa. As both forms of errors are damaging, it is important for competition authorities and courts to minimize them through <u>proper analysis."</u>

It is undisputable that a predictable and more consistent analysis is preferable, *ceteris paribus* the costs of investigation. The crucial question is defining the standard of proof given an efficient investigation; *i.e.* that provides the most comprehensive set of answers for a given set of investigation resources. In this setting, there is always a trade-off between the costs of investigation and the level of type I and II errors; otherwise, the preferable standard of investigation would always be the full rule of reason, with no presumptions. What the authors call a “proper analysis” that minimizes decision errors may be too costly or even unattainable. That is the reason why authorities establish decision rules and presumptions, so as to save investigative resources. In particular, in the case of emerging economies, where the antitrust agency normally has fewer available resources and expertise, requiring more sophisticated analysis would probably imply higher false negatives.

IN PARTICULAR, IN THE CASE OF EMERGING ECONOMIES, WHERE THE ANTITRUST AGENCY NORMALLY HAS FEWER AVAILABLE RESOURCES AND EXPERTISE, REQUIRING MORE SOPHISTICATED ANALYSIS WOULD PROBABLY IMPLY HIGHER FALSE NEGATIVES.

In particular, in the case of vertical restraints, requiring the proof of actual effects, as suggested in several passages of Garadin and Pereira Neto’s article, will probably lead to a decrease in false positives (the benefit of a higher standard of proof), but also, on the other hand, to a sharp increase in false negatives. This is not necessarily a better policy, as the Madeira River case, presented at the end of these comments, illustrates.

Moreover, empirically establishing causality between a strategy and its anticompetitive effects is quite difficult and rare (Angrist and Pischke, 2008). In the vast majority of vertical restraint cases there is not enough information to statistically prove causality of a foreclosure effect, which implies that requiring that standard of proof would ultimately imply ‘underpunishment’ of unlawful conducts.

The second aspect to highlight is the implicit belief that economic models provide definite and undisputable results or, alternatively, that it is preferable not to rely on qualitative evaluation, but only or mainly on quantitative evidence. This view is clear in the following excerpt.

> “For rapid developing jurisdictions like Brazil, which are attempting to leapfrog earlier stages of more mature jurisdictions, the analytical framework proposed by the Guidance Paper could serve as a starting point to provide some hard edge to an otherwise soft effects-based approach applied by the authorities so far. Indeed, in Brazil, the problem is not so much that there is a lack of consensus over an effects-based approach, but the fact that this approach is carried out through balancing tests relying on qualitative, rather than quantitative, criteria. This leads to considerable inconsistency and uncertainty. With some adaptations to the reality of these developing jurisdictions, new guidelines could be used to establish substantive standards to evaluate vertical restraints, leading to a healthy convergence of analytical approaches based on modern economic theory.”

There is no doubt that rigorous economic thinking is necessary for an appropriate scrutiny of vertical restraints. Less trivial, though, is to conclude that the economic thinking should count on quantitative evidence alone. The reasons for keeping qualitative evidence at the core of the antitrust analysis are twofold. First, there is no *a priori* justification to discard information, be it qualitative or quantitative. These two sets of information are usually distinct, and, therefore, relying only on the quantitative set implies less information. In short, there are good reasons not to dismiss qualitative information on the analysis of vertical restraints. Second, the adoption of rigorous (formal and quantitative) economic models does not necessarily translate into lower discretion of the judge or greater predictability of their decisions. Available economic models are often sensitive to arbitrary choices (auxiliary hypothesis) and economic theory does not always provide a definitive answer to eliminate or mitigate the discretion of the modeler. Behind the apparent accuracy of the figures, there is great variation in their reliability and robustness.

For all this reasoning, the definition of safe harbors may be a more efficient alternative than an in-depth, effects-based analysis. The authors acknowledge the convenience of this approach in several passages of their article. It is also arguable that there is some benefit from the presumptions of anticompetitive effects in some extreme cases that could dispense with the actual observation of effects. In the next section, the Madeira River case illustrates how useful it is to rely on presumptions of potential foreclosure, rather than the observation of actual effects.

IV. THE MADEIRA RIVER CASE

The 2007 Madeira River case[4] is arguably the most effective in Brazilian competition policy, at least if one takes into account its immediate effect on Brazilian economy. The case ended with a settlement (*Termo de Cessação de Conduta*) signed between CADE – the Brazilian competition authority – and Construtora Norberto Odebrecht S.A., which was being prosecuted for exclusionary conducts by means of exclusive dealings contracts. Odebrecht is a diversified company, but excels mainly in building large infrastructure projects, such as highways, bridges and hydropower plants. The administrative proceeding investigated illicit, exclusive-dealing contracts with a likely effect of market foreclosure in the public competitive bids for the concession of the hydroelectric power plants of Santo Antônio and Jirau, located at Rio Madeira.

The case required urgent measures, given the proximity of the competitive bid of those plants, which was, according to the evidence available, limited to one sole participant: Odebrecht. The company held the rights of exclusive-dealing contracts with three of the only four companies in the world that were able to provide the turbines necessary for the construction of the plants: Alstom, VA Tech and Voith Siemens. Furthermore, the fourth company, General Electric Company (GE), was contractually precluded from participating in the public bids, unless it did so through a consortium with Odebrecht, even though it could freely supply turbines to the winner consortium.

These specifications made the case especially subject to the anticompetitive use of exclusive dealing. Environmental concerns barred the hydroelectric plants of Santo Antonio and Jirau from using conventional turbines, and required surface turbines that allow the transit of fish and reduce environmental damage. Nevertheless, only the four companies mentioned above had the expertise and operational conditions to supply this type of equipment. Aggravating the situation, at least two suppliers, if not three, were necessary to make the required investment viable.

Therefore, there was strong evidence to presume market foreclosure, although it was not possible to quantify this effect or even to observe it concretely before the bids took place. Considering the urgency of the case, as the first public bid was expected to occur within the next three months, on September 14, 2007, the investigatory body of the Brazilian competition policy system[5] initiated an administrative procedure and, through a preliminary injunction, extinguished the exclusivity effects of the contracts signed between Odebrecht and the four suppliers of surface turbine. That injunction was then contested in court by Odebrecht, but the company and the antitrust authorities ended up signing a settlement on October 29, 2007, where Odebrecht renounced to all its exclusivity rights before the four suppliers. GE was immediately released from its obligation, including being part of a rival consortium, while the other three companies became free to supply equipment to any rival consortium that eventually won the public bids.

Given the technical complexity, the drafting of that agreement involved several State bodies that formed a task force to handle the case with the required urgency. This was a very rare case whose results could be immediately assessed. The bid was the price to be charged to final consumers, with a maximum price of R$122/MWh, for 30 years of concession. Without competition, Odebrecht would rationally choose the maximum price as its bidding strategy, and there was clear (qualitative) evidence that it was the sole expected bidder. The settlement allowed for the participation of at least two competitors, that formally manifested their interest during the proceedings. At the public bid's auction, the winning bid, from Odebrecht itself, was of R$78,87/MWh, 35.4 percent lower than the maximum price. The present value of those savings amounted to R$16,4 billion, more than two thousand times greater than CADE's annual budget at that time, which was about R$8 million.

A rival consortium won the following public auction, which at first seemed very unlikely under the previous contractual conditions. This case illustrates, as few others do, the extent of damages that can result from unilateral conducts based on vertical restraints. Moreover, the Madeira River case would be probably dismissed if the standard of proof would require the observation of actual effects (that would only occur after the public auction) and an in-depth quantitative analysis. At the end of the day, the case illustrates how important it is to rely on presumed effects, making the intervention possible and timely.

THE MADEIRA RIVER CASE WOULD BE PROBABLY DISMISSED IF THE STANDARD OF PROOF WOULD REQUIRE THE OBSERVATION OF ACTUAL EFFECTS (THAT WOULD ONLY OCCUR AFTER THE PUBLIC AUCTION) AND AN IN-DEPTH QUANTITATIVE ANALYSIS.

V. CONCLUSIONS

Competition authorities and practitioners will probably have Geradin and Pereira Neto's article as a key reference for the analysis of vertical restraints. The study fills the gap between the academic surveys on the law and economics of vertical restraints, and the actual decision on the level of competition authorities, with a competent and comprehensive comparative analysis of the EU and the Brazilian jurisdictions.

For being a controversial issue, it is not expected that the publication of this study will end all disputes on the assessment of vertical restraints. Its role is primarily to foster the debate and to instigate the reform of the antitrust praxis towards a more predictable and effective intervention. And this is an aim that Geradin and Pereira Neto achieve with excellence.

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2. Geradin, D. and Pereira Neto, C.M. *For a rigorous "effects-based" analysis of vertical restraints adopted by dominant firms: an analysis of the EU and Brazilian competition law*. Working Paper presented at the CEDES Seminar on Competion Law, Brasilia, Dec 6th 2012 and reproduced in this issue of *CPI Journal*.

3. To name but a few, see Dobson and Waterson (1996), Posner (2005), Ray and Tirole (2007), and Lafontaine and Slade (2008).

4. Administrative proceeding # 08012.008678/2007-98, reported by Commissioner Luís Fernando Schuartz.

5. At that time, the Secretary of Economic Law, at the Ministry of Justice, played this role.

Economics Of Vertical Restraints For Multi-Sided Platforms

By David S. Evans[1]

This paper presents an overview of what economists can say about vertical constraints by multi-sided platforms at this stage in the development of our knowledge about the economics of these businesses. It describes the general procompetitive and anticompetitive uses of vertical restraints by multi-sided platforms. It then focuses on the role of critical mass for multi-sided platforms and how vertical restraints might be used on the one hand, anti-competitively to prevent rivals from achieving critical mass and long-term growth and, on the other hand, pro-competitively, to ensure the platform and its customers that the platform will remain viable.

I. INTRODUCTION

Some firms enter into agreements with their customers that limit their ability to buy from rivals of the firms. These agreements are called "vertical restraints." They include exclusive-dealing contracts, tying and bundling, conditional rebates, and meeting competition clauses. There is an extensive literature on how these restraints could increase economic efficiency, on the one hand, and how they could harm competition and consumers, on the other hand[2]. Vertical restraints are also the subject of a considerable body of decisions by courts and competition authorities.[3]

This paper is about the use of vertical restraints by a particular kind of business known as a multi-sided platform.[4] Multi-sided platforms create value by serving as intermediaries between two or more types of customers where one type of customer can realize value by interacting with another type of customer. The demand by one type of customer depends on the participation on the platform of one or more of the other types of customers.[5]

There are three main reasons for a focused analysis of vertical restraints by multi-sided platforms. First, certain features of these platforms raise special issues for the analysis of the procompetitive and anticompetitive uses of vertical restraints. Second, these platforms include an economically significant group of businesses including shopping malls, payments systems, software platforms, exchanges, dating venues, various types of media including radio, television, newspapers, and online businesses including search engines, social networks, and ecommerce. Third, multi-sided platforms are frequently under investigation for their use of vertical restraints; several important decisions have found that multi-sided platforms engaged in the anticompetitive use of vertical restraints.[6]

The literature on multi-sided platforms is relatively new.[7] It is related to an older literature on network industries that recognized the importance of direct and indirect network externalities in firm and competitive dynamics. The multi-sided platform literature has developed behavioral models for firms with interdependent demand that build on the earlier work on network effects. It has also shown that indirect network effects are important for many industries such as shopping malls and exchanges that were not considered by the network effects literature.

Some of the issues discussed in this paper were presaged in the network industry literature, particularly the possible role of exclusive dealing in foreclosing entrants, but the multi-sided platform literature provides a richer and more nuanced treatment of these topics.[8]

This paper presents an overview of what economists can say about vertical constraints by multi-sided platforms at this stage in the development of our knowledge about these businesses.[9] Section I describes several key features of multi-sided platforms that are helpful for analyzing the use of vertical constraints by these platforms. Section II explains how vertical restraints can help platforms achieve efficiencies that improve consumer welfare. Section III reviews possible anticompetitive vertical restraints in light of the traditional economics literature on vertical restraints and the more recent literature on the use of vertical restraints by multi-sided platforms. Section IV focuses on the key anticompetitive concern arising from the new literature on multi-sided platforms and the older literature on network effects: the use of vertical restraints such as exclusive dealing to prevent rival platforms, particularly entrants, from achieving the critical mass necessary for being viable platforms. Section V concludes with recommendations for how competition analysis should deal with vertical restraints given our current state of knowledge.

II. INTERDEPENDENT DEMAND AND EXTERNALITIES

Each type of customer for a multi-sided platform is referred to as a "side" of the platform. Multi-sided platforms facilitate interactions between members of each side. They do this by providing mechanisms that facilitate search, matching, and exchange. For example, financial exchange platforms provide mechanisms for helping traders search for trading opportunities, matching potential trading partners, and consummating transactions. Those interactions result in the creation of value. In some cases, such as dating venues, the platform simply gets the parties together and they decide whether there is a mutually advantageous exchange. In other cases, such as advertising-supported media, the platform subsidizes one side by providing valuable services to make members of that side available to the other side.

A. Externalities And Their Management

Multi-sided platforms typically have positive indirect network externalities that lead to positive feedback effects between the sides. Each member on one side can expect to realize more value if there are more members on the other side. That is because they have a higher likelihood of finding a trading partner and with more trading partners the expected value of the trade is higher as well. There is also a positive indirect externality in use between two trading partners. Each benefits if the other agrees to trade.[10] These positive indirect externalities result in the linkage of demand schedules for the various sides. The demand by one side depends on the participation of the other sides and vice versa. The demand schedules for the sides of multi-sided platforms are therefore interdependent. Multi-sided platforms also have positive direct network effects at least to a degree. Having more members on the same side attracts more members on the other side.

While positive indirect network externalities are the main reason multi-sided platforms create value these platforms often also have to deal with direct and indirect negative externalities. Negative direct externalities can arise from congestion (too many people at the mall), competition (at some point competition with other members outweighs the value of their attracting members to the other side), or bad behavior (nightclub brawls). Negative indirect externalities can arise because members on one side impose costs on members of the other side by behaving badly (hate speech on social networks), undersupplying or distorting information (selling practices on commerce sites), creating congestion (too many traders overloads electronic trading platforms), or otherwise reducing the value of the platform to the detriment of its members.

Multi-sided platforms create value for their participants, and profit for themselves, by managing these externalities. They can increase indirect network externalities, of course, by securing more members on each side of the platform. But, in addition, for a given number of members they can increase the value of the platform by increasing the amount of positive externalities among members and decreasing the amount of negative externalities. Multi-sided platforms have a number of instruments available for maximizing the value of the platform in addition to price. These include design choices, product offerings and the design and enforcement of rules and standards. Some of these instruments involve vertical restraints as discussed below.

As a result of positive indirect network externalities the entrepreneurs who start multi-sided platforms have to solve significant coordination problems to create an economically viable platform and one that can rely on positive feedback effects for growth. The platform must have enough members of each side on board to create a situation in which a member realizes enough value to participate in the platform and the platform can charge enough to operate profitably. Solving this conundrum is one of the key challenges these entrepreneurs face.

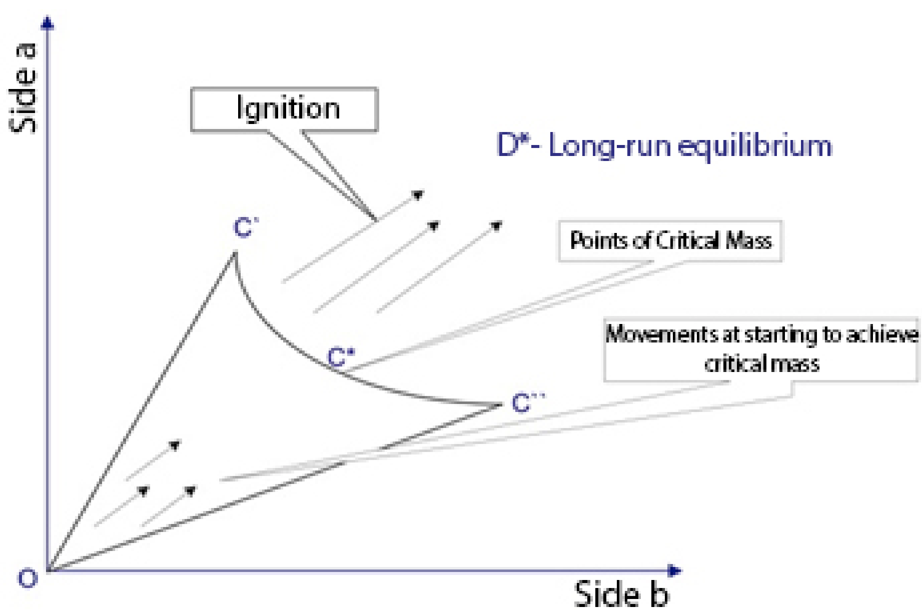
B. Critical Mass and Growth

Multi-sided platforms face a dynamic growth problem.[11] To be viable platforms need to achieve "critical mass" which involves a sufficient number of members of both sides to create enough value to attract more members of each side. Once a platform achieves critical mass indirect network externalities enable it to grow by attracting more members. That is, once a platform reaches critical mass, it "ignites" in the sense that it is propelled forward by its own momentum from positive-feedback effects. If a platform has not achieved critical mass then members who have joined it tend to stop participating because it does not provide enough value and new members do not join because they do not realize enough value either. In this case the platform "implodes" through a process in which positive feedback effects work in reverse: as members of one side stop participating, the value to members of the other side falls and some of them stop participating, which leads to more members of the first side to stop participating.

As a practical matter, platforms achieve critical mass through getting customers who like to try new things ("early-adopters"), customers with especially high values for participating in the platform, and customers who expect that the platform will obtain critical mass and are therefore willing to make the investment to join. If they can keep the interest of these initial customers, and get them to through increasing growth they can reach critical mass and ignite. If they cannot then they implode.[12] In some cases, platforms can start with critical mass by securing enough customer relationships before they launch.[13] In other cases they can move sequentially by attracting customers on one side (using content to attract viewers) and then when they have enough of those customers making them available to customers on the other side (advertisers).

Figure 1 shows the basic concept of critical mass and ignition for a two-sided platform with sides A and B and for a common case in practice. There is minimal numbers of customers, shown on C'-C", that, if achieved, provides a "thick enough market" or a sufficiently "liquid" market to permit sustainable growth. Once a platform achieves critical mass, by being at a point on C'-C", for example, it can grow to its profit-maximizing potential of D*; if it does not achieve critical mass on the segment C'-C" it contracts and ultimately fails. The optimal growth path to critical mass and to long-run equilibrium is well away from the horizontal and vertical axes in most plausible cases.[14] Relatively balanced growth is necessary. This is reflected in Figure 1 in that the equilibrium growth path to critical mass must occur within the triangle 0-C'-C". Having too many of one side and too few of another side will cause implosion.

Figure 1: Catalytic Ignition and Critical Mass



New multi-sided platforms must engage in a variety of tactics to move from an initial situation of having no consumers to a point of critical mass from which the business can grow through positive feedback effects. In doing so they often must shape the expectations of potential members. To incur the costs of joining and participating in the platform members of each side must expect that there will be enough members of other sides to make it worth their while.

Achieving critical mass is a difficult business problem that multi-sided businesses face that single-sided ones do not. The vast number of successful multi-sided businesses, however, demonstrates that ignition is a solvable problem. Moreover, the fact that many multi-sided industries support several viable platforms, and have experienced entry, demonstrates that the success of a first mover at ignition does not prevent followers from achieving critical mass either.[15] In some industries, the critical mass needed is relatively low as a proportion of total industry output.

C. Multi-Homing

The competitive dynamics of multi-sided platforms depend in theory and in practice on the number of platforms that a customer on each side uses, on differences between the sides in the number of platforms used, and on the ability of a customer on one side to dictate the choice of platform for the other side. A customer "single homes" if she uses only one platform in a particular industry and "multihomes if she uses several.[16]

Armstrong analyzed the role of "multi-homing" in platform competition. Suppose platforms in some market create value by having agents of Type A and Type B as members. If Type A agents only join one platform, then Type B agents can only gain access to Type A agents by joining that same platform. When there is single-homing on one side and multi-homing on the other side in his model, Armstrong shows that platforms have incentives to compete aggressively for the single-homing customer who will therefore pay low prices. With these customers on board the platform will then earn its profits from the customers who multi-home on the other side. Armstrong referred to the single-homing side as a "competitive bottleneck" in this situation.

Sometimes multi-homing customers on one side can dictate the choice of platform to agents on the other side of the market. For example, most consumers use multiple payment methods and even use multiple payment cards and most merchants accept all of these payment alternatives. In practice, one can argue that the consumer dictates which payment system is used. The consumer generally presents one particular payment method at checkout out of the choices the merchant has made available. For the purposes of that transaction the consumer single-homes and, by the same logic as above, the platform has an incentive to compete aggressively for the consumer to use their payment method.[17]

It is not clear how robust the "competitive bottleneck" argument is, however. In software platforms, for instance, the price structure is the opposite of what the competitive bottlenecks theory would predict. Most personal computer users rely on a single software platform, while most developers write for multiple platforms.[18] Yet personal computer software providers generally make their platforms available for free, or at low cost to applications developers and earn profits from the single-homing user side.

Nevertheless, platforms face a challenge in securing critical mass when customers single home. To reach critical mass entrants have to rely on attracting customers that have not yet committed to a platform or on persuading customers of other platforms to switch. Entry may, therefore, be challenging in mature platform industries where most consumers have committed to a platform and in situations in which there are significant platform switching costs.

D. Product Differentiation

Multi-sided platforms can engage in horizontal and vertical product differentiation. For one-sided firms, horizontal and vertical differentiation locates the firm near a pool of potential customers and helps determine pricing. For multi-sided platforms, by determining the customers on one side, horizontal and vertical differentiation affects demand on the other side. Because of these interdependencies, a platform must make differentiation decisions jointly for all of the sides it serves. Moreover, the selection of customers on one side is one possible way to differentiate the platform horizontally or vertically.

A shopping mall developer, for example, must decide on a number of different product attributes such as location, size, parking, and quality of construction. But it also needs to decide what kind of stores and customers it wants to attract. Those are obviously interdependent. It could be an upscale mall and only rent space to merchants with an upscale clientele. If it succeeds in attracting enough such merchants it will tend to attract an upscale clientele. In order to do this, of course, it is likely to make other decisions—such as locating close to wealthy towns and using better finishes—that help attract wealthy customers and merchants they tend to patronize.[19] Product differentiation, as this example suggests, is a tactic that firms can use to create value by making it easier for agents to find counterparties for value-increasing exchange. The upscale mall, for example, makes it easier for shoppers to find stores that serve their tastes and easier for stores to find customers. Platforms can also create value for agents on one side by limiting how much competition they face for a match.[20]

Product differentiation is a key reason why many industries with multi-sided platforms have multiple competitors even though indirect network effects and sometimes economies of scale would seem to propel them to monopolies.[21] Job placement provides an interesting example. The online portion of this industry consists of job boards that help match job searchers with employers through online postings and search. In the US there are two large job boards that cover many different job categories. But then there are hundreds of other job boards that specialize in different job segments such as professionals (LinkedIn.com) and media jobs (mediabistro.com). By specializing, these job boards presumably increase matching efficiency. Beyond the job boards there are recruiting services that work for employers or employees. The result is a highly fragmented industry of two-sided platforms.

III. VERTICAL RESTRAINTS AND PLATFORM VALUE

Platforms create value by making the exchange of pecuniary and non-pecuniary value more efficient. They do that typically by reducing the transactions costs for the members of the various sides of the platforms. The creation and distribution of that value are intertwined.[22] The platform owner can distribute the value created between the two sides, and thereby determine the consumer surplus each receives and to itself as profit. The distribution of value between the sides determines the extent to which the platform attracts participants on those sides. Platform owners may subsidize some sides—in the sense of providing marginal value at below marginal costs—to secure their participation.

The value created by the platform, and the overall consumer surplus distributed to the members of the multiple sides, depends in part on the platform's success in increasing positive externalities and reducing negative externalities. Moreover, the platform can create consumer surplus on a sustainable basis only if it reaches critical mass.

Vertical restraints can assist in this sustainable value creation.[23] To explain how we consider a two-sided platform consisting of sides A and B. The same considerations apply to platforms with more than two sides.

A. Procompetitive Explanations For Vertical Restraints By Multi-Sided Platforms

There are three broad categories of procompetitive explanations for vertical restraints that apply to multi-sided platforms.[24] First, vertical restraints help platforms achieve a natural monopoly that provides the largest benefits to consumers overall. Second, vertical restraints help platforms deal with expectation and coordination problems that result in welfare gains for platform users. Third, vertical restraints on one side of the platform benefit the other side of the platform and increase consumer welfare overall.

PRODUCT DIFFERENTIATION IS A KEY REASON WHY MANY INDUSTRIES WITH MULTI-SIDED PLATFORMS HAVE MULTIPLE COMPETITORS EVEN THOUGH INDIRECT NETWORK EFFECTS AND SOMETIMES ECONOMIES OF SCALE WOULD SEEM TO PROPEL THEM TO MONOPOLIES.

1. Natural Platform Monopolies

As a result of indirect network effects, customers on side A realize greater value when there are more customers on side B and customers on side B realize greater value when there are more customers on side A. There are some circumstances in which these positive feedback effects could imply that it would be socially optimal to have a single platform. That is, the industry served by the platform is a natural monopoly.[25] That could occur if there are no diseconomies of scale on the cost side, no congestion effects on the demand side, and homogeneous consumers on both sides so that there is not optimal to have differentiated platforms. The monopoly platform could maximize the value for consumers if the benefits of positive feedback effects outweigh higher prices resulting from the exercise of market power.[26] Vertical restraints that provide incentives for customers to consolidate demand on a single platform could therefore increase consumer welfare in this situation.[27]

This same argument applies even if there is not a natural monopoly. Vertical restraints could be used to help consolidate demand in a few possibly differentiated platforms. The general point is that with positive indirect effects there are gains at least up to a point in having customers on board the same platform.

2. Demand Coordination, Expectations, and Vertical Restraints

There are other possible procompetitive benefits of vertical restraints that do not hinge on the argument that consolidating demand increases consumer welfare. Vertical restraints can ensure the platform will have enough participation by members of side A to exceed critical mass and to grow through positive feedback effects. This provides value to the platform participants on all sides. They obtain some assurance that their investments in joining and participating in the platform will provide a return. The vertical restraints reduce the risk that the platform will implode. By increasing participation rates vertical restraints also increase the expected value of the gain from trade on the platform. They, in effect, assure a greater supply of liquidity—potential partners with whom to enter into a value-increasing exchange—to platform participants. These assurances help the platform solve its fundamental coordination problem. The platform can only secure participation of members it they expect that members of the opposing side will participate as well.

We can see the procompetitive value of the vertical restraints providing this value by considering the but-for world in which the platform cannot avail itself of these restraints. New platforms might not be able to reach critical mass without securing commitments that customers on one side will only be able to interact with customers on the other side through their platform. Moreover platforms that have exceeded critical mass might invest less in the platform, and possibly not be willing to operate the platform, if they face a risk that a reduction in participation on one side could, through reverse positive feedback effects, result in a downward spiral for the platform. Platform participants would ultimately lose in these situations because the platform would either not be available at all to them or it would be a smaller platform offering less value.

3. Vertical Restraints and Indirect Externalities

Vertical restraints on side A can also result in benefits to side B. Although these restraints may decrease the welfare of side A participants in the first instance they could increase the welfare of side B participants and ultimately also increase the welfare of side A participants as a result of positive feedback effects. The platform may be able to increase value by ensuring participants on side B that when they interact with participants on side B that side B participants will provide particular products and services of specified quality, will make the terms of trade transparent, will not act opportunistically, and will not engage of other forms of behavior that could harm members of side B. Some of the restrictions on participants on side B could entail vertical restraints (tying for example) or could be interpreted as possible vertical restraints (no surcharge rules for example).

B. Analysis Of Typical Vertical Restraints

We now consider specific vertical restraints and their possible procompetitive benefits in light of these three considerations.

1. Exclusive Dealing

Exclusive dealing contracts limit the ability of customers to purchase from other firms. The usual procompetitive justifications for these contracts apply to multi-sided platforms.

These contracts increase the certainty of demand. That then reduces the risk for the firm and increases its ability to engage in resource planning that will benefit all customers. For example, a shopping mall developer would incur risk if the anchor store, which occupies a large space in the mall, could have a nearby stand-alone store or an anchor store at a competing nearby mall.

BY INCREASING PARTICIPATION RATES VERTICAL RESTRAINTS ALSO INCREASE THE EXPECTED VALUE OF THE GAIN FROM TRADE ON THE PLATFORM.

Exclusive dealing contacts might enable the firm to make sunk-cost investments that benefit the customer without facing the risk that the customer will opportunistically refuse to bear the costs of these investments after they have been made. For example, a financial exchange platform might invest in creating a trading platform for a new class of securities. It may want large traders to commit exclusively to the platform before incurring those costs to avoid ex-post opportunistic haggling.

These contracts also prevent free riding whereby customers receive services from the firm but then purchase from another firm at a lower price made possible because that other firm does not provide those services. For example, an ecommerce platform could provide services to connect a buyer and seller for a mutually advantageous transaction but the parties might try to consummate the trade off of the platform and thereby avoid the transaction fees.

The existence of indirect positive externalities between sides provides additional ways in which exclusive dealing contracts could increase the efficiency of multi-sided platforms. As noted earlier a platform can increase the value it provides to its customers on one side by enabling them to interact with more customers on the other side. In theory, competition among platforms could result in the consolidation of demand on the most efficient platform. In practice there could be a coordination problem. Customers would benefit if more of them moved to a common platform. But they do not consolidate their demands perhaps because of switching costs or asymmetric information. A platform—particularly the more efficient one—could help solve this coordination problem by entering into a contract that requires different groups of customers to consolidate their demands.

These exclusive dealing contracts could be particularly helpful in increasing efficiency when customers on side engage in single homing. Customers on the other side incur pecuniary and non-pecuniary costs accesses these single homing customers across several platforms and may not realize the benefits of having a thick enough market on any one platform. By consolidating these customers through exclusive deals the platform could generate additional value that could benefit itself as well as the customers on all sides.

Exclusive dealing contracts with customers on one side (A) also provide potentially valuable guarantees to customers on the other sides (B for example). The side B customers know that they will be able to access side A customers if they use side B. Such guarantees would be more valuable the more side B customers have to incur sunk costs in joining the platform.

Finally, exclusive dealing contracts could also help ensure the platform as well as its customers on both sides that the platform will achieve critical mass and be in a position to grow. This increased certainty for the platform also makes its entrepreneur and investors more willing to invest in the platform. For example, video game console companies may enter into exclusive deals with developers to help ensure that they will have both a supply of games and game users who cannot get the game elsewhere.[28]

2. Bundled Rebates, Meeting Competition, and other Price Restraints

Competitive concerns over bundled rebates arise when they provide incentives for customers to consolidate their purchases with a single provider. For multi-sided platforms these rebates have the same possible procompetitive effects as exclusive dealing. Instead of requiring a customer to consolidate its demand by contract, bundled rebates give the customer a strong financial incentive to do so.

The literature has offered other justifications for bundled rebates based on analyses of single-sided firms. These justifications include avoiding double marginalization, reducing transactions cost, and various price discrimination-based explanations. These justifications may also apply to multi-sided firms. However, the analysis of whether they increase consumer welfare would need to account for the impact of these pricing mechanisms on the demand by the other sides and positive feedback effects.[29]

Meeting competition clauses are likely to have procompetitive justifications for multi-sided platforms beyond those that have been offered for single-sided firms. Multi-sided platforms use complex pricing mechanisms to solve problems resulting from interdependent demand. Particular groups of customers create more value for the platform because of their value to other participants. Prices and other terms of services are therefore based not just on cost but also on the value of these customers to the platform. These complex pricing arrangements provide an opportunity for rival platforms to divert customers by offering better prices. Meeting competition clauses could reduce the risk the platform faces from the loss of critical mass and by reducing that risk, they encourage the firm to make investments in improving the platform in ways that ultimately benefit consumers. Unlike single-sided firms multi-sided platforms cannot avoid the risks of losing customers by charging prices equal to marginal costs. Platforms may not be able to reach critical mass with marginal cost pricing and in any event marginal cost pricing does not maximize the value of the platform for consumers.

3. Tying and Bundling

The literature has provided a number of explanations for why tying and bundling could increase the welfare of the customers who are purchasing the tied or bundled products.[30] These explanations apply to the customers of multi-sided platforms as well.

There is an additional justification for multi-sided platforms. There may be situations in which customers on side A benefit when customers of side B are using an additional product or service provided by the platform. For example, an ecommerce platform might require merchants to use its payment platform thereby bundling both matchmaking and payment services together. Doing so might make it easier for consumers to pay efficiently. To take another example, a newspaper might require consumers to take multiple sections. That benefits advertisers who obtain more inventory for the fixed cost of printing and delivery the paper to the consumer as well as additional methods of targeting advertisements based on which consumers read each section.

4. Behavioral Restrictions and Standards

Multi-sided platforms impose constraints on the behavior of platform participants.[31] They also sometimes have well-developed governance structures for detecting, adjudicating, and punishing violations of platform rules. Many of these rules appear to be designed to prevent members from imposing negative externalities on other members. These rules include ones that encourage platform members to provide reliable information, to meet their commitments to trading partners, not to engage in various kinds of opportunistic behavior, and other actions that either limit negative externalities or increase positive externalities. For example, eBay imposes a variety of rules on both buyers and sellers on its ecommerce platform and can expel customers from the platform that violate those rules.[32]

MEETING COMPETITION CLAUSES COULD REDUCE THE RISK THE PLATFORM FACES FROM THE LOSS OF CRITICAL MASS AND BY REDUCING THAT RISK, THEY ENCOURAGE THE FIRM TO MAKE INVESTMENTS IN IMPROVING THE PLATFORM IN WAYS THAT ULTIMATELY BENEFIT CONSUMERS.

In some cases multi-sided platforms impose constraints that reduce the welfare of some users but increase the welfare of other users. Hagiu and Jullien, for example, show that platforms sometimes increase the search costs for consumers to benefit merchants.[33] Shopping malls, for example, are often designed to maximize the foot traffic to stores and in the course of doing so increase the time it takes consumers to find and go to a particular store destination.

Platforms also impose standards on one or both groups of customers. These could be technological standards such as the requirements that payment networks impose on merchants that accept their care, standards for presenting information such as those that Facebook imposes through its design of its pages, and process standards such as those using by physical exchanges for signaling whether an offer has been accepted.

In some cases competition authorities and courts have argued that some of these behavioral restrictions and standards are vertical constraints because they limit the ability of the customers to deal with rivals. The example of payment card systems is instructive. These systems have historically had rules that prohibit merchants that have agreed to accept their cards from imposing surcharges on customers that pay with those cards. Competition authorities and regulators have argued that these no-surcharge rules are anticompetitive because they limit the ability of merchants to steer consumers towards competing payment systems.[34]

Although the no-surcharge rule may impose costs on some merchants it provides benefits to consumers who receive certainty about the prices they will pay when they use their cards. Consumers also receive protection against opportunistic behavior by merchants, for example, that assess a surcharge on consumers who do not have an alternative form of payment. In fact, while some competition authorities and regulators have banned surcharges other countries have passed legislation prohibiting merchants from imposing surcharges.[35] There is evidence that merchants have in fact used the ability to impose surcharges to engage in price discrimination and charge consumers opportunistically.[36]

Of course, whether vertical restraints make platforms more efficient and benefit consumers depends on the facts of the particular situation in which these restraints are being used. The same holds true for the anticompetitive effects to which we now turn.

IV. ANTICOMPETITVE USE OF VERTICAL RESTRAINTS BY MULTI-SIDED PLATFORMS

Economists have developed a variety of models that examine the effect of vertical restraints.[37]

These models are typically based on a variety of assumptions that may or may not apply in any specific market. It is well known that the results of these models are sensitive to these assumptions. The single-monopoly profit theorem finds that a monopoly cannot obtain an additional profit by leveraging its monopoly in one good to a good that is supplied competitively. That conclusion strictly holds only when the two goods are consumed in fixed proportion. Economists have developed various models of how tying could reduce social welfare when the two goods are consumed in fixed proportions. Those theories find that tying necessarily reduces social welfare only under specific assumptions such as the existence of scale economies in the production of tied good.[38]

The main theoretical models concerning the possible procompetitive and anticompetitive uses of vertical restraints assume, explicitly or implicitly, that the businesses considered are single-sided. They may provide some insights into possible procompetitive or anticompetitive aspects of vertical restraints by multi-sided platforms. Unfortunately, there is no guarantee that any of the key findings of these vertical-constraint theories will necessarily apply to multi-sided platforms that have several groups of customers with interdependent demand. For example, engaging in tying on one side of a platform could affect demand on the other sides of platform in a variety of way that are not incorporated in the standard theories of tying in the face of fixed or variable proportions.

A few authors have extended models originally developed to study vertical constraints by one-sided firms to consider the effects of those practices or similar ones when engaged in by multi-sided platforms. We provide an overview of some of this work and then examine its application to considering the anticompetitive effects of vertical restraints. Like the standard theories, however, these theories yield sharp predictions of the effect of vertical restraints on consumer and social welfare under very specific and difficult to verify assumptions.

A. Tying And Bundling

Whinston showed that in the presence of scale economies in the market for good B, a monopoly seller of good A would, under some conditions, find it profitable to employ tying contracts to become a monopolist in the B market.[39] He found that whether or not this reduces social welfare depends on the details of the situation. Does this one-sided analysis apply to multi-sided firms? Not surprisingly, adding sides adds a layer of complexity.

Amelio and Jullien consider a two-sided case in which tying is both profitable and increases consumer welfare.[40] Suppose the profit-maximizing price on one side of the business is less than zero but that it is not feasible actually to charge a negative price. By bundling another good, however, it is possible to make the effective price negative. They show that this practice increases consumer welfare in the monopoly case although it may not increase consumer welfare when there is competition.

Choi presents a model that is designed to capture the facts of an antitrust claim against Microsoft.[41] The company included Windows Media Player with its Windows software platform.[42] In Choi's model, two platforms, A and B, link content providers with consumers. Platform A also produces a product M, which must be purchased in order to use A or B. He assumes that content providers multi-home, and therefore make their content available on both A and B. If consumers single-home, tying A to M will exclude B but may increase welfare if network effects are strong (so there is a large efficiency gain from having more customers on both sides of A) and consumers do not consider A and B to be very different (so the reduction in variety from eliminating B is small). If consumers also multi-home, however, tying A to M does not exclude B (there are no economies of scale), and social welfare is higher necessarily. This analysis makes clear the importance of understanding where multi-homing occurs and, even if it is not observed, why it does not occur.

THERE IS NO GUARANTEE THAT ANY OF THE KEY FINDINGS OF THESE VERTICAL-CONSTRAINT THEORIES WILL NECESSARILY APPLY TO MULTI-SIDED PLATFORMS THAT HAVE SEVERAL GROUPS OF CUSTOMERS WITH INTERDEPENDENT DEMAND.

Chao and Derdenger investigate mixed bundling, which involves selling the products individually and together at a discount over the separate prices.[43] Consider a monopoly video game platform that is considering a mixed bundling strategy: offering a bundle consisting of a console and some games as well as selling the console alone and allowing video game developers to sell games by themselves. Ignoring indirect network effects, one would expect that the optimal mixed bundling strategy would have higher prices for both the console and games than would be optimal if the bundle were not offered, since the bundle enables the firm to segment the market according to the number of games they prefer to consumer. These authors present a model in which network effects make it is optimal to reduce both console and game prices if a bundle is offered. Mixed bundling here acts as a price discrimination device, as in one-sided models, and the presence of the bundle reduces the cost of cutting console and game prices in order to encourage participation by both consumers and developers.

B. Exclusive Dealing

The *Dallas Morning News* and the *Dallas Times Herald* were competing newspapers in Dallas, Texas. They both obtained content such as columns and comic strips from the Universal Press Syndicate. In August 1989 the *Morning News* signed an exclusive contract with Universal. *The Times Herald* subsequently lost readership. It filed an antitrust case, and lost.[44] In 1991, the parent company of the *Morning News* bought the *Times Herald* and shut it down. Chowdury and Martin use this example to motivate their analysis of exclusive dealing contract that deny platform rivals access to a key complementary input. They show that if consumers do not have strong preferences for one paper over the other and if fixed costs are substantial, social welfare may be higher with the exclusive contract. Consumers are always worse off in this model.

In the presence of significant economies of scale, Segal and Whinston have demonstrated that an incumbent monopoly can profitably deter the entry of a more efficient rival by persuading sufficient customers to sign exclusive dealing contracts before the entrant appears. Doganoglu and Wright investigate the effectiveness of this strategy when there are no economies of scale but direct or indirect network effects are present. In the case of a two-sided platform with indirect network effects, they find that it is profitable for the incumbent to exclude a more efficient entrant by offering attractive exclusive dealing contracts to one side of the market before the entrant appears and then charging high prices to those on the other side. As in the single-sided case with scale economies, exclusive dealing deters entry by making it impossible for the potential entrant to obtain sufficient customers to be viable. Locking up either side of the market will make it impossible for an entrant to obtain customers on the other side. The platform does not have to lock up all of the one side for this result—it just needs to lock up enough to prevent profitable entry. Exclusive dealing reduces consumer welfare in this case.

Both of these analyses focus on the situation in which the platform with the exclusive dealing arrangement is an incumbent. As noted above other authors have shown that exclusive dealing arrangements are helpful for platforms to break into a market. Exclusive dealing arrangements enable entrants to break competitive-bottleneck equilibria in which customers single home on incumbent platforms. The use of exclusive dealing arrangements to secure critical mass raises some complexities for competition policy analysis. A platform may have entered into exclusive dealing contracts during the process of dynamic competition. Therefore the grounds for these contracts may well have been procompetitive. That leaves an issue of whether it should be allowed to maintain these contracts if it becomes the dominant platform. We discuss that issue in the next section.

C. Conditional Rebates, Meeting Competition And Other Vertical Restraints

The multi-sided platform literature has not analyzed many of the other types of vertical restraints. However, conditional rebates and some other types of vertical restraints could be used to raise the cost to customers of either multi-homing with rival platforms or single homing on a rival platform. One might expect that these restraints would have effects similar to exclusive dealing. They present the risk that these restraints might deter the profitable entry of a more efficient platform or one that is valuable because it is differentiated from the incumbent.

V. VERTICAL CONSTRAINTS, CRITICAL MASS, AND EXCLUSIONARY STRATEGIES

The concern over the anticompetitive use of vertical restraints to prevent rival platforms from achieving critical mass is not new. It was raised in the late 1990s in the antitrust literature concerning network industries.[45] Carl Shapiro, for example argued that "exclusionary contracts and exclusive membership rules can be especially pernicious in network industries, posing a danger that new and improved technologies will be unable to gain the critical mass necessary to truly threaten the current market leader."[46] The multi-sided platform literature provides a more nuanced and richer treatment to the role of exclusive contracts. In addition to providing a rigorous definition of critical mass it provides deeper insights into strategies that multi-sided platforms could use to prevent firms from reaching critical mass. However, it also provides additional perspectives on the procompetitive use of exclusive dealing contracts by multi-sided platforms. Finally, it shows that the analysis of indirect network effects and critical mass extends well beyond the high-technology industries focused on by the network effects literature.

EXCLUSIVE DEALING ARRANGEMENTS ENABLE ENTRANTS TO BREAK COMPETITIVE-BOTTLENECK EQUILIBRIA IN WHICH CUSTOMERS SINGLE HOME ON INCUMBENT PLATFORMS.

A. Critical Mass

One can think of platform entry and growth as consisting of two phases.[47] In the first "initiation" phase the platform develops a critical mass of users. In the second "growth" phase the platform relies on network effects to drive growth to a long-run equilibrium level that is determined by the profit-maximizing size of the platform given the state of competition, and product differentiation, in the industry.[48]

Critical mass is the border between the initiation and the growth phase. Critical mass is the amount of demand on both sides that is sufficient to generate positive feedback effects. Once critical mass is reached an additional fully-informed user on side gets value from the platform, increases the value of the platform, and makes the platform attractive to an additional fully informed user on the other side. The positive-feedback effect process continues until the platform reaches its long-run equilibrium size.

The notion of critical mass for platforms is similar to the well-known issue of liquidity in trading environments.[49] A trading venue is viable only if there is a sufficient volume of bids and asks for trading to occur and therefore for both liquidity providers and liquidity takers to incur the expense of coming to the trading platform. If there is too little liquidity buyers and sellers will not come to the platform. It there is enough liquidity more buyers and sellers will come and the platform will in fact grow and the platform will be attractive to market specialists and other liquidity providers.

During the initiation phase the platform engages in strategies to reach critical mass. From the standpoint of formal economics this is, for now, a block box. In practice, platforms use a combination of securing the participation of early adopters who like trying new things, trying to get users who place particularly high value on the platform, promotional offers, securing marquee customers who are particularly attractive to the other side, and aggressive marketing and promotion to get word of mouth. They also may engage in a variety of communications to shape the expectations of users that they are likely to achieve critical mass that provide these users with value.

Based on casual evidence it appears that most new platforms do not make it through this initiation phase.[50] They never achieve critical mass and die. The economics of critical mass explains what happens. Platforms that cannot achieve critical mass do not get to the point where there are self-perpetuating positive feedback effects. Instead, customers that have joined the platform on one side realize from experience that the platform does not have enough customers on the other side to make participation in the platform worth their while. Early adopters, high-valued users, and people who expected that the platform would achieve critical mass therefore abandon the platform. Growth towards critical mass slows and eventually reverses itself as platform participants abandon it. Although the economic models do not make it possible to put a time frame on the initiation phase it is obvious that it is limited. The customers that join during the initiation phase will only give the platform so much time before they abandon it.

Entering into exclusive dealing contracts is one of the strategies that platforms would want to consider during this initiation phase. These contracts enable the platform and guarantee participation one side of the platform. That demand attracts members on the other side since participation in the platform is the only way for members on the other side to access these customers.

B. Vertical Restraints And The Platform Initiation Phase

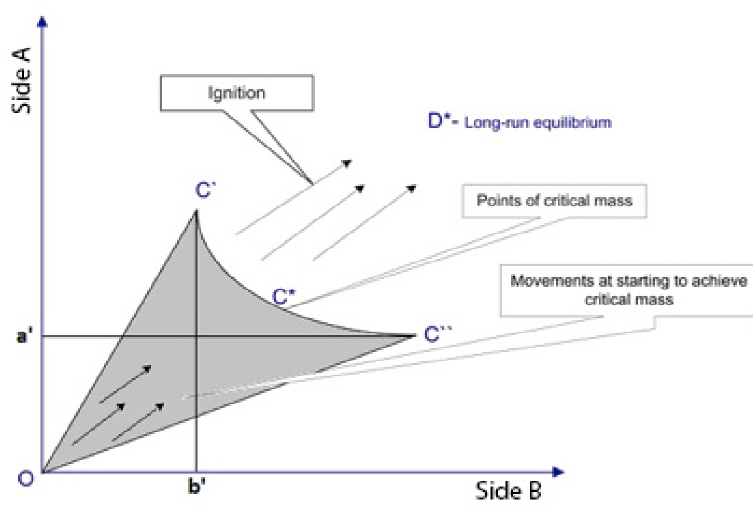
Incumbent platforms could adopt strategies that make it difficult for new platforms to reach critical mass during the initiation phase. Entrants would fail. Moreover, knowledge of these strategies, together with perhaps observing past failures, could dissuade other firms from entering and from investors funding startups in this area. Incumbent platforms could use vertical restraints to make it difficult for new platforms to attain critical mass.[51]

Vertical restraints could discourage customers from multi-homing in favor of single homing on the incumbent platform that has imposed the vertical restraints. Vertical restraints could also discourage customers from abandoning the incumbent platform altogether and single homing on a rival platform.

Exclusive dealing contracts could prevent new platforms from obtaining enough members on either side to attain critical mass. Platforms could enter into agreements that preclude customers from also participating in another platform. Conditional rebates and meeting competition clauses could accomplish the same result less directly. Conditional rebates would provide financial disincentives to reduce volume and in the extreme case could make it uneconomic to move modest portions of volume to a rival platform. Meeting competition clauses on the other hand would give the incumbent platform the opportunity to beat the rival's terms.

Vertical restraints would not need to foreclose the new platform from all demand on either side. It just needs to prevent the new platform from securing enough demand to reach critical mass. Figure 2 outlines the typical situation for platforms.

Figure 2: Critical Mass and Entry Deterrence



Vertical restraints would prevent a platform from reaching critical mass if these restraints prevented the platform from attaining enough demand on any side—that is more than b' on side B or more than a' on side A. Vertical restraints would also prevent a platform from reaching critical mass if these restraints prevented the platform from attaining any more combination of demand shown by the shaded area in the cone to the southwest of the critical mass frontier.

The greatest obstacle for a new platform that is trying to secure critical mass is being prevented from pursuing the various strategies that would be most helpful in getting to critical mass. Therefore if particular groups or constellations of customers would be useful in getting to critical mass during the initiation phase vertical restraints that prevent those particular groups from joining the new platform would be most effective. Those could be marquis customers. Similarly, if a new platform would consider entering into exclusive deals with some set of customers vertical restraints that prevent or deter those customers from doing so would be most damaging to the new platform.

In both cases it is possible that the vertical restraints could deter the entrant from attaining critical mass by preventing the entrant from securing enough demand on any side. An incumbent platform could, for example, enter into exclusive contracts with "enough" of the potential members of one side of a platform. Platforms typically have a side that is more valuable and this is the side that is usually charged to a lower price. Locking up demand on that side would appear to be the most effective way to block an entrant. An incumbent platform could take a different approach. There may be situations in which groups of customers on various sides account for a disproportionate share of positive feedback effects. These are the most valuable customer segments for the platform. The platform could try to lock up as many of these key customer groups as possible through a variety of contracts.

Entrants are obvious targets because they cannot survive, let alone grow, if they do not achieve critical mass. However, it is possible for incumbents to employ tactics that could drive other incumbents, who already exceed critical mass, out of business. A particular target could be platforms that have surpassed critical mass and are in their growth phase towards their long-run equilibrium size. Let us refer to the incumbent that employs the strategy the predator and the rival the prey. The predator could enter into vertical restraints with its customers to deter them from working with a rival and then poach enough customers from its rival—possibly at terms that would be unprofitable for the rival—to drive the prey below critical mass.

C. Product Differentiation And Exclusionary Strategies

The older network effects literature often assumed that direct or indirect network effects would lead one firm to capture the market as a result of efficiency, luck, or anticompetitive strategies. Looking across the wide variety of industries with multi-sided platforms, all of which have indirect network effects to varying degrees, the empirical evidence does not support that concern. As noted earlier most industries that have multi-sided platforms appear to evolve to a situation in which several platforms compete with each other for customers. Product differentiation is one of the likely reasons for the ability of several platforms to compete with each other despite having much in common in what they are doing.[52]

We would expect that businesses that want to compete with existing platforms would try to differentiate their platform. That makes sense for two related reasons. The first is that a new platform would have trouble competing with an existing platform if it was truly a copycat.[53] The existing platform would provide more value to users because it has both sides on side and has gotten critical mass. Although the new platform could engage in price competition at similar prices, the incumbent platform would always be better. The second reason, though, is that by differentiating itself a new platform would have an easier time achieving critical mass. It would be able to attract early adopters and high value users who are particularly attracted to its differentiated service. It would also be able to enter into exclusive deals at a lower cost since it would not necessarily be competing to the same desirable customers as the incumbent platform.

The older network effects literature expressed significant concern that networks could engage in exclusionary strategies, especially exclusive dealing contracts, to prevent entrants from challenging them. They would therefore be able to attain secure monopoly positions. The existence of product differentiation tempers the concern in two ways. First, as an empirical matter it does not appear that incumbent platforms have in fact kept out competition in most multi-sided platform industries. Second, product differentiation appears to be a useful counterstrategy to vertical restraint strategies deployed by incumbents.

D. Procompetitive Vertical Restraints

The fact that an incumbent platform has vertical restraints and that these vertical restraints make it harder for an entrant to achieve critical mass does not necessarily mean that these restraints are anticompetitive. The incumbent platform may have adopted these restraints to achieve efficiencies that benefit consumers. These benefits may outweigh the harm that consumers incur from deterring entry and growth of new platforms. We return to our discussion of the procompetitive use of vertical restraints in light of the analysis of critical mass.

1. Vertical Restraints and Static Efficiencies

Vertical restraints including exclusive dealing contracts could be used by the platform to ensure that it retains critical mass in the face of competition. In some cases the platform may have adopted exclusive dealing during its initiation phase and continued these after it achieved critical mass and reached long-run equilibrium. But it may continue these contracts because dropping them would raise the risk of those customers being lured to other platforms that offer exclusive deals. In other cases it might adopt new exclusive dealing contracts to reduce the risk of losing sufficient demand to attract the other side. Either way, if a sufficient number of customers left, the platform could see positive feedback effects work in reverse and it could fall below the level necessary for critical mass.

It is also possible that some customers on one side use their value to the platform to threaten to go to another platform in the absence of price or other concessions. The obvious bargain to strike with such customers is one in which the platform provides low prices, or subsidies, in return for a commitment on the part of these customers to make themselves available exclusively to the customers on the platform, or not to pay higher prices to other platforms. As Armstrong and Wright point out, it is the customers that comprise the competitive bottleneck that may ultimately benefit from exclusive dealing.

Customers on the opposite side of the customers who have an exclusive contract may benefit from these exclusive dealing contracts as well. These customers have a guarantee that certain counterparties that they would like to interact with will be available on the platform. That increases the expected thickness of the market they will have available to them on the platform. It also enables them to reduce the costs of searching for these potential counterparties to trades on other platforms. Customers can avoid some of the costs of multi-homing. Customers on the same side as the customers who have exclusive contracts may benefits from these contracts as well. They know that the customers with exclusive contracts will attract customers on the other side and they will therefore be able to interact with those customers. A useful example is a dating venue. It is common for nightclubs to recruit "cool" people to ignite their venues. The presence of the "cool" guys attracts women with whom both the cool and uncool guys can then interact with.

Generally, as mentioned earlier, vertical restraints could be natural elements of the strategies that platforms adopt to manage the positive and negative externalities that ultimately determine the value of the platform to the customers on the several sides.

2. Vertical Restraints and Dynamic Efficiencies

Multi-sided platforms face the same risks that all businesses do in entering a new category. Especially if they are the initial innovator they face uncertainty over whether there is sufficient demand to create a viable business and whether more efficient competitors will appear that will destroy their investment value. They have to incur the risks inherent in discovering demand and learning how to design an efficient and profitable business. But in addition, multi-sided platforms face considerable risks in whether they will be able to secure critical mass. That is especially the case for platforms that must have both sides on board simultaneously. They have a limited time to get to critical mass. Their primary challenge is they are necessarily offering a service that is probably not valuable in its early stages to customers simply because there are not enough customers on board the platform early on. That is very unlike the startup phase for single-sided businesses that generally start with a product or service that is valued by consumers.

Building up critical mass means assembling groups of customers that together create value to ignite positive feedback effects. A platform that does this successfully may provide something of a roadmap to other potential platform competitors. These rivals could free ride on the platform's success in identifying the right types of customers to get on its platform during the initiation phase. Vertical restraints could be used to make it harder for competitors to free ride in this way. The benefits and costs of allowing a platform to protect the customer base it has assembled are similar to other kinds of intellectual property. The benefits result from providing incentives to develop innovative solutions to securing critical mass and ignition for a new platform business and discouraging free riding that could reduce if not eliminate those incentives. The costs result from the increased market power that a successful platform entrant would then as a result of being able to discourage rivals.

3. Vertical Restraints During Common Initiation and Growth Phases

The multi-sided platform literature shows that as a matter of theory exclusive dealing contracts are helpful for entrants to break competitive bottleneck equilibria. Empirical result has documented that these contracts were valuable for entrants in the video game console industry. The contracts also have a number of other benefits in terms of helping platforms build critical mass as we have discussed. It is therefore not surprising to see these contracts and similar vertical restraints that bind customers being used by multi-sided platforms.

Assessing whether these arrangements are anti- or procompetitive is a particularly difficult exercise during the startup phase of an industry. During this period many multi-sided platforms may be entering and going through initiation and growth phases. Long run equilibrium for any of them may be a ways off. Unfortunately, competition authorities and courts do not necessarily know which stage the industry is in. The leading firm may be at an early stage in growth and not that far away from the critical mass boundary. A better-financed firm may be at the critical mass phase. It is far from clear that intervention in these circumstances to prohibit exclusive contracts by the leading firm would result in the industry moving to a long run equilibrium that is superior for consumers. That could destabilize the leading firm while giving the entrant an artificial advantage.

VI. CONCLUSIONS

This review of vertical restraints by multi-sided platforms has identified several aspects of these platforms that competition analysis should take into account to assess the procompetitive and anticompetitive aspects of these restraints.

First, where the platform is in its life cycle and where the platform and its rivals are in the lifecycle of the industry are important considerations. Exclusive dealing and other similar vertical restraints that bind customers to the platform are more likely to be procompetitive practices, or at least the residue of procompetitive strategies, during the initiation and early growth stages of platforms are during the early parts of the lifecycle of platform industries. This point argues for avoiding antitrust interventions during the early years of an industry.

Second, in assessing whether vertical restraints on one side of a platform generate efficiencies, it is important to look at the impact of these restraints on the other sides of the platform. These restraints could provide customers on the other side with the benefits of knowing that particular kinds of customers they want to interact with are available on the other side. They could also provide various other benefits as we saw when customers on one side benefit from the customers on the other side having a tied product.

Third, in assessing whether there are procompetitive benefits of vertical restraints it is important to consider their role in harnessing positive and negative externalities in ways that increase platform value. Vertical restraints could help increase positive network effects and also limit customers on one side from engaging in behavior that harms customers on the other side.

Fourth, in assessing whether vertical restraints could foreclose a rival it is important to assess the impact of the restraints on the ability of the rival to reach critical mass. That will ordinarily involve examining the types of customers that are foreclosed to the rival, their positive externalities with customers on the other side of the platform, and their overall importance in moving the platform to critical mass.

Fifth, one cannot take the implications of formal economic models of anticompetitive restraints that were developed for traditional industries and assume that these implications apply to multi-sided platforms. The only reliable way to assess whether they do or not is to incorporate interdependent demand in these models and assess whether the implications are robust to that change.

Sixth, the literature on multi-sided platforms is relatively new as is the experience of courts and competition authorities in analyzing their practices using the lens of this new theory. Over time we would expect that developments in economics, both theory and empirics, and the experience with cases will find that multi-sided platforms can engage in anticompetitive strategies we have not yet identified and that some strategies that appear anticompetitive today will turn out to be benign.

So, one can be sure that this paper is not the last word on the subject.

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1. Chairman, Global Economics Group; Lecturer, University of Chicago Law School; Visiting Professor, Faculty of Laws, University College London. Portions of this paper are based on joint work I have done with Richard Schmalensee. An earlier version of this paper was presented at the CEDES Conference on Vertical Restraints Adopted by Dominant Firms, in Brasilia, Brazil, and at a seminar organized by IBRAC/Mackenzie University in Sao Paulo Brazil. I would like to thank Howard Chang, Paulo Furquim de Azevedo, participants in the preceding seminars for helpful comments and Steven Joyce for excellent research help. I retain sole ownership of any errors.

2. See, e.g., MASSIMO MOTTA, COMPETITION POLICY: THEORY AND PRACTICE 302-410 (2004).

3. See PHILIP E. AREEDA AND HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION Chapters 16-18 (2012); KEITH N. HYLTON, ANTITRUST LAW: ECONOMIC THEORY AND COMMON LAW 252-310 (2003).

4. For a survey of this literature as it relates to antitrust see David S. Evans and Richard Schmalensee, The Antitrust Analysis of Multi-sided Platform Businesses, in OXFORD HANDBOOK ON INTERNATIONAL ANTITRUST ECONOMICS (Roger Blair and Daniel Sokol eds., forthcoming 2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2185373.

5. Id.

6. See, for example, European Commission, Decision of 24 May 2004 Relating to a Proceeding Pursuant to Article 82 of the EC Treaty and Article 54 of the EEA Agreement Against Microsoft Corporation (Case COM/C-3/37.792 – Microsoft), Official Journal L 032, 06/02.2007 P. 0023-0028.

7. See Jean-Charles Rochet and Jean Tirole, Platform Competition in Two-Sided Markets, 1 J. EUR. ECON. ASS'N 990 (2003). This paper started circulating in draft firm around 2000.

8. There is, however, an important related literature concerning exclusivity arrangements in networks. See David Balto, Networks and Exclusivity: Antitrust Analysis to Promote Network Competition, 7 GEO. MASON L. REV. 523 (1999); Carl Shapiro. Exclusivity in Network Industries, 7 GEO. MASON L. REV. 673 (1999).

9. There are likely specific issues relevant to an analysis of vertical restraints in any particular multi-sided industry or company that will not be reflected in this overview. Among other reasons, this overview largely reflects the multi-sided vertical restraints literature to date, which is a relatively new and developing literature.

10. See Rochet and Tirole, supra note 5.

11. See David S. Evans, How Catalysts Ignite: The Economics of Platform-Based Start-Ups, in PLATFORMS, MARKETS, AND INNOVATION (Annabelle Gawer, ed., 2009); David S. Evans and Richard Schmalensee, Failure to Launch: Critical Mass in Platform Businesses, 9 REV. NETWORK ECON. (2010). Earlier literature on direct and indirect network effects alluded to critical mass but did not provide any formal definition of analysis of it.

12. See Evans, supra note 8, for further discussion.

13. For example, when the Discover Card launched in 1986 it used the base of Sears store cardholders to secure customers on the card side and had the Discover Card accepted at Sears stores in addition to signing up many merchants to accept it at its launch as well. See DAVID S. EVANS AND RICHARD SCHMALENSEE, PAYING WITH PLASTIC: THE DIGITAL REVOLUTION IN BUYING AND BORROWING (2006).

14. See Evans and Schmalensee, supra note 8.

15. David S. Evans and Richard Schmalensee, Industrial Organization of Markets with Two-Sided Platforms, 3 COMPETITION POL'Y INT'L 151 (2007), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=987341.

16. See Rochet and Tirole, *supra* note 5.

17. See Özlem Bedre-Defolie and Emilio Calvano, Pricing Payment Cards (European School of Management and Technology and Bocconi University, Working Paper, 2012).

18. DAVID S. EVANS, ANDREI HAGIU, AND RICHARD SCHMALENSEE, INVISIBLE ENGINES: HOW SOFTWARE PLATFORMS DRIVE INNOVATION AND TRANSFORM INDUSTRIES (2006).

19. Andrea Galeotti and José Moraga-González, Platform Intermediation in a Market for Differentiated Products, 53 EUR. ECON. REV. 417 (2009) provide a model of a shopping mall that attracts horizontally differentiated retailers as well as consumers.

20. Hanna Halaburda and Mikołaj Jan Piskorski, Competing by Restricting Choice: The Case of Search Platforms (Harvard Business School, Working Paper No. 10-098, 2011).

21. David S. Evans and Richard Schmalensee, Industrial Organization of Markets with Two-Sided Platforms, 3 COMPETITION POL'Y INT'L 151 (2007), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=987341.

22. To use economic parlance, they are determined endogenously.

23. Of course, one would need to examine the facts of the particular case to assess whether these procompetitive benefits of vertical restraints exist and whether they outweigh possible anticompetitive effects. As is the case with vertical restraints generally there may be arguments as to why some vertical restraints should be presumed procompetitive and therefore treated as per se lawful.

24. In addition, the traditional explanations that have been advanced in the literature and case law for vertical restraints as to why vertical restraints may be procompetitive generally apply to multi-sided platforms as well. See, e.g., DENNIS W. CARLTON AND JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 396-412 (4th ed. 2005); MASSIMO MOTTA, supra note 1, at 306-347; Damien Geradin and Caio Mario da Silva Pereira Neto, For a Rigorous "Effects-Based" Analysis of Vertical Restraints Adopted by Dominant Firms: An Analysis of the EU and Brazilian Competition Law 11-16 (Tilburg University and Getulio Vargas Foundation, Working Paper, 2012), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2173735.

25. The traditional case of natural monopoly arises as a result of scale economies in cost. In this case the natural monopoly arises as a result of interdependent demand that result in the value of the platform to users being maximized when all users participate in the same platform. It is economically efficient to have a single platform— that is, there is a natural monopoly—so long as diseconomies of scale in costs do not outweigh the benefits of consolidating demand.

26. Or alternatively if the single platform can be regulated so that the benefits of having a single platform outweigh the direct and indirect costs of regulating it compared with having multiple competing platforms.

27. During the development of the industry platforms would compete on the terms of the vertical restraints and through this process of competition the most efficient platform would win the market. Once a platform has dominated an industry it may still need to maintain vertical restraints to prevent rivals platforms from attracting selected users and thereby reducing the overall welfare that the platforms can deliver.

28. For a discussion of commitment issues for video game platforms see Andrei Hagiu, Pricing and Commitment by Two-Sided Platforms, 37 RAND J. ECON. 720 (2006) and for an empirical analysis of exclusivity arrangements in this industry see Robin S. Lee, Vertical Integration and Exclusivity in Platform and Two-Sided Markets (Stern School of Business, Working Paper, 2012).

29. As discussed below, tests that involve examining the incremental profit from bundled rebates would need to consider the additional profit realized from positive feedback effects.

30. Christian Ahlborn, David S. Evans, and A. Jorge Padilla, The Antitrust Economics of Tying: A Farewell to Per Se Illegality, 49 ANTITRUST BULL. 287 (2004); David S. Evans and A. Jorge Padilla, Designing Antitrust Rules for Assessing Unilateral Practices: A Neo-Chicago Approach, 72 U. CHI. L. REV. 73 (2005); David S. Evans and Michael Salinger, Why Do Firms Bundle and Tie?, 22 YALE JOURNAL ON REGULATION 37 (2005).

31. David S. Evans, Governing Bad Behavior by Users of Multi-Sided Platforms, 27 BERKELEY TECH. L. J. 1201 (2012).

32. For guidance relating to the rules for buyers and sellers on eBay, see Rules & Policies, EBAY, http://pages.ebay.com/help/policies/overview.html (last visited Dec. 18, 2012).

33. For a general analysis of strategies in which platforms increase consumer search costs, see Andrei Hagiu and Bruno Jullien, Why do Intermediaries Divert Search?, 42 RAND J. ECON. 337 (2011).

34. RESERVE BANK OF AUSTRALIA, REFORM OF CREDIT CARD SCHEMES IN AUSTRALIA IV: FINAL REFORMS AND REGULATION IMPACT STATEMENT 38 (2002), available at http://www.rba.gov.au/payments-system/reforms/cc-schemes/final-reforms/complete-stmt.pdf

35. Countries that ban credit card surcharging include Austria, Fiji, France, Italy, Bulgaria, Latvia, Lithuania, the Philippines, Portugal, Romania, Slovakia, Sweden, and the United Arab Emirates. The Price of Paying by Plastic, WHICH? MAGAZINE, Oct. 2010, at 14, 14, reprinted in Which?, Super-Complaint: Credit and Debit Surcharges 107, submitted to Office of Fair Trading (UK) Mar. 30, 2011, available at http://www.which.co.uk/documents/pdf/payment-method-surcharges-which-super-complaint-249225.pdf; KPMG Fiji Islands, International Executive Alert (Oct. 3, 2012), http://www.kpmg.com/US/en/IssuesAndInsights/ArticlesPublications/flash-international-executive-alert/Documents/flash-international-executive-alert-2012-176-oct.pdf; Credit Card Surcharges Are Unlawful, Says DTI, ABS-CBN News, October 17, 2010, available at http://www.abs-cbnnews.com/business/10/17/10/credit-card-surcharges-are-unlawful-says-dti; UAE Bans Credit Card Surcharge from July 1, EMIRATES 24/7, June 6, 2011, available at http://www.emirates247.com/news/emirates/uae-bans-credit-card-surcharge-from-july-1-2011-06-06-1.401405. US states that ban credit card surcharges include California, Colorado, Connecticut, Florida, Kansas, Maine, Massachusetts, New York, Oklahoma, and Texas. Visa Inc., Visa Warns Consumers about Retailer Checkout Fees, http://usa.visa.com/personal/using_visa/checkout_fees/index.html (last visited Dec. 20, 2012). Countries that limit surcharging include Australia, Denmark, Germany, Greece, Hungary, and Spain. Which?, supra, at 14. The Reserve Bank of Australia recently changed its regulations, allowing the payment card networks to limit surcharging. RESERVE BANK OF AUSTRALIA, A VARIATION TO THE SURCHARGING STANDARDS: FINAL REFORMS AND REGULATION IMPACT STATEMENT (2012),

available at http://www.rba.gov.au/payments-system/reforms/cards/201206-var-surcharging-stnds-fin-ref-ris/pdf/201206-var-surcharging-stnds-fin-ref-ris.pdf. The European Union is moving toward limiting surcharges, and the UK is considering early implementation of this directive. Council Directive 2011/83/EU, 2011 O.J. (L 304) 64, 81 (EC), available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:304:0064:0088:EN:PDF; Department for Business Innovation and Skills (UK), Consultation on the Early Implementation of a Ban on Above Cost Payment Surcharges, September 2012, available at http://www.bis.gov.uk/assets/biscore/consumer-issues/docs/c/12-1008-consultation-ban-above-cost-payment-surcharges.

36. Office of Fair Trading, Payment Surcharges (2012), available at http://www.oft.gov.uk/shared_oft/super-complaints/OFT1349resp.pdf; Reserve Bank of Australia, supra note 30, at 4-7.

37. For a survey see MOTTA, supra note 1.

38. Evans and Padilla, supra note 25.

39. Michael D. Whinston, Tying, Foreclosure, and Exclusion, 80 AM. ECON. REV. 837 (1990).

40. Andrea Amelio and Bruno Jullien, Tying and Freebies in Two-Sided Markets, 30 INT'L J. INDUS. ORG. 436 (2012).

41. Jay Pil Choi, Tying in Two-Sided Markets with Multi-Homing, 58 J. INDUS. ECON. 607 (2010).

42. European Commission (EC), Case COMP/C-3/37.792 Microsoft, March 24, 2004, available at http://ec.europa.eu/competition/antitrust/cases/dec_docs/37792/37792_4177_1.pdf; Ahlborn, Evans, and Padilla, supra note 25.

43. Yong Chao and Timothy Derdenger, Mixed Bundling in Two-Sided Markets: Theory and Evidence (University of Louisville and Carnegie Mellon University, Working Paper, 2012).

44. Times Herald Printing Co. vs. A.H. Belo Corp., No. A14-90-00856-CV (Texas App. – Houston [14th Dist.] November 27, 1991).

45. Balto, supra note 6; Shapiro, supra note 6.

46. Shapiro, supra note 6, at 674.

47. Evans and Schmalensee, supra note 8.

48. As noted earlier, temporally these two phases could collapse into a single point in time when the platform has secured commitments from a critical mass of customers and in effect opens for business at that point in time.

49. In fact critical mass for a trading environment corresponds to minimum liquidity. For a discussion of liquidity and critical mass see Larry Harris, TRADING AND EXCHANGES: MARKET MICROSTRUCTURE FOR PRACTITIONERS (2002); Maureen O'Hara, MARKET MICROSTRUCTURE THEORY (1995).

50. Of course it is well known that most entrepreneurs fail even in single-sided businesses. Critical mass is just another hurdle in multi-sided platform businesses.

51. They could also engage in predation which we do not discuss here.

52. The existence of congestion and diseconomies of scale in costs are other reasons.

53. Although as noted above congestion and diseconomies of scale could provide room for entry.

Vertical Restraints: A Look Ahead

By Vinicius Marques de Carvalho, Marcos Paulo Verissimo, and Paulo Burnier da Silveira[1]

Competition authorities worldwide are constantly facing the challenges involved in the design of an effective competition policy towards vertical restraints. This may be explained by two main reasons. First, vertical restraints are ambiguous by nature, since they may cause anticompetitive impacts and, at the same time, generate important efficiencies. Secondly, vertical restraints may take a large variety of forms, such as resale price maintenance, exclusivity clauses, loyalty discounts and tie-in sales, which may all produce similar effects. In general, vertical restraints are simply viewed as competition restrictions in commercial agreements at different levels of the production and distribution chains, as opposed to horizontal restraints which are related to agreements between direct competitors.

In addition, one may ask if developing countries should take the opportunity to address particular problems in designing their competition policy towards vertical restraints. In a certain way, a possible lenient approach of certain developed countries towards some vertical restraints may be justified by their placement in a given economy, which may not be the same when analyzed through a different set of economic standards. Developing countries may need to contextualize their approach to vertical restraints considering particular elements, such as a recent introduction of competition in certain sectors, a history of economic concentration, the presence of state-owned enterprises and regulatory restraints in some markets, a weak capacity of innovation, as well as inequality in general and the need to foster mobility and access.

This paper will first analyze the current Brazilian framework for vertical restraints, including the new Brazilian legal provisions for vertical restraints control and a few past cases analyzed by the Brazilian Administrative Council for Economic Defense – CADE (I). Then, a look ahead of vertical restraints through the lens of resale price maintenance (RPM) practices will be carried out, considering RPM practices just recently had its first case condemnation in Brazil - this should likely indicate a direction for future similar cases (II).

I. THE CURRENT BRAZILIAN FRAMEWORK FOR VERTICAL RESTRAINTS

The new Brazilian Competition Act (Law nº 12,529 from 30 November 2011) states which practices shall be deemed unlawful:

> Art. 36. The acts under any circumstance, which have as object or may have the following effects, shall be considered violations to the economic order, regardless of fault, even if not achieved:

I – to limit, restrain or in any way injure free competition or free initiative;
II – to control the relevant market of goods or services;
III – to arbitrarily increase profits, and
IV – to abusively exercise a dominant position.

The Brazilian legislation establishes that practices which have as object, or that may lead to effects indicated above, shall be considered illegal from a competitive point of view. This instantly raises the question of measuring the effects for the purpose above, which could possibly include the extension of costs and benefits to consumers, companies and competition. It also raises the question of the possibility of a *per se* condemnation by simple proof of an unlawful practice by its object. The *per se* approach has been applicable to certain cartel cases and it reduces or eliminates the ambiguity addressed in the introduction of this paper, since it does not open the possibility for compensation through possible efficiencies.

The Brazilian experience demonstrates that vertical restraints correspond to less than 10 percent of CADE's total condemnations. Nevertheless, case law indicates a certain consistency for the general approach to vertical restraints, which is usually analyzed through a rule of reason approach based on three steps: (i) confirmation of the existence of market power; (ii) potential negative effects of anticompetitive conducts, such as the creation of barriers to entry; and (iii) efficiencies. The analysis is thus carried out by balancing the economic justifications of the conduct against its negative anticompetitive effects.

CADE's case law indicates that vertical restraints condemnations have been issued under the forms of exclusivity, refusal to sell, rebound discounts, price discrimination, and, just recently, Resale Price Maintenance (RPM) practices.

For instance, in 2004, the former Secretariat of Economic Law (SDE for its acronym in Portuguese) initiated an Administrative Proceedings against AmBev, a company that owns the main brands of the commercialized beers in Brazil, to investigate if its loyalty program named "*Tô Contigo*" could produce anticompetitive effects in the market. The program basically established that the sale shops could earn points, depending on the amount and type of beers acquired, which could later be exchanged for gifts. Thus, from a formal point of view, the loyalty program would be a simple linear program of awarding. However, inspections and market inquiries showed that AmBev demanded exclusivity from the sale shops as a requisite to participate in the loyalty program. At the end of the investigation, SDE concluded that the loyalty program had an anticompetitive potential, as it reduced the degree of contestability in the market and artificially increased the barriers to entry. Thus, in March 2007, the process was sent to CADE with a suggestion of conviction for abuse of dominant position and, in July 2009, CADE imposed on AmBev, among other sanctions, a fine of around R$352 million, which was, at that time, recognized as the biggest fine in CADE's history.[2]

Another important case concerns the exclusivity agreements between the construction company Odebrecht and suppliers of hydroelectric turbines (GE, Alstom, VA Tech and Voith Siemens). The agreements unduly foreclosed the participation of these companies in an important auction for the granting of a hydroelectric plant concession by the Madeira River in the Amazon region. The investigations were undertaken by the former SDE and the case was settled by CADE in 2007. As a result, the price for energy was substantially lower than the reserve price, which resulted in savings of around R$16 billion for Brazilian consumers over the total 30-years concession contract granted to Odebrecht.[3]

II. A LOOK AHEAD THROUGH THE LENS OF RPM PRACTICES

RPM practices are a controversial topic in the antitrust community. Traditionally, competition authorities have dealt with RPM either as a *per se* infringement, or by a "rule of reason" approach, since they differ on their assessment of their pro- or anticompetitive effects. In fact, many economists claim that RPM practices may have positive impacts on distribution chains, for instance by reinforcing inter-brand competition. However, many competition authorities remain skeptical when it comes to the possible efficiencies generated by this kind of vertical restriction.

The Brazilian Administrative Council for Economic Defense (CADE) has recently issued an important decision that will likely guide its assessment of RPM practices. Its importance lies in the intense debate held amongst CADE's Commissioners who attempted to identify a cornerstone policy. CADE condemned a company under RPM practices and decided that the company must prove economic efficiency gains if the retail price fixing is to be lawful.

This article analyzes the potential Brazilian policy towards RPM practices. It will first analyze the general debate on the adequate approach towards RPM conduct - that is, to treat it as a *per se* infringement as opposed to a rule of reason approach (A). Then, it will focus on the aforementioned Brazilian case in an attempt at drawing a forecast and conclusions (B).

A. Debate between *per se*, or rule of reason, approaches

Academics have often argued that RPM can be typified under diametrically opposite, binary lenses: either the "rule of reason" or the *per se"* approach. If a jurisdiction adopted the rule of reason approach in its "hardcore version," following the definition given by the academic works of the Chicago School, then the Public Administration would have the integral burden of proving, on a case-by-case scenario, that a given conduct concretely produced negative economic effects to the general welfare. On the other hand, if the *per se* approach was adopted, and thus an illegality of the practice itself, there would be no consideration of the abstract potential of a given conduct to produce negative effects – or, even, the consideration of eventual counterproofs that demonstrated efficiencies capable of overcoming the potential negative effects.

A COMPARATIVE STUDY SEEMS TO INDICATE THAT COMPETITION AUTHORITIES ANALYZE RPM CASES AS SOMEWHERE IN BETWEEN THE PER SE ILLEGALITY AND THE RULE OF REASON APPROACH FOR LEGALITY.

Nevertheless, from a practical standpoint, this seems to be essentially an academic debate, and it would be inaccurate to build a jurisprudence based on this classical dichotomy. A comparative study seems to indicate that competition authorities analyze RPM cases as somewhere in between the *per se* illegality and the rule of reason approach for legality. In addition, most jurisdictions apply a rigorous approach to RPM practices, namely the minimum RPM where a minimum price is fixed for retailers, often with penalties to those who sell above the established price due to high anticompetitive risks that this kind of practice encompasses.

In order to sustain the argument that there is no clear dichotomy – as for practical grounds – between these two approaches, it is important to analyze the main jurisdictions worldwide to empirically perceive how the competition authorities analyze RPM cases. Thus, this section will analyze past decisions in the United States, European Union, Austria, Germany, France, and the United Kingdom, especially based on the recent OECD roundtable discussions published in 2009.

The American jurisprudence has sensitively changed through time. Regarding the first relevant case on RPM, the 1911's *Dr. Miles Medical Co. v. John D. Park & Sons Co.,* the US Supreme Court understood that RPM should be presumed as illicit in every circumstance, because its own object is unreasonable – which many have considered as a *per se* rule, even though some may argue that this analysis is simplistic. The Court's decision was in accordance with the Sherman Act, which proscribes unreasonable restrictions to trade. More than 50 years later, 1977's *Continental T.V., Inc. v. GTE Sylvania, Inc.*, became a cornerstone case with a strong influence from the Chicago School presenting, in this sense, a typical hardcore rule of reason-based decision. However, as it will be further analyzed, it imposes an expensive and hard-to-fulfill burden to the Public Administration that could be comparable to a *per se* rule regime which considered RPM to be licit.

Most recently, in 2007, the case of *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, inaugurated a less stringent form of rule of reason analysis, postulating a new problem: which form of rule of reason should be applied to RPM cases? Whilst the question remains unanswered, it is safe to state that the US most recent jurisprudence stopped considering RPM, *iure et de iure,* as presumably illicit, and began to subject RPM conducts to reasonable standards that still need to be defined by the Supreme Court.

In regard to the European Union, RPM is generally considered to be a hard core restriction, which is presumed to be anti-competitive. However, the EU also follows the same intermediate standard between absolute presumption of illegality and the submission of the conduct to a case-by-case analysis of its negative effects, since it accepts taking into consideration the effects. For this reason, some consider the EU's position as being rule of reason-based, but it is certainly much different from the one seen in American case-law: the case-by-case analysis only occurs in exceptional circumstances, where it is fundamentally the defendant's burden to be able to prove the efficiency of the particular RPM practice – which must be plausible and present, and unachievable through other means. The reason behind this exemption regime's existence is the highly suspicious character of RPM practices, especially minimum RPM ones, and its potentially anticompetitive aspects despite the market shares.

Austria follows the steps of the EU and presumes the illegality of minimum RPM conducts, and even of calculation guides to prices, margins, or discounts, unless it is proven that they are solely suggestive and that there was no intent of enforcement of those suggestions.

As for Germany, minimum RPM is expressly prohibited by competition law, requiring only a minimum level of "substantiality" for the conduct to be punished.

France also understands that minimum RPM is, practically speaking, presumed as hampering to competition and, for that, considers it illicit, and requires proof on the effective application of prices by distributors and on the implementation of control mechanisms by suppliers. No proof on the conduct's effective impact on competition is necessary, though.

On its behalf, the United Kingdom had multiple cases of condemnation for minimum RPM under the presumption of negative consequences to competition. In addition, 1998's UK Competition Act backs up such decisions, accepting exceptions only under very specific market conditions that would be able to remove, in its entirety, this presumption.

Other countries that present similar rules regarding minimum RPM include Belgium, Ireland, Italy, Spain, Czech Republic, Denmark, and Estonia. For instance, in Australia, Canada, China, Greece, Israel, Bulgaria, Lithuania, Colombia, Japan, and Korea, confirmation of minimum RPM *per se* is sufficient for the condemnation of the indicted. Therefore, it is safe to affirm that an expressive number of antitrust authorities worldwide consider minimum RPM to be a "hard core" restriction, resorting to multiple presumptions of its illegality and distinguishing between the treatment of minimum RPM and maximum RPM and/or price suggestion.

B. A pragmatic approach to "*per se*" or rule of reason debate

As mentioned, CADE has recently issued an important decision on RPM practices that may serve as guidance for future analyses of this conduct (CADE's administrative proceeding nº 08012.001271/2001-44). The administrative judgment started in 2009 after a few years of investigations carried out by the former Secretariat of Economic Law (known as "SDE" for its Portuguese acronym) over a minimum RPM practice promoted by the Brazilian SKF company with its commercial retailers. The company confirmed that it "collaborated" for the adoption of the "proceeding," and that the initiative to implement the RPM came from its network of distributors. It also failed to demonstrate the inexistence of unilateral or coordinated market power, considering that SKF had more than 20 percent of market shares on two of the four analyzed markets, including bearing and monitoring equipment in which the company's economic group had already been condemned for anticompetitive practices in France.

Despite these elements, CADE's Commissioners differed on the determination of the illegality of the conduct, particularly due to the analysis of its anticompetitive effects. While two Commissioners, including the first Reporting Commissioner, sustained that the RPM practice did not generate any anticompetitive effect, the rest of the Board argued for the condemnation of the company stating that the latter failed to demonstrate the positive impacts, in particular economic efficiency gain of the practice. For this reason, the Brazilian company SKF was fined to the amount of 1 percent of the company's revenues.

On economics grounds, it would not be adequate to simply prohibit the fixing of resale prices in all cases, as a classical *per se* approach, without admitting any kind of defense or exception. Yet, it would also be illogical to submit every RPM conduct case to a test of negative effects. This would be an unnecessary use of costly public resources, given the high probability that the conduct is anticompetitive. For this reason, the burden of efficiency gain should fall on the companies, and not the other way around in which the burden belongs to competition authorities to prove the anticompetitive effects of the RPM practice.

The decision enabled CADE to discuss and determine at which intermediate point the presumptions and standards of proof should be settled, rather than to focus on the academic debate of what category – *per se* or rule of reason – should be used to analyze the case, so that RPM practices could be clearly punished. Before this case, a careful and systematic analysis of how to deal with this kind of conduct had not been done in Brazil. The establishment of standards in this area is particularly necessary, especially at its most "suspect" angle, which is a minimum RPM practice carried out by an agent who holds significant market share (under Brazilian legislation, 20 percent of a given market). Given the circumstances above, it seems that neither a "rule of reason" nor a "*per se*" rule approach would be able to deal properly with the case. As mentioned, the two classical approaches do not seem to be technically in opposition, but instead seem to be extremes of the same spectrum of intensity; the simple application of either in a concrete case may lead to undesirable consequences.

One may label CADE's decision either as a rule of reason or an illicit *per se* approach. From an enforcer standpoint, this is irrelevant. What is relevant is the consolidation of the understanding that CADE will consider minimum RPM practices as presumably illegal. Of course, this implies an *iuris tantum* presumption, where companies are entitled to prove the economic efficiencies of the conduct, knowing in advance that this must be clearly demonstrated since RPM practices continue to be considered with skepticism for their competition advantages.

ONE MAY LABEL CADE'S DECISION EITHER AS A RULE OF REASON OR AN ILLICIT PER SE APPROACH. FROM AN ENFORCER STANDPOINT, THIS IS IRRELEVANT.

III. CONCLUSION

Vertical restraints may take shape under different forms, such as exclusivity, refusal to sell, loyalty discounts, price discrimination, and RPM practices. Even though these practices should capture special attention of competition enforcers, the Brazilian experience demonstrates that they correspond to less than 10 percent of CADE's total condemnations. Just recently, in 2013, CADE issued its first decision concerning RPM practices, and it is likely to serve as guidance for future cases in this field, namely for the methodology employed in the use of the rule of reason versus *per se* approaches.

Indeed, the debate between a *per se* or a rule of reason approach is interesting and stimulating, particularly in academic circles. However, from an enforcer standpoint, it seems that it is a false dichotomy, since competition analyses will always make some sort of rule of reason approach. What may radically change is how to weigh the presumption of legality, or illegality, of a particular conduct. CADE has recently issued an important decision on minimum RPM practices, which enables CADE to send an important message to companies, since any behavior that is a restriction directly related to price may be targeted by the regulator, given that there is certain skepticism on the efficiencies that outweigh the anticompetitive risks. This case indicates that its denouement would have been the same from both the *per se* and the rule of reason, in its *Sylvania* conception, approaches. By transferring the burden of proof from the Public Administration to the defendant, under economic and legal grounds, it was possible for CADE to not only condemn this anticompetitive practice, but also to define its own standards regarding minimum RPM for future cases.

INDEED, THE DEBATE BETWEEN A PER SE OR A RULE OF REASON APPROACH IS INTERESTING AND STIMULATING, PARTICULARLY IN ACADEMIC CIRCLES. HOWEVER, FROM AN ENFORCER STANDPOINT, IT SEEMS THAT IT IS A FALSE DICHOTOMY, SINCE COMPETITION ANALYSES WILL ALWAYS MAKE SOME SORT OF RULE OF REASON APPROACH.

1. Vinicius Marques de Carvalho is President of CADE; Paulo Burnier da Silveira is Head of International Unit at and CADE; Marcos Paulo Verissimo is a Commissioner at CADE.

2. CADE's Administrative Proceding nº 08012.003805/2004-10.

3. CADE's Administrative Proceding nº 08012.008678/2007-98.

Current Cases And Issues

Bid Rigging In Public Procurement Of Generic Drugs In Mexico

By Ernesto Estrada and Samuel Vazquez[1]

This document studies bid rigging in public procurement of generic drugs in Mexico. The study is based on the outcomes of a series of public auctions for generic drugs held in 52 different locations between 2003 and 2008. By applying price and market share screenings, we identify many drugs where lowest bids tend to be identical across auctions regardless of winner, location or contract volume; and market shares quickly converge over time. Additionally, bids dropped and the above pattern disappeared after aggressive entry or procurement consolidation occurred. These findings triggered a formal investigation by the Mexican antitrust agency of two of the largest families of drugs: insulin and saline solutions. These collusive patterns and other indirect evidence gathered during the investigation, led to issue a decision by the agency of illegal bid rigging in both cases.

I. INTRODUCTION

Cartels can significantly increase prices. For example, Connor (2010) analyzes studies and judicial decisions on 381 cartelized markets worldwide and estimates a long-run median overcharge of 23.3 %. This result has contributed to creating an international consensus to strengthen cartel prosecution.

Because of their secretive nature, competition agencies have focused prosecution efforts on developing cartel detection tools. The most important are leniency programs that promote collaboration of cartel members in exchange for reductions or elimination of sanctions. Other important sources of detection are complaints from disgruntled members or cartel employees, purchasers' or the general public's awareness and consequent complaints of suspicious collusive activities.[2]

Most agencies do not use economic evidence to detect cartels because they consider other methods more effective.[3] However, economic evidence may be relevant in jurisdictions where the perceived risk of being detected is low and there is little public awareness of cartels' presence and harm, such as in Mexico. For example, during 1993-2007, the Federal Competition Commission (hereafter CFC for its initials in Spanish), the Mexican antitrust agency, imposed total fines on cartels of only USD $6.5 million. These circumstances may limit the success of other methods of detection. On the other hand, they may facilitate applying economic tests for collusion in the past, since cartelists may have been less careful about acting strategically to "pass" this test.[4]

An economic test of collusion uses market information to test alternative hypotheses of competition and collusion. An inference of collusion would be supported if the data is consistent with the hypothesis of coordination and inconsistent with that of independent actions. If evidence is consistent with both hypotheses, the conclusion would be ambiguous and the inference of collusion may not be valid, particularly if contested in court.[5] However, even in these circumstances, the test can help competition agencies focus further detection efforts on cases where collusion is more likely to exist.[6]

An inference of collusion drawn from economic evidence would not necessarily differentiate between tacit and explicit collusion. Nevertheless, courts may not consider tacit collusion as illegal, so an inference of collusion from a legal perspective may require further evidence of explicit negotiations.[7]

This paper screens for bid rigging in the public procurement of generic drugs in Mexico. It uses outcomes of *first-price sealed-bid* auctions held in 52 different locations between 2003 and 2008 for total purchases of USD $2.2 billion.[8] The study applies collusion screenings derived from economic literature and, in many drugs, identifies bidding patterns that are consistent with bid rigging, but not with competition. Unit price bids vary across bidders in each auction, but the lowest bids tend to be identical across auctioneers and over time regardless of the winner; additionally, market shares quickly converge over time. These patterns seem consistent with the hypothesis of collusion under a dynamic bid-rotation mechanism that requires explicit communication among competitors, similar to the collusive scheme derived by Aoyagi (2003) and Athey and Bagwell (2001). Furthermore, bids dropped significantly and collusive bidding patterns disappeared after aggressive entry or procurement consolidation occurred, which further supports the hypothesis of collusion during the earlier years.

THIS PAPER SCREENS FOR BID RIGGING IN THE PUBLIC PROCUREMENT OF GENERIC DRUGS IN MEXICO. IT USES OUTCOMES OF FIRST-PRICE SEALED-BID AUCTIONS HELD IN 52 DIFFERENT LOCATIONS BETWEEN 2003 AND 2008 FOR TOTAL PURCHASES OF US$2.2 BILLION.

This analysis contributes to the empirical literature on cartel detection and the competitive design of public procurement auctions. It also allowed the CFC to initiate investigation proceedings and bring forward cases in two of the most important drug groups: insulin and saline solutions. Based on the collusive bidding patterns, plus evidence of explicit communications and other indirect evidence gathered during these proceedings, this agency ruled in 2010 that illegal bid rigging existed in both cases and imposed total fines of USD $12 million.[9]

The paper is organized as follows: Section II describes public procurement of generic drugs in Mexico, focusing on aspects that influence the feasibility of collusion. Section III briefly reviews the literature of collusive bidding, while section IV screens for collusive price and market share patterns to identify groups or families of drugs where collusion is more likely. Then, section V estimates the one-lag version of the ARCH model with structural shift due to collusion proposed by Bolotova et al. (2008) to validate some of the conclusions in section IV. Section VI evaluates to what extent the screening exercise constitutes an explicit test for collusion. Section VII presents final considerations.

II. DESCRIPTION OF THE MARKET AND AUCTION RULES

A generic drug is produced and commercialized once the patents of the corresponding original drug have expired and bioequivalence has been approved by the regulator. Generic drug procurement classifies drugs by its active ingredient, dosage, strength, and form of administration. However, drug manufacturers tend to compete within groups of drugs containing the same active ingredient, since they are substitutes on the supply side. Although most manufacturers in Mexico only have one manufacturing facility from where they distribute nationwide, bidders for a specific drug will convene throughout locations across the country.

A. Public procurement of generic drugs

The study focuses on procurement of generic drugs undertaken by the Mexican Institute of Social Security (hereafter IMSS for its initials in Spanish), the leading social security institution in Mexico and the largest public health care provider, offering health services—including drugs—to nearly 50 million people. In 2009, IMSS operated 1,795 medical units throughout the country to provide these services and spent a total of USD$1.8 billion in pharmaceuticals, of which 85 % were generic and 15 % patented.

Drug requirements are determined by each medical unit independently of prices. These requirements are then gathered and procured by regional purchasing units (auctioneers). The procurement of drugs is price inelastic below a reserve price determined by the auctioneer. The demand for drugs is highly correlated with the population covered by IMSS, which is increasing and highly predictable over time. For example, during 2005-2009, the population and drug expenses increased, in real terms, at an annual rate of 3.1 % and 3.9 %, respectively.

B. Auction rules and design[10]

All auctions are *first-price sealed-bid* auctions. Each auction allocates a specified volume of a particular drug to the lowest price per unit bid, as long as this bid is below the reserve price. In case of tied bids the winner is chosen among the lowest bidders by a random mechanism. Auctioneers are required to document the reserve price and have the option to keep it private or make it public, but in practice they rarely make it public. Finally, bids are opened publicly with the presence of all bidders.

Some auction rules limit international competition. First, auctions are reserved to nationals, unless the participation of foreigners is mandated by a free trade agreement or the auctioneer justifies an expected price reduction greater than 15 %. Furthermore, in international auctions, nationals have a 15 % price advantage over foreigners. In practice, auctioneers hold international auctions only by exception. Second, importers of drugs are required to have at least one manufacturing plant in Mexico,[11] which is generally unfeasible for global manufacturers of generic drugs, because they tend to concentrate their production in certain locations from where they export worldwide. Thus, even if auctions were international, global manufacturers would not necessarily participate.

C. Auction fragmentation and market concentration

During the period of analysis, auctions were frequent and highly fragmented. For example, between 2003 and 2006, there was an average per drug of 248 auctions. This fragmentation derives mainly from IMSS's procurement decentralization strategy. Between 2003 and 2006, IMSS decentralized auctions into 52 different regional procurement units across the country. Procurement concentrated at the regional level thereafter, moving to six units in mid-2006, three in 2007 and two in 2008. As we discuss below, this has reduced the feasibility of collusion.

A key (negative) aspect of IMSS's procurement decentralization strategy was that nobody compared auction results across the 52 procurement units or evaluated the effects of such strategy. On the other hand, bidders had a clear view of this picture, since the same bidders participated in auctions across the country.

A KEY (NEGATIVE) ASPECT OF IMSS'S PROCUREMENT DECENTRALIZATION STRATEGY WAS THAT NOBODY COMPARED AUCTION RESULTS ACROSS THE 52 PROCUREMENT UNITS OR EVALUATED THE EFFECTS OF SUCH STRATEGY.

Additionally, the supply of each generic drug is highly concentrated. For example, between 2003 and 2006, 14 of the 20 top selling drugs registered an HHI (Herfindahl-Hirschman Index) greater than 2,500 points.

D. Conditions that facilitate collusion

In general, conditions that reduce short-run gains from cheating relative to long-run gains from collusion tend to facilitate collusion. Several such conditions are identified in the public procurement of generic drugs:

- High market concentration reduces relative gains from cheating, and makes the agreement easy to reach because fewer firms are involved.
- Restrictions to international competition make collusion more attractive by reducing the risk that future collusive gains disappear due to the entrance of global manufacturers.
- Public information on bids facilitates detection of cheating and the imposition of penalties (Stigler, 1964; Green and Porter, 1984; and Abreu et al, 1986).
- High auction frequency helps to implement cartel penalties and reduces the ratio between present gains from cheating and future collusive gains; it also restricts the capacity of each auctioneer to fight collusion (Tirole, 1988; Snyder, 1996; and Compte 2000).
- Increasing and predictable demand reduces the ratio between present gains from cheating and future collusion (Haltiwanger and Harrington, 1991; and Bagwell and Staiger, 1997).
- Easy access to channels of communication among bidders facilitates reaching a cartel agreement (Grout and Sonderegger, 2005): manufactures of generic drugs meet regularly at the Committee on public procurement of the National Chamber of the Pharmaceutical Industry.
- Standardized products eliminate the need for cartelists to coordinate in other product dimensions but price, which facilitates cartel operations (Porter and Zona, 1999).

In summary, prevailing market conditions tend to facilitate collusion in the public procurement of generic drugs, particularly during 2003-2006.

III. PRICE AND MARKET SHARE PATTERNS UNDER BID RIGGING: THEORY AND EVIDENCE

In each auction, IMSS allocates a certain volume of a standardized drug to the lowest bidder. Bidders submit sealed bids and bids are publicly opened. The literature on similar auctions predicts certain bidding and market share patterns, as well as their differences with those under competition. The standard literature for this type of games derives a competitive (Bayesian Nash) equilibrium in which each firm's bidding function (b_i) is increasing on its costs (c^i) and below the purchaser's reserve price (p^r) (see, for example, Athey et al., 2004).

Bid rigging is generally identified with an agreement among bidders to increase bids above those under competition, which in turn introduces incentives to cheat. Thus it requires a mechanism of credible threats where short-run profits from cheating are equal to or lower than future losses from higher competition in response to cheating (Tirole, 1988). This type of mechanism may seem difficult to achieve, but the Folk theorem states that any feasible outcome better than the Nash equilibrium in the static game can be achieved through a Nash equilibrium in the infinitely repeated (dynamic) version of the game (Friedman, 1971). These possible results include optimal collusion equilibrium both with and without side payments in the static game. However, this theorem says nothing about which is the "natural equilibrium,", how bidders will choose such equilibrium or learn the associated rules or reach it. Moreover, it is silent about the need for explicit communication in this process.

On the other hand, the literature on similar auctions on dynamic auctions with public information on bids and private information on costs identifies specific collusive equilibriums and derives certain predictions certain on bidding and market share patterns, as well as and their differences with those under competition. Below we discuss these predictions and how to use them to identify groups of drugs where bid rigging is more likely.

A. Low price variance: theory and evidence

Auction theory derives optimal collusive schemes where bidders always bid the purchaser's reserve price (p^r) regardless of their cost, which predicts bids would tend to be more stable under collusion than under competition.[12] McAfee & McMillan (1992) show that the submission of identical bids among bidders equal to p^r is the optimal collusive mechanism in the static game if side-payment transfers among cartelists are not allowed. Athey et al. (2004) and Athey and Bagwell (2008) generalize this result for the dynamic game. They show that optimal collusion can be achieved if all firms bid p^r and share the market equally in each period, regardless of their costs, so long as all firms have selected p^r in all previous periods. These papers predict that, under optimal collusion, bids are identical across bidders in each auction and across auctions. This collusive scheme is not productive because high-cost bidders always get a share, but it reduces costs associated with deterring firms from understating their costs. Furthermore, if p^r is purchasers' private knowledge, this result requires explicit communication among bidders to agree upon the estimated p^r.

On the other hand, Aoyagi (2003) and Athey and Bagwell (2001) studied bid rigging in a dynamic game without side-payment transfers, but with communication among bidders. They derived a collusive equilibrium where in each period the lowest cost bidder bids p^r and the rest forgo market share to be favored with a higher expected market share in the future. This collusive scheme can achieve productive efficiency assuring the lowest cost bidder is the winner. These papers predict identical lowest bids across auctions, but a unique lowest bid in each auction.

Empirical literature relating to price variance under bid rigging is limited, most likely due to a lack of information required for this type of analysis. Abrantes-Metz et al. (2006) validated the low price variance prediction in the bid rigging cartel of frozen fish sold to the US Department of Defense uncovered by the US Department of Justice (DOJ).

Bolotova et al. (2008) provided similar evidence in the case of the international lysine and citric acid cartels. Although these cartels did not involve bid rigging, the screening procedures proposed by the authors may be valid for bid rigging. The authors estimated extended autoregressive conditional heteroscedasticity (ARCH) and GARCH (generalized ARCH) models to evaluate the effect on price level and variance of these conspiracies, which were uncovered by the US DOJ and competition authorities in other jurisdictions. Their fitted GARCH (1,1) models indicated that, relative to the competitive period, the lysine conspiracy increased prices by 24.4 percent and decreased price variance, while the citric acid increased prices by 11.9 percent, but also increased price variance.

B. Stable or converging market shares

In the literature we identify two alternative predictions on collusive market shares: stable market share associated with identical bids in each auction; and converging market share over time associated with unique lowest bids in each auction. Athey et al. (2004) and Athey and Bagwell (2008) derive a collusive scheme where bidders share the market equally every period; thus, shares will tend to be stable over time. On the other hand, Athey and Bagwell (2001) and Aoyagi (2003) obtain that the first-best collusion can be attained using history-dependent reallocation of market shares. In each period the lowest cost firm gets all sales, while the rest relinquish market share to be favored with a higher expected market share in the future; therefore, firms will take turns as winners and losers and each firm's market share will tend to be negatively correlated over time.[13]

Empirical studies on market share patterns under bid rigging are practically nonexistent, since the data required is typically not publicly available. On the other hand, there is some evidence that some kind of inter-temporal market sharing has been used in some detected cartels (Harrington, 2008), but none was associated with bid rigging.

IV. SCREENING FOR COLLUSION

We use a database with outcomes of an average of 248 auctions for each of 250 different generic drugs held between January 2003 and July 2008. This database was developed from copies of the official records of the auction outcomes, which, according to the Federal Transparency Law, constitute public information. Among other information, it includes: auction's date; identity of the product, bidders and auctioneers; bids; and volume allocated per bidder. To our knowledge, this is the first time such a database has been developed for Mexico.

Screening for collusion in each of the 250 drugs may be cumbersome, so we only screen for collusive patterns in the 20 top-selling drugs as well as other drugs containing similar active ingredient. Table A.1 and A.2 (Annex 1) present the 20 top-selling drugs and the corresponding lowest bid statistics, respectively.

A. Structural changes

A structural event that increases competition and breaks bid rigging would tend to reduce bids and increase bid variability, as well as to destabilize market shares or make them diverge. This type of break would allow the comparison of patterns during the supposed conspiracy and after it was broken. In this regard, both Abrantes-Metz et al. (2006) and Bolotova et al. (2008) compare collusive and competitive bidding based on a breakdown of conspiracies caused by the corresponding antitrust investigations.

However, ours is a detection exercise without prior evidence of a conspiracy. In our case, the procurement of generic drugs changed in several ways that could have broken potential conspiracies. The most important change was the aggressive procurement consolidation starting in July 2006 that aggregated the procurement of each drug into a few large national contracts instead of many fragmented local contracts. This consolidation involved all drugs and significantly decreased bids in many of them: it increased incentives to compete and made market allocation agreements more difficult. Furthermore, even before this consolidation, some drugs registered aggressive entry with similar effects; this is the case of drugs 1, 2 and 12:[11] in April 2005, bidder 112[12] entered the market for drug 2 with a 46 % discount over the prevailing price; in November, bidder 10 entered the market for drug 1 supplying imported product with a 22 % discount over the prevailing price; and on the same date, bidder 27 entered the market for drug 12, supplying its own product with a 4.1 % discount over the prevailing price that seems to have triggered a price war in later auctions. Annex 2 plots the lowest bids for each of the 20 top-selling drugs.

In the screening exercise below we use these events as reference. Specifically, we divide the data into two periods: before and after the corresponding break, or period I and II, respectively. These periods vary between drugs as follows: for drug 2, period I ends in March, 2005; drugs 1 and 12, in October, 2005; and the rest, in September, 2006.

B. Bidding patterns

Table A.2 summarizes the statistics of the lowest bids for each of the 20 top-selling drugs. Based on these data, we can associate drugs with the following groups of patterns:

- Group I: drugs 3, 4, 13, 15 and 16. Bids remain stable within each period and between periods, and there are almost no competing bids (see Table A.2).[13]
- Group II: drugs 1, 2, 5, 7, 8, 12, 17, 18, 19 and 20. Bids are relatively stable within

period I, but in period II they decrease and their variability increases.[14] Additionally, there are several simultaneous bids, except for drug 12, and lowest tight bids are infrequent, except for drug 2 (see in Table A.2).

- Group III: drugs 6, 9, 10 and 14. Bids decrease between periods, but bid variance remains relatively constant or decreases between periods.
- Group IV: drug 11. Both bid mean and variance increase between periods.

C. Market sharing patterns

As mentioned before, bidders coincide across drugs containing the same active ingredient, as they constitute the same generic drug and are perfect substitutes from the supply side. Therefore, a market-sharing agreement may include all drugs within a family and the agreed shares will not necessarily be derived from the shares observed in each drug. For this reason, in analyzing market share patterns we consider all drugs within the same generic name as one market. Table A.4 associates each of the 20 top-selling drugs with their corresponding family.

Furthermore, corporations frequently bid through different subsidiaries across auctions, so original individual bidders' market shares would underestimate actual market shares. To avoid this bias, we considered as one bidder all subsidiaries belonging to the same corporation. Although auctions' records do not associate individual bidders with their corresponding corporation, government contractors are obliged to upload their information to the website www.compranet.gob.mx, which is the public procurement database launched by the federal government for transparency purposes. Using this database as well as information from several bidders' web pages, we identify individual contractors having identical phones, fiscal addresses, web pages or contact officials; we then use this information to map the "original individual bidders" with the corporations that we consider as bidders in this study. Table A.5 presents the 20 top-selling bidders and their corresponding total sales; these bidders account for 75.7 % of total sales.

Finally, Table A.3 presents the market shares of the largest bidders in families of drugs associated with the 20 top-selling drugs.

Based on these data and other detailed information from the official records of the auction outcomes, families of drugs can be associated with the following groups of market-sharing patterns:

- Group A: rituximab, etanercept and sirolimus. One manufacturer dominates the market in both periods, and it does not face competing bids. In rituximab, bidder 2, a distributor of Roche's product, concentrates 100 % and 86.7 % of the market in period I and II, respectively. In etanercept and sirolimus, bidder 5 concentrates nearly 100 % in both markets in period I, but only 50 % in period II; however, the remaining share is captured by bidder 2 who distributes bidder 5's product.
- Group B: interferon. Manufacturers seem to present joint bids through distributors. In period I, bidder 15 (a distributor of Serono's product), bidder 19 (who manufactures its own product) and bidder 10 (a distributor of several competing manufacturers: Bayer Shering Pharma, Probiomed and Crone) have market shares

of 30.5 %, 29.9 % and 22.8 %, respectively, but they do not bid simultaneously; in period II, bidder 19 does not participate and bidder 15's share drops to 12.7 %, while bidder 10's increases to 35.5 % and bidders 2 and 20 enter and reach market shares of 21.4 % and 28.5 %, respectively, but they do not bid simultaneously. Not surprisingly, both bidder 2 and 20 are distributors of several competing manufacturers (including bidder 19 and Serono).

- Group C: insulin, eperubicin and saline solutions. In period I, three to four bidders concentrate nearly 100 % of the market and their market shares converge to relatively similar levels; then in period II, high market concentration remains, but the tendency to distribute the market in similar shares among the original bidders disappears.
- Group D: calcium, benzylpenicillin, omeprazole, dicloxacilin, ampicilin and methylprednisolone. In period I, four bidders concentrate between 43.6 % and 80.3 % of the market, but their market shares do not seem to converge. In period II some bidders no longer bid and new bidders enter but shares do not converge nor is there a clear pattern.
- Group E: diclofenac. One manufacturer dominates the market in both periods and its dominance increases in period II.
- Group F: mycophenolic acid: In period I, two manufacturers dominate the market and there are almost no competing bids, but market shares do not seem to converge. Then in period II, these two bidders only capture 17 % of the market and the number of competing bids almost double.
- Group G: pentoxifylline: One manufacturer dominates the market in both periods, but its dominance falls in period II.

D. Combining bidding and market share patterns

Combining the results in the previous two sections, we propose the following groups of hypotheses:

- Unbroken monopoly: rituximab, etanercept and sirolimus. In both periods bids remain stable, and one manufacturer, who faces no competing bids, monopolizes the market. A monopoly will tend to bid their estimated purchaser's reserve price (p^r), and keep it stable if they do not expect p^r to change across auctions.
- Unbroken collusion: interferon. Prices remain stable during both periods; there are no competing bids; and manufacturers seem to take turns as bidders or present joint bids through common distributors. An optimal bid rig will tend to bid its estimate of the purchaser's reserve price (p^r), and keep it stable if they do not expect p^r to change across auctions; additionally, the presence of only one bidder per auction suggests that players take turns as bidders.
- Strengthened market dominance: dicoflenac. Both mean bid and market dominance increase between periods.
- Weakened market dominance: pentoxifylline. Both mean bid and market dominance decreases between periods.
- Broken collusion; insulin, eperubicin and saline solutions. In period I, prices are

stable, there are several bids per auction, three to four players concentrate nearly 100 percent of the market and market shares converge. In period II, price mean decreases and price variance increases; the market remains concentrated but market shares diverge. The patterns seem consistent with collusion in period I where conspirators take turns as winners and losers for their market shares to converge over time: the winner submits a bid that remains relatively stable across auctions regardless of the winner; and losers offer higher (phony) bids to simulate competition. These patterns disappear in period II.

- Broken collusion? mycophenolic acid: In period I, prices are stable, there are almost no competing bids and two players concentrate 93 % of the market, but their market shares do not converge. In period II, mean price decreases and price variance increases. The market remains concentrated but the original bidders lose most of their market shares. These patterns seem consistent with collusion in period I where conspirators take turns as bidders, except for market shares that do not converge. One possible explanation is that there were not enough auctions for these shares to converge before the structural break occurred: by far this is the drug with the lowest number of auctions (interactions) during period I (see table A.2).
- Broken collusion or increased competition?: calcium, benzylpenicillin, omeprazole, dicloxacilin and ampicilin. Some elements suggest collusion, but others competition. In these drugs the mean bid decreases but market shares are not as concentrated and convergent as in the previous group. In calcium, benzylpenicillin and dicloxacilin bid variability increases between periods but in omeprazole and ampicilin it remains relatively constant. We do not discard bid rigging in this group, but consider it less likely than in the previous group.

E. Screening for collusion: Summary

Based on these findings, we hypothesize bid rigging is most likely in the following families of drugs: interferon, insulin, eperubicin, saline solutions and mycophenolic acid. Table 1 presents the market shares of the largest bidders in each family during period I (we exclude interferon because manufacturers' market shares are unknown as they bid through common distributors). The data reveals a noticeable feature: bidder 1 is present in the four groups of drugs; were this bidder to play a leading role in the bid rigging, it would help explain common features across conspiracies.

Table 1: Hypothesized bid rigs, market shares in period I

Generic Drug	Bidders								
	1	4	6	7	8	11	15	18	24	Total
Saline Solutions	33.8%				32.3%	31.4%				97.4%
Insulin	23.8%			26.4%			20.2%		28.5%	98.8%
Eperubicin	33.5%	28.9%	34.6%							96.9%
Mycophenolic acid	55.9%							37.2%		93.0%

The purpose of this screening exercise is to identify cases where collusion is more likely, focus detection efforts here without discarding the possibility of collusion in other drugs or families of drugs, since identifying collusion in all drugs lies beyond the scope of this study.

Finally, the analysis focuses on the largest bidders because markets are highly concentrated, so key aspects of cartel functioning can be captured by this analysis even if cartel membership includes smaller bidders.

V. A MORE "FORMAL" PRICE SCREENING FOR COLLUSION[15]

In this section we estimate the one-lag version of the Auto-Regressive Conditional Heteroscedasticity (ARCH) model proposed by Bolotova et al. (2008) to verify if drugs grouped as "Broken collusion" above (insulin, eperubicin, mycophenolic acid, and saline solutions) actually follow bidding patterns consistent with such a hypothesis.[16] Following these authors, the ARCH (1) model with structural shift due to collusion is represented by equations (1) and (2):

$$1)\ p_t = \psi_0 + \psi_1 p_{t-1} + d_t (\theta_0 + \theta_1 p_{t-1}) + u_t$$

$$2)\ u_t^2 = \alpha_0 + \alpha_1 u_{t-1}^2 + d_t (\beta_0 + \beta_1 u_{t-1}^2) + w_t$$

Where p_1 is the bid in the auction held in period t; d_t is the "collusion dummy variable" (CDV) that is equal to 1 during the conspiracy (in our case, period I) and to 0 after it was broken; and both u_t and w_t are white noises. Under the "broken collusion" hypothesis, the mean bid is expected to increase and the variance to decrease during the conspiracy; so the estimated coefficient for the CDV is expected to be positive in the mean equation (equation 1) and negative in the variance equation (equation 2).

As Bolotova et al., we first tested if bid time series was stationary, heteroscedastic and auto-correlated to validate the use of the ARCH model. The null hypothesis (H_o) of unitary root was evaluated using both the standard Dickey-Fuller test (Dickey and Fuller, 1979 and 1981) and the Phillips-Perron test with structural break (Phillip and Perron, 1988); the H_o of homoscedasticity was evaluated using the ARCH test; and the Ho of uncorrelated mean and variance changes was evaluated using the Ljung–Box–Pierce test (Box and Pierce, 1970; and Ljung and Box, 1978).

Table 2 presents the resulting p-values for insulin (drug 1), eperubicin (drug 7), mycophenolic acid (drug 12), and saline solutions (drugs 17, 19 and 29). In summary, these time series are stationary, except for drug 12,[17] heteroscedastic, and auto-correlated.

Table 2: diagnostic tests, p-values

Drug	Test			
	D-F[a]	PP[b]	ARCH[c]	LBP[d]
1	0.0415	0.0064	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000
12	**0.5079**	**0.3489**	0.0289	0.0000
17	0.0000	0.0000	0.0000	0.0000
19	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000

[a] Dickey-Fuller test; [b] Phillips-Perron test; [c] ARCH test;
[d] Ljung–Box–Pierce test

Next, we estimate the ARCH (1) model: Table 3 presents a summary of the Maximum Likelihood (ML) estimation results. These results are consistent with the "broken conspiracy" hypothesis (except for drug 12): the effect of the CDV is positive and statistically significant in the bid equation; and negative and statistically significant in the variance equation. In drug 12 the effect of the CDV has the expected sign in both equations, but it is not statistically significant in the variance equation and in the bid equation it is significant but only at the 10 % level.

Table 3, ARCH(1) Model, Maximum Likelihood estimation results

Drug	Bid Equation				Variance Equation			
	P_{t-1}		Conspiracy Dummy		u^2_{t-1}		Conspiracy Dummy	
	Coeff.	P-Value	Coeff.	P-Value	Coeff.	P-Value	Coeff.	P-Value
1	0.9588	0.0000	0.6458	0.0000	0.8207	0.0000	-3.7905	0.0000
7	0.8831	0.0000	0.6008	0.0000	7.5597	0.0000	-2.7498	0.0000
12	0.957	0.0000	0.8267	0.0959	0.2934	0.0016	-0.2283	0.5611
17	0.8471	0.0000	0.3159	0.0000	0.3251	0.0000	-1.5212	0.0000
19	0.9198	0.0000	0.5503	0.0000	0.5862	0.0000	-0.902	0.0000
20	0.9259	0.0000	0.3654	0.0000	2.888	0.0000	-2.7648	0.0000

As Bolotova et al, we use the fitted model to estimate the price overcharge due to the conspiracy.[20] This overcharge is calculated as $(P^I-P^{II})/P^I$ where P^I is the mean estimated bid during period II and P^{II} is P^I minus the estimated coefficient of the conspiracy dummy variable. The estimated overcharges for drugs 1, 7, 12, 17, 19 and 20 are 35 %, 5 %, 21 %, 17 %, 18 % and 17 %, respectively.

VI. AN EXPLICIT TEST FOR BID RIGGING?

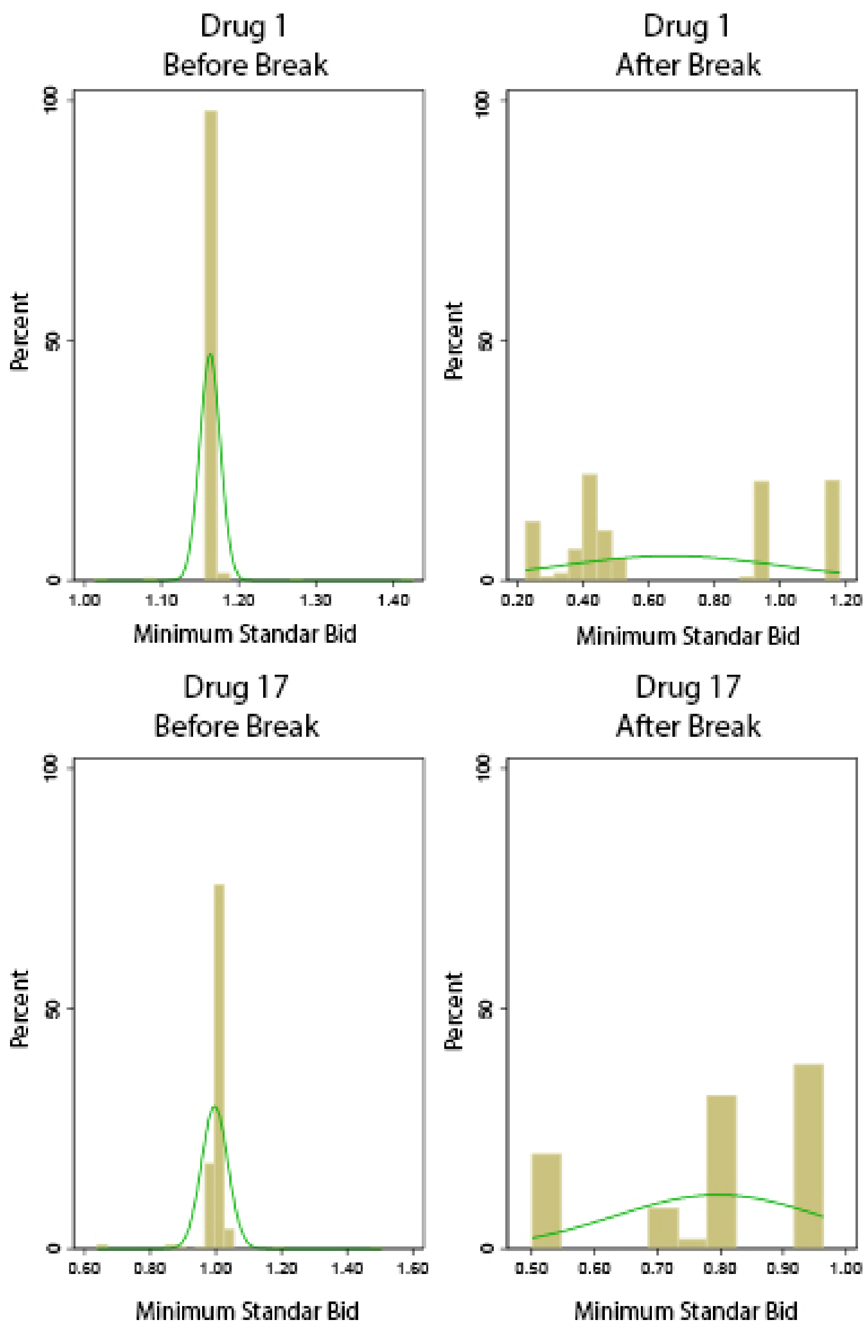
The price and market share screening above described are consistent with the hypothesis of bid rigging in interferon, saline solutions, insulin, eperubicin and mycophenolic acid under the following mechanism: i) bidders take turns as winners and losers to reach converging market shares over time; ii) the winner in turn submits a pre-agreed bid, which is sustained stable across auctions; and iii) losers in turn offer higher (phony) bids to simulate competition.[18] The screening also indicates that arrangements were broken after aggressive entry (insulin and mycophenolic acid) or procurement consolidation (eperubicin and saline solutions); in the case of interferon the conspiracy seems to have survived during the entire period of analysis.

A. Fixed lowest bids across auctions and phony bids

There is an extensive literature that explicitly tests for bid rigging by estimating what each firm bids as a function of exogenous variables affecting costs, the probability of winning, and evaluating whether the results are consistent with competition or collusion. In this case, we highlight, Porter and Zona (1993 and 1999), Bajari and Ye (2003) and Ishii (2008).[19] We do not, however, have access to cost variables to perform similar tests.[20] On the other hand, it may not be necessary to observe cost variables to conclude that during the proposed cartel period the observed bids were unlikely to arise from a competitive bidding.

First, in the great majority of auctions, the lowest bids are practically identical: in drugs 1, 7, 12, 17, 19 and 20 the frequency of lowest bid mode (the most frequent lowest bid) was, on average, 77 % before the break. Such an event is unlikely, even under minimum cost variation, uncertainty and private information. Second, this indicates that lowest bids were predictable across auctions, so bidders presenting higher bids most likely knew they would lose, suggesting an agreement for some bidders to participate only to simulate competition. As an illustration, Figure 1 plots the histogram and estimated density function of the standardized lowest bids associated with drugs 1 and 17.

Figure 1. Histogram and estimated density function



B. Bid rotation mechanism

The market share patterns observed in these groups of drugs suggest that bidders may have agreed upon a bid rotation mechanism to "even up" market shares in the medium term. A bid rig must decide how to choose the winner in each auction. It could choose it randomly by submitting identical bids in each auction and relying on the high frequency of auctions to equalize market shares over time. However, this does not seem to be the case: in each auction there were several bids and tight lowest bids were present in only 6.2 % of the time on average. Alternatively, the cartel could have used knock-out auctions to choose the lowest cost bidder as the winner in each auction and rely on the high frequency of auctions to even up market shares over time without foregoing productive efficiency (assuming no side-payments were possible). Unfortunately, we do not have cost data to evaluate to what extent the suspected cartels used a cost-based bid rotation scheme. Finally, the cartel could have used a number of predetermined arrangements to rotate contracts such as the "phases of the moon," which would be difficult to identify without previous knowledge of the specific arrangement.

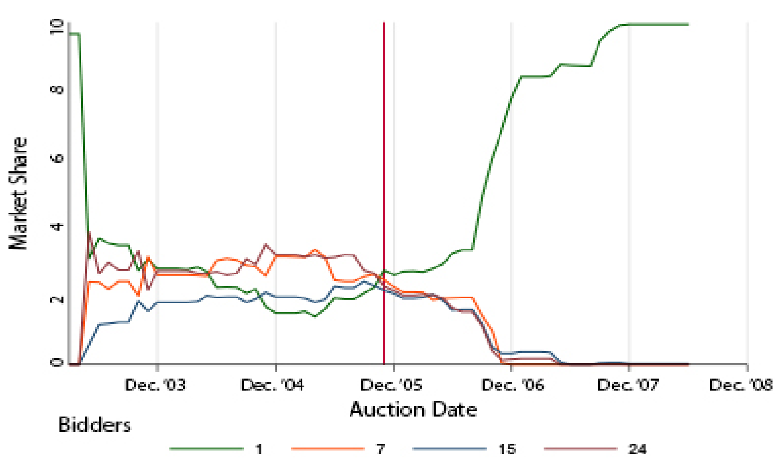
THE MARKET SHARE PATTERNS OBSERVED IN THESE GROUPS OF DRUGS SUGGEST THAT BIDDERS MAY HAVE AGREED UPON A BID ROTATION MECHANISM TO "EVEN UP" MARKET SHARES IN THE MEDIUM TERM.

On the other hand, regardless of the specific form it takes, an inter-temporal market sharing mechanism would lead market shares to quickly converge to relatively similar levels and stay stable around such levels. In contrast, if the conspiracy were broken, market shares would diverge from their original targets and be less stable. These patterns are clearly observed in insulin, eperubicin and saline solutions, as we can see in Figure 2 that plots the accumulated market shares of the largest bidders considering a12-month period.[21]

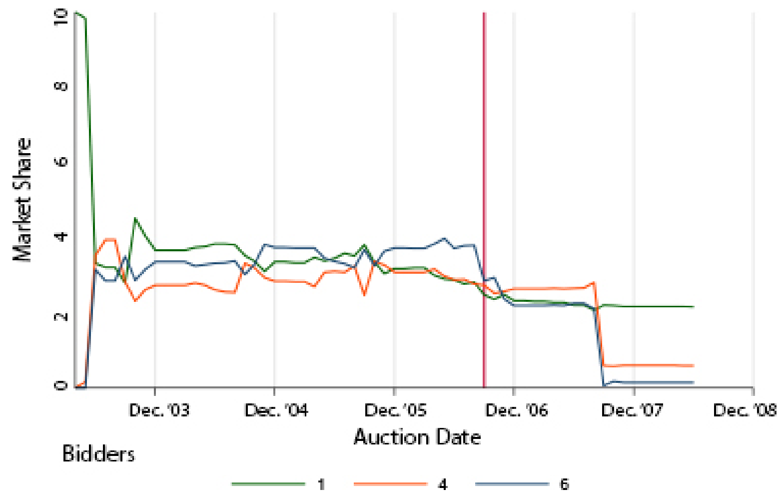
Figure 2. Accumulated market shares[22]

(The red vertical line indicates the date of the potential structural break)

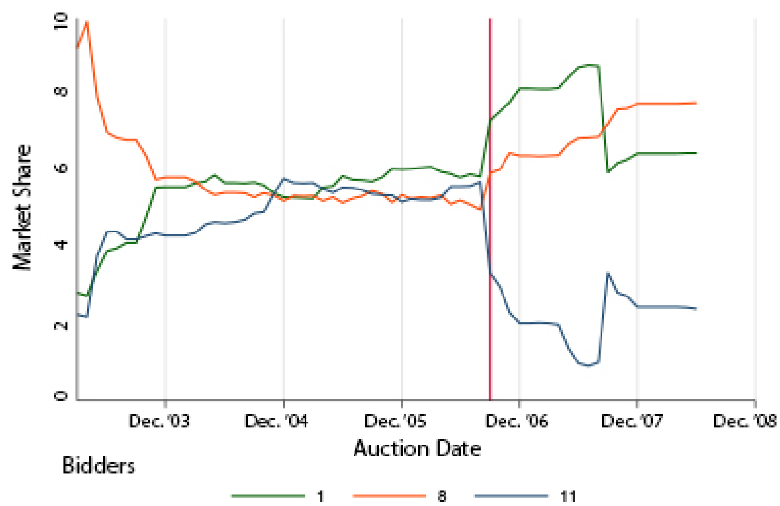
Insulin



Eperubicin



Saline solutions



C. Implicit vs. Explicit Collusion

This collusive scheme is associated with explicit collusion. First, it includes a history-dependent reallocation of market shares, implying that the cartel needed a rule to allocate auctions among members. An agreement upon such a rule would necessarily require explicit communication among members. Second, cartelists also needed to explicitly communicate to agree upon the lowest bid, since the purchaser's reserve price was not public.

VII. FINAL COMMENTS

This work presents economic evidence suggesting possible explicit bid rigging in public procurement of some generic drugs in Mexico, particularly in insulin, saline solutions, interferon, epirubicin and mycophenolic acid. It provides empirical evidence for undertaking further investigation into these markets. In fact, this work triggered a formal investigation by the CFC in the two groups of drugs where the collusive patterns were clearer and estimated price effects higher: insulin and saline solutions. This investigation concluded in late 2010 and gathered evidence on regular explicit communication among executives in charge of presenting bids for the involved firms; it also found that the frequency of such communication increased before major auctions. Also, the involved firms failed to provide a reasonable alternative explanation to the observed collusive bidding patterns; some of them even offered tacit collusion as an alternative explanation.

THIS WORK TRIGGERED A FORMAL INVESTIGATION BY THE CFC IN THE TWO GROUPS OF DRUGS WHERE THE COLLUSIVE PATTERNS WERE CLEARER AND ESTIMATED PRICE EFFECTS HIGHER: INSULIN AND SALINE SOLUTIONS.

In 2006 firms involved in the insulin cartel initiated a proceeding for predatory pricing against the bidder whose entrance in late 2005 seems to have broken the cartel. However, in the CFC's investigation, these firms claimed that lower bids after November 2005 were attributable to reductions in their costs and not to a broken cartel, but were unable to prove such claim. A comprehensive evaluation of the evidence gathered through the investigation together with the economic evidence led the CFC to issue a decision on the existence of illegal bid rigging in both groups of drugs.

Additionally, the analysis indicates the presence of monopolies in several families of drugs; this is the case in rituximab, diclofenac, etanercept, and sirolimus. In these cases, further investigation would be advisable to identify potential barriers to entry or even to evaluate the possibility of collusion through the allocation of different families of drugs to different manufacturers.

Finally, our work shows not only that bid rigging can be pervasive and impose a substantial burden on taxpayers (the beneficiaries of the IMSS), but also that such behavior can be effectively prevented with an adequate auction design and that such a design plays a major role in enhancing competition in public procurement. For example, this study suggests that through its procurement decentralization strategy enacted before July 2006, IMSS actually surrendered its tremendous purchasing power. ◀

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ANNEX 1: TABLES

Table A.1. 20 top-selling drugs

Drug ID[a]	IMSS's Code	Generic Name	Sales (Million USD)	Share in total sales
1	1050	Insulin	78.3	3.6%
2	1006	Calcium	41.3	1.9%
3	5445	Rituximab	40.6	1.9%
4	5237	Interferon	34.9	1.6%
5	1924	Benzylpenicillin	28.7	1.3%
6	5187	Omeprazole	27.0	1.2%
7	1774	Eperubicin	26.8	1.2%
8	1926	Dicloxacilin	26.5	1.2%
9	1929	Ampicillin	26.2	1.2%
10	0476	Methylprednisolone	25.1	1.2%
11	3417	Diclofenac	24.4	1.1%
12	5306	Mycophenolic acid	23.9	1.1%
13	5250	Interferon	23.8	1.1%
14	4117	Pentoxifylline	23.8	1.1%
15	4510	Etanercept	23.2	1.1%
16	5087	Sirolimus	23.2	1.1%
17	3610	Saline solution	22.9	1.1%
18	1095	Calcitriol	21.5	1.0%
19	3608	Saline Solution	21.1	1.0%
20	3603	Saline solution	21.0	1.0%
Sub total			584.2	26.8%
Other drugs			1,598	73.2%
Total			2,182	100.0%

[a]Drug's ID corresponds to each drug's ranking in total sales

Table A.2: Lowest bid statistics, 20 top-selling drugs

Drug ID[a]	Perido I Mean[b] (A)	CV[c] (%) (B)	Aucs # (C)	USD[d] (000) (D)	Bids/ Aucs	Tight Bids[e] (%)	Perido II Mean[b] (E)	CV[c] (%) (F)	Aucs # (G)	USD[d] (000) (E)	Bids/ Aucs	Tight Bids[e]	Bids/ Aucs	Tight Bids[e] (%)	Changes Δ Mean	Δ CV	Grupo
1	100	1.9	214	256	3.3	4.0	53	53.5	146	161	3.4	19.4	3.4	19.4	-46.8	51.5	II
2	100	5.4	129	249	3.7	67.3	30	57.6	157	58	5.8	8.8	5.8	8.8	-69.9	52.3	II
3	100	4.0	35	139	1.0	0.0	104	1.7	12	2,982	1.0	0.0	1.0	0.0	4.0	-2.3	I
4	100	4.5	112	126	1.0	0.0	100	1.5	23	903	1.1	0.0	1.1	0.0	0.1	-3.0	I
5	100	6.8	289	76	4.5	9.7	68	27.0	23	293	4.0	11.5	4.0	11.5	-32.3	20.2	II
6	100	14.0	186	54	2.4	8.0	79	14.9	35	484	2.3	22.2	2.3	22.2	-20.6	0.9	III
7	100	4.1	223	65	1.8	10.4	94	16.9	27	451	2.5	49.1	2.5	49.1	-6.0	12.8	II
8	100	6.5	277	67	2.4	12.9	85	20.4	31	255	3.1	28.6	3.1	28.6	-15.3	13.9	II
9	100	7.6	284	64	2.7	15.4	93	10.0	28	288	3.4	6.7	3.4	6.7	-7.1	2.4	III
10	100	9.3	296	52	3.7	15.7	86	3.4	32	307	3.9	5.9	3.9	5.9	-14.1	-5.9	III
11	100	21.0	292	45	2.4	33.9	111	39.6	36	310	1.5	10.0	1.5	10.0	11.4	18.6	IV
12	100	9.7	20	87	1.2	9.1	74	35.2	68	325	2.1	17.6	2.1	17.6	-26.3	25.5	II
13	100	4.2	141	45	1.2	0.0	103	0.7	25	701	1.0	0.0	1.0	0.0	3.1	-3.5	I
14	100	15.3	318	38	2.3	17.1	93	15.7	40	292	2.5	7.1	2.5	7.1	-6.9	0.5	III
15	100	4.4	58	62	1.0	0.0	105	1.7	14	1,400	1.1	6.7	1.1	6.7	5.3	-2.7	I
16	100	4.0	84	67	1.0	0.0	101	7.1	23	763	1.0	0.0	1.0	0.0	0.5	3.2	I
17	100	4.5	304	57	2.8	4.7	80	20.7	35	160	3.1	2.8	3.1	2.8	-19.8	16.2	II
18	100	7.1	252	65	2.4	16.6	54	63.6	38	136	5.0	22.4	5.0	22.4	-46.0	56.5	II
19	100	5.8	310	53	2.8	5.5	78	26.0	29	163	3.0	0.0	3.0	0.0	-22.3	20.2	II
20	100	3.4	290	57	2.9	3.7	81	17.6	30	150	2.9	3.2	2.9	3.2	-19.1	14.3	II
	100	**7.2**	**206**	**86**	**2.3**	**11.7**	**84**	**21.7**	**43**	**529**	**2.7**	**11**	**2.7**	**11.1**	**-16.4**	**14.6**	

Note: All bid statistics correspond to lowest bids, except for Bids/Auc that includes all bids

[a] Drug ID correspond to each drug's ranking in total purchases

[b] Bids were standarized to the average bid during Period I

[c] Coefficient of variation (standard deviation/mean)

[d] Average amount allocated per auction

[e] % of auctions with tight lowest bids

Table A.3: Generic drugs, bidders and market shares

Table A.2: Lowest bid statistics, 20 top-selling drugs

Drug ID[a]	Perido I Mean[b] (A)	CV[c] (%) (B)	Aucs # (C)	USD[d] (000) (D)	Bids/ Aucs	Tight Bids[e] (%)	Perido II Mean[b] (E)	CV[c] (%) (F)	Aucs # (G)	USD[d] (000) (E)	Bids/ Aucs	Tight Bids[e]	Bids/ Aucs	Tight Bids[e] (%)	Changes Δ Mean	Δ CV	Grupo
1	100	1.9	214	256	3.3	4.0	53	53.5	146	161	3.4	19.4	3.4	19.4	-46.8	51.5	II
2	100	5.4	129	249	3.7	67.3	30	57.6	157	58	5.8	8.8	5.8	8.8	-69.9	52.3	II
3	100	4.0	35	139	1.0	0.0	104	1.7	12	2,982	1.0	0.0	1.0	0.0	4.0	-2.3	I
4	100	4.5	112	126	1.0	0.0	100	1.5	23	903	1.1	0.0	1.1	0.0	0.1	-3.0	I
5	100	6.8	289	76	4.5	9.7	68	27.0	23	293	4.0	11.5	4.0	11.5	-32.3	20.2	II
6	100	14.0	186	54	2.4	8.0	79	14.9	35	484	2.3	22.2	2.3	22.2	-20.6	0.9	III
7	100	4.1	223	65	1.8	10.4	94	16.9	27	451	2.5	49.1	2.5	49.1	-6.0	12.8	II
8	100	6.5	277	67	2.4	12.9	85	20.4	31	255	3.1	28.6	3.1	28.6	-15.3	13.9	II
9	100	7.6	284	64	2.7	15.4	93	10.0	28	288	3.4	6.7	3.4	6.7	-7.1	2.4	III
10	100	9.3	296	52	3.7	15.7	86	3.4	32	307	3.9	5.9	3.9	5.9	-14.1	-5.9	III
11	100	21.0	292	45	2.4	33.9	111	39.6	36	310	1.5	10.0	1.5	10.0	11.4	18.6	IV
12	100	9.7	20	87	1.2	9.1	74	35.2	68	325	2.1	17.6	2.1	17.6	-26.3	25.5	II
13	100	4.2	141	45	1.2	0.0	103	0.7	25	701	1.0	0.0	1.0	0.0	3.1	-3.5	I
14	100	15.3	318	38	2.3	17.1	93	15.7	40	292	2.5	7.1	2.5	7.1	-6.9	0.5	III
15	100	4.4	58	62	1.0	0.0	105	1.7	14	1,400	1.1	6.7	1.1	6.7	5.3	-2.7	I
16	100	4.0	84	67	1.0	0.0	101	7.1	23	763	1.0	0.0	1.0	0.0	0.5	3.2	I
17	100	4.5	304	57	2.8	4.7	80	20.7	35	160	3.1	2.8	3.1	2.8	-19.8	16.2	II
18	100	7.1	252	65	2.4	16.6	54	63.6	38	136	5.0	22.4	5.0	22.4	-46.0	56.5	II
19	100	5.8	310	53	2.8	5.5	78	26.0	29	163	3.0	0.0	3.0	0.0	-22.3	20.2	II
20	100	3.4	290	57	2.9	3.7	81	17.6	30	150	2.9	3.2	2.9	3.2	-19.1	14.3	II
	100	**7.2**	**206**	**86**	**2.3**	**11.7**	**84**	**21.7**	**43**	**529**	**2.7**	**11**	**2.7**	**11.1**	**-16.4**	**14.6**	

Note: All bid statistics correspond to lowest bids, except for Bids/Auc that includes all bids

[a] Drug ID correspond to each drug's ranking in total purchases

[b] Bids were standarized to the average bid during Period I

[c] Coefficient of variation (standard deviation/mean)

[d] Average amount allocated per auction

[e] % of auctions with tight lowest bids

a: Bidder´s ID corresponds to the bidder's ranking in total sales for all drugs.

Table A.4, families of drugs associated with the 20 top selling drugs

Family	Drugs	Sales (Million USD)	Share in total sales
Insulin	1 and 91	86	3.9%
Calcium	2 and 18	63	2.9%
Rituximab	3 and 60	52	2.4%
Interferon	4, 13 and 33	74	3.4%
Benzylpenicillin	5, 95 and 225	39	1.8%
Omeprazole	6 and 179	31	1.4%
Eperubicin	7 and 175	31	1.4%
Dicloxacilin	8, 114 and 167	37	1.7%
Ampicillin	9, 103, 116	39	1.8%
Methylprednisolone	10 and 113	31	1.4%
Diclofenac	11 and 242	27	1.2%
Mycophenolic acid	12	24	1.1%
Pentoxifylline	14	24	1.1%
Etanercept	15	23	1.1%
Sirolimus	16 and 77	33	1.5%
Saline solutions	17, 19, 20, 37, 40, 43, 50, 70, 79, 105, 177, 222, 245, 246, 247, 248, 249 and 250	159	7.3%
Sub total		**773**	**35.4%**
Other families		**1,409**	**64.6%**
Total		**2,182**	**100.0%**

Table A.5 20 top-selling bidders

Bidder's ID[a]	Bidder's Name	Sales (million USD)	Share in total sales
1	Grupo Pisa	310	14.2%
2	Grupo Fármacos Especializados	247	11.3%
3	Grupo CPI	152	7.0%
4	TEVA México	95	4.4%
5	Equimed, S.A. de C.V.	93	4.3%
6	Selecciones Médicas, S.A. de C.V.	83	3.8%
7	Grupo IFACO	78	3.6%
8	Grupo Fresenius	70	3.2%
9	Grupo Pego	66	3.0%
10	Savi Distribuciones, S.A. de C.V.	62	2.8%
11	Baxter, S.A. de C.V.	59	2.7%
12	Farmacéuticos Maypo, S.A. de C.V.	52	2.4%
13	Representaciones e Investigaciones Médicas, S.A. de C.V.	50	2.3%
14	Importadora y Manufacturera Bruluart, S.A. de C.V.	47	2.2%
15	Probiomed, S.A. de C.V.	43	2.0%
16	Ralca, S.A. de C.V.	36	1.6%
17	Compañía Internacional Médica, S.A. de C.V.	35	1.6%
18	Grupo PIHCSA	25	1.1%
19	Pro Inmune, S.A. de C.V.	24	1.1%
20	Proquigama, S.A. de C.V.	24	1.1%
Sub total		**1,651**	**75.7%**
Other bidders		**531**	**24.3%**
Total		**2,182**	**100.0%**

[a] Bidder's ID corresponds to each bidder's ranking in total sales

1. Authors can be contacted at: eestrada@cfc.gob.mx and samuel.vazquez@bbva.com; their views do not necessarily reflect those of the Federal Competition Commission or BBVA Research.

2. (Harrington, 2008).

3. See for example, Monsanto Co. v. Spray-Rite Service Corp., 465, US 752 (1984).

4. See for example, Theatre Enterprises v. Paramount Distributing, 346 U. S. 537 (1954), and Brooke Group Ltd. v. Brown &Williamson Tobacco Corp., 509 US 227 (1993).

5. Mexican pesos were converted to US dollars using a 12.5 exchange rate.

6. The decision can be found at: http://www.cfc.gob.mx/docs/pdf/resolucion_final_medicamentos.pdf

7. Auction regulations are established in Public Procurement Law; the Health Inputs Regulations; and the Federal Competition Law.

8. This was a requirement during the period of analysis, but it was already eliminated.

9. Harrington (2008) proposes this as a "collusive marker".

10. Harrington (2008) proposes both patterns as "collusive markers".

11. Drug's ID corresponds to each drug's ranking in total purchases.

12. Bidder's ID corresponds to each bidder's ranking in total sales.

13. In drugs 13, 15 and 16, bids registered regular upward adjustments during the early periods.

14. In the case of drug 7, bids remain stable after the break and dropped only until the end of period II.

15. For the analysis in this section we introduced some adjustments to our original data. First, each bid is associated with a specific auction date, but auctions do not necessarily follow a regular periodicity; we addressed this problem by simply assigning t=1 to the date of earliest auction, t=2 to the date of the next auction, and so on, regardless of the time span between two subsequent auctions. Second, in many drugs, there was a high frequency of identical lowest bids across auctions and over time (see Table A.2), so that several lowest bid time series lack enough variability to estimate these models; we addressed this problem by including all bids in the time series not only lowest bids.

16. Hamilton (1994) analyzes the properties and estimation methods associated with the original ARCH and GARCH models; regarding the ARCH and GARCH models Bolotova et al (2008, p 1299) point out: "… they allow for simultaneous estimation of the conditional mean and conditional variance processes over time. The models assume that unconditional variances are homoscedastic, and conditional variances depend on the vari-

ances in previous periods and are heteroscedastic (i.e. change over time)."

17. Drug 12 seems to have registered a price war during the whole duration of period II.

18. In the case of interferon and mycophenolic acid, manufacturers seem to have taken turns as bidders or present joint bids through common distributors(interferon), so there were no losers or phony bids.

19. Harrington (2008) and Hendricks and Porter (2007) review this literature.

20. The only variables that we observed and may affect costs are the volume associated with each contract and the distance between the location of the bidder and auctioneer. For each bidder and each drug, we computed a linear regression on the log of the bids as a function of the logs of these two variables, and, in the great majority of the cases, the coefficients were not statistically significant.

21. In insulin this includes four bidders accounting for 98.8 % of the sales during period I and 86.4 % during period II; in eperubicin, three bidders accounting for 96.9 % during period I and 54.3 % during period II; and in saline solution, three bidders accounting for 97.4 % during period I and 99.9 % during period II.

22. Bidder i's market share at month t (s_{it}) was calculated as follows: $s_{it} = \frac{\sum_{\tau=t-11}^{t} Q_{i\tau}}{\sum_{\tau=t-11}^{t} Q_{\tau}}$ for t ≥12 and $s_{it} = \frac{\sum_{\tau=0}^{t} Q_{i\tau}}{\sum_{\tau=0}^{t} Q_{\tau}}$ for t <12, where $Q_{i\tau}$ and Q_t represent bidder i's sales and total sales at month t, respectively.

Economics And Private Antitrust Litigation In China

By Dennis Lu and Guofu Tan[1]

Since the introduction of China's Anti-Monopoly Law in 2008, private litigation has been increasing in the areas of monopolistic agreements and abuses of dominance. In addition, China's Supreme People's Court recently issued its judicial interpretation concerning the application of the law in order to offer some guidance in resolving private disputes. The purpose of this paper is to explain how competition economics can help to provide evidence in these private litigations. We discuss how the Anti-Monopoly Law and the judicial interpretation seem to take a rule of reason approach, as well as what roles economic analyses and economists may play in related litigation. We describe the economic evidence being used and accepted in recent Chinese cases that have reached the Chinese courts of appeals and further provide our views on what other evidence could have been offered in these cases.

I. INTRODUCTION

In 2008, China introduced its *Anti-Monopoly Law* (AML), possibly as a way to further competition in its economy. Even as public enforcement of the law develops, private litigation has become a fast-growing area.[1] Complementing this growth, China's Supreme People's Court issued its judicial interpretation (JI), the *Provisions on Several Issues Concerning the Application of the Law in Adjudication of Monopoly-Related Civil Disputes*, on May 8, 2012, in order to offer some guidance in resolving private disputes.[2] A challenge in enforcing the law is the need to develop supporting evidence, which requires an understanding of how business firms behave and compete. The field of industrial organization in economics helps to address this need.[3] Its general focus is on the theory of the firm and business strategies; it expands the standard textbook model of perfect competition to imperfect competition, accounting for such more realistic factors as product differentiation, strategic interactions, and choice dynamics.[4] Supporting evidence for litigation can then be developed from these factors, as well as from reasoning in this field. The purpose of this paper is to explain how economics, particularly antitrust economics, can help to provide evidence in the context of new and evolving private antitrust litigation in China.

The private provisions of the AML contain two types of acts that may be considered violations of the law: monopolistic agreements and abuses of dominant market positions. A key aspect of the JI relates to the burden of proof for litigation under these provisions. With respect to some monopolistic agreements, once the plaintiffs have shown that such an agreement exists, the JI allows for the defendant to prove that there has been no elimination or restriction to competition. As for cases involving abuse of dominant market positions, the JI states that the plaintiff has to prove that the defendant has a dominant market position in the relevant market, and that the defendant has abused said position through certain acts, although the JI does allow the defendant to justify its acts.

Section II of the paper discusses how the AML and the JI seem to take a rule of reason approach, attempting to evaluate competitive effects of the alleged act.[5] In evaluating the competitive effects, economic reasoning may apply and offer methods of how to support claims from both plaintiffs and defendants. The AML seems intended to prevent monopolistic agreements that harm consumers and society. But then, economic theory can explain why there may be agreements that raise prices, as well as the conditions under which these agreements may arise. More important, litigants can use these explanations and possibly observe the conditions as support for their claims. So, economics can be useful in providing evidence as to whether or not there has been elimination or restriction of competition associated with alleged agreements.

The law also seems intended to prevent firms from harming consumers and society through abuse of their dominant market positions. The intuition behind the abuse of dominant market position is that firms with large market shares have greater ability to raise prices than smaller firms. The rule of reason approach, based on economic analysis, suggests that this intuition may not necessarily hold. Through defining relevant (product and geographic) markets and evaluating alleged dominant market positions, economic theory can help to explain those situations when large firms may or may not have the ability to raise prices. For example, potential entry can prevent incumbent firms from raising prices regardless of their size. Observing that there are potential entrants may support claims that a large firm cannot abuse its dominant market position. The law seems to take a direct rule of reason approach by describing most acts as only constituting violations if there are no justifiable causes for using them.

With the role of economics following a rule of reason approach in the AML and JI, we also discuss the possible roles of economists. Generally, antitrust economists have the necessary training to help delineate relevant markets, estimate competitive effects, calculate damages, and so forth.[6] A team of specialized economists may be more suitable in litigation, because their diverse expertise may better address the range of economic analyses needed.

Section III of this paper describes the economic evidence being used and accepted in recent Chinese cases. China's private litigation experience under the private provisions of the AML is relatively low at this point. As far as we are aware, there are only three decisions that have been reached and upheld by the Chinese appeals courts. In all three cases, the plaintiffs were not successful. To learn from these decisions, we will explore these cases in terms of the evidence that has been accepted or rejected, while adding what other evidence or arguments either the plaintiffs or defendants could have offered.

Section IV concludes with a summary of our discussions.

II. RULE OF REASON AND ECONOMIC ANALYSES

The legal framework behind the civil provisions of the AML seems to require a rule of reason approach.[7] Even if the plaintiffs can prove the use of prohibited acts, harm to consumers and society is not presumed. Instead, the defendant may be able to argue that the acts had beneficial consumer effects. The rule of reason approach requires a balancing of the benefits against the harms. Economics provides reasoning and tools to help guide practitioners with evaluating the benefits and harms of firms' actions.[8]

Following the rule of reason approach, we now discuss in some detail how economics plays a role in providing evidence in support of those elements of the provisions of the AML involving monopolistic agreements and abuse of dominant market position.

A. **Monopolistic Agreements**

Agreements among firms at the same level of production (that provide similar products or services) are usually treated as horizontal agreements, and agreements among firms at different levels of production are treated as vertical agreements.[9] The AML identifies certain types of horizontal agreements in Article 13, as well as resale price maintenance (RPM) agreements in Article 14, as monopolistic. RPM agreements are a type of vertical agreement. A general concern with either of these agreements is that they may eventually lead to higher prices for consumers.

1. **Horizontal Agreements**

Article 13 of the AML generally describes horizontal agreements among competitors, stating the following:

> "Any following agreements among the undertakings competed with each other shall be prohibited: (i) fix, or change prices of products;(ii) limit the output or sales of the products; (iii) allocate the sales markets or the raw material purchasing markets; (iv) limit the purchase new technology or new facilities, or the development of, new products or new technology; (v) jointly boycott transactions; (vi) other agreements identified by antimonopoly authorities. Agreements referred to this law are agreement, decision or concerted action which eliminates or restricts competition."

While the evidentiary threshold for proving horizontal agreements is subject to legal debate, economics can explain the incentives behind horizontal agreements. Economists typically use game theory to explain why firms would want to collude, and they have empirical methods to possibly detect collusion.[10]

Sometimes, detection is easy, because the horizontal agreements are public, although the incentives may not be clear. Economics can identify the incentives necessary to explain why competition is not restricted or eliminated. Consider the following the US case, *BMI v. CBS,* in which the plaintiffs American Society of Composers, Authors, and Publishers and Broadcast Music Inc. issued a blanket license for all their copyrighted materials.[11] The defendant Columbia Broadcasting System responded by suing the plaintiffs for price fixing.[12] The US Supreme Court ruled that this case was not *per se* illegal and must be considered under a rule of reason approach. In particular, the license was not to restrict competition, but rather, to save on transaction costs. Essentially, the economic incentive for the horizontal agreement by the defendants in this case comes from transaction costs. Given that each individual plaintiff's licensing fees are relatively small, collection of these fees would be prohibitively costly. By identifying the incentives behind the horizontal agreement, we can explain the effects of the agreement. In general, the plaintiffs were not competing before their agreement, since they would not have been paid for their services. Since there would have been no competition if the defendants did not collude, one could argue that the horizontal agreement has not eliminated or restricted competition.

When horizontal agreements are hidden, detecting them can be challenging. Competition authorities may become aware of illegal agreements through complaints and leniency programs.

Private suits can follow the agreements detected by competition authorities.

In addition, economic analytical tools are available for detecting monopolistic agreements. Empirical analysis may be used to detect how price increases over time (or across different markets) may occur, while not attributing the increases to changes in market conditions, such as cost increases. A possible explanation is that the price increases are due to behavioral changes, such as firms agreeing to fix their prices. Another venue for detection comes from estimating current demand functions and then calculating and comparing theoretical prices for a monopoly and a competitive market. If observed prices are similar to the calculated theoretical prices for a monopoly, rather than to those for a competitive market, then a possible explanation is that there exist horizontal agreements.[13]

An advantage of using economic analyses for detecting horizontal agreements is that they can be extended to estimate damages. Essentially, these analyses provide estimates of prices before and after an agreement. The overcharge due to the agreement is the difference between the before and after prices. Since purchasers affected by this agreement can certainly show how much they bought, the total damages can be estimated by multiplying the overcharge by these amounts.[14]

2. Resale Price Maintenance Agreements

Different from horizontal agreements, Article 14 of the AML treats RPM agreements as violations:

"Any following agreements among undertaking and counterparty are prohibited: (i) fix the price for resale; (ii) restrict the lowest price for resale; (iii) other monopolistic agreement identified by antimonopoly authorities."

Since RPM agreements are a form of trading agreement, the focus of Article 14 seems to be on how the agreements maintain pricing, which is the basic tenet behind making price fixing illegal. To illustrate how RPM agreements may result in higher prices, consider the following example. A high-end watchmaker may want its dealers to set prices higher than what the dealers prefer (minimum RPM). Despite higher prices, consumers may still benefit from the minimum RPM agreement if the dealers compete by offering better services.[15]

Decisions from the US Supreme Court suggest a rule of reason for RPM agreements. In *State Oil Co. v. Khan*, the defendant was a gasoline wholesaler who used maximum RPM to prevent the plaintiff, a gasoline retailer, from raising its prices.[16] Contrary to the plaintiff's *per se* claim, the US Supreme Court ruled in favor of the defendant by taking a rule of reason approach, noting that maximum RPM removes successive mark-ups at each level of distribution.[17] The same approach was taken in *Leegin v. PSKS*. The defendant manufactured leather products and wanted to maintain its brand through quality by suggesting a retail price. The plaintiff was a retailer who sold the defendant's products below the suggested retail price. The defendant responded by refusing to deal with the plaintiff, who then took a *per se* claim of minimum RPM to the courts.[18] The US Supreme Court accepted the defendant's rule of reason argument that there are other ways to compete besides using prices.[19]

Economics is embedded in the rule of reason approach toward RPM, since it can offer theoretical reasoning and demonstrate empirical measures of harm from RPM. Detection of RPM is usually not problematic, as the plaintiffs are parties of the RPM agreements. The plaintiffs may accept these agreements for various reasons, such as being uninformed, but then apply to the courts later for relief. If plaintiffs or consumers are adversely affected by the RPM agreements, we can use the same methodologies as described earlier concerning horizontal agreements to estimate harm and damages.

3. Agreements that Eliminate or Restrict Competition

Article 7 of the JI complements Article 13 of the AML by stating that, if the plaintiff is able to prove the existence of a horizontal agreement under this article, the defendant can rebut by showing that there has been no elimination or restriction of competition. Even though the JI does not discuss Article 14 of the AML, RPM agreements can be defended in the same manner. However, it is not clear who bears the burden of proof—though a recent lower court decision on RPM seems to suggest the plaintiff.

In *Rainbow v. Johnson & Johnson*, the intermediate court ruled that the mere existence of an RPM agreement is not enough to support a violation of Article 14 of the AML.[20] The court also seems to suggest that the plaintiff should provide support for the elimination or restriction of competition. Specifically, that support can come in terms of market shares in relevant markets, competition among suppliers and distributors, or the effect of the RPM on prices and supply. The reasoning behind the court's suggestion appears to be as follows: If the defendant has relatively low market share, it is not clear how RPM can eliminate or restrict competition. Later, we will discuss how economics can be used to define relevant markets and calculate market share in the subsection on abuse of dominant market position. As for competition among suppliers and distributors, if there are many firms in their respective markets, then the exit of one firm due to lack of profits as a result of RPM, such as the plaintiff, may not have any effect. Competition can come from prices, but also in other dimensions, such as services. While minimum RPM may result in higher prices, competition in services may result in more supply, yielding an environment where customers are willing to buy more because they may benefit from better services.

Article 15 of the AML has a non-exhaustive list of reasons why agreements may not eliminate or restrict competition. Some of the exempted agreements seem to be welfare-increasing, in that they may improve technology or research and development, upgrade quality, reduce costs or improve efficiency, unify standards, and so on. In the US, for example, in *Texaco and Shell Oil v. Dagher*, the defendants were two oil companies that had set up a joint venture to process and distribute their gasoline, as well as to unify their pricing.[21] In response, the stations selling the defendants' brands of gasoline sued the defendants for *per se* price fixing. The US Supreme Court followed a rule of reason approach in declaring that the joint venture was not a price fixing scheme, since there were still other significant competitors besides the defendants. The implication of having other significant competitors is that competition is certainly not eliminated—and likely not restricted, either.

While economic analysis with respect to competition can be applied to some of the exempted agreements, other agreements are exempted for possibly different reasons, including: a) industrial policies, such as agreements allowing small and medium firms to improve efficiency and enhance competitiveness, as well as enabling firms to cope with economic depression or loss in sales volume; b) public interest policies, such as agreements dealing with energy savings and environmental protection; c) trade policies, such as agreements with foreign entities and foreign trade; and d) any agreements approved by State Council or by National People's Congress (or by law).

An added qualifier from Article 15 of the AML for exempted agreements is that consumers benefit in some ways, and competition is not fully eliminated in the relevant market. While vague in terms of how much consumers must benefit, this qualifier really bans agreements that lead to a monopoly and result in price increases. So, such an agreement can still be beneficial to society, but not necessarily to consumers. Banning the agreement then suggests that a "consumer surplus" standard is applied in the monopolistic agreement provisions of the AML.[22] Agreements leading to a monopoly must somehow benefit consumers.

Before we begin our discussion on abuse of dominant market position, we want to note that estimating damages and liability for abuse cases is generally the same as estimating damages for cases of monopolistic agreements. While detection of abusive practices is not an issue, since these are often observable, the analyses for detecting monopolistic agreements may be applied in order to determine the before and after prices. Afterwards, damages can be calculated in the same manner.

B. Abuse of Dominant Market Position

The rule of reason approach also extends to Article 17 of the AML, which states the following:

> "Undertakings with dominant market positions are prohibited from committing any of the following acts that abuses dominant market positions: (i) selling products at unfairly high prices or buying products at unfairly low prices; (ii) without valid reasons, selling products at prices below cost; (iii) without valid reasons, refusing to trade with trading partners; (iv) without valid reasons, restricting trading partners to only trade with the undertaking or undertakings designated by the undertaking; (v) without valid reasons, tying products or imposing other unreasonable trading conditions during the deals; (vi) without valid reasons, applying differentiated treatment in regards to transaction conditions such as trading prices to equivalent trading partners; or (vii) other abuses of dominant market position determined by the Anti-Monopoly Law Enforcement Authority under the State Council."

According to Article 8 of the JI, the plaintiff must first establish that the defendant has a dominant market position through market shares in order to claim a violation of Article 17 of the AML. This logic requires that the plaintiff also bear the burden to define the relevant markets. Without establishing the relevant markets, calculating market shares and by extension, finding market dominance is both arbitrary and uninformative. Standard methodologies from antitrust economics can be used to define the relevant markets. The AML does offer market share thresholds to support dominant market positions, but it also allows the defendants to prove evidence otherwise. A usual economic focus is that a firm with dominant market position

ACCORDING TO ARTICLE 8 OF THE JI, THE PLAINTIFF MUST FIRST ESTABLISH THAT THE DEFENDANT HAS A DOMINANT MARKET POSITION THROUGH MARKET SHARES IN ORDER TO CLAIM A VIOLATION OF ARTICLE 17 OF THE AML. THIS LOGIC REQUIRES THAT THE PLAINTIFF ALSO BEAR THE BURDEN TO DEFINE THE RELEVANT MARKETS.

has the ability to raise its prices above competitive levels, so the defendant may be able to rebut evidence of its high market shares with its lack of ability to charge supra-competitive prices.

Article 8 of the JI states that the plaintiff must also show evidence of how the defendant's act abuses its dominant market position, but the defendant can rebut by invalidating the plaintiff's claims of abuse. Article 17 of the AML describes some acts that may be considered abusive, but it generally also states that the acts must not have any justifiable causes. Economics can provide conditions under which the described acts may or may not result in any adverse effect to consumers and society. If observable, these conditions can be used as evidence by the plaintiffs or defendants. An act that seems adverse to competitors may actually be beneficial to consumers or society. Similarly, a possible justifiable cause for an act is that consumers or society may benefit from the act.

Given the rule of reason approach, we now offer some detailed steps on assessing abuse of dominant market position.

1. Market Definition

Defining the relevant market is required as a point of reference for evaluating a claim that a firm has a dominant market position.[23] For example, a soft drink manufacturer may account for all soft drinks sold in a local area, but still have relatively few sales outside the area. Depending on how the relevant market is defined, the soft drink manufacturer may have 100% market share of soft drinks in the local area, but its market share may be much lower when a larger area beyond the local area is considered.

In order to define relevant markets, we turn for guidance to the Anti-Monopoly Commission of State Council's *Guidelines on Relevant Market Definition* (GRMD), released on May 24, 2009. There are two elements associated with relevant markets: relevant product market and geographic market. Article 10 of the GRMD explains the key concept behind market definition: the hypothetical monopolist test. Starting with a product (or an area), the test asks whether a (hypothetical) monopolist is able to profitably raise prices above a given threshold, such as 5%. If so, then the product can be considered the relevant product. If not, another product is included, and the test is repeated until the hypothetical monopolist is able to do so.[24]

The intuition behind the test comes from understanding consumer behavior, which can help to explain how consumers may value products through their willingness to pay or to substitute across different products. Demand estimation provides possible measurements of consumer behavior. The purchase decisions by consumers act as price discipline: If a firm attempts to raise its price, consumers can simply choose not to buy from the firm by either stopping their consumption of the firm's product, or by substituting to a different product.

Given how consumers behave when there are substitutes, we know that the incentive for a firm to raise its prices depends on how close are substitute products or services. In theory, we can compare prices when the substitutes are controlled by one firm (a monopolist), as compared to independent firms. Of course, the monopolist will increase prices. But the key observation here is that the monopolist's price increases should be relatively higher when the substitutes are relatively closer. Raising price for a product will result in lost sales to substitutes: The closer the substitutes, the greater the loss in sales. By controlling the substitutes, a monopolist will be able to recapture this loss in sales: The greater the loss in sales, the higher the price increase.[25] By choosing a threshold for the monopolist's price increases, we are then choosing a threshold for which substitutes are close enough to be in the same relevant market.

While the hypothetical monopolist test offers a conceptual approach, its application has challenges. Legal documents, such as guidelines, are typical sources for applying this test, but these formal descriptions can be, and have been, subject to different interpretations.[26] The hypothetical monopolist's behavior is not clear, in that the price increases need to be either profitable or profit-maximizing. Following economic theory, recent interpretation suggests that the behavior should be profit-maximizing. When choosing products or areas to test, one issue is determining which product (or area) should be used as a starting point. For example, the product can be defined broadly or much more narrowly (all colas versus diet colas, for example). Choosing which substitutes to test is also subject to debate, as there is no clear cut way to rank how close the substitutes are. In addition, the substitutes may have asymmetric demands. There are also lingering questions about both how long the hypothetical monopolist should be able to sustain a price increase, and how much of a price increase there should be.

AS AN ALTERNATIVE TO QUANTITATIVE EVIDENCE, ARTICLE 8 OF THE GRMD SUGGESTS THE FOLLOWING AS QUALITATIVE EVIDENCE FOR PRODUCT MARKET DEFINITION: CONSUMER RESPONSES IN TERMS OF PRODUCTS TO PRICE CHANGES, PRODUCT CHARACTERISTICS, PRICE VARIANCES, AND HOW PRODUCTS ARE DISTRIBUTED.

Resolving these challenges, the test can be applied quantitatively. Studying how price movements change across products or areas may indicate whether they are in the same relevant markets. For example, two products having the same price increases and decreases over a long period of time may indicate that they are close enough substitutes to be in the same relevant product market. But we also have to ensure that the movement is due to the competitive environment and not to other factors, such as similar input prices. We can use demand estimates or similar variables that measure how sensitive consumers are to switching among substitutes when there are price changes, and then calculate the hypothetical monopolist's profit maximizing price relative to a benchmark price. However, we need to be careful here, as current prices may not be competitive.[27]

As an alternative to quantitative evidence, Article 8 of the GRMD suggests the following as qualitative evidence for product market definition: consumer responses in terms of products to price changes, product characteristics, price variances, and how products are distributed. Similarly, Article 9 of the GRMD offers the following as possible qualitative evidence for geographic market definition: consumer responses in terms of areas to price changes, transportation costs, consumer locations, and trade barriers.

2. **Dominant Market Position**

After properly defining the relevant markets, we now turn to the issue of dominant market position. Article 18 of the AML states that:

"The dominant market position of an undertaking shall be determined based on the following factors: (i) the market share of the undertaking and the competition status in relevant markets; (ii) the ability of the undertaking to control the sales market or the purchase market of raw materials; (iii) the financial and technical conditions of the undertaking; (iv) the degree of the reliance on the undertaking by other undertakings in transactions; (v) the difficulties for other undertakings to enter relevant markets; and (vi) other factors relating to the determination of dominant market position of the undertaking."

The article alludes to market share as a factor in determining dominant market position. Moreover, Article 19 of the AML presumes dominant market position by market shares: more than 50% for one firm, 66.6% for two firms, and 75% for three firms.

While the GRMD does not discuss how to calculate market shares, we offer some suggestions: References should be made to the shares of all sellers identified as the participants in the relevant market.[28] Explanations of how shares are calculated over different units may differ. The relevant unit for market share calculations can be in terms of revenues (dollar sales), volume (unit sales), capacity, or even reserves. However, these choices are likely to be restricted by the availability of data. For example, participants in network markets may have the same capacity but different density, which implies different revenues or volumes. Depending on the nature of competition, capacity may or may not be the right measure. For instance, while capacity may be the right measure for two local phone service providers with identical networks, it may incorrectly measure two competing trucking firms operating in different areas within the same road network. In two-sided markets, having a large market share on one side may not necessarily imply having a large market share on the other side.[29]

Article 19 of the AML allows for defendants to rebut the claim of dominant market position:

> "When the undertakings assumed to have a dominant market position can prove that they do not have a dominant market position, shall not be assumed to have a dominant market position."

Article 8 of the JI supports this allowance by stating that the defendants have a right to defence of justifiable conduct. While the ways this article may be used for rebuttal is subject to the courts, the focus of antitrust litigation is usually on market power. Market share is often used to infer the degree of market power.[30] Loosely speaking, market power is the ability of a firm to profitably raise its price above either the competitive level or the marginal cost. The defendant can argue that it may have a relatively large market share, but it does not have the ability to raise prices, due to the possibility of entry from potential competitors or to countervailing power from its customers. If the defendant increases its price, there will be entrants attracted by the higher price, and competition will eliminate any price increases. Similarly, customers may be able to successfully threaten the defendant from raising prices.[31]

3. Acts that Abuse Dominant Market Positions

With dominant market position established, acts that abuse the position must be supported by evidence. Economic theories do offer explanations as to how some of the acts, as described by Article 17 of the AML, may or may not be anti-competitive. We also note that Article 17 of the AML offers a non-exhaustive list of possible abusive acts, and that industrial economics is constantly evolving. Hence, new theories may shed further insights into the competitive effects of other practices that may abuse dominant market positions.

Article 17(1) starts by depicting the act of "selling products at unfairly high prices or buying products at unfairly low prices."[32] Since such an act deals with the principle of fairness, economics may not be much helpful in terms of supporting evidence. Economics can help in objective measures of efficiencies, but not subjective measures of equity.

Article 17(2) mentions the next act, which is that of "selling products at prices below cost."[33] Predatory pricing theories in economics offer explanations of how firms can benefit from using low prices to first drive out competitors, and then raise prices later at the expense of consumers. In the US, in *Matsushita v. Zenith*, two US electronics manufacturers filed a lawsuit against seven Japanese electronics manufacturers for colluding for over 20 years. The US Supreme Court ruled in favor of the defendants, since the claim of collusive predation simply made "no economic sense." The reason came with an economic perspective: Firms are unlikely to lose profits for over 20 years and only then raise prices and re-coup profits after competitors are driven out.[34]

Under Article 17(3), the act of "refusing to trade with trading partners" may be considered a violation of the law. We note that there may not be many economic theories suggesting refusal to deal to be welfare-decreasing.[35] For example, the US Supreme Court has ruled that a dominant firm can refuse to deal with its rivals by not allowing network access.[36] On the other hand, Article 17(4) describes the act of "requiring its counterparty to trade exclusively with it or trade exclusively with the appointed undertakings without legitimate reasons." This description can be linked to economic theories of exclusive contracts, which offer ambiguous welfare effects.[37] Consider the following example: Automobile manufacturers typically have exclusive arrangements with their dealers. Since a dealer can only sell the automobile of one manufacturer, other manufacturers are excluded from this dealer. Selling only one manufacturer's automobile may allow the dealer to charge higher prices, but the dealer may also offer more services. To a consumer, exclusive dealing results in a trade-off between higher prices and better services. Article 8 of the JI allows defendants that use exclusive dealing to argue that consumers gain more from better services than they lose from higher prices. The defendants can further argue that other manufacturers set up their own exclusive dealers, so competition may not be harmed.

The economics of tying (or bundling) also follows the same line of ambiguity, which Article 17(5) refers to as the act of "tying products or imposing other unreasonable trading conditions during the deals."[38] We often observe how firms tie the sale of multiple products, such as value meals (bundle of food and drink) in restaurants. A justifiable cause for why firms would use such acts is that they are trying to charge different prices to different people. Some people prefer to buy a bundle of goods from one seller, while others may not. On the other hand, the seller may use bundling or tying as a way to exclude competitors.[39] In particular, there must be enough consumers who want the bundle, which is only available from the monopolist. Even so, the monopolist may find exclusionary bundling or tying to be profitable only in certain situations.[40]

The last act, described in Article 17(6), refers to "applying differentiated treatment in regards to transaction conditions such as trading prices to equivalent trading partners." There are at least three possible economic interpretations of such an act. One interpretation is price discrimination. Economic research generally finds that price discrimination yields ambiguous welfare effects. Another interpretation is that the act raises rivals' costs or reduces rivals' revenues. There are several economics models that offer conditions under which raising rivals costs' or reducing rivals' revenues may result in harming competition.[41] A third interpretation relates to more recent economic theories on loyalty discounts; it suggests that firms may use certain forms of discounting to harm rivals and competition.[42] Firms may offer discounts if customers buy all their products from them.[43] On one hand, firms benefit from customer loyalty, while customers benefit from lowered price for loyalty. Loyalty discounts seem pro-competitive from this view. On the other hand, the discounts may be set in a way so that competitors, especially new ones, cannot compete for the customers.[44] The discounts now seem to be anti-competitive.

IF A COMPANY CANNOT SHOW THAT ITS INTENDED PURPOSE OF THE ALLEGED ACT IS PART OF ITS USUAL BUSINESS PRACTICES, THEN SUCH AN ACT MAY BE DEEMED ANTI-COMPETITIVE.

4. Justifiable Causes

Article 17 of the AML highlights how some of the described practices are "without any justifiable causes." [45] Economic reasoning is applied here: If a company cannot show that its intended purpose of the alleged act is part of its usual business practices, then such an act may be deemed anti-competitive. For example, a retailer often sells many products but may advertise a few of them ("loss leaders") at prices below costs. While one can argue that the act is a violation of Article 17, a justifiable cause for the retailer to use the act is that it is intended to induce customers to visit its stores and buy other products.[46] Going back to transaction costs, another example comes from using exclusives so that firms do not need to constantly renegotiate contracts. Exclusives also allow firms to manage risks in their supply chains.[47]

A general justifiable cause for alleged abusive acts is that they may help eliminate negative externalities, such as dis-incentives to reward investments or innovation, free-riding on marketing expenses, excessive entry, costly monitoring, costly divestiture, and costly expansion to provide access, loss of reputation in association with inferior downstream firms, sunk costs, and so on.

5. Elimination or Restriction of Competition

Now, suppose that the plaintiff were able to prove that there had been an abuse of dominant market position without any justifiable causes. Would this mean that the plaintiff had won? Alternatively, suppose that the defendant did have a justifiable for its act. Would this mean that the defendant had won? Article 6 of the AML suggests otherwise:

"Undertakings with dominant market positions shall not abuse their dominant market positions to eliminate or restrict competition."

Following the monopolistic provisions of the AML, competition must be eliminated or restricted. Wu (2008) explains this additional reasoning, in that Article 6 was not included in the initial draft of the AML.[48] Instead, the article was added in the subsequent drafts because the reviewers of the initial draft felt that the AML should explicitly differentiate between cases when dominant market positions have been achieved legally and illegally. Specifically, the reviewers observed that other countries do not ban firms from gaining dominant positions due to the following economic principle: Relatively efficient firms should have more of a market, at the expense of inefficient firms. Banning these efficient firms and protecting inefficient firms can only harm consumers and social welfare.

As with vertical agreements, the JI does not mention the elimination or restriction of competition as a factor in the abuse of dominance analysis, so we do not have guidance on whether there is a need to demonstrate this element. However, the decision from *Rainbow v. Johnson & Johnson* does suggest that the plaintiff has to do so.

The concern in these discussions seems to come from how competition may be eliminated or restricted, even when the defendant has a justifiable cause. A defendant's act may lower its costs or enhance demands, but at the same time, drive out competitors and result in making consumers and society worse off. But we have to be careful here: A lack of a justifiable cause does not necessarily imply harm to competition. Consider a situation in which the defendant's act has eliminated competitors, but there are no barriers to entry. New competitors will simply replace the eliminated competitors, and competition will not be harmed. While a justifiable cause may be an important factor in considering how competition may have been harmed, there may also be other factors, such as barriers to entry, which should be considered.

WHILE A JUSTIFIABLE CAUSE MAY BE AN IMPORTANT FACTOR IN CONSIDERING HOW COMPETITION MAY HAVE BEEN HARMED, THERE MAY ALSO BE OTHER FACTORS, SUCH AS BARRIERS TO ENTRY, WHICH SHOULD BE CONSIDERED.

The key issue here is really the way that competition may be harmed, regardless of whether or not there is any intention of harming competition. That is, there is an underlying trade-off between any benefit the defendant might see from its action and any harm consumers might experience. In a complete information world, economists have methodologies that allow for simulating what would happen with or without the defendant's practice. For example, a model can be created based on observing how competitors are differentiated in the case that the defendant will be using loyalty discounts. Afterwards, demands can be estimated and prices can be calculated for cases with and without the use of loyalty discounts. Differences in price, consumer surplus, and welfare can then be calculated in order to illustrate the use of loyalty discounts.

In reality, informational requirements may make these methodologies impractical. Plaintiffs may not have the resources to fulfill their informational needs, and instead, they rely on making assumptions. There may be no historical information on how firms have competed in the past. Sometimes, the assumptions made may be too strong. In such cases, they may not be realistic, given the available facts. Assuming that there has been perfect competition in the past in a high fixed cost market may not be suitable. For example, perfect competition is unlikely to have occurred in most telecommunication markets, since government policies have limited entry in order to encourage market development. A further consideration is that, even if there is enough information to make all the necessary calculations reliable, there is still the issue of determining what the welfare standard should be. As an alternative to using such methodologies, there are tests that rely on available information, such the "profit sacrifice" test, the "no economic sense" test, and the "equally efficient competitor" test.[49] However, these tests may reflect different welfare standards, and they also have different rates of false convictions or false acquittals.[50]

C. Possible Roles for Economists

Article 12 of the JI states that the parties may use specialists (including economic experts), while Article 13 of the JI states that the courts may use an (economic) expert agreed upon by the parties, or appoint one if there is no agreement. Given that economists do have a role in this legal process, we turn our attention to offering more details on this role.

As we have discussed earlier, economics can offer support in terms of evidence from theoretical and empirical analyses, such as defining relevant product markets, testing the conditions identified by the theory, and quantifying damages. The role of economists is then to be the providers of these analyses. Moreover, economists can point to what factors or data are needed at the start of litigation.[51] With the knowledge of how to apply these analyses, economists are more able to understand the trade off between information requirements and precision. Gathering information may be costly, but then, the information may help in winning a case.

ARTICLE 12 OF THE JI STATES THAT THE PARTIES MAY USE SPECIALISTS (INCLUDING ECONOMIC EXPERTS), WHILE ARTICLE 13 OF THE JI STATES THAT THE COURTS MAY USE AN (ECONOMIC) EXPERT AGREED UPON BY THE PARTIES, OR APPOINT ONE IF THERE IS NO AGREEMENT.

We also want to mention the information required for applying economic analyses. Public websites and government studies may provide qualitative information about markets and their structures. Statistical agencies and private consulting firms may have the required pricing and cost information. Estimates of demand sensitivity for certain products (i.e., price elasticity) may already be available in the economic literature. Plaintiffs or defendants may have marketing studies, possibly with market share estimates; financial documents detailing their profit structure (i.e., revenues, costs, etc.); and transaction data on prices and quantity sold to their customers. Besides knowing how much the customers bought and at what prices, plaintiffs or defendants may be able to indicate the customers' willingness to pay and their price sensitivity.

Economists can also provide help both on how economic issues can be presented, and on how to cross-examine the opposing economists. An economics expert report should include not only analytical results and conclusions, but also methodologies and assumptions, including justifications for the chosen methodologies and assumptions. The report should also explain how robust the results are. All data (raw and constructed) and computer programs needed to replicate the results should be made available upon request. In sum, the report should allow other economists and non-economists to understand how the conclusions are reached.

A key concern of using experts, including economists, is that the incentives to testify truthfully can be murky.[52] Both plaintiffs and defendants may have similar incentives in retaining economic experts as "hired guns," in that the sole purpose of their employment is to support their employers' views. For example, an economist may offer views without any analytical support, analytical support without any facts, or non-standard analytical support. We have to assume that the courts are relatively astute to disqualify such an economist. In the US decision, *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, expert testimony was deemed to be admissible only if it is "sufficiently tied to the facts of the case that it will aid the jury in resolving a factual dispute."[53] Background checks may help to ease the courts' collective burden of assessing economic experts. Posner (1999) points to how publication records can help to keep economic experts from acting as hired guns, because true experts are unlikely to refute their own publications. A relative lack of publications, on the other hand, may instead permit experts to act as hired guns.

Given the different types of applicable economic analyses, the legal team may consider retaining an economics team that can offer theoretical, empirical, and presentation skills in one package. Requests for proposals may help legal practitioners to both determine an economics team's expertise and estimate the likely budget. The proposal should include key objectives (e.g., theory of the case), methodologies, relevant literature, and timelines, and it should also explain the resource requirements, such as labor and materials. Once retained, legal practitioners should prepare questions for economists in order to communicate efficiently. Consider asking the following questions, for example: What is the economic model used to assess the alleged anti-competitive acts? Under what conditions does the model predict harm to competition? How can the harm and damages be estimated? What are the key assumptions and observations to support the theory and empirical analyses? What are the possible justifiable causes for the alleged acts?

III. CURRENT STATE OF ECONOMIC EVIDENCE USED IN CHINA

As far as we are aware, there have been three private action cases taken under the private provisions of the AML that have reached the appeals courts. All three involved abuse of dominant market position; none depended on monopolistic agreements. The plaintiffs lost in all these cases in the lower courts, with the decisions being upheld in the appeals courts. To discuss the economic evidence used in Chinese cases so far, we turn to the deliberations made in the lower courts for these three cases, and then we offer our views on what alternative evidence could have been presented.

A. Renren v. Baidu

The plaintiff, Tangshan Renren Information Service Co., Ltd. (Renren), is a content provider that offered medical information on its websites, while the defendant, Beijing Baidu Network Technology Co. Ltd. (Baidu), is a Chinese Internet search provider.[54] Baidu provided search engines for users to freely search for any topic using the Chinese language. The findings of any search would be composed of links to websites related to the topics being searched. Baidu earned income by charging websites for better rankings in these searches.[55] Essentially, Baidu sold keywords that might be used by users on searches through an auction;[56] the winner of the auction would get a better ranking in searches.[57] Since more than one word could be used in searches, buying more than one word could help to increase the likelihood of getting an even better, higher ranking. The plaintiff made the following allegations in its private suit at the intermediate court: It initially made lump sum payments to the defendant in order to promote its websites.[58] Afterward, the plaintiff had to spend relatively less due to its business needs. Subsequently, the plaintiff found the listings for one of its websites dramatically reduced.[59] The plaintiff claimed that the defendant was dominant in the search engine market in China under Article 19 of the AML and maintained that the defendant was abusing its dominance by blocking the plaintiff's website, causing the plaintiff financial harm.[60] While the plaintiff did not explain how it was hurt financially by the reduction of listings, the plaintiff was likely selling advertising placed on its websites. The defendant's act likely had reduced the number of visitors to the plaintiff's websites, which would have made the websites relatively less attractive to advertisers. The plaintiff sued the defendant under Article 17(4) of the AML, which prohibits any undertaking "requiring its counterparty to trade exclusively with it or trade exclusively with the appointed undertakings without legitimate reasons."[61] The plaintiff wanted the defendant to stop the practice, and also to provide monetary compensation.

In terms of market definition, the plaintiff suggested a relevant market consisting of the "search engine services market in China," but did not offer much supporting evidence. The defendant countered that search engine services were not a relevant product market, since users could use its search engine services for free.[62] In its decision, the intermediate court rejected the defendant's argument by recognizing that the defendant was able to earn profits from ranking websites despite providing its search services for free.[63] The court also recognized a "search engine services market" as the relevant product market by using qualitative factors in terms of product characteristics and use. In contrast to other Internet services, such as news or email, the court reasoned that search services enabled the users to receive relatively vast amounts of information quickly through their searches. Cultural and language factors were considered to determine China as the relevant geographic market.

To establish dominance, the plaintiff had argued that the defendant had more than 50% of the "search engine service market in China" by offering two public documents indicating the defendant's market share in order to presume dominant market position.[64] The court rejected the plaintiff's evidence, since the documents provided by the plaintiff did not explain the nature of the market or the basis on which the market share had been calculated. On the whole, the court seemed to differentiate between relevant markets for antitrust evaluation and "common sense" markets in business practices, as well as to understand the need for relating market share to the relevant markets.

ON THE WHOLE, THE COURT SEEMED TO DIFFERENTIATE BETWEEN RELEVANT MARKETS FOR ANTITRUST EVALUATION AND "COMMON SENSE" MARKETS IN BUSINESS PRACTICES, AS WELL AS TO UNDERSTAND THE NEED FOR RELATING MARKET SHARE TO THE RELEVANT MARKETS.

As for whether the defendant might have abused its dominant position, the plaintiff claimed that the defendant reduced the listing of the plaintiff's websites because the plaintiff had started paying less to the defendant. The court pointed out that, since the rating system was based on relevancy and payments, the plaintiff did not provide sufficient information on the causality relationship between the listing reduction and payment reduction. If the plaintiff's websites were truly relevant to searches, they should not have suffered any reduction in listings. Moreover, the defendant offered a justifiable cause for its act: It admitted to discriminating against the plaintiff in order to prevent fraud. The court understood that the defendant's business relied on ranking websites based on relevancy to the topics being searched, but some websites with irrelevant content may have added unrelated links in order to gain relatively higher search rankings. The defendant, like other Internet search providers, had the necessary technology to treat such websites as frauds in order to reduce their rankings or even eliminate them from being listed.[65] The court seems to have accepted this pro-competitive argument from the defendant. Preventing fraud may be deemed as reasonable, despite the possible harm to a private entity.

Given the lack of supporting evidence on the defendant's dominance provided by the plaintiff, what could the plaintiff have offered as an alternative? A complication in this case is that the search engine market may be considered as a two-sided market (search and advertising).[66] The court did recognize the nature of a two-sided market by pointing out that the defendant earned profits from other related services.[67] So, the relevant product market could be a general "search engine" market that included both sides, with a "search" market on one side and an "advertising" market on the other side. The "search" market could arguably be supported by the lack of alternatives to searching for information on the Internet. The "advertising" market could consist of advertising services provided via keyword searches on the Internet. Again, if someone had wanted to advertise based on keywords, there were no reasonable alternatives. However, other forms of Internet advertising, such as placement of advertising through banners, may have been included in the "advertising" market.[68] The Chinese language could have been used as a way to narrow the relevant markets, or as a way to define the relevant geographic market by observing that there were no alternatives in terms of Chinese-language search and advertising.

In market definition with two-sided markets, an advantage of using functionality instead of pricing data could be that there is no need for complicated accounting of how each side may be affected by the other side. Focusing only on one side's prices may not lead to the right market definition, since the prices may be influenced by pricing on the other side. For example, zero pricing on one side may be driving up the demand on the other side, which then affects the pricing on the first side.

Market share data could certainly provide guidance for evaluating dominance. For the "search" market, market share information on search engine websites seems readily available. The plaintiff had already provided support of the defendant's dominance through public documents, but it could have better explained how the figures were calculated. For the "advertising" market, public information may not be readily available, but profit margins could have been used to indicate market power, which then may have supported dominance. Since the defendant is a publicly listed company, its financials may be available publicly and could have revealed the defendant's profit margins.[69] By supporting how the defendant may be dominant in both sides of the market, the plaintiff could avoid any critique about how the market shares might be misleading in terms of dominance. That is, the defendant might be dominant on one side of the market but not necessarily on other side. Moreover, the plaintiff could suggest that the defendant was dominant regardless of whether the relevant market was defined as including both sides, such as in a general "search engine" market, or as including only one side, such as a "search" market or an "advertising" market.

A more important issue here is the relationship between the relevant market and the abusive act. In particular, the plaintiff and the defendant must have been in, or have potentially been in, the same market. The plaintiff was not in the "search" market, but it could have been competing with the defendant in the "advertising" market. If the "advertising" market were defined narrowly to only include keyword advertising, then the plaintiff could not be in the same market as the defendant. On the other hand, if the "advertising" market were defined to include both keyword advertising and placement advertising, then the plaintiff and the defendant would be competitors or potential competitors in the same relevant market.[70] How narrowly the market was defined could matter in that, if the plaintiff and defendant were neither competitors nor potential competitors, economic theories on non-collusive anti-competitive behaviour would suggest that the defendant could not earn any extra profit from harming the plaintiff. Therefore, the defendant could not have harmed the plaintiff. But if the plaintiff could not be harmed, then competition could not be harmed, either.

To further relate market definition and harm to competition, consider the market for watches in that consumers have different demands for luxury watches and regular watches. If we assume that the demands for each type are so differentiated to the extent that they are independent, then we can clearly defined different relevant markets for each type. With this market definition, lower competition at one market will not result in lower competition at the other market since consumers facing higher prices in one market will not buy in the other markets. That is, a price increase for a $10,000 watch is unlikely to increase demand for a $10 watch. So, firms in one market have no incentive to harm firms in the other market since there is no profit in doing so (unless are planning to enter the other market or somehow, collude to increase prices in either or both markets).

If the plaintiff could prove that the defendant had dominance and both firms were in the same relevant market, what could the defendant's abusive act be? Under Article 17(4) of the AML, the plaintiff had claimed that the defendant was practicing an act of "requiring its counterparty to trade exclusively with it or trade exclusively with the appointed undertakings without legitimate reasons." As we have discussed earlier, this definition may be a better fit with exclusive dealing theories, but the plaintiff was not an exclusive dealer of the defendant. An alternative for the plaintiff was to have claimed an act of "refusing to trade with trading partners" under Article 17(3) of the AML. However, we have already discussed how economics may not provide much guidance on a refusal act, since theories tend to suggest that the act does not necessarily affect welfare adversely. Perhaps, a better avenue for the plaintiff would have been to claim an act of "applying differentiated treatment in regards to transaction conditions such as trading prices to equivalent trading partners" under Article 17(6) of the AML. We have suggested that this act may be interpreted as a way to raise rivals' cost, which may lead to exclusion. In this case, the plaintiff was likely earning income from placing advertisements on its website, while the defendant's profit comes from advertisement through searches. For the plaintiff to claim that the defendant's act was exclusionary, the plaintiff must argue an "advertising" market that includes both keyword advertising and placement advertising. With this relevant product market definition, the plaintiff would have to show that the defendant was dominant. Given the defendant's dominance, the plaintiff could then have an explanation for how the defendant's act could be abusive.

A bigger challenge for the plaintiff in winning the case was the defendant's justifiable cause. Clearly, the plaintiff could show that it had been harmed by the defendant's action. However, what was the cause behind the defendant's action? According to the defendant, it had identified that the plaintiff was exploiting the defendant's search engines to identify the plaintiff's websites, even through the websites may have contained information irrelevant to searches made through the defendant's search engines. The defendant's business relied on users of its search engine finding websites with relevant information to their searches. Of course, users would likely stop using the defendant's search engines if their searches were finding irrelevant information. Since the exploitation could have harmed the defendant's business, the defendant admitted to taking steps in order to protect its business. Somehow, the plaintiff needed to have been able to rebut this argument and argue that the defendant's action was to exclude competitors from an expanded "advertising" relevant market.

Lastly, if the plaintiff could successfully invalidate the defendant's cause, it would still need to show harm to competition. But to show how competition had been harmed, the plaintiff would need to use the defendant's documents or data. For example, internal documents from the defendant may have indicated that the plaintiff was disciplining the defendant's ability to raise prices in the relevant market, and that, if the defendant could eliminate the plaintiff from the relevant market, the defendant could raise prices afterward. A more complicated alternative for the plaintiff may be to use empirical analyses for simulating effects of the defendant's act.[71] However, data for such empirics may often need to come from the defendant. A typical challenge for plaintiffs in proving harm to competition is that they do not have access to the defendant's information.[72]

B. Li Fangping v. China Netcom

The plaintiff, Li Fangping, was a consumer of fixed-line telephony services while the defendant, China Netcom Co. Ltd. Beijing Branch (China Netcom), offered fixed-line services.[73] The defendant allowed citizens or registered permanent residents of Beijing the options of having to pay before receiving their services (pre-paid plan) or after receiving their services (post-paid plan). However, non-registered residents could only have the pre-paid plan unless they could offer a guarantee, such as owning a house.[74] The plaintiff was a non-registered resident of Beijing who wanted to buy the defendant's services under the pre-paid plan, but could not do so. So, the plaintiff sued the defendant at the intermediate court under Article 17(6) of the AML by alleging that the defendant was abusing its dominance in treating customers differently.[75]

In terms of evidence, the plaintiff simply argued that the defendant had dominance based on the defendant's ranking from a website, as well as on an article about how successful the defendant was in Beijing. In its decision, the court affirmed that the plaintiff bears the burden of proof for showing dominance. The court rejected the plaintiff's evidence of dominance, since it was not clear how dominance could be established without first defining a relevant market. The plaintiff's evidence, the website and the article, calculated market shares using markets that may not necessarily be the relevant markets. Furthermore, the plaintiff did not explain what the relevant markets should be.

THE COURT REJECTED THE PLAINTIFF'S EVIDENCE OF DOMINANCE, SINCE IT WAS NOT CLEAR HOW DOMINANCE COULD BE ESTABLISHED WITHOUT FIRST DEFINING A RELEVANT MARKET.

As for the plaintiff's claim to an abusive practice under Article 17(6), the plaintiff offered the observation of the defendant using plan discrimination—a form of price discrimination. The defendant admitted to the plaintiff's claim of discrimination, but explained that it had to apply different payment types to address the differentiated risks in collecting payments from its customers. With these arguments, the court decided in favor of the defendant.

As an alternative, what could the plaintiff have done to further support his claim of the defendant's dominance? First, the relevant market could have been defined as the market for pre-paid fixed-line services using qualitative factors, such as how the product was purchased by consumers. The defendant had already admitted that customers who pre-paid their services were likely to be different from those who post-paid their services. Using the defendant's admission, the plaintiff could have claimed that demands for pre-paid plans are different from demands for post-paid plans, and as such, there could be two different relevant markets: one for pre-paid plans and another for post-paid plans. The plaintiff could then have an explanation for the court on what the relevant markets should be.

In order to show that the defendant had a dominant market position in the market for pre-paid plans, the plaintiff could have used market power as support, since market share data were not available. The defendant's financial reports were available publicly, and they could have shown the profitability of pre-paid fixed-line services. As we have already discussed in the previous case, the plaintiff could argue that the defendant's profit levels were indicative of the defendant's market power and dominance. To defend itself, the defendant could have countered that its profit level was due to relatively lower costs. But then, the plaintiff could also have argued that the defendant's ability to discriminate was another indicator of market power and dominance.[76]

Now, suppose that the plaintiff could have been able to successfully argue that the defendant's cause was not justifiable. For example, the defendant could have collected from non-paying and non-registered residents with ease. How could the defendant's act be considered abusive according to Article 17(6)? The plaintiff had argued the defendant's act was price discrimination. Our earlier discussion suggests that price discrimination may make some consumers worse off and other consumers better off, but that it tends to increase total welfare. In this case, the defendant's act may harm some customers by limiting their payment choices. On the other hand, these consumers may not be harmed if they are able to purchase their services from the defendant's competitors at nearly the same cost.

Keeping in mind a case in which the plaintiff would not be a customer, but a competitor, we have suggested that there may be other interpretations of Article 17(6), such as raising rivals' costs, reducing rivals' revenues, or using loyalty discounts to harm competitors. If rivals' costs are not raised, rivals' revenues are not reduced, or loyalty discounts do not harm competitors, then economic theories would suggest that there is no harm to competition. That is, these theories are suggesting that harm to competition is conditional on harm to competitors. To interpret Article 17(6) according to these acts, the plaintiff would need to show harm to competitors. As a customer, the plaintiff may have difficulty in finding support of competitors being harmed; this may be challenging, as firms typically do not publicize their business details. Moreover, if other competitors were really harmed, they would likely either have taken actions themselves or have alerted the antitrust authorities. Of course, the defendant's practice could have been common among its competitors, in that most firms generally will have some credit requirements in place to avert losses due to non-payments by their customers.[77]

C. Huzhou Yiting Termite v. Huzhou City Termite

The plaintiff, Huzhou Yiting Termite Control Services Co., Ltd., wanted to provide termite prevention services in Huzhou at a time when the defendant, Huzhou City Termite Control Research Institute Co., Ltd., was the only termite prevention service provider in Huzhou.[78] To provide termite prevention services, the plaintiff had applied to register with a local authority, the Planning and Construction Bureau of Huzhou.[79] However, the local authority rejected the plaintiff's application. Apparently, the local authority used to own the defendant and still had some involvement in the defendant's business. The plaintiff then took an administrative challenge against the local authority and won the administrative challenge. Afterwards, the plaintiff sued the defendant for abusing its dominant position under the AML in the intermediate court, seeking monetary compensation for damages. However, the plaintiff did not make clear how the defendant had abused its dominance. The court decided in favor of the defendant.[80]

As evidence, the plaintiff essentially offered the observation that the defendant was the only firm supplying the service in question within a city. Implicitly, the plaintiff was suggesting that the relevant market was "termite prevention services in Huzhou." The court accepted the relevant market based on the plaintiff's observation. Furthermore, the court ruled that the plaintiff met the threshold for dominance, since the defendant had 100% of the relevant market. While the local authority was not a defendant, the court viewed that the local authority had legitimate reasons for rejecting the plaintiff's application. The court then ruled that there was not enough support to show that the defendant had used an abusive act, or that competition had been eliminated or restricted.

IN REVIEWING THE THREE CASES, AN IMMEDIATE IMPRESSION IS THAT THE PLAINTIFFS DID NOT RELY MUCH ON USING ECONOMICS...ON THE OTHER HAND, THE COURTS SEEM VERY CAPABLE IN UNDERSTANDING AND DEFINING RELEVANT MARKETS.

A key observation is that, in theory, observing a single firm in a market may not necessarily imply a relevant market. Potential competitors and a lack of barriers may prevent a single firm from behaving as a monopolist. For example, if the defendant had charged monopoly prices, competitors may have entered the Huzhou market. These entries could come from other termite prevention service providers in nearby cities, firms who could easily gain the expertise to control termites, or individuals who may decide to do control termites themselves. If there were these potential competitors, the hypothetical monopolist test would suggest a relatively broader relevant market than only the city of Huzhou.

Given that the court had accepted the defendant's dominance, what might the defendant's abusive act have been? Since the defendant shared economic interests with the local authority, the plaintiff was inferring that the defendant and the local authority were a single entity. With this inference, the plaintiff could have claimed an abusive act of "restricting trading partners to only trade with the undertaking or undertakings designated by the undertaking" under Article 17(3) of the AML, or of "applying differentiated treatment in regards to transaction conditions such as trading prices to equivalent trading partners" under Article 17(6) of the AML. As we have discussed already, these descriptions may fit as refusal to deal or as raising rivals' cost in terms of economic description of anti-competitive acts. As well, economic theories tend to suggest that refusal to deal may not lead to adverse welfare effects, while raising rivals' cost may do so. Without any justifiable causes for the action by the defendant and the local authority, the plaintiff could have argued by applying a basic economic theory: Any entry into a monopoly would generally result in lower prices. By denying the plaintiff's entry, the plaintiff would have harmed competition by preventing prices from being lowered. If the plaintiff needs to quantify the harm, such as how much prices could have fallen, then it would face a more challenging aspect in using empirical analyses without data being readily available. Similarly, if the defendant could have successfully expanded the relevant markets, the plaintiff would have to use empirical analyses for showing harm to competition in that case, unless it had access to documentary evidence.

A more practical alternative for the plaintiff could have been to sue the local authority under Article 51 of the AML. This article prevents authorities from abusing their administrative powers from eliminating or restricting competition. However, the article would not have allowed the plaintiff to claim compensation from damages.

D. Possible Lessons

In reviewing the three cases, an immediate impression is that the plaintiffs did not rely much on using economics. Since market share is readily observable and easily understood, the plaintiffs likely chose to support their claims through this avenue. But then, the plaintiffs in the first two cases lost mostly because they did not provide enough explanations and facts for market definition, and consequently, their claim of dominance failed. On the other hand, the courts seem very capable in understanding and defining relevant markets.

Now, even if the plaintiffs were able to prove dominance, there is the evidentiary question: Who has to provide evidentiary support on the abuse of dominant market position, as well as on any justifiable causes? Since the plaintiffs offer no explanation as to why the defendants' acts may be abusive, nor any support on how competition may have been harmed, the court really could not provide any indication on their ability to assess such explanations. On the other hand, the defendants were able to explain business justifications for their actions, and the courts also were able to understand the defendants' explanations.

With respect to abuse of dominant market positions, the JI seems to follow these court decisions: The plaintiff has to provide support on the abuse, while the defendant has to support any justifiable causes. As discussed earlier, economic reasoning can help to provide support on whether an act is abusive or not, as well as on the justification of any causes behind the act. The JI and the decisions may have assigned the burden of proof in this manner due to who may have the relevant information: The plaintiff must explain why it has been harmed, while the defendant must have a reason for its act. What remain unclear are the evidentiary thresholds: to what extent may an act be abusive or may a cause be justifiable? For example, would narrations suffice, or is there more evidence required? Further clarity can only come from future cases.[81]

IV. CONCLUDING REMARKS

Our discussion expands on how the rule of reason is behind the private provisions of the AML, as well as on how economics can be applied when using this approach. In litigating cases involving these provisions, antitrust economics can offer possible explanations and point to evidentiary indicators. The explanations are usually directed toward explaining the ability of firms to raise prices, explaining how agreements and acts affect consumers or society, and eventually, explaining how competition is eliminated or restricted. Market power can be indicated from the usual properly measured market shares, but also indirectly from market structure, such as intensity of competition and potential entry. Whether or not the agreements and acts in question harm consumers and society may depend on conditions that allow defendants to profit from using them. Observations of these conditions can be used as evidentiary indicators of harm. In addition, economics can help to measure any harm and associated damages.

After explaining the role of economics in litigating cases under the civil provisions of the AML, we turned to decisions made by the appeals courts for more guidance on this role. We observed that two of the cases failed for the plaintiff because the relevant markets were not properly defined. We explained how antitrust methodologies based on economics can be used to define relevant markets. An additional challenge with these cases is the lack of data to properly measure market shares. We pointed to how indicators of market power may be used as evidentiary support of dominant market position. We recognized that defendants do seem apt to justify their conduct through business reasons.

As the Chinese economy continues to develop, we expect that civil antitrust litigation will also grow. The court decisions will help us in developing further understanding the AML and its enforcement. Economic analyses in supporting the litigation will also improve, which in turn, will improve the enforcement of the law in China.

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2. China had 33 civil cases accepted nationwide in 2010, with plaintiffs requesting as much as RMB 200 million in compensation, as observed by Li Zhu, *New Developments in Civil Antitrust Litigation in China*, CPI Antitrust Chronicle (January 2012). Our focus is on issues related to private enforcement, but the same issues may also be related to enforcement by Chinese authorities, which is discussed by Adrian Emch, *Antitrust in China – The Brighter Spots*, 3 European Competition Law Review, 132–138 (2011) and Adrian Emch, *Abuse of Dominance in China – The First Cases*, Capacity Building for the Enforcement of Competition Law (Wang Xiaoye, Ed.), 153–173 (2012).

3. *Supreme People's Court of the People's Republic of China, Provisions on Various Issues for Application of Law in Adjudication of Civil Lawsuits Caused by Monopoly Conduct*, Judicial Interpretation (2012) No. 5. This interpretation passed at the Conference (No. 1539) of the Adjudicatory Committee of the Supreme People's Court on January 30, 2012.

4. While we refer generally to economics throughout this paper, we want to note how specialized

economics is in the context of antitrust. In particular, antitrust is commonly studied in the field of industrial organization. With the application of non-cooperative game theory, industrial organization as a field has evolved to study strategic interactions among firms.

5. An expert's testimony was excluded in a US case because the witness lacked specialized training and experience in industrial organization. Despite the testimony in question having come from someone with a doctoral degree in economics, the decision in *Nelson v. Monroe Regional Medical Center*, 925 F.2d 1555 (7th Cir. 1991) suggests that testimonies given by witnesses with "no background in antitrust markets" may be excluded. For more details, see Gregory J. Werden, *The Admissibility of Expert Economic Testimony in Antitrust Cases*, 33 ABA Section of Antitrust Law, Issues in Competition Law and Policy, 801–817 (2008).

6. In contrast, a *per se* approach presumes the effects of the alleged act. Phillip Areeda offers the following definitions for rule of reason and *per se* approaches: "An act that is unlawful whenever it occurs and regardless of the circumstances may be said to be 'unlawful *per se*.' By contrast, where legality depends upon an appraisal of the circumstances of a challenged act, the case is said to be governed by the 'rule of reason.'" For more details, see Phillip Areeda, *The 'Rule of Reason' in Antitrust Analysis: General Issues*, Federal Judicial Center's Division of Continuing Education and Training (1981).

7. Richard Posner explains that the testifying expert should serve to offer evidence to the court, not to provide advice or to consult. For example, rather than testifying that price fixing is illegal, an economic expert for a defendant firm might testify that, if there are no price effects from an alleged agreement, then price fixing behavior likely did not occur or be consistent with the agreement. See Richard A. Posner, *The Law and Economics of the Economic Expert Witness*, 13(2) Journal of Economic Perspectives, 91–99 (1999).

8. From the perspective of optimal mechanism design, it is not clear whether the AML is optimal in terms of enforcement, such as leading to either more false convictions (Type I error), false acquittals (Type II errors), or somewhere in between. For discussion of designing legal mechanisms for antitrust enforcement from a judicial review perspective, see Christian Ahlborn, David S. Evans, and A. Jorge Padilla, *Unilateral Practices, Antitrust Rules, and Judicial Review*, mimeo, (2008).

9. Some of the trade offs might not be easily quantifiable. For example, given the limited amount of information available, the trade-off between price and service quality may not be easily determined. This challenging determination is really for the judges to decide.

10. The European Commission's 2010 *Guidelines on Vertical Restraints* defines vertical agreement as "an agreement or concerted practice entered into between two or more undertakings each of which operates, for the purposes of the agreement or the concerted practice, at a different level of the production or distribution chain, and relating to the conditions under which the parties may purchase, sell or resell certain goods or services" (European Commission, p. 6).

11. For a detailed discussion on the economic incentives for collusion, as well as the economic methodologies for detecting collusion, see Louis Kaplow, *An Economic Approach to Price Fixing*, 77(2) Antitrust Law Journal, 343–449 (2011).

12. For more details, see *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc*., 441 US 1 (1979) and Stephen Calkins, *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.,* Antitrust Stories, Eleanor M. Fox and Daniel A. Crane (eds.), Foundation Press (2008).

13. The defendant also sued for tied selling, refusal to deal, and the improper use of copyrighted materials.

14. For example, see Gregory J. Werden, *Economic Evidence on the Existence of Collusion: Reconciling Antitrust Law with Oligopoly Theory*, 71 Antitrust Law Journal, 719–800 (2004) and William E. Kovacic, Robert C. Marshall, Leslie M. Marx, and Halbert L. White, *Plus Factors and Agreement in Antitrust Law*, University of Michigan Law Review, forthcoming (2011).

15. Robert E. Hall and Victoria A. Lazear state that "In most cases, the analysis considers the difference between the plaintiff's economic position if the harmful event had not occurred and the plaintiff's actual economic position. The damages study restates the plaintiff's position 'but for' the harmful event; this part is often called the 'but for' analysis. Damages are the difference between the 'but for' value and the actual value." See Robert E. Hall and Victoria A. Lazear, *Reference Guide on Estimation of Economic Losses in Damages Awards, Reference Manual on Scientific Evidence*, Second Edition, Federal Judicial Center, 284 of 277–332 (2000).

16. For example, see Yongmin Chen, *Oligopoly Price Discrimination and Resale Price Maintenance*, 30(3) Rand Journal of Economics, 441–455 (1999). The paper provides a model to explain why manufacturers may want to profitably use maximum or minimum RPM when there is retail market price discrimination. His analysis predicts ambiguous welfare effects with the use of RPM. For the economics behind maximum RPM in distribution agreements, see Benjamin Klein, *Distribution Restrictions Operate by Creating Dealer Profits: Explaining the Use of Maximum Resale Price Maintenance in State Oil v. Khan*, 7 Supreme Court Economic Review, 1–58 (1999).

17. For more details, see *State Oil Co. v. Khan*, 522 US 3, 7 (1997).

18. The successive mark-up is often called the "double marginalization problem." For a discussion on this problem, see Joseph J. Spengler, *Vertical Integration and Antitrust Policy*, 50(4) Journal of Political Economy, 347–352 (1950).

19. For more details on the case, see *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 US 877 (2007). This decision completed the reversal of a much earlier US decision banning RPM, *Dr. Miles Medical Co. v. John D. Park & Sons Co.*, 220 US 373 (1911).

20. Besides inducing other dimensions of competition, RPM may be used for exclusionary reasons. For example, see John Asker and Heski Bar-Isaac, *Exclusionary Minimum Resale Price Maintenance*, working paper (2011). The paper explains how upstream firms can profit from using minimum RPM in order to exclude. Downstream firms have an incentive not to accommodate upstream entry, since they can benefit from minimum RPM. If upstream entry is dependent on downstream accommodation, entry is then denied.

21. See Judge Liu's decision from the Shanghai No. 1 Intermediate People's Court, *Rainbow Medical Equipment & Supplies Co. v. Johnson & Johnson Medical (China) Ltd. Shanghai Branch*. The plaintiff, Rainbow, had sued the defendant, Johnson & Johnson, for minimum RPM. In particular, the defendant had terminated a distribution agreement after the plaintiff had gained business by quoting prices below the plaintiff's price floor.

22. A lower court had ruled in favor of the defendants, but it was reversed by the appeals court, which applied a *per se* ruling. For more details, see *Texaco Inc. v. Dagher*, Nos. 04-805, 04-814, 547 US (2006).

23. A "consumer surplus" standard implies that consumers cannot be worse off. This is in contrast to a "total surplus" standard, where society may benefit if all the gains by firms are greater than the losses by

consumers, even if consumers are worse off. The AML's seems to take a "balancing weights" standard, which balances the consumer surplus and firm profits. For a discussion on the AML's approach to welfare, *see* Pinping Shan, Guofu Tan, Simon Wilkie, and Michael Williams, *China's Anti-Monopoly Law: What is the Welfare Standard?*, 41 Review of Industrial Organization, 31–52 (2012). While the rule of reason may have been applied in the US litigation for a relatively long period of time, there has been little guidance from the US Supreme Court on their welfare standard. This is an observation made and discussed in details by Roger D. Blair and D. Daniel Sokol, *The Rule of Reason and the Goals of Antitrust: An Economic Approach*, mimeo, (2012). This paper is available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2039337&download=yes.

24. For detailed discussions on assessing dominance, see the International Competition Network's *Unilateral Conduct Workbook Chapter 3: Assessment of Dominance*, Prepared by The Unilateral Conduct Working Group, Presented at the 10th Annual ICN Conference, The Hague, Netherlands (2011). This document is available at http://www.internationalcompetitionnetwork.org/uploads/library/doc752.pdf.

25. For a formal algorithm on delineating relevant markets, see Gregory J. Werden, *Market Delineation Algorithms based on the Hypothetical Monopolist Paradigm*, US Department of Justice, Antitrust Division, EAG Discussion Paper 02-8, (2002).

26. This is the concept behind diversion ratio. For a discussion of diversion ratios, see Carl Shapiro, *Mergers with Differentiated Products*, Speech before the American Bar Association, (November 9, 1995) and Carl Shapiro, *Mergers with Differentiated Products*, Antitrust, 23–30 (Spring 1996). Michael Katz and Carl Shapiro extend the use of diversion ratios when applying the critical loss analysis to market definition. This market delineation analysis examines whether the monopolist can profit from the price increase. Diversion ratio helps to estimate how much the monopolist can actually profit from the price increase. See Michael Katz and Carl Shapiro, *Critical Loss: Let's Tell the Whole Story*, Antitrust Magazine, 49–56 (Spring 2003).

27. The hypothetical monopolist test was first described in the 1982 US merger guidelines. Subsequent US merger guidelines have made slight revisions to the test's description. For a historical context of market delineation, see Gregory J. Werden, *The History of Antitrust Market Delineation*, 76 Marquette Law Revue, 123–215 (1992). Most textbooks do not offer clear definitions, something that results in most economics graduates being unfamiliar with the test, as observed by Adriaan ten Kate and Gunnar Niels, *The Relevant Market: A Concept Still in Search of a Definition*, 5(2) Journal of Competition Law and Economics, 297–333 (2008).

28. If there is a monopolistic agreement in place, then using current price, which is the monopoly price, would broaden the relevant market. This problem is often called the "cellophane fallacy."

29. For example, see Gregory J. Werden, *Assigning Market Shares*, 70 Antitrust Law Journal, 67–104 (2002).

30. For example, newspapers given away for free may have relatively large numbers of readers, but they still often earn less in advertising revenues than traditional newspapers charging for subscriptions.

31. William M. Landes and Richard A. Posner show formal conditions under which market shares do not necessarily imply market power. See William M. Landes and Richard A. Posner, *Market Power in Antitrust Cases*, 94(5) Harvard Law Review, 937–996 (1981).

32. Even when a firm has a patent, market power cannot be presumed. The US Supreme Court had ruled that, in a tying case where one of the products is a patented, the plaintiff must still establish the defendant's

market power for the patented product. For more details, see *Illinois Tool Works Inc. v. Independent Ink, Inc.*, 547 US 28 (2006).

33. Sometimes, this act may be referred to as price gouging. In the United States, price gouging laws tend to be at the state level, rather than federal level. A list of how each state applies their price gouging laws, if any, can be found at http://apps.americanbar.org/antitrust/at-committees/at-fe/pdf/programs/spring-06/price-gouging-statutes.pdf.

34. For economic theories on predation, *see* Patrick Bolton, Joseph F. Brodley, and Michael H. Riordan, *Predatory Pricing: Strategic Theory and Legal Policy*, Georgetown Law Journal, 2239–2330 (2000). For more details on predation from an enforcement perspective, see the International Competition Network's *Report on Predatory Pricing*, Prepared by The Unilateral Conduct Working Group, Presented at the 7th Annual ICN Conference, Kyoto (2008). This document is available at http://www.internationalcompetitionnetwork.org/uploads/library/doc354.pdf.

35. For a more detailed discussion, see Michael Salinger, *The Legacy of Matsushita*, 38 Loyola University Chicago Law Journal, 475–490 (2007).

36. For more details on refusal to deal from an enforcement perspective, see the International Competition Network's *Report on the Analysis of Refusal to Deal with a Rival Under Unilateral Conduct Laws*, Prepared by The Unilateral Conduct Working Group, Presented at the 9th Annual ICN Conference, Istanbul, Turkey (2010). This document is available at http://www.internationalcompetitionnetwork.org/uploads/library/doc616.pdf.

37. For more details, see *Verizon Communications Inc. v. Offices of Curtis v. Trinko*, *LLP* 540 US 398 (2004). This decision contrasted with an earlier US Supreme Court decision that ruled against the defendant for refusal to deal when there was a termination of a voluntary agreement. For more details, see *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.* 472 US 585 (1985).

38. There is an economics literature on exclusive dealing. For a paper that illustrates that long-term contracts can be a barrier to entry, *see* Philippe Aghion and Patrick Bolton, *Contracts as a Barrier to Entry*, 77(3) American Economic Review, 388–401 (1987). For a paper that shows how an incumbent might exploit the lack of coordination among multiple buyers to deter entry in the presence economies of scale, see Eric Rasmusen, J. Mark Ramseyer, and John Wiley, Jr., *Naked Exclusion*, 81(5) American Economic Review, 1137–1145 (1991). For more details on predation from an enforcement perspective, see the International Competition Network's *Report on Single Branding/Exclusive Dealing*, prepared by the Unilateral Conduct Working Group, Presented at the 7th Annual ICN Conference, Kyoto (2008). This document is available at http://www.internationalcompetitionnetwork.org/uploads/library/doc355.pdf.

39. For a survey of the economic literature on bundling, see Bruce H. Kobayashi, *Does Economics Provide a Reliable Guide to Regulating Commodity Bundling by Firms? A Survey of the Economic Literature*, 1(4) Journal of Competition Law and Economics, 707–746 (2005). For more details on tying and bundling from an enforcement perspective, see the International Competition Network's *Report on Tying and Bundled Discounting*, prepared by the Unilateral Conduct Working Group, Presented at the 8th Annual ICN Conference, Zurich, Switzerland (2009). This document is available at http://www.internationalcompetitionnetwork.org/uploads/library/doc356.pdf.

40. In a well-known US antitrust case, Microsoft's practice of bundling its browser software with its operating system software led to a violation of US antitrust law. For more details, see *United States v. Microsoft*

Corp., 253 F.3d 34, 59 (D.C. Cir. 2001).

41. Michael D. Whinston explains that, if buyers cannot coordinate, then a seller can use tying as a way to exclude competitors by preventing them from achieving the necessary economies of scale to operate profitably. See Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80(4) American Economic Review, 837–859 (1990).

42. For a historical context of raising rivals' costs, see David T. Scheffman and Richard S. Higgins, *Twenty Years of Raising Rivals' Costs: History, Assessment, and Future*, 12 George Mason Law Review, 371–387 (2003).

43. Interests in exclusionary loyalty discounts came from *LePage's Inc v. 3M (Minnesota Mining and Manufacturing Co*) (2003), in which the US Supreme Court declined to review a lower court ruling for the plaintiff in which the defendant was ruled to have been engaged in predatory pricing, even through there was uncontested evidence of above-cost pricing. For more details on loyalty discounts from an enforcement perspective, see the International Competition Network's *Report on the Analysis of Loyalty Discounts and Rebates Under Unilateral Conduct Laws,* prepared by the Unilateral Conduct Working Group, Presented at the 8th Annual ICN Conference, Zurich, Switzerland (2009). This document is available at http://www.internationalcompetitionnetwork.org/uploads/library/doc357.pdf.

44. Note how this description of an act may also be treated as bundling or tying. Economics can help to study the effects of the acts by distinctly modeling them. For example, the seller's decision can be formalized as whether to sell its products as a bundle, to offer conditional discounts, or to do both.

45. Consider a customer who requires 100 units. A dominant supplier offers $10 per unit and a 20% discount for buying all its requirements. So, the customer pays $1000 but gets $200 back. For the customer to buy 10 units from a competitor, the customer will lose $200, or $20 per unit. So, the competitor must at least pay $20 per unit to the customer, who is only paying $10 per unit. To win the business from the customer, the competitor then must not only give the 10 units to the customer, but must also give back a $200 rebate. Our example can be extended to include a pricing below cost test, as proposed by Janusz Ordover in *Ortho Diagnostic Sys. v. Abbott Labs*., 920 F. Supp. 455 (S.D.N.Y. 1996). A version of the test is that the price of the contested products less full amount of discount must be below the defendant's incremental cost to produce those product(s) in order to have a violation, as raised in *Cascade Health Solutions v. PeaceHealth* (2007). For additional details, see Patrick Greenlee, David Reitman, and David Sibley, *An Antitrust Analysis of Bundled Loyalty Discounts*, 26(5) International Journal of Industrial Organization, 1132–1152 (2008).

46. In particular, Article 17(2) to 17(5) end with a qualifier in that they must be applied "without justifiable cause". The National Development and Reform Commission (NDRC)'s guidelines on price-related abuse (Rules against Pricing-related Monopolies, effective February 1, 2011) offer such examples as how price reduction of fresh, seasonal, expiring, and overstock commodities may be legitimate. The State Administration for Industry and Commerce (SAIC)'s guidelines on non-price related abuse (*Rules of Administration for Industry and Commerce on Prohibition of Market Dominance*, effective February 1, 2011) provide two factors: a) normal business activities; b) effects on efficiency, public interest and economic development.

47. For example, news reports indicated that Costco, a large US big-box store, has benefitted from higher gasoline prices by using a strategy of pricing their gasoline below local competing gasoline stations in order drive its sales inside the store. See http://www.forbes.com/sites/abrambrown/2012/05/24/costco-profit-tops-estimates-on-rising-gasoline-prices/.

48. For a review of empirical studies on vertical contractual practices, as a reflection of Oliver Williamson's work on transactional economics, see Francine Lafontaine and Margaret Slade, *Transaction Cost Economics and Vertical Market Restrictions - Evidence*, 55(3) Antitrust Bulletin, 587–611 (2010).

49. For more details, see Zhenguo Wu, *Perspectives on the Chinese Anti-Monopoly Law*, 75 Antitrust Law Journal, 73–116 (2008).

50. Generally, these tests require some observations and then, make inferences from the observations. The "profit sacrifice" test observes that a firm is forgoing short term profit, and then it assesses whether the firm's conduct is irrational but for the elimination or restriction of competition. However, a possible issue with this test is that firms investing in research and development are losing profit in the short run, though if they are successful in their investments, they may be able to eliminate or restrict competition by offering better products. The "no economic sense" test avoids this investment issue by suggesting that it should be illegal for a firm to harm competition and be the only benefactor of the firm's conduct. In the example, the firm's conduct should not be illegal, since the firm and society may benefit from the firm's investment. A problem with this test is that we may not be able to observe how society may benefit. The "equally efficient competitor" test suggests that firms should not exclude equally efficient competitors. However, we may not be able to observe whether or not firms are equally efficient. For example, entrants may not be as efficient as incumbents in the short run but will be in the long run.

51. For more a detail discussion on the implications of these legal tests, see Keith N. Hylton, *The Law and Economics of Monopolization Standards*, Antitrust Law and Economics, 4 Encyclopaedia of Law and Economics, Second Edition, Edward Edgar, 82–115(2010).

52. Daniel L. Rubinfeld remarks on how Oliver Williamson had early insights on recognizing the use of economists in antitrust trials before the court appointed economic experts. In an early predation case, Williamson provided analysis that focused on the key economic issues and methodologies, which indirectly caused the convergence of views by experts. The predation case was *Barry Wright Corp. v. ITT Grinnell Corp.*, 724 F.2d 227 (1st Cir. 1983). See Oliver Williamson, *Pretrial Uses of Economists: On the Use of 'Incentive Logic' to Screen Predation*, 29 Antitrust Bulletin, 475–500 (1984) and Daniel L. Rubinfeld, *On the Pretrial Use of Economists*, 55(3) Antitrust Bulletin, 679–697 (2010).

53. Economics refers to this problem as the informational asymmetry between a principal and an agent. The agent has more information than the principal and has strategic incentives to exploit the information asymmetry.

54. See *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 US 579, 591 (1993). The decision referred to an evidentiary rule, Rule 706 of the Federal Rules of Evidence, for guidance.

55. See Beijing Intermediate People's Court No. 1, *Tangshan Renren Information Service Co., Ltd. v. Beijing Baidu Network Technology Co. Ltd.*, [2009] Yi Zhong Min Chu Zi No. 845, December 18, 2009. Upheld on appeal by Beijing High People's Court, *Tangshan Renren Information Service Co., Ltd. v. Beijing Baidu Network Technology Co. Ltd.*, [2010] Gao Min Zhong Zi No. 489, July 9, 2010.

56. There are generally two ways for listings to be displayed. One way is to display two columns, with one listing links based on relevancy and the other listing links based on payment. Another way is to only have one column, but to add indicators that show whether the links are based relevancy or payment.

57. For more details, *see* Angela Huyue Zhang, *Using a Sledgehammer to Crack a Nut: Why China's Anti-Monopoly Law was Inapproriate for Renren v. Baidu*, 7(1) Competition Policy International, (2011).

58. For example, a website for a golf course may choose to bid and ultimately, buy words, such as "golf" and "course." In any searches for golf courses, the link to this golf course website will then be placed ahead of other golf course websites. For more details on how a search engine provider works, a description is available at http://computer.howstuffworks.com/internet/basics/search-engine1.htm.

59. We do not have information on what exactly the defendant was doing for the plaintiff.

60. The plaintiff made less payment on July 2008 and made the following comparisons: a) From June 10 to July 9, 2008, there were 88,095 IP and 251,684 PV browses but from July 10 to August 9, 2008, there were 18,340 IP and 123,905 PV browses; b) On September 25, 2008, the plaintiff also found that there were four pages in Baidu's listings for its website, www.qmyyw.com, while there were 6,690 pages in Google's listings.

61. For more details on the evidence and legal arguments from the case, see Tong Shu, *Reflections on Baidu Monopoly Litigation: Comments on Renren v. Baidu*, No 1 China Patents & Trademarks, 66–71 (2010).

62. *See* Angela Huyue Zhang, *supra* note 56, p. 283.

63. The defendant seems to have relied on a decision made by the US lower court in *Kinderstart.com, LLC v. Google, Inc*, Case No. C 06-2057 JF (RS) (N.D. Ca., March 16, 2007). In this case, the plaintiff alleged that the defendant's search engines had discriminated against the plaintiff's websites. The court ruled in favor of the defendant. In particular, the plaintiff had claimed two relevant markets, "search" market and "search ad" market. The plaintiff argued that the "search" market was a relevant market, since such a market must be free because of user's experience and expectations, as well as government policies. The court pointed out that the defendant had not cited any authority "indicating that antitrust law concerns itself with competition in the provision of free services," and that the plaintiff had not alleged that anyone has paid the defendant to search. For these reasons, the court ruled that the plaintiff had not established the "search" market as a relevant market. The court also did not recognized the plaintiff's claim of "search ad" market as being distinct from other Internet advertising, since the plaintiff offered no support. A copy of the decision is available at http://wsgr.com/attorneys/BIOS/PDFs/kinderstart_google.pdf.

64. See Tong Shu, *supra* note 60.

65. Renren cited a Chinese Securities Journal article that claimed Baidu had 65.8% market share in China. Renren also used Baidu's own website, which indicated that the company had over 70% market share. Neither the article nor the website described the markets that the shares were based on, such as the search engine advertising market or the search engine market.

66. Search engines, such as the defendant's, usually will rank websites based on how much they pay and how relevant the websites are. However, websites may be able to exploit the ranking by relevancy instead of ranking by payment. For example, golf course websites may be ranked according to the number of links they have to other golf course websites. A website selling golf clubs may gain a higher ranking by adding links to golf course websites. In turn, search engines have adjusted their ranking system to prevent such exploitations. Google offers guidelines to websites in order to avoid being treated accidentally as an exploitative website by their search engine, a document which is available at http://support.google.com/webmasters/bin/answer.py?hl=en&answer=35769.

67. For more details on the economic theories of two-sided markets and defining markets in cases involving two-sided markets, see David S. Evans, *Two-Sided Market Definition*, ABA Section of Antitrust Law, Market Definition in Antitrust: Theory and Case Studies, forthcoming (2011). Among enforcement authorities, defining two-sided markets remain an issue that is not settled. See OECD Roundtables, *Two-Sided Market*s, (2009). This document is available at http://www.oecd.org/daf/competition/44445730.pdf.

68. For a discussion on how the court recognized the two-sided market but did not consider the impacts of this feature, such as market definition and competitive effects, see Angela Huyue Zhang, *supra* note 55.

69. In order to cater towards the user's preferences, placement advertising would usually require users to be tracked, which may not be possible for privacy reasons, and also may not reach a relatively wider audience than advertising through keywords.

70. For a possible technique for relating market power with profits, see Michael A. Williams, Kevin Kreitzman, Melanie Stallings Williams, and William M. Havens, *Estimating Monopoly Power with Economic Profits*, 10 UC Davis Business Law Journal, 125–150 (2010).

71. Delineating the relevant markets with respect to keyword advertising and placement advertising were possible issues in Google's acquisition of DoubleClick. For information on this acquisition, the US FTC's decision is available at http://www.ftc.gov/opa/2007/12/googledc.shtm and the E.C. decision is available at http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/426.

72. John Asker provides a model consisting of vertical segments that allows for exclusive distribution. By estimating the model, the paper tests whether exclusive dealing can lead to foreclosure. See John Asker, *Diagnosing Foreclosure due to Exclusive Dealing*, mimeo, (2005).

73. Antitrust authorities have an advantage in obtaining information from the defendants in that they have formal powers.

74. See Beijing Intermediate People's Court No. 2, *Li Fangping v. China Netcom (Group) Co. Ltd. Beijing Branch*, [2008] Er Zhong Min Chu Zi No. 17385, December 18, 2009. Upheld on appeal by Beijing High People's Court, *Li Fangping v. China Netcom (Group) Co. Ltd. Beijing Branch*, [2010] Gao Min Zhong Zi No. 48, June 9, 2010.

75. As well, non-registered residents could not buy bundles of fixed-line services along with other telecommunication services.

76. For more details on the case, see Susan Ning, Ding Liang and Angie Ng, *Li Fangping vs China Netcom — Abuse of Dominance Case Dismissed*, China Law Insight, September 19, 2010. This document is available at http://www.chinalawinsight.com/2010/09/articles/corporate/antitrust-competition/li-fangping-vs-china-netcom-abuse-of-dominance-case-dismissed/.

77. For example, see William J. Baumol and Daniel G. Swanson, *The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria of Market Power*, 70 Antitrust Law Journal, 661–686 (2003).

78. Alternatively, all firms may be implicitly participating in some collusive acts that raise prices.

79. See *Huzhou Intermediate People's Court, Huzhou Yiting Termite Control Services Co., Ltd. v. Huzhou City Termite Control Research Institute Co., Ltd.*, [2009] Zhe Hang Zhu Chu Zi No. 553, June 7, 2010. Upheld on appeal by Zhejiang High People's Court, *Huzhou Yiting Termite Control Services Co., Ltd. v. Huzhou City Termite Control Research Institute Co., Ltd.*, [2010] Zhe Zhi Zhong Zi No. 125, August 27, 2010.

80. The local authority was responsible for assuring the requirements issued by the Ministry of Construction were met by any firms wishing to engage in termite prevention services.

81. For more details on the case, see Susan Ning and Ding Liang, *Termites and Abuse of Dominance*, China Law Insight, October 8, 2010. This document is available at http://www.chinalawinsight.com/2010/10/articles/corporate/antitrust-competition/termites-and-abuse-of-dominance/.

82. With these cases on the abuse of dominant market positions, the JI and the decisions have indicated that the plaintiff has to support harm to competition. In contrast to some monopolistic agreements, the JI burdens the defendant with having to prove that competition has not been harmed. The JI seems to follow the notion that price fixing is generally bad for society, but instead of using a *per se* prohibition of all monopolistic agreements, the JI places the burden on the defendant.

The Classics

I Can See Clearly Now: Lee Benham, Eyeglasses, And The Empirical Analysis Of Advertising And The Effects Of Professional Regulation

By Bruce H. Kobayashi & Timothy J. Muris[1]

In his oft quoted dissent in *New State Ice v. Liebmann,* Justice Brandeis noted that "it is one of the happy incidents of the federal system that a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country."[2] An important by-product of the variation in state law produced by these laboratories of democracy is the opportunity for empirical research. Measuring the effect of these different laws, both across states and over time, is now a standard and ubiquitously used methodology in law and economics.[3]

Lee Benham's 1972 article, *The Effect of Advertising on the Price of Eyeglasses*,[4] represents an early, highly influential example of this empirical methodology, where the variation between state laws permits use of legislative "experiments" to study the effects of differing approaches to regulation. Benham found that mean prices of eyeglasses in states that prohibit advertising by optometrists were $6.70 (25 percent) higher than in states that did not prohibit such advertising.[5] Cross-section regression analyses[6] also found significant increases in the price of eyeglasses in states with complete restrictions on advertising, with average prices in such states $7.48 higher.[7] Benham's main result was robust to the inclusion of a variable to control for entry restrictions. He also found that mean prices for eyeglasses in states that only banned price advertising were higher than in states with no restrictions, but lower than in states with complete advertising restrictions.[8]

These striking results challenged the conventional economic wisdom that the costs of advertising raised market prices.[9] Benham also provided tangible and concrete evidence of both the costs of economic regulation to consumers and the likely beneficiaries of such regulation.[10]

While Benham was not the first to exploit variation in state law to measure the effect of regulation,[11] the clear and straightforward nature of his methodology and results provided empirical evidence that addressed two important theoretical controversies in economics: the pro-competitive versus anticompetitive effects of advertising, and the public versus private interest theories of the regulation of licensed occupations. Benham's article appeared when both economic and legal analysis of the effects of advertising and regulation were being revised to incorporate recent advances in the economics of information[12] and the application of public choice theory to regulation.[13] The article helped create interest in and the subsequent production of a robust empirical literature that measured the effects of professional regulation on both price and quality.[14] Benham's piece was also a prominent example of the empirical work that transformed regulation in general,[15] and antitrust law in particular.[16] Discussion of the article, its methodology, and its clear results are a staple of popular economics texts in both microeconomics[17] and industrial organization.[18]

Benham's article was published shortly before the US Supreme Court's landmark cases that reversed its prior decision denying First Amendment protection for commercial speech, including advertising.[19] In *Virginia State Board of Pharmacy v. Virginia Citizens Consumer Council*, the Court overturned a state ban on advertising drug prices, holding that First Amendment protection applied to commercial speech that was not false or misleading.[20] In *Bates v. Arizona State Bar,* the Court applied the First Amendment to allow advertising by a legal clinic.[21] In both cases, the Court applied a cost-benefit analysis in deciding whether to grant First Amendment protection to advertising.[22] The influence of the recent advances in economics of information and advertising was evident in both of these landmark cases, and explicit in *Bates*.[23] Indeed, the *Bates* Court used the empirical results from the Benham article to support its conclusions.[24]

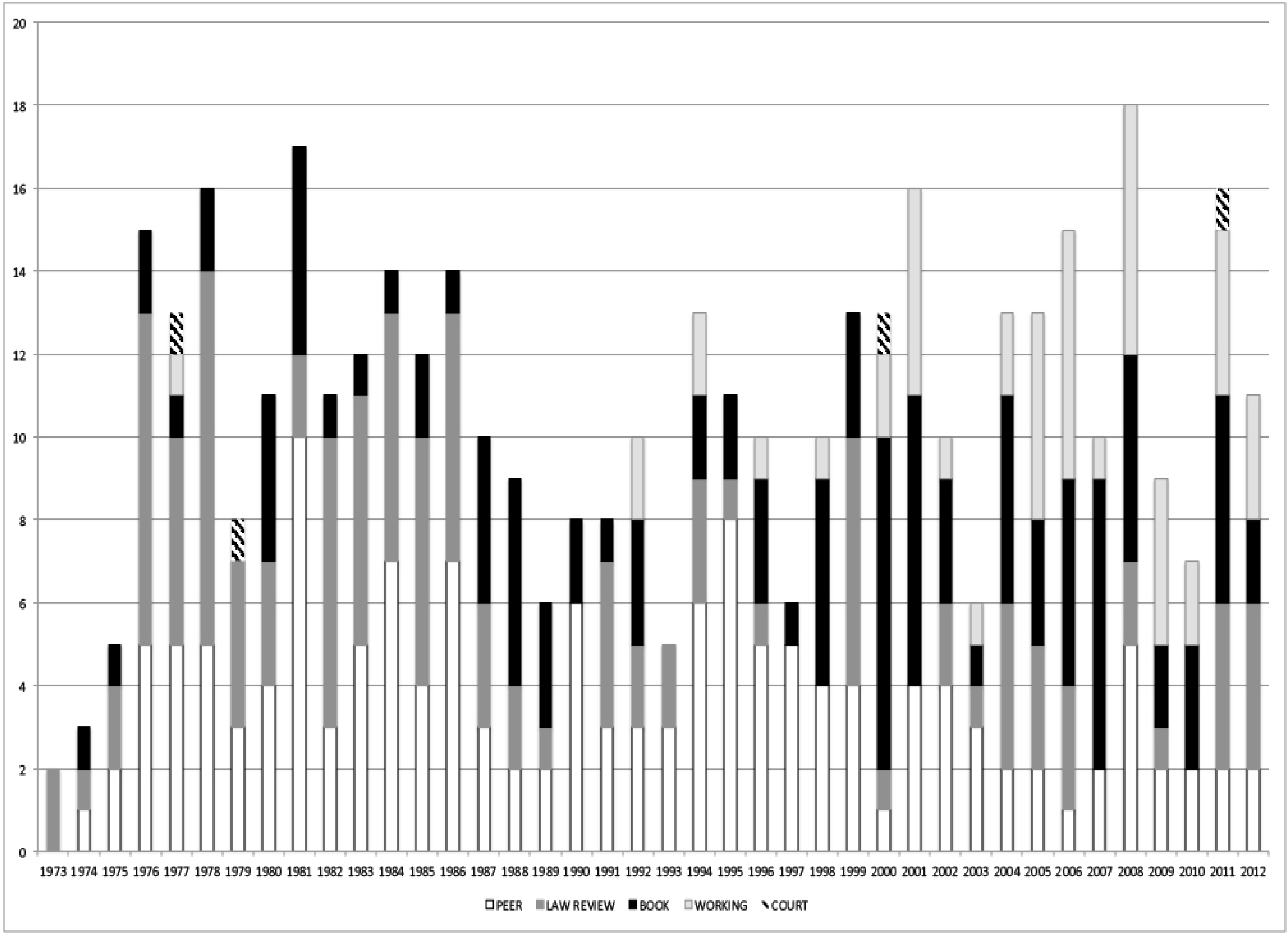
The depth and scope of Benham's influence can be illustrated by examining citations to the article.[25] Figure 1 depicts citations to Benham's article by year from 1973 (the year after publication of the article in the Journal of Law & Economics) to 2012.[26] Over these forty years, our search found more than 400 citations to Benham's article from a diverse set of sources.[27] The figure also differentiates the number of citations by source. Specifically, our search found 147 cites in articles published in peer review journals, 117 cites from articles published in law reviews, 112 cites from published books, 49 cites from working or occasional papers, and 4 cites from federal court opinions.[28]

In addition to the overall volume and diversity of the citations, perhaps the most striking pattern is the relative constancy of the volume of cites over four decades. While citations articles normally peak soon after they are published and quickly decline after a few years, citations to Benham's article remain robust forty years after its publication. Indeed, the highest yearly total, 18, was in 2008, and four of the seven years with citations of 15 or greater have occurred since 2000. Moreover, the large number of recent citations to Benham's article contained in recent unpublished working papers suggests that this trend is likely to continue for some time.

WHILE CITATIONS ARTICLES NORMALLY PEAK SOON AFTER THEY ARE PUBLISHED AND QUICKLY DECLINE AFTER A FEW YEARS, CITATIONS TO BENHAM'S ARTICLE REMAIN ROBUST FORTY YEARS AFTER ITS PUBLICATION.

Benham's work had, and will likely continue to have, a direct and important impact on the agenda of US antitrust agencies. In many regulated professions, regulatory bodies and/or practitioners continue to attempt to restrict advertising, proscribe relationships with commercial firms, prevent consumers from buying related goods and services from non-professionals, and expand the list of services that only professionals can provide. Since the mid-1970s, a combination of court challenges and the Federal Trade Commission and Department of Justice advocacy efforts before regulatory bodies have helped eliminate most barriers to truthful, non-deceptive advertising by professionals. These agencies, like the Court in *Bates*, use the empirical results from Benham's article to support their position.[29] And consistent with the results of his empirical analysis, prices have decreased when these barriers were eliminated.[30]

Figure 1 – Citations to Benham (1972)



Because other barriers to competition remain, the antitrust agencies continue to apply the lessons of Benham's work by attacking anticompetitive restraints in many industries.[31] One area in which the federal antitrust agencies confront such restraints is in health care, including the professions. The antitrust agencies have acted aggressively to eliminate restraints on advertising, both by bringing cases to lift advertising bans and through advocacy in front of other government bodies (most notably involving restrictions on direct-to-consumer prescription drug advertising). On several recent occasions, agencies also have helped persuade state governments to avoid granting antitrust exemptions that would allow medical professionals to fix prices.[32] Indeed, regulatory restrictions that would reduce competition in the sale of eyewear, the industry studied in Benham's article, remain a focus.[33]

Finally, Benham's article is an early and important example of a broader empirical literature, instrumental in altering both industrial organization economics and related areas of law. For example, contemporaneous changes in antitrust scholarship and law accompanied the changes in the economic analysis and legal regulation of advertising discussed above.[34] Perhaps the most prominent example involved the then-existing consensus, held by most antitrust economists and legal scholars, that industrial concentration itself was a major problem. This consensus was based on the observed positive correlation between industrial concentration and accounting profits, but collapsed after the publication of *Industrial Concentration: The New Learning*, which contained the proceedings of a 1973 conference that included Harold Demsetz's empirical test of the effects of concentration on consumer welfare.[35] Demsetz's results supported the hypothesis that the observed correlation between concentration and profits was generated by the efficiency of large firms, and not by the effects of market power.[36] Although theoretical flaws were relevant in the debate over the effects of concentration, the de-concentration movement — which sought to break up leading business firms — foundered primarily on empirical evidence, and Demsetz's work was among the most important in revealing the flaws in the existing consensus.[37]

This new learning soon influenced antitrust law. In 1977, the same year as *Bates,* the Supreme Court concluded that antitrust rules must be based on "demonstrable economic effect."[38] Antitrust had moved from an era of competitor protection and de-concentration for its own sake, to one based on an empirical foundation.[39] More generally, the economic sophistication of antitrust law, both within the agencies and in court decisions, has improved dramatically in recent decades. Lee Benham's 1972 article played a critical and formative role in that progress.[40]

THE ANTITRUST AGENCIES CONTINUE TO APPLY THE LESSONS OF BENHAM'S WORK BY ATTACKING ANTICOMPETITIVE RESTRAINTS IN MANY INDUSTRIES.

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1. Professor of Law, George Mason University School of Law and Foundation Professor of Law, George Mason University School of Law and of Counsel, Kirkland & Ellis. Professor Muris was Chairman of the Federal Trade Commission (2001-2004).

2. 285 US 262, 311 (1932).

3. *See* P. L. Joskow and N. L. Rose, *The Effects of Economic Regulation,* in HANDBOOK OF INDUSTRIAL

Organization, Vol. 2, (Schmalensee & Willig, eds. (1989)), reviewing numerous studies of regulation taking advantage of variation in laws.

4. Lee Benham, *The Effect of Advertising on the Price of Eyeglasses,* 15 J. L. & Econ. 337 (1972).

5. *Id.* at Table 1.

6. Benham discusses, but does not explicitly examine because of data limitations, time series evidence. *Id.* at 346, n. 19. Modern studies of the effect of state regulations often exploit panel (cross section and time series) data and difference-in-difference or triple difference estimates to address endogeneity issues associated with the passage of state laws. *See, e.g.,* J. Klick, et al., *The Effect of Contract Regulation on Franchising* 168 J. Inst. Theo. Econ. 38 (2012).

7. Benham, *supra* note 4 at Table 2.

8. *Id.* at Table 3.

9. *Id.* at 315-2, noting poll of University of Chicago professors in which approximately 40 percent of the economists and 100 percent of those in marketing expected prices to be the same or lower where advertising was prohibited.

10. *Id.* at 351, showing evidence consistent with the regulation benefiting optometrists and physicians.

11. Stigler and Friedland used state variation to measure the effects of utility regulation in an article published 10 years earlier. *See* George J. Stigler and Claire Friedland, *What Can Regulators Regulate? The Case of Electricity*, 5 J. L. & Econ. 1 (1962). *See* also Sam Peltzman, *George Stigler's Contribution to the Economic Analysis of Regulation,* 101 J. Pol. Econ. 818 (1993), discussing the Stigler and Friedland article and its contribution to the literature.

12. George J. Stigler, *The Economics of Information*, 69 J. Pol. Econ. 213 (1961); Phillip Nelson, *Information and Consumer Behavior*, 78 J. Pol. Econ. 311 (1970).

13. George J. Stigler, *The Theory of Economic Regulation*, 2 Bell J. of Econ & Mgmt. Sci. 3 (1971).

14. *See, e.g.*, J.F. Cady, *An Estimate of the Price Effects on Restrictions on Drug Price Advertising*, 14 Econ. Inq. 490, 504 (1976); Timothy J. Muris and Fred McChesney, *Advertising and the Price and Quality of Legal Services: The Case for Legal Clinics*, 1979 Am. Bar. Found. Research J. 179; R. S. Bond, J. J. Kwoka, J. J. Phelan, and I. T. Whitten, *Effects of Restrictions on Advertising and Commercial Practice in the Professions: The Case of Optometry*, FTC Bureau of Economics Staff Report (1980); William W. Jacobs, Brenda W. Doubrava, Robert P. Weaver, Douglas O. Stewart, and Eric L. Prahl, *Improving Customer Access to Legal Services: The Case for Removing Restrictions on Truthful Advertising*, FTC Staff Report (1984); John Kwoka, *Advertising the Price and Quality of Optometric Services*, 74 Am. Econ. Rev. 211 (1984); Deborah Haas-Wilson, *The Effect of Commercial Practice Restrictions: The Case of Optometry*, 29 J. L. & Econ. 165 (1986); Deborah Haas-Wilson & Elizabeth Savoca, *Quality and Provider Choice: A Multinominal Logit Least Squares Model With Selectivity*, 24 Health Service Res. 791 (1990); James H. Love, et al., *Spatial Aspects of Competition in the Market for Legal Services*, 26 Reg. Stud. 137 (1992); Frank H. Stephen, *Advertising, Consumer Search Costs, and Prices in a Professional Service Market*, 26 Applied Econ. 1177 (1994). For a summaries of this literature, *see* Timothy J. Muris, *California Dental Association v. Federal Trade Commission: The Revenge of Footnote 17*, 8 Sup. Ct. Econ. Rev. 265 (2000); James H. Love and Jack H Stephen, *Advertising, Price and Quality, in Self- regulating Professions: A Survey*, 3 Intl. J. Econ. Bus. 227(1996); J. Howard Beales & Timothy J. Muris, State and Federal Regulation of National Advertising 8-9 (1993).

15. See Peltzman, *supra* note 11.

16. See Timothy J. Muris, *GTE Sylvania and the Empirical Foundations of Antitrust,* 68 Antitrust L. J. 899,

903 (2001); Bruce H. Kobayashi & Timothy J. Muris, *Chicago, Post-Chicago, and Beyond: Time to Let Go of the 20th Century*, 78 ANTITRUST L. J. 147 (2012); Joshua D. Wright, *Abandoning Antitrust's Chicago Obsession: The Case for Evidence-Based Antitrust*, 78 ANTITRUST L. J. 241 (2012).
17. *See, e.g.,* N. Gregory Mankiw, PRINCIPLES OF ECONOMICS, Vol. 1 (2009) at 357 which includes a full page case study on Advertising and the Price of Eyeglasses based on the results of Benham's article.

18. *See, e.g.,* Dennis W. Carlton & Jeffrey M. Perloff, MODERN INDUSTRIAL ORGANIZATION, 4th ed. (2005) at 481-2 discussing the results of Benham's article; Jean Tirole, THE THEORY OF INDUSTRIAL ORGANIZATION (1988) at 290 discussing this article; Richard A. Posner, ECONOMIC ANALYSIS OF LAW, 8th ed. 945 (cited); F. M. Scherer, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE, 2d. ed. (1980) at 376-7 discussing Behnam's results as a "convincingly documented case" of the benefits of advertising. One can see of the impact of Benham's article by comparing the discussion of advertising contained in Scherer's second edition to that contained in the first edition of his widely adopted book, which was published in 1970 before Behnam's article was published. *See* , noting only that the benefits of advertising "does not necessarily occur" and that "[w]hat evidence we have is inconclusive".

19. Valentine v Chrestensen, 315 US 52 (1942).

20. 425 US 748 (1976).

21. 433 US 350 (1977).

22. As some commentators have noted, the Court's analysis resembles a rule-of-reason analysis under the antitrust laws. See Muris, *supra* note 13 at 280; Fred S. McChesney, *De-Bates and Re-Bates: The Supreme Court's Latest Commercial Speech* Cases, 5 SUP. CT. ECON. REV. 81, 86 (1997). Indeed, *Bates* was in part an antitrust case, but the actions challenged in the antitrust claim were held to be exempt from the antitrust laws under the state action doctrine.

23. *See* McChesney, *supra* note 19 at 86-7; Frank H. Easterbrook, *Foreward: The Court and the Economic System,* 98 HARV. L. REV. 4, 16 (1984), noting the Court's incorporation of economic reasoning, with the citation of Benham's article by the Court in *Bates* as an early example.

24. 433 US 377, n. 34, noting that "there is revealing evidence with regard to products; where consumers have the benefit of price advertising, retail prices often are dramatically lower than they would be without advertising.". As noted by some commentators, these cases may have been the high water mark for the application of economics to First Amendment challenges to advertising restrictions. See Muris, *supra* note 13, McChesney, *supra* note 19.

25. The use of citation analysis is a standard, albeit imperfect, way of measuring the reputation of an author or the influence and impact of an article or judicial decision. *See, e.g.,* Richard A. Posner, *An Economic Analysis of the Use of Citations in the Law,* 2 AM. L. & ECON. REV. 381 (2000).

26. The citation analysis show results from exact matches to the phrase "The Effect of Advertising on the Price of Eyeglasses", using Google Scholar, Google Books, and a search of the TP-ALL and ALLCASES databases on WESTLAW. The computer search was supplemented by a manual search of books in possession of the authors.

27. Entries were counted if the search preview showed citation of the Behnam article, or if a full text search of the individual article revealed a citation to the Benham article. Citations from Books were based on the latest version of a book, and citations from earlier version of the same book were not separately listed. Thus, our search technique attempts to minimize the number of false citations. There are undoubtedly a higher number of missed citations to Benham's article because of misspellings and the limits of the coverage of the databases searched.

28. These include two Supreme Court cases, and two Federal Courts of Appeal cases. The Supreme Court cases are *Bates, supra* note 21, and Friedman v. Rogers, 440 US 1, 22 (1979). The Federal Appellate Court cases

are California Dental Association v. Federal Trade Commission, 224 F.3d 942 (9th Cir. 2000), and Loomis v. Exelon Corp. 658 F. 3d 667 (7th Circuit, 2011).

29. *See*, *e.g., California Dental, supra* note 28, noting FTC's reliance on a number of scholarly articles, including Benham's 1972 article; *Friedman, supra* note 28, noting Federal Trade Commission's statement of basis and purpose in its Eyglasses I Rule, 43 Fed, Reg, 24006 (1978), characterizing Benham's study as "reliable".

30. *See* remarks of Timothy J. Muris, Chairman, Federal Trade Commission, *Creating a Culture of Competition: The Essential Role of Competition Advocacy,* before the International Competition Network Panel on Competition Advocacy and Antitrust Authorities, Naples, Italy, September 28, 2002, available at http://www.ftc.gov/speeches/muris/020928naples.shtm.

31. *Id.* For example, the agencies have opposed rules in some states that only allow funeral directors can sell caskets, and rules in several states that require home buyers to hire an attorney to handle real estate and mortgage closings.

32. *Id.*

33. *See id*, discussing the FTC staff filing comments before a Connecticut state optical board considering whether to force out-of-state contact lens vendors to obtain a license if they want to ship lenses to customers in Connecticut. The broad antitrust agenda regarding health care is summarized in the agencies' 2004 joint report. *See Improving Health Care: A Dose of Competition,* A Report by the Federal Trade Commission and the Department of Justice, July 2004, available at http://www.ftc.gov/reports/healthcare/040723healthcarerpt.pdf.

34. *See* Muris, *supra* note 16.

35. Harold Demsetz, *Two Systems of Belief About Monopoly,* in Industrial Concentration: The New Learning (Harvey Goldschmid et al. eds., 1974) at 164-84.

36. *Id.* To test the impact of concentration on consumer welfare, Demsetz assumed, arguendo, that large firms in concentrated industries earned higher rates of return. Under the market power hypothesis, these higher profits resulted from an increase in prices, and thus smaller firms in concentrated industries should benefit from the lack of competition and earn higher rates of return than smaller firms in unconcentrated industries. Under the efficiency hypothesis, larger firms in concentrated industries were more profitable because of lower costs rather than because of market power. Under this hypothesis, smaller firms in concentrated industries, which lack the efficiency of their larger brethren, would not have higher profits than smaller firms in unconcentrated industries. Demsetz found evidence consistent with the latter hypothesis.

37. *See* Muris, *supra* note 16.

38. Continental TV, Inc. v. GTE Sylvania Inc., 433 US 36, 54 (1977).

39. *See* Muris, *supra* note 16.

40. See Richard Schmalensee, *Inter-Industry Studies of Structure and Performance,* in Handbook of Industrial Organization, Vol. 2, (Schmalensee & Willig, eds. (1989)) at 983, 988 (citing both the Demsetz and Benham articles as containing "strong results supporting" empirical regularities that have been uncovered in inter-industry research).

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The Effect Of Advertising On The Price Of Eyeglasses*

By Lee Benham

I. INTRODUCTION

The impact of advertising on prices has long been a matter of dispute. It has been argued that the persuasive aspects and the product differentiation effects of advertising tend to raise the prices of products to consumers. On the other hand, by providing consumers with information about products and alternatives in the market, allowing them to economize on search and to locate low-priced sellers more readily, advertising may tend to lower prices to consumers. It may also lower prices by allowing sellers or producers to economize on other merchandising costs and to take advantage of economies of scale. On purely theoretical grounds, therefore, no reliable prediction can be made as to the overall effect of advertising on prices.[1]

While there has been much discussion of this question, relatively little has been done to estimate empirically the relationship between advertising and prices. Some studies have compared prices for different brands of "homogeneous" items, some of which were advertised and some of which were not. In general, the advertised brands were found to sell at higher prices.[2] While such comparisons have frequently neglected such characteristics as quality control, service provided with the sale, location of sales outlets, waiting time to purchase, and inventory and range of stock available, it is not my purpose here to further refine measures of homogeneous commodities. It is rather to propose an alternative approach to this question.

One way to understand better the full impact of advertising on prices is to examine markets for a product in which advertising is prohibited and markets for the same product in which advertising is allowed, comparing the price structures of the two types of markets. Market organization and price structure may be significantly affected by the presence in a market of even one seller who advertises or who potentially can do so. The full impact on prices of the existence of advertising may be much greater than the price differences we observe when some producers of an item choose to advertise it and others do not. For a variety of goods and services, especially in the service sector, advertising is frequently prohibited by cities or states. Examples are most services of physicians and dentists, prescription drugs, and eyeglasses. Unfortunately, for most such items there is little if any variation in the restrictions imposed across states. A major exception is eyeglasses: some states prohibit advertising related to eyeglasses and eye examinations while others do not. By examining the prices paid for these items by a

* I would like to thank Ronald Andersen for generously making available the data used in this study, Sara Paretsky for assistance in editing the data, and Harold Pashner for computer programming. Helpful comments by Gary Becker, Alexandra Benham, Harold Demsetz, Reuben Kessel, Willard Mueller, and Melvin Reder are gratefully acknowledged. This investigation was supported by PHS Grant Number HS00080 from the National Center for Health Services Research and Development.

1 See The Economist Advisory Group, The Economics of Advertising: A Study (1967).

2 For example, Borden compared the prices of private and manufacturers brands of several items. An extreme case was that of Bayer aspirin: in 1938 the wholesale price for the generic equivalent was only 17% of the wholesale price for Bayer. See Neil H. Bor- den, The Economic Effects of Advertising 576 (1944).

sample of individuals in each category of states, we may gain more insight into the impact of advertising on prices.

II. ADVERTISING AND INFORMATION

The full cost of purchase (C_f) of a good to a consumer includes not only the cost of the item itself (C_g) but the cost of knowledge (C_k) concerning the location of sales outlets and prices and the cost of time and transportation (C_t) required to purchase the item:

$$C_f = C_g + C_k + C_t$$

These components of full cost are in part jointly determined. For a given frequency distribution of retail prices offered in the market, the distribution of prices paid (C_g) will depend upon the extent of consumers' knowledge of the alternative prices available and the cost of time and transportation. Past studies have shown that both the mean and the dispersion of prices paid generally decrease as the extent of search (knowledge) increases.[3]

Insofar as advertising increases consumers' knowledge of alternative prices in the market, it will tend to decrease the mean and dispersion of prices paid. If there are economies of scale in retailing the good, then the effect of advertising in lowering mean prices should be intensified.[4] In general, large-volume low-price sellers are dependent upon drawing consumers from a wide area and consequently need to inform their potential customers of the advantages of coming to them. If advertising is prohibited, they may not be able to generate the necessary sales to maintain the low prices. In such a situation, the cost of disseminating information to consumers will more than offset the other economies of scale. At the same time, the likelihood that small-volume high-priced retailers survive in the market will increase. Consequently, the distribution of retail prices offered will shift upward. The question under consideration here is the extent to which economies resulting from the information provided through advertising are offset by the costs of advertising and by product differentiation.

III. ADVERTISING RESTRICTIONS IN THE MARKET FOR EYEGLASSES

The advertising of eyeglasses and eye examinations is controlled in many states by various state agencies. From a predominantly laissez-faire situation in the first decades of this century, the trend has been toward increased regulation and restriction of advertising. In 1963, the year for which data on prices were available for this study, approximately three-quarters of the

3 See the work of Stigler and others on the economics of information: George J. Stigler, The Economics of Information, 69 J. Pol. Econ. 213 (1961); Roger E. Alcaly, Informa- tion and the Distribution of Prices, Sept. 1970 (Dep't of Econ., Columbia Univ., unpub- lished paper presented at 2nd World Congress of Econometric Society, Cambridge, Eng.).

4 However, the consequences for price dispersion are less clear-cut. When economies of scale exist, the size distribution of firms will be changed by advertising. Consequently, the average cost of time and transportation to purchase the given item may increase, even as costs of information fall. In this situation, the dispersion of prices paid will depend upon several factors including the cost of time and transportation to consumers and the func- tional relationship between prices and volume of sales.

states had some regulations against advertising. Some states prohibited only price advertising while others allowed virtually no information concerning eye examinations or eyeglasses to be published, broadcast, or in any way distributed.[5] Since 1963, several additional states have introduced restrictions. The following excerpts are taken from 1963 laws.

Arkansas: The following Acts are hereby declared to be unlawful Acts: … For any optometrist, physician, surgeon, individual, firm, partnership, corporation, wholesaler, jobber or retailer to solicit the sale of spectacles, eyeglasses, lenses, contact lenses, frames, mountings, prisms, or any other optical appliances or devices, eye examinations or visual services including vision training or orthoptics by radio, window display, television, telephone directory display advertisement, newspaper advertisement, hand bills, circulars, prospectus, posters, motion pictures, stereopticon slides or any other printed publication or medium or by any other means of advertisement; or to use any method or means of baiting, persuading, or enticing the public into buying spectacles, eyeglasses, lenses, contact lenses, frames, mountings, prisms, or other optical appliances or devices for visual correction or relief of the visual system or to train the visual system …

Nothing in this Act except as expressly provided otherwise herein shall apply to physicians and surgeons, nor to persons who sell eyeglasses, spectacles, lenses, frames, mountings, or prisms at wholesale on individual prescriptions to optometrists, physicians, and surgeons. …"[6]

Florida: Any certificate of registration granted by the Florida state board of optometry … may be revoked by said board, if the person … is found guilty of unprofessional conduct. .... 'Unprofessional conduct' ... is defined to mean any conduct of a character likely to deceive or defraud the public, including among other things free examination advertising, price advertising, billboard advertising, use of any advertising either directly or indirectly, whether printed, radio, display, or of any nature which seeks to solicit practice on any installment payment or price plan.

It is unlawful for any person, firm or corporation to ... advertise either directly or indirectly by any means whatsoever any definite or indefinite price or credit terms on prescriptive or corrective lenses, frames, complete prescriptive or corrective glasses or any optometric service; to advertise in any manner that will tend to mislead or deceive the public; to solicit optometric patronage by advertising that he or some other person or group of persons possess better qualifications or are best trained to perform the service or to render any optometric service pursuant to such advertising. This section is passed in the interest of public health, safety and welfare, and its provisions shall be liberally construed to carry out its objects and purposes.[7]

A survey was made of several state boards of optometry concerning the sanctions used to enforce these regulations. Injunctions and suspensions of license for periods up to a year were

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5 Because sellers are prevented from advertising through normal channels, they are not necessarily prevented from providing information through other methods. The selling effort within a store is in part a substitute for general advertising. Joint sales arrangements may be developed (where permitted) to take advantage of consumer knowledge concern- ing low prices for other items which can be advertised. Insofar as these other ways of offering information are close substitutes for regular advertising, then the prohibition will not have much effect.

6 The Blue Book of Optometrists 87-88 (1964).

7 Id. at 146-47.

the most common sanctions mentioned by the respondents. In some cases they said that fines were levied and licenses revoked. There appears to be careful policing and enforcement of these regulations in most states.

IV. PRICE DIFFERENTIALS ASSOCIATED WITH ADVERTISING RESTRICTIONS

The data on eyeglass and eye examination prices used in this study were obtained from a 1963 survey of a national sample of individuals. The survey examined use of and expenditures on medical services.[8] The present study uses a subsample of 634 individuals who each underwent an eye examination and/or obtained a pair of eyeglasses in 1963. In addition to the amount spent by individuals for eye examinations and eyeglasses, detailed demographic information on each individual was included in the survey. With this information, the prices paid for eye examinations and eyeglasses could be associated with the state of purchase.

The analysis below deals principally with eyeglasses and not with eye examinations; very few states permitted advertising of eye examinations in 1963. However, 291 individuals in the survey quoted only the combined price of the examination and glasses. Since relatively little variation in the cost of eye examinations was found across states and since prices of examinations and eyeglasses were not highly correlated across states,[9] the systematic variation in total cost examined here is assumed to reflect variation in the cost of eyeglasses.

To estimate the differential in prices associated with prohibition of advertising, two comparisons were made. First, the mean price paid for eyeglasses and the mean price paid for eyeglasses and eye examination together were calculated for individuals living in states with and without restrictions on advertising. Next, since the demographic characteristics of individuals in the sample were not uniform across the states, the following simple model was used to estimate price differentials.[10]

$$P_1 = \alpha + \beta_1 X_{1i} + \sum_{j=2}^{5} \beta_j X_{ji} + \mu_i$$

where P_1 is the price paid by individual i for his eyeglasses;
X_{1i} is a dummy variable which equals 1 if individual i purchased his eyeglasses in a state with complete prohibition of advertising, and equals 0 otherwise;
$X_{2i}, \ldots, X_{5i}$ are total family income, age, sex, and family size.

Thus β_1 estimates the average difference in dollars paid for eyeglasses between states with complete prohibition of advertising and states without such prohibition.

8 See Ronald Andersen & Odin W. Andersen, A Decade of Health Services: Social Survey Trends in Use and Expenditure (1967).

9 States with low prices for eyeglasses had a higher proportion of combined price quotes. This might disguise lower mean prices for examination in those states.

10 These variables might account for the differences in prices paid across states. In addition, various other combinations of variables not shown here were examined, including education of individual, race of individual, size of city of residence, and mean level of education and income in county of residence. The coefficient of the advertising variable was basically unchanged when these latter variables were included in the estimating equation.

TABLE 1
Mean Cost Of Eyeglasses And Mean Combined Cost Of Eye Examinations Plus Eyeglasses In 1963 As A Function Of Restrictions On Advertising In States
(in Dollars)

	States With Complete Advertising Restrictions		States With No Advertising Restrictions		
Population Group	X_1	N	X_2	N	$X_1 - X_2$
	Eye Glasses Alone				
1) All individuals	33.04	50	26.34	127	6.70
2) All individuals in Texas, North Carolina, and the District of Columbia	37.48	21	17.98	27	19.50
	Eyeglasses and Eye Examinations Combined				
3) All individuals	40.96	121	37.10	261	3.86
4) All individuals in Texas, North Carolina, and the District of Columbia	50.73	37	29.97	72	20.76

There appears to be no single most satisfactory way to categorize states by the extent to which they restrict advertising, so two sets of estimates are presented to indicate the likely range of impact. The first set of estimates (Table 1, line 1 and Table 2, equation 1) is based on all individuals purchasing eye-glasses in 1963 in states either with no restrictions on advertising or in states with complete prohibition of it.[11]

To estimate the probable upper bound of the effects of advertising restrictions, the second set of estimates (Table 1, line 2 and Table 2, equation 2) is based only on individuals living in states at the extremes: Texas and the District of Columbia, extreme laissez-faire states, versus North Carolina, a state with extensive restrictions in force for a number of years prior to 1963 (hence likely to have the long-run effects of these restrictions in evidence). This latter set of estimates is likely to overstate the impact of advertising restrictions, since North Carolina had other laws which would tend to raise prices independent of advertising regulations, and the proportion of the total price difference which can be attributed to advertising restrictions cannot be determined at this stage.

11 Several sources of information were used to determine states' restrictions on advertis- ing. State laws were canvassed, a survey of state optometry board members was made, 1963 newspapers from several states were sampled to search for eyeglass advertisements, and optometrists in several states were contacted. The problem was to ascertain not only the restraints against advertising by optometrists but also the restraints against advertising by other sellers. In some states optometrists were prohibited from advertising but opticians or commercial firms were permitted to advertise. States were classified as allowing advertising if any sellers were permitted to advertise. Despite the aforementioned search, it was not possible to classify several states satisfactorily. Furthermore, Ohio was excluded because cities apparently had regulatory authority over advertising; New Jersey was ex- cluded because the individuals sampled lived predominantly near New York City, creating substantial classification problems. In addition, the original survey did not include respondents from some states. In the estimates here, states classified as having no restrictions on advertising in 1963 are: Alabama, the District of Columbia, Georgia, Illinois, Indiana, Kansas, Maryland, Michigan, Minnesota, Missouri, Texas and Utah. States classified as having total prohibition of advertising are Arkansas, Massachusetts, North Carolina, North Dakota, Oklahoma, and South Carolina.

TABLE 2

Regression Estimates For Cost Of Eyeglasses For Various Population Groups in 1963
As A Function Of Restrictions On Advertising In States And Other Variables
(t statistic in parentheses)

Population Group	Complete Advertising Restrictions 0=No, 1=Yes	Total Family Income	Age	Sex Female=0 Male=1	Family Size	Constant	R^2	R^2	N
	Eyeglasses Alone								
All individuals in states with complete restrictions or with no restrictions	7.482	.03981	.01246	-3.192	.1256	23.27	.046	.018	177
	(2.5)	(1.4)	(.17)	(-1.1)	(.11)	(3.5)			
All individuals in Texas, North Carolina and District of Columbia	18.89	-.02422	.1572	-8.298	.1599	18.06	.34	.26	48
	(4.1)	(-.5)	(1.1)	(-1.6)	(.07)	(1.54)			
	Eyeglasses And Eye Examination Combined								
All individuals in states with complete restrictions or with no restrictions	4.33	.04560	.05615	-.2998	-1.528	36.72	.038	.025	382
	(1.96)	(2.03)	(.96)	(-.15)	(-1.92)	(7.5)			
All individuals in Texas, North Carolina and District of Columbia	21.07	.001651	.06701	-3.437	-2.54	37.30	.28	.25	109
	(5.6)	(.04)	(.63)	(.94)	(-1.6)	(4.5)			

In the first set of estimates, the difference in mean prices of eyeglasses between the two categories of states is \$6.70, with the lower mean price found in states having no advertising restrictions (Table 1, line 1).[12] The regression estimate of the difference is similar, \$7.48 (Table 2, equation 1). The difference in price between the most and least restrictive states is much larger, \$19.50 as measured by means (Table 1, line 2) and \$18.89 as measured by the regression coefficient (Table 2, equation 2). Estimates using combined cost of eyeglasses and eye examinations yield the same results, although the absolute difference is somewhat smaller in one case (Table 2, equation 3).

Despite the shortcomings of these estimates, they serve to indicate the direction and magnitude of effect.[13] The estimates of eyeglass prices alone suggest that advertising restrictions in this market increase the prices paid by 25 per cent to more than 100 per cent.[14] Furthermore, these estimates are likely to understate the total savings to consumers occasioned by advertising, since the search process itself is less expensive when information is more readily and cheaply available.[15]

V. ALTERNATIVE EXPLANATIONS OF OBSERVED PRICE DIFFERENTIALS

Some have argued that in this model advertising restrictions serve only as a proxy for other

12 The coefficient of variation in prices (σ/X) is also smaller in states which allow advertising (.56) as compared with states which prohibit advertising (.73).

13 The coefficient of determination is low in these estimates. In terms of predicting the prices paid by individuals for eyeglasses, the model is obviously incomplete. A higher R^2 would be desirable, but results of this order are common in estimates of economic models which use individual data. One of the likely reasons for the low R^2 in this case is the unmeasured variation in type and quality of eyeglasses purchased. In the survey used, individuals were not asked about the specification or quality of frames and eyeglasses purchased. However, provided that quality is uncorrelated with the advertising variable X_1, the coefficient β_1 is an unbiased estimate of the systematic effects of advertising on prices. This issue is discussed infra at 345-48.

It has also been suggested that the difference in prices between states with advertising and states without is due to systematic variation in types of service provided: where physicians are the more frequent source of eye care, that is, in the restrictive states (see Table 4), fees for non-routine services may have been more frequently included with fees for eye examinations and eyeglasses. Although all the original questionnaires were examined for any indication that services other than eye examination and eyeglasses were provided, and those cases were excluded from the estimates of this paper, the possibility remains that a few non-routine items may have been included in the sample. To see if a few expensive cases affected the overall results, median prices for eyeglasses were calculated. The difference in median prices between states with advertising and states without is \$4.00, and between North Carolina and Texas and the District of Columbia is \$14.00, with the higher prices in the states restricting advertising.

14 A further comparison was made by sampling, through personal visits, the prices of eyeglasses at nineteen opticians, optometrists, and commercial firms in Texas and New Mexico in July, 1971. A price quote was requested for eyeglasses with a given lens and frame specification without an examination. The mean price sampled in New Mexico, a state with restrictions on advertising, was \$31.70 (n = 10) and in Texas, a state without restrictions, \$25.90 (n = 9). The difference in mean prices paid by consumers would be larger than those figures indicate, since the volume of sales in the low-priced firms in Texas is much larger than the average volume of the other outlets. Consumers in New Mexico are apparently not completely unaware of the lower prices in Texas. A newspaper editor from Alburquerque, New Mexico told Professor Yale Brozen of the University of Chicago that some families had in the past driven from Albuquerque to Amarillo, Texas to purchase glasses, a distance of 288 miles.

15 Other associated costs of purchase such as transportation and time costs required to purchase items may increase with advertising. If so, the savings in search would be partially offset.

restraints on competition.[16] If this is so, then the higher prices observed in states with restrictions on advertising may be improperly attributed to the advertising restrictions. For example, interstate barriers to mobility for optometrists and opticians might account for the observed price differentials. If there are effective barriers to entry in some states, there will be an artificially low number of optometrists and opticians per capita there,[17] and this in turn will be reflected in higher prices. If states restricting advertising also keep the number of optometrists and opticians artificially low by restrictions on entry, then the higher prices might be inappropriately attributed to advertising restrictions.

To examine this question, the equations in Table 1 were re-estimated including as additional variables the number of optometrists and opticians per capita. To the extent that barriers to entry are systematically associated with the restrictions on advertising, the coefficient of the advertising variable should be reduced in absolute value when these two variables are added to the equation. However, the coefficient of X_1 was essentially unchanged when these two variables were added.

Many other types of regulations, if vigorously or selectively enforced, could reduce competition and raise prices. These range from restrictions on employment of optometrists to extra-legal harassment. Unfortunately, they cannot be investigated as easily as barriers to entry because of the difficulties in classifying states according to the severity of these other regulations. *A priori* judgments concerning the effects of each regulation are quite arbitrary, and data limitations prevent the development of a model at this time to estimate the separate effects of each such regulation on prices.

In an attempt to deal with these problems, representatives of several optometric associations and commercial firms were contacted to obtain assistance in classifying states according to the extent of these other types of regulations. There was general agreement that certain states were generally restrictive (for example, North Carolina) and that others were generally unrestrictive (for example, Texas), but otherwise opinion diverged. There appeared to be considerable variation in these other types of regulations across states in both groups: advertising and non-advertising. An attempt was made to match states which allowed advertising with states which did not by the severity of their other regulations. The price patterns obtained were similar to those reported in Tables 1 and 2, but the comparisons were crude at best.

The representatives of commercial firms were also asked to give their assessments of the impact of advertising restrictions. All stated that the presence or absence of advertising restrictions affected their decision to move into new market areas. Several said that they would not enter a new market unless advertising were permitted, no matter what the other restrictions.[18]

16 A related argument suggests that advertising restrictions serve as a proxy for collusive behavior by sellers. Since there are a large number of establishments in the states included here, effective collusion appears unlikely without some method of enforcement. The most likely method would appear to be state laws or regulations. If prohibition of advertising is the only method used to reduce competition, then the argument presented earlier holds. If other restrictive legislation is involved, then the issue is that discussed in this section.

17 For discussion of this issue, see L. Benham, A. Maurizi &M. Reder, Migration, Location and Remuneration of Medical Personnel: Physicians and Dentists, 50 Rev. Econ. & Stat. 332 (1968).

18 The data used in this study suggest that commercial firms have a larger share of the market in the states with lower prices (Table 4). Another recent study of prices charged for frames and lenses by optometrists and by retail stores in New York showed substantially lower prices in the retail stores. The study also found that prices

Furthermore, the representatives of two large commercial firms stated that the retail prices of their own firms varied across states, with the higher prices in the states with advertising restrictions.

Data limitations prevent a fuller treatment of this question. The qualitative evidence presented hardly eliminates the possibility that the advertising variable serves as a proxy for other restrictions.[19] Nevertheless, the available evidence is consistent with the hypothesis that restrictions on advertising reduce competition and raise prices and that the estimates in Tables 1 and 2 reflect the effects of advertising restrictions.

Another type of argument often given by the professionals (optometrists and ophthalmologists) is that the quality of service and product supplied by the "commercial" establishments is lower than that supplied by "professionals." By implication, the average quality of eyeglasses would be lower in states where commercial establishments were more strongly represented,[20] the states in which advertising was permitted. During the course of this study, several professionals referred to their own personal experience with low quality commercial work. Commercial representatives responded to these charges with allegations of low quality work by certain professionals. Although standards do not appear to be uniform across establishments, either commercial or professional,[21] the issue here is not that of establishing how many of these specific allegations are valid. It is rather one of determining any systematic differences in quality of products between states which allowed and states which prohibited advertising.[22] Several attempts were made to investigate this question.

The issue was first examined by investigating the source of eyeglasses by type of retail establishment. Some commercial firms produce their own eye-glasses; however, many purchase from the same sources as the professionals.[23] The professionals also purchase from the commercial firms. In 1971, one of the largest commercial firms sold only 50 percent of its eyeglass output through its own retail outlets. The remainder was sold through professional establish-

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charged by optometrists were lower in an area with a high concentration of commercial firms (New York City) than in areas with a lower concentration of commercial firms. See A Retail Shopping Study of Optometrists and Retail Opticians, submitted by Marketing Research Dep't, Dale System, Inc., to N.Y. St. Optical Retailers Ass'n, January, 1968.

19 An examination of the changes in prices over time as a function of changes in advertising laws would provide a better test of this question. For example, the actions being currently taken in some areas to reduce restrictions on prescription drug advertising should provide extremely useful evidence on this question.

20 See Table 4, *infra*.

21 For example, a reporter for the CBS Television Network traveled around the country having his eyes examined in 1969. He had excellent vision and did not wear glasses. He read all the charts and answered all questions honestly. Out of the 28 eye examinations which he took he was given three prescriptions, one each from an optical firm, an optome- trist, and an opthalmologist. CBS Television Network, 60 Minutes, Tuesday, October 28, 1969.

22 Even if the commercial firms sold eyeglasses which were unambiguously lower in quality, the case for eliminating these firms through legislative action is not obviously strengthened. For many individuals, the choice may be between the low quality, low price product and no product at all. The quality issue arises in this study because of the need to compare reasonably homogeneous items across states. For a discussion of the costs and benefits of eliminating "low quality" products from the market, see Milton Friedman, Capitalism and Freedom, ch. 9 (1962).

23 Approximately 90% of eyeglasses worn in the US are made by three companies: American Optical, Bausch and Lomb, and Shuron Continental.

ments.[24] To the extent that commercial and professional firms both have the same source of eyeglasses, possibilities for quality variation are obviously reduced.

The quality issue was then raised with representatives of several large re-tail chains. They argued that the commercial firms were generally under more careful scrutiny by state regulatory authorities and state optometric association than the typical professional establishments and consequently had to be more concerned about quality control. They also argued that evidence on systematic quality differences would long since have been used against them in political and legal disputes, if any such evidence could be found, and that none had been so presented.

In following up this point, a search was made attempting to locate references to quality differences. No specific evidence was found to support the claim of systematic quality differences as a function of type of firm or of advertising regulations. The headquarters of the American Optometric Association, the Illinois State Optometric Association, and local optometrists were also unable to give any specific references to support these allegations. This lack of evidence does not establish the absence of a systematic difference in quality. However, it is consistent with this position particularly since the professional associations have a strong incentive to generate and use such information in their disputes with the commercial firms.

Some direct evidence on the prices of standardized products is available from two other sources. In a personal survey of retail outlets in Texas and New Mexico in which specification of frames and lenses was uniform, prices were found to be higher in New Mexico, a state with strict advertising laws.[25] The Bureau of Labor Statistics also collects price estimates of eye examinations and eyeglasses across cities for the consumer price index. The specifications used in pricing eyeglasses are quite detailed and leave little room for variation in type or quality of lenses or frames. The published data do not permit a comparison across states, and the Bureau would not release its de-tailed price estimates by cities. However, a representative at the Bureau who was familiar with its price estimates of eyeglasses stated that the price patterns were similar to the ones found here: cities in states with advertising restrictions tended to have higher prices than cities in states without restrictions.

The findings discussed in this section, although far from conclusive, suggest that variations in quality were not responsible for the results presented in Tables 1 and 2.

VI. CONTENT OF ADVERTISING

The results presented above are consistent with the hypothesis that, in the market examined, advertising improves consumers' knowledge and that the benefits derived from this knowledge outweigh the price-increasing effects of advertising. However, some individuals have argued that eyeglass advertising contains substantially more information than other types of advertising and that consequently these findings cannot be generalized to most other goods

24 In the small survey of eyeglass prices in Texas and New Mexico, one of the highest prices quoted was by an optometrist in New Mexico who was selling frames and lenses produced by Texas State Optical, one of the large and low priced commercial firms in Texas (see supra note 14).

25 See supra note 14.

and services.[26] It is true that there has been little if any advertising of eyeglasses on national television, a medium which some feel provides a less information-intensive form of advertising. However, there has been considerable local and statewide television advertising in those states which allow advertising. One large commercial firm spends 80 percent of its advertising budget on television.

As one means of investigating this question further, newspapers of several cities in Illinois, a state with no advertising restrictions on eyeglasses in 1963, were examined for 1963 advertisements. During a week's search, few advertisements were found which contained any reference to price, and fewer still quoted specific prices. The proportion of eyeglass advertisements which contained price information was smaller than for most other items advertised in the newspapers, in particular clothing and furniture. This is obviously fragmentary but suggestive evidence that eyeglass advertising is not markedly more information intensive than other advertising.

Note that the relative infrequency of price advertising of eyeglasses is not necessarily inconsistent with the argument that restrictions on advertising have a significant impact on price. Only a few price advertisements may be required to inform a sufficient number of consumers so that the average purchase price is reduced substantially. Non-price advertising may also be a close substitute for price advertising.

To examine the effect of non-price advertising on prices, I re-estimated Table 2, equation 1 with the addition of individuals in the sample who purchased eyeglasses in states which in 1963 prohibited price advertising but allowed other types of advertising.[27] A dummy variable X_6 was added, where X_s equals 1 if the individual purchased eyeglasses in a state which prohibited only price advertising, and equals 0 otherwise. The results are shown in Table 3. The coef-

TABLE 3
Regression Estimates For Cost Of Eyeglasses For Various Population Groups in 1963
As A Function Of Restrictions On Advertising In States And Other Variables
(t statistic in parentheses)

Population Group	Complete Advertising Restrictions 0=No, 1=Yes	Restrictions on Price Only 0=No, 1=Yes	Total Family Income	Age	Sex Female=0 Male=1	Family Size	Constant	R_2	N
	Eyeglasses Alone								
All individuals	7.369	1.320	.03154	-.0003	-2.645	-.01409	24.73	.028	287
	(2.4)	(.55)	(1.3)	(.00)	(-1.2)	(-.02)	(4.7)		

26 For an interesting discussion of advertising as information, see Phillip Nelson, Infor- mation and Consumer Behavior, 78 J. Pol. Econ. 311-29 (1970); and Phillip Nelson, Advertising as Information, (unpublished manuscript at St. Univ. of N.Y. at Binghampton).
27 These states were California, Florida, New York, Oregon, and Virginia.

ficient of X_6 suggests that in states prohibiting only price advertising prices are slightly higher than in states with no restrictions, and are considerably lower than in states prohibiting all advertising.[28] This estimate suggests that even "non-price" advertising may lower prices.

VII. WHO BENEFITS?

The discussion thus far has been concerned with the costs of advertising restrictions to consumers. The extent to which various groups supplying eye-glasses benefit from these restrictions depends upon a number of factors including the elasticity of demand for eye examinations and eyeglasses, the effect of advertising restrictions on firm size, the level of specialization within firms of differing sizes, and restrictions on entry into the state.

A crude estimate of the elasticity of demand can be obtained by comparing per capita expenditures on eyeglasses and eye examinations for the total sample population in states which restricted advertising and in those which did not. Two comparisons were made, one for the sample as a whole and one for the subset of Texas, the District of Columbia, and North Carolina. Both results suggest that the industry faces an inelastic demand, since per capita expenditures were higher in states which had higher prices (and which had restrictions on advertising).

There is in addition some evidence which suggests that the share of the market held by the large commercial firms declines when advertising is prohibited (Table 4). The individuals in the sample were asked about the source of their eye examinations and eyeglasses, and responses were classified into four categories: physicians, optometrists, firms (or clinics), and unknown. The first two categories are more likely to indicate individual or small firm operations, while the third category is more likely to represent larger commercial firms. Although these figures should not be interpreted as accurate measures of the distribution of sales by firm size, the results do suggest that a larger fraction of purchases are made from "large" firms in states which allow advertising. The frequency with which the large chains were specifically named as the source also follows the same pattern. Since larger firms tend to employ fewer optometrists per volume of sale,[29] a decline in the large firms' share of the market would appear to benefit optometrists and physicians.

Finally, advertising restrictions make it more difficult for new firms to become established, and they increase the opportunities for price discrimination.

Taken together, this evidence suggests that established optometrists and other professionals within a state are likely to benefit if advertising is prohibited, not a surprising conclusion given the enthusiasm with which they support these restrictions.[30]

28 This estimate should be viewed with caution, because without the observations from New York the coefficient of X_6 would be approximately the same as the coefficient of X_1.

29 Higher costs of production are often alleged to be evidence of higher quality, particularly when the higher costs are associated w ith the use of a larger proportion of professional inputs. This argument essentially defines the quality of output in terms of the quality (costs) of inputs and denies benefits to specialization in production.

30 When questioned about restrictions on advertising in the District of Columbia, an optometrist there informed me that there were none but that such restrictions would be the first item on the agenda if the optometrists ever obtained professional control.

TABLE 4
Source Of Eye Examination And Eyeglasses For Individuals In States With And Without Advertising Restrictions, in 1963
(percentage)

Population Group	Physicians	Optometrists	Clinic or Firm	Source Unknown
Individuals living in states with advertising permitted	22.1	31.1	36.4	10.3
Individuals living in states with all advertising prohibited	39.7	43.7	15.0	1.6
Individuals living in Texas and the District of Columbia (advertising allowed)	13.6	16.4	52.0	1.6
Individuals living in North Carolina (advertising prohibited)	55.3	39.5	5.3	0.0

VIII. CONCLUSION

Several professors in economics and marketing at the University of Chicago were asked whether they thought the price of eyeglasses would increase or decrease if advertising were prohibited. Of those individuals polled, approximately 40 percent of the economists and 100 percent of those in marketing expected prices to be the same or lower where advertising was prohibited. It is, I think, the most common view to emphasize the costs of advertising,[31] the demand inducing and product differentiating aspects and to put relatively less emphasis on the information provided and the effects of this information on organization and efficiency in the market. These results suggest that, at least for the item considered, the emphasis has been misplaced. Prices were found to be substantially lower in states which allowed advertising.

The extent to which these results can be generalized to other goods will have to await further study. Eyeglasses may of course be a special case. Nevertheless, on a question which has in the past been overwhelmingly judged on a priori grounds, it has been possible to obtain a range of estimates of the impact of advertising on prices.

31 Several large commercial firms were questioned about their advertising costs per pair of eyeglasses Sold. Such a figure is often used to estimate the cost to consumers of advertising. Only one firm, a large firm operating in many states, was willing to provide this information: Its average expenditure on advertising per pair of glasses-sold is approximately $2.00.