GETTING MARKET DEFINITION RIGHT: HOSPITAL MERGER CASES AND BEYOND

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I. INTRODUCTION

In 2016 the Federal Trade Commission ("FTC") lost its motions for preliminary injunctions against the mergers of Penn State Hershey Medical Center with PinnacleHealth in Hershey, Pennsylvania, and Advocate Health Care with NorthShore University Health System in Northern Chicago.[4] In both cases the district courts rejected the FTC's geographic market definitions, arguing that they were too narrow. These losses had echoes of the 1990s when the FTC and the Antitrust Division of the Department of Justice (the agencies) suffered a string of losses in litigated hospital mergers largely (though not exclusively) related to issues of geographic market definition.[5] This time, however, the FTC ultimately prevailed on appeal. The appeals courts concluded that the district courts erred in their analyses of the market and that the FTC correctly defined the antitrust relevant geographic markets and thus established a prima facie case that the mergers are anticompetitive.

These decisions strongly reinforce the use of the hypothetical monopolist test as the standard for market definition in both hospital merger cases and in horizontal merger cases in general, and clarify how it is to be used correctly. In this article we first review the process used by the agencies to define antitrust relevant markets and discuss how this process applies to the markets for hospital services specifically. We next summarize the courts' opinions in the two recent hospital merger cases, discuss the ways in which the courts erred in their analyses, then describe the impacts the appeals courts' decisions will likely have on market definition in future merger cases, both for hospitals and in general.

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4 We refer to these as *Penn State Hershey* and *Advocate Health Care* in what follows.

5 *California v. Sutter Health Sys.*, 84 F. Supp. 2d 1057 (N.D. Cal.), aff'd mem., 2000-1 Trade Cas. (CCH) ¶ 87,665 (9th Cir. 2000), revised, 130 F. Supp. 2d 1109 (N.D. Cal. 2001); *FTC v. Tenet Healthcare Corp.*, 17 F. Supp. 2d 937 (E.D. Mo. 1998), rev'd 186 F.3d 1045 (8th Cir. 1999); *United States v. Long Island Jewish Med. Ctr.*, 983 F. Supp. 121 (E.D.N.Y. 1997); *FTC v. Butterworth Health Corp.*, 946 F. Supp. 1285, 1300-1301 (W.D. Mich. 1996), aff'd, 1997-2 Trade Cas. (CCH) ¶ 71,863, 71,867-68 (6th Cir. 1997); *United States v. Mercy Health Services*, 902 F. Supp. 968 (N.D. Iowa 1995), vacated as moot, 107 F.3d 632 (8th Cir. 1997); *FTC v. Freeman Hosp.*, 911 F. Supp. 1213 (W.D. Mo.), aff'd, 69 F.3d 260 (8th Cir. 1995); *In re Adventist Health Sys.*, 117 F.T.C. 224 (1994).

II. MARKET DEFINITION

Market definition is a critical component of a horizontal merger antitrust case. It often determines the results of antitrust cases[6] and is the focus of intense battles by the opposing parties. Plaintiffs claim narrower markets and defendants broader markets.[7] And although there has been criticism of a rigid reliance on market definition and the market shares and measures of concentration implied by a market definition,[8] the agencies[9] and the courts[10] have emphasized an ongoing role for market definition.

An antitrust market should be defined as the set of products and locations that exercise a significant competitive constraint on each other.[11] As straightforward as this definition is, when the goods or services under consideration are imperfect substitutes because of differences in characteristics or geographic location, identifying the set of suppliers and demanders that establish the price is not a straightforward exercise.

The U.S. Department of Justice introduced the "hypothetical monopolist" or "SSNIP" (Small but Significant and Non-transitory Increase in Price) test as a method for delineating markets,[12] and this approach has been adopted by competition authorities worldwide. The latest version of the Horizontal Merger Guidelines ("HMG"), issued jointly by the agencies and updated in 2010, describe the hypothetical monopolist test as follows:[13]

> The hypothetical monopolist test…requires that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future seller of those products ("hypothetical monopolist") likely would impose at least a small but significant and non-transitory increase in price ("SSNIP") on at least one product in the market, including at least one product sold by one of the merging firms. For the purpose of analyzing this issue, the terms of sale of products outside the candidate market are held constant.

Relevant geographic markets are defined in a similar fashion:[14]

> The hypothetical monopolist test requires that a hypothetical profit-maximizing firm that was the only present or

6 Areeda, Hovenkamp & Solow, Antitrust Law, 3rd ed. (Aspen Publishers, 2007); Baker, *Market Definition: An Analytical Overview*, 74 Antitrust Law Journal 129-173 (2007); Farrell & Shapiro, 2010, op. cit.; Jacobson et al., (eds.), ABA Section of Antitrust Law, Antitrust Law Developments, 6th edition, (American Bar Association, 2007); Kaplow, 2010, op. cit.; Pitofsky, *New Definitions of Relevant Market and the Assault on Antitrust*, 90(7) Columbia Law Review 1805-1864 (1990); *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 469 n.15, 1992.

7 E.g. *FTC v. Staples, Inc.*, 970 F. Supp. 1066 (D.D.C. 1997); *FTC v. Whole Foods Mkt. Inc.*, 548 F.3d 1028 (D.C. Cir. 2008), *United States v. Oracle, Inc.*, 331 F. Supp. 2d 1098 (N.D. Cal. 2004).

8 Farrell & Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10(1) The B.E. Press Journal of Theoretical Economics 1–39 (2010); Kaplow, *Why (Ever) Define Markets?*, 124 Harvard Law Review 437-517 (2010).

9 Section 4 in "Horizontal Merger Guidelines," U.S. Department of Justice and the Federal Trade Commission, Issued: August 19, 2010, https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf; Fry, McGuire & Schmierer, *Horizontal Market Power: The Evolving Law and Economics of Mergers and Cartels*, 18(4) George Mason Law Review 819–832 (2011), http://www.georgemasonlawreview.org/doc/18-4- CONFERENCE-REPORT.pdf; Shapiro, *Update From The Antitrust Division: Remarks as Prepared for the American Bar Association Section of Antitrust Law Fall Forum,* (2010), http://www.justice.gov/atr/public/speeches/264295.pdf; Werden, *'Why (Ever) Define Markets?' An Answer to Professor Kaplow*, (2012): http://ssrn.com/abstract=2004655.

10 E.g. *FTC v. CCC Holdings, Inc.*, 605 F. Supp. 2d 26, 37, 39–40 (D.D.C. 2009), *City of New York v. Group Health Inc.*, No. 10-2286-cv (2d Cir. Aug. 18, 2011); Federal Trade Commission Office of Administrative Law Judges, Docket No. 9346, In The Matter Of ProMedica Health System, Inc., December 12, 2011. This is in part because of the role of precedent in case law (e.g. *United States v. E.I. du Pont de Nemours and 11 Co.*, 353 U.S. 586, 593 (1957), "Determination of the relevant market is a necessary predicate to a finding of a violation of the Clayton Act because the threatened monopoly must be one which will substantially lessen competition within the area of effective competition.").

11 Stigler & Sherwin, *The Extent of the Market*, 28 Journal of Law and Economics 555-585 (1985); Motta, *Competition Policy: Theory and Practice* (Cambridge University Press, 2004).

12 U.S. Department of Justice, 1982, 1982 Merger Guidelines, available at: http://www.justice.gov/atr/hmerger/11248.htm.

13 Horizontal Merger Guidelines, issued Aug. 19, 2010, op. cit. § 4.1.

14 Id. § 4.2.

future producer of the relevant product(s) located in the region would impose at least a SSNIP from at least one location, including at least one location of one of the merging firms.

The SSNIP test used by the agencies ensures that a relevant market (both product and geographic) is not defined too narrowly. It begins by defining a narrow market and asking whether a hypothetical monopolist in the defined market could profitably implement a SSNIP (usually a 5 percent price increase for one year). If sufficient numbers of consumers are likely to switch to alternative products so that the price increase is unprofitable, then the firm or cartel lacks the power to raise price. The relevant market therefore needs to be expanded. The next closest substitute is added and the process is repeated until the point is reached where a hypothetical monopolist could profitably impose the SSNIP. The set of products/locations so defined constitutes an antitrust relevant market. Once the candidate market has been expanded to the point that a hypothetical monopolist would find a SSNIP profitable, an antitrust relevant market is identified.[15] The focus on whether a hypothetical monopolist can profitably impose a SSNIP ensures that a relevant market (both product and geographic) is not defined too narrowly. If a SSNIP is unprofitable for a hypothetical monopolist in the candidate market, then the candidate market is too narrow, since there are suppliers outside the candidate market exerting sufficient competitive pressure to constrain prices. The candidate market must therefore be expanded by adding products or by expanding the relevant geographic area and the profitability of a SSNIP re-evaluated.

A number of other informal *ad hoc* methods have been used for market definition, such as the Elzinga-Hogarty ("EH") test[16] and Critical Loss analysis.[17] The EH test, in particular, was used extensively in hospital merger cases. The method was originally developed in the 1970s to delineate geographic markets for relatively homogenous consumer goods like coal and beer; it defines a market as an area that has both low inflows and low outflows.[18] A market passes the EH test if both a high level of sales (usually 75 or 90 percent) is to buyers located in the market and a similarly high percentage of buyers located in the market buys within it. As we discuss in Section V, the use of an EH-style method based on patient flows to define the geographic markets for hospital services is problematic given the unique institutional features of the market.

III. HOSPITAL MARKET DEFINITION

A. The Two Stages of Hospital Competition

Generally the demanders in a market are the individuals who both purchase *and* consume the good or service. However, the presence of health insurance introduces a third party into the mix. Insurers are the primary payers for care and individuals the consumers. This important institutional feature of health care markets means that competition occurs in two stages:

Stage one: Selective contracting for inclusion in insurers' provider networks.

Stage two: Non-price competition among in-network providers for patient volume.

15 Id. § 4.1.

16 Elzinga & Hogarty, *The Problem of Geographic Market Delineation Revisited: The Case of Coal*, 23 Antitrust Bulletin 1-18 (1978); Elzinga & Hogarty, *The Problem of Geographic Market Delineation in Antimerger Suits*, 18 Antitrust Bulletin 45-18 (1973).

17 Harris & Simons, *Focusing Market Definition: How Much Substitution is Necessary?,* 12 Research in Law and Economics, 207-226 (1989). Critical loss is related to the SSNIP test, but suffers from some serious problems. For criticisms, see Danger & Frech, *Critical Thinking about Critical Loss in Antitrust*, 46(2) Antitrust Bulletin, 339-355 (2001); Katz & Shapiro, *Critical Loss: Let's Tell the Whole Story*, 17(2) Antitrust 49-56 (2003); Langenfeld & Li, *Critical Loss Analysis in Evaluating Mergers*, 46(2) Antitrust Bulletin 299-337 (2001); O'Brien & Wickelgren, *A Critical Analysis of Critical Loss,* 71(1) Antitrust Law Journal 161-184 (2004).

18 The outflow percentage is the proportion of consumers who reside in that area but purchase from a seller located outside the area (e.g. the percentage of area residents who travel to a hospital located outside the area for hospital care); and the inflow percentage is the percentage of sales by firms in an area that are to consumers who reside outside the area (e.g. of all patients treated by an area hospital, the percentage who come from outside that area).

This "two-stage" model of provider competition has been used extensively in economic research on hospital price-setting[19] and embraced by the FTC since its *Evanston* complaint in 2004.[20]

In stage one, insurers construct networks of health care providers qualified to render the medical services that their enrollees may require through selective contracting. A provider network generally includes a wide variety of provider types such as hospitals, surgical centers, physician specialists and primary care practitioners. Enrollees have a strong incentive to obtain care from providers in their insurer's network, since they pay much lower out-of-pocket costs if they obtain care from in-network providers. A provider gains from being in an insurer's network by obtaining greater volume. Providers treat more — typically significantly more — of an insurer's enrollees and earn greater revenues from the insurer by being in the insurer's network.

Because there is generally a large difference in a patient's out-of-pocket costs for in-network and out-of-network providers, enrollees generally place more value on plans with broader provider networks compared to plans with narrower networks. That is, they value more plans that give them the option of receiving care from more providers on an in-network basis.[21] By adding a provider to its network, an insurer increases its network's value. Network inclusion creates value for the provider as well by increasing the volume of patients that the provider can expect to receive from the insurer's members.

Although additional providers increase the value of an insurer's network, it does not necessarily want to include all providers in its network. Restricting the number of providers in its network gives an insurer leverage over providers to agree to lower prices in exchange for network membership. An insurer loses that leverage if it seeks to include most or all of the area's providers in its network. In consequence, an insurer faces a trade-off: add more providers to its network to increase the network's value or limit the size of its provider network to extract more favorable reimbursement terms.

In stage two, the health care providers in an insurer's network compete with one another to attract the insurer's enrollees. Because insurance eliminates or sharply attenuates differences in out-of-pocket costs, providers typically must compete for patient volume by differentiating in non-price dimensions such as clinical quality, wait-times and patient experience. The locus of price competition among health care providers is therefore stage one, where price plays a leading role in the competition for network inclusion.

B. Market Definition

To accurately capture the impact of a hospital merger on competition, a defined relevant market for hospital services must align with the principles of this two-stage model. This means that the relevant market should include all hospitals that constrain the merging parties in stage one price negotiations with insurers. These will be hospitals that are sufficiently substitutable for the merging parties, i.e. those hospitals that consumers see as good alternatives.

Although hospitals provide a broad array of medical services, both plaintiffs and defendants in hospital antitrust cases have generally agreed that the range of services within an inpatient care setting face similar competitive conditions and thus can be treated as a single "cluster" market. Since many inpatient services are too intensive to provide in an outpatient setting, the courts have recognized inpatient services as a product market distinct from outpatient services.[22]

19 Town & Vistnes, *Hospital Competition in HMO Networks*, 20(5) Journal of Health Economics 733-752 (2001); Capps, Dranove & Satterthwaite, *Competition and Market Power in Option Demand Markets,* 34(4) RAND Journal of Economics 737-763 (2003); Vistnes, Cooper & Vistnes, *Employer Contribution and Health Insurance Premiums: Does Managed Competition Work?*, 1 International Journal of Health Care Finance and Economics 159-187 (2001); Lewis & Pflum, *Diagnosing Hospital System Bargaining Power in Managed Care Networks*, 7(1) American Economic Journal: Microeconomics 243-271 (2015); and Gowrisankaran, Nevo & Town, *Mergers When Prices Are Negotiated: Evidence from the Hospital Industry*, 105(1) American Economic Review 172-203 (2015).

20 See also, Opinion, *Saint Alphonsus Med. Ctr. – Nampa Inc. v. St. Luke's Health Sys., Ltd.*, No. 14-35173 (9th Cir. Feb. 10, 2015), at n.10 ("This 'two-stage model' of health care competition is 'the accepted model.'" Citing John J. Miles, 1 Health Care & Antitrust L. § 1:5 (2014)). Complaint, *In re Evanston Northwestern Healthcare Corp.*, No. 9315 (2004),

21 Capps, Dranove & Satterthwaite (2003), op. cit., refer to enrollees' preference for plans that give them the option of receiving healthcare services from a large variety of providers as "option demand."

22 See, e.g. *FTC v. OSF Healthcare Sys.*, 852 F. Supp. 2d 1069, 1076 (N.D. Ill. 2012); *FTC v. ProMedica Health Sys.*, 2011 U.S. Dist. LEXIS 33434, No. 3:11 CV 47, at

Disputes over market definition in hospital merger cases are generally over the extent of the relevant geographic market and not the scope of the relevant product market.[23]

To accurately define the extent of the geographic market, one must identify those hospitals that constrain one another in stage one competition. To illustrate how the hypothetical monopolist test identifies such constraining hospitals, suppose there are three hospitals A, B, and C, where some patients prefer A to the other hospitals, some prefer B, and some prefer C. Consider patients for whom A is their first choice. If A is excluded from an insurer's provider network, patients who would otherwise select A will turn to their next-best alternative, either B or C. A network that excludes A will lose less value when patients view one of the other hospitals as a close substitute for A. For example, suppose most patients who prefer A view B as a close second and view C as a very distant substitute. The presence of B constrains A's bargaining leverage and its ability to negotiate higher prices since an insurer could substitute B for A with little impact on the value of their network. This means that A's bargaining leverage is significantly constrained by the presence of B, and its negotiated price will therefore be relatively low.

Now consider a proposed merger between hospitals A and B. Start with a candidate market that contains A and B. After the (hypothetical) merger, if an insurer cannot reach an agreement with the combined entity AB, then the value of the insurer's network would be significantly diminished since B is a close substitute for A but C is not. This leaves the insurers with significantly less attractive networks if they fail to reach an agreement with AB. This enhances the merged entity's bargaining leverage and enables them to extract a higher price. If the bargaining leverage is increased enough that entity AB can profitably impose a SSNIP, then hospitals A and B represent a relevant antitrust market.

Of course, some patients will go to hospital C instead of either A or B. It's important to recognize that this fact alone doesn't mean that A and B do not constitute a relevant market. The mere fact that some patients will go elsewhere doesn't mean that a potential market doesn't pass the hypothetical monopolist test. A and B constitute a relevant antitrust market if they can (jointly) profitably impose a SSNIP, even if some nontrivial number of patients would go elsewhere. Patient preferences over hospitals matter, but only to the extent that they affect the value placed on an insurer's provider network and the impact that has on stage one negotiations.[24]

In general, the increase in bargaining leverage from a merger is determined by the prevalence of patients who view the merging hospitals as close substitutes and by how much they dislike having to turn to less preferred alternatives. The two-stage model of competition described above captures this fundamental of health care competition; it serves as the theoretical foundation of published economic research on provider competition; and, importantly, the empirical predictions of this framework have been verified in studies of hospital mergers, as well as in other health care services markets.[25] Specifically, mergers between hospitals that are close competitors generally lead to price increases.[26]

*24 (N.D. Ohio 2011); *In re Evanston Nw. Healthcare Corp.*, 2007 FTC LEXIS 210, No. 9315, at *148–51 (F.T.C. Aug. 6, 2007).

23 This was true in both the *Penn State Hershey* and the *Advocate Health Care* cases.

24 If those preferences are strong enough and if there are enough of such patients, then the presence of C can defeat attempts by AB to impose a SSNIP, since enough patients would go to C to make such a price increase unprofitable.

25 Vogt & Town, *How Has Hospital Consolidation Affected the Price and Quality of Hospital Care?*, Robert Wood Johnson Foundation Synthesis Project (2006); Gaynor & Town, *The Impact of Hospital Consolidation—Update*, Robert Wood Johnson Foundation Synthesis Project (2012); Gaynor, Ho & Town, *The Industrial Organization of Health-Care Markets*, 53(2) Journal of Economic Literature (2015).

26 While most research focuses on prices, the market power arising from provider mergers could be exercised, in whole or in part, through reductions in the quality of services provided, and indeed there is empirical evidence that hospital mergers are associated with quality reductions as well. Id. See also, Cooper et al., *Does Hospital Competition Save Lives? Evidence from the English NHS Patient Choice Reforms*, 121(554) Economic Journal228-260 (2011); Gaynor, Propper & Seiler, *Free To Choose? Reform, Choice, and Consideration Sets in the English National Health Service,* 106(11) American Economic Review 3251-57 (2016); Gaynor, Moreno-Serra & Propper, *Death by Market Power: Reform, Competition, and Patient Outcomes in the National Health Service,* 5(4) American Economic Journal: Economic Policy 134-166 (2013); and Kessler & McClellan, *Is Hospital Competition Socially Wasteful?*, 115(2) Quarterly Journal of Economics 577-615 (2000).

IV. THE COURTS' INTERPRETATION OF THE FTC'S GEOGRAPHIC MARKET DEFINITION

In *Penn State Hershey* the FTC used the hypothetical monopolist test to conclude that the relevant antitrust geographic market is "roughly equivalent to the Harrisburg Metropolitan Statistical Area (Dauphin, Cumberland and Perry Counties) and Lebanon County."[27] Based on this geographic market definition, the FTC argued that the merger would result in a presumptively unlawful increase in market concentration. The District Court for the Middle District of Pennsylvania rejected the FTC's market definition, found that plaintiffs did not show that they were likely to succeed on the merits, and denied the request for an injunction to block the merger.

In rejecting the FTC's market definition, the court focused on the locations and travel patterns of patients as well as the contractual agreements between the merging hospitals and two of Central Pennsylvania's largest health insurers, Capital BlueCross ("CBC") and Highmark. The court argued that the market definition advanced by the FTC was too narrow because a large proportion (43.5 percent) of Hershey Medical Center's ("Hershey") patients travel to Hershey from outside the four county region proposed by the FTC as the relevant market. Noting that 20 percent of Hershey's patients travel over an hour to reach Hershey, the court argued that the 19 hospitals within a 65 minute drive of Harrisburg — many of which are closer to patients who travel into Hershey — would readily offer consumers an alternative if the merged hospitals were to impose a SSNIP.

The Court also noted that the merging hospitals agreed to a five-year contract with Highmark and a ten-year contract with CBC that maintain the existing rate structures and rate differentials between the hospitals. The court therefore argued that, because the contracts prevent the hospitals from imposing a SSNIP even if it was profitable to do so, it cannot enjoin the merger based on a prediction of what might happen five years into the future after the Highmark contract expires.

In *Advocate Health Care*, the FTC's expert, Dr. Tenn, used the hypothetical monopolist test to conclude that a contiguous region that includes the four NorthShore hospitals and the two nearby Advocate hospitals represents an antitrust relevant market. Dr. Tenn excluded from the market four academic medical centers and two specialty hospitals that he referred to as "destination hospitals" because they drew patients from across the entire Chicago area. Dr. Tenn also considered two broader geographic markets. In one, he identified five additional hospitals that had at least a two percent share of the admissions in *both* Advocate's and NorthShore's service areas. In the other, Dr. Tenn identified four more hospitals that had at least a one percent share of the admissions from *either* NorthShore or Advocate's service areas. In both instances, he concluded that a hypothetical monopoly consisting of these hospitals could profitably impose a SSNIP.

Similar to the district court in *Penn State Hershey*, the District Court for the Northern District of Illinois rejected the FTC's market definition and denied an injunction. In rejecting the FTC's market definition, the court focused on the criteria Dr. Tenn used to include and exclude hospitals in his candidate market. It disagreed with the assumption that patients generally prefer to have access to local hospitals, calling the evidence that they do "equivocal."[28] The court additionally argued that there is no reason a competitor must constrain both Advocate and NorthShore to be in the geographic market, and that there was no economic basis for distinguishing between academic medical centers and local hospitals.

In both cases the appellate courts rejected the district courts' opinions and reversed the denials of requests for an injunction. The U.S. Court of Appeals for the Third Circuit stated that the district court's argument suffered from the "silent majority fallacy"[29] and what the court referred to as the "payor problem,"[30] both of which arise by failing to recognize the two-stage model of competition present in the market for hospital services. The Third Circuit wrote that together "[these errors] render the [district court]'s analysis economically unsound and not reflective of the commercial reality of the health care

27 *Penn State Hershey* opinion, §II.C, pg. 6.

28 *Advocate Health Care* opinion, pg. 10.

29 Capps, Dranove, Greenstein & Satterthwaite, *The Silent Majority Fallacy of the Elzinga-Hogarty Criteria: A Critique and New Approach to Analyzing Hospital Mergers*, National Bureau of Economic Research working paper No. W8216.

30 3rd Cir. opinion, §1.b, pg. 19.

market."[31]

The U.S. Court of Appeals for the Seventh Circuit similarly argued that in rejecting the FTC's market definition, the district court misunderstood the hypothetical monopolist test by overlooking the test's results and misinterpreting the test's iterations as "logical circularity." The Seventh Circuit further concluded that the district court had three mistaken criticisms: it incorrectly found that Dr. Tenn lacked a basis for distinguishing local hospitals from academic medical centers; it erroneously determined that the evidence about patient preferences for local hospitals was "equivocal;" and, its analysis suffered from the "silent majority fallacy."

V. DISCUSSION

The two district courts made several errors in their analyses of the relevant geographic markets. At the core of these errors was their failure to correctly apply the hypothetical monopolist test to the market for hospital services. The courts appear to have ignored the fact that hospital prices are established by negotiations between insurers and hospitals and that those prices have little effect on patient hospital choice. As a consequence, the district courts' opinions contained arguments that relied on patient flow patterns and other faulty logic (e.g. interpreting the hypothetical monopolist test's iterative process as circular reasoning and incorporating private pricing agreements) to conclude that the FTC's market definitions were too narrow. We discuss these errors in more detail here.

Both the Third and Seventh Circuits observed that the district courts erred by incorporating the silent majority fallacy as a basis for their opinions — the assumption that, because there are patients who travel to a distant hospital to receive care, these distant hospitals act as a constraint on the prices that the closer hospitals can charge for those patients who do not travel.[32,33] As both courts correctly noted, this assumption is incorrect. A patient's hospital choice is almost entirely based on non-price factors (when choosing between in-network hospitals) such as location, clinical quality and patient experience. Thus the fact that some patients travel relatively far to receive care says little about what the (silent) majority of "non-travelers" would do in response to a post-merger price increase. Utilizing patient-flow data to define the relevant geographic market is akin to the EH test, which focuses on the number of customers who come from outside the proposed market to purchase goods and services, and the number of customers who reside inside the market but leave to purchase goods and services.

An EH-style approach was frequently utilized by courts to define geographic markets in hospital merger cases in the 1980s and 1990s. This typically produced broad geographic markets, with correspondingly low market shares and low concentration. This led to courts approving a series of hospital mergers challenged by DoJ and the FTC.[34] Subsequent research has shown that EH markets are too broad,[35] and that the mergers of closely competing hospitals result in substantial post-

31 Id. §1.b, pg. 27.

32 In *Penn State Hershey*, the 3rd Cir. noted in its opinion that the district court relied almost exclusively on the fact that Hershey attracts many patients from outside of the Harrisburg area without acknowledging that Hershey is a leading academic medical center that provides highly complex medical services. In consequence, the 3rd Circuit argued, patients who travel to Hershey for these complex services are unlikely to go to other hospitals in the area. Furthermore, the 3rd Circuit noted that the district court created a misleading characterization of the relevant geographic market by not considering patient outflows and the undisputed evidence presented by the FTC that 91 percent of patients who live in Harrisburg use services in the Harrisburg area.

33 In *Advocate Health Care*, the 7th Circuit argued that the district court was in error to reference the high proportion of patients would seek care outside of the proposed market if their first choice hospital were unavailable as a reason to dismiss Dr. Tenn's proposed geographic market definition. Even if a sizable minority of patients consider Northwestern Memorial — a hospital excluded from Dr. Tenn's geographic market — as a close substitute (as indicated by the diversion ratios), the court argued, it does not follow that Northwestern Memorial could offer it as a sufficient substitute for a commercially viable insurance network. The 7th Circuit also noted that the district court's reasoning is not precisely the same as the silent majority fallacy, which treats current travel patterns as a proxy for post-merger travel patterns, while diversion ratios predict likely post-merger travel more directly. Nevertheless, "…[these] share a critical flaw: they focus on the patients who leave a proposed market instead of on hospitals' market power over the patients who remain, which means that the hospitals have market power over the insurers who need them to offer commercially viable products to customers who are reluctant to travel farther for general acute hospital care."

34 Competition Law: Hospitals, in *Improving Health Care: A Dose of Competition*, FTC and DOJ, chap. 4 (2004). In the 1990s, the FTC and DOJ lost 6 consecutive hospital merger challenges. Capps, *From Rockford to Joplin and Back Again: The Impact of Economics on Hospital Merger Enforcement*, 59(3) Antitrust Bulletin 443-478 (2014).

35 Gaynor, Kleiner & Vogt, *A Structural Approach to Market Definition With an Application to the Hospital Industry*, 61(2) Journal of Industrial Economics 243-289

merger price increases, even though such mergers were not considered presumptively anticompetitive in the more expansive geographic markets produced by EH-style methods.[36]

The reason an EH-style method is ineffective at identifying an antitrust relevant market for hospital services is because simply examining patient travel patterns does not indicate how insurers will respond to a hypothetical price increase. The Third Circuit correctly recognized that insurers are the party principally affected by price increases and referred to the district court's failure to account for the insurers' response to a SSNIP as the "payor problem."[37] The Third Circuit argued that the hypothetical monopolist test must be conducted through the lens of the insurers:

> If enough insurers, in the face of a small but significant non-transitory price increase, would avoid the price increase by looking to hospitals outside the proposed geographic market, then the market is too narrow…. It was error for the district court to completely disregard the role that insurers play in the healthcare market.[38]

In *Advocate Health Care*, the Seventh Circuit similarly noted that insurers are the most relevant buyers and must consider both whether employers would offer their plans and whether employees would sign up for them. The Seventh Circuit argued that "…measures of patient substitution like diversion ratios do not translate neatly into options for insurers. The district court erred in assuming they did."[39]

In addition to failing to recognize the importance of the two stages of provider competition, the district court for *Advocate Health Care* erroneously criticized the FTC's expert for selecting the hospitals to include in the relevant market by assumption, rather than by "analyzing data." The Court cites the defense expert, saying "…'you can constrain the postmerger system by constraining any [one] of its hospitals…,' so requiring a hospital to constrain both parties to be included in the geographic market makes little sense."[40]

This logic is flawed. If an omitted hospital is a sufficiently close substitute, then the SSNIP test will fail. This is precisely the purpose of the SSNIP test: to identify whether there are other hospitals that provide a strong enough competitive constraint to prevent the hospitals in the proposed market from profitably imposing a SSNIP. If there are hospitals that overlap with the service area of only one of the merging hospitals and provide such a constraint, then that proposed market would fail a SSNIP test. Similarly, a correctly defined relevant market need not include all substitutes to which customers may turn (e.g. the so-called "destination hospitals"). If the exclusion of all hospitals in the proposed market lowered the value of an insurer's network by more than the collective price increase, then that market is relevant for purposes of merger analysis. This remains true even if a sizeable share of patients travel into or out of the proposed geographic market.

The district court erred by not evaluating the FTC's market definition against this standard. In short, the key question is not whether certain hospitals are "arbitrarily" included or excluded from a proposed market but whether the hospitals in that proposed market can profitably impose a SSNIP.

(2013); Frech, Langenfeld & McCluer, *Elzinga-Hogarty Tests and Alternative Approaches for Market Share Calculations in Hospital Markets*, 71(3) Antitrust Law Journal 921-947 (2004).

36 Capps & Dranove, *Hospital Consolidation And Negotiated PPO Prices*, 23(2) Health Affairs 175-181 (2004); Dafny, *Estimation and Identification of Merger Effects: An Application to Hospital Mergers*, 52(3) The Journal of Law & Economics 523-550 (2009); Haas-Wilson & Garmon, *Hospital Mergers and Competitive Effects: Two Retrospective Analyses*, 18(1) International Journal of the Economics of Business 17-32 (2011); Tenn, *The Price Effects of Hospital Mergers: A Case Study of the Sutter–Summit Transaction*, 18(1) International Journal of the Economics of Business 65-82 (2011).

37 3rd Cir. opinion, §1.b, pg. 21.

38 Id. §1.b, pg. 23.

39 7th Cir. Court opinion, §III.D, pg. 25.

40 *Advocate Health Care* opinion, pg. 13.

In *Penn State Hershey* the district court additionally erred in incorporating the contractual agreements between the merging hospitals and the insurers, Highmark and CBC. As the Third Circuit noted, the hypothetical monopolist test is based on what a hypothetical monopolist would do, free of any price caps or contractual limits.

VI. CONCLUSION

The rulings for *Penn State Hershey* and *Advocate Health Care* threatened to turn back the clock on hospital merger enforcement to the 1990s, when EH-style flow-based analyses were *de rigueur*. A return to their use by the courts would have been a mistake. Patient flow-based analyses generate unreliable and incorrect conclusions regarding hospital market definition and market power. Their application to hospital markets has been thoroughly discredited by many economists, including Professor Elzinga, one of the originators of the approach.[41] Fortunately the appeals courts correctly identified the flaws with using this approach to define markets and reversed the district courts' decisions.

These decisions reinforce the use of the hypothetical monopolist test as the correct standard for market definition in horizontal merger cases generally, and clarify how it is to be used correctly. This is a welcome development that will help lead courts to better decisions in both health care and merger cases in general.

41 Elzinga & Swisher, *Limits of the Elzinga-Hogarty Test in Hospital Mergers: The Evanston Case*, 18(1) International Journal of the Economics of Business 133-146 (2011). Professor Elzinga himself testified in a hospital merger case that the test was not appropriate for healthcare provider markets. *In re Evanston Northwestern Healthcare*, No. 9315, 2007 WL 2286195, at **63–66 (FTC Aug. 6, 2007).