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What Can We Learn From the FTC's Recent Merger Study?

By Robert A. Kneuper and Erica E. Greulich

The Federal Trade Commission (FTC) recently released an econometric study of factors affecting merger enforcement policy. The study, which was done by staff members of the Bureau of Economics and not presented as the Commission's opinion, uses data the FTC previously released as part of its efforts to provide greater transparency in merger enforcement policy. While the study cannot be used to predict the likelihood that the FTC will challenge any given merger, it does provide useful information and insights concerning merger enforcement policy.

The underlying data derive from memoranda written by FTC attorneys recommending for or against merger challenges. The study's authors started with all 281 memoranda associated with Hart-Scott-Rodino (HSR) second requests during the fiscal years 1996-2003, but then limited the data to 151 mergers that were fully-investigated cases and involved substantial horizontal issues. These 151 transactions encompassed 784 markets, but 214 markets (mostly oil industry cases) were dropped due to insufficient information on concentration.

Remaining data limitations are the primary reason that the study should be interpreted with care. First, the data are based on FTC legal staff descriptions of markets and may not correlate strongly with objectively measurable economic variables. Second, numerous relevant economic factors could not be measured or could be measured only for a small sample of the mergers. The study measures entry barriers, customer complaints and hot documents only with dummy variables, which can indicate whether these factors are present but not their relative strength. Many relevant factors are omitted, such as the type of anticompetitive theory (e.g., horizontal, vertical, coordinated, unilateral) at issue, the existence of significant efficiencies, or the existence of a power buyer. Finally, some of the measured factors are highly correlated with a particular enforcement outcome. For example, all markets characterized by ease of entry are associated with closed investigations. These highly-correlated factors make it difficult to determine how other variables affect the enforcement decision. The authors deal with this problem by re-estimating the models with samples excluding markets with easy entry and customer complaints, but those exclusions greatly reduce the sample size.

Despite these limitations, the FTC study finds a number of interesting results that either confirm existing perceptions of enforcement behavior or provide new information. First, not surprisingly, the probability of an enforcement action increases significantly as concentration increases, whether concentration is measured by the Herfindahl-Hirschman Index or by the number of pre-merger rivals. For example, a market with 3 pre-merger rivals had more than an 80% likelihood of involving an enforcement action, whereas a merger with 5 pre-merger rivals had a 40% or lower likelihood of involving an enforcement action. The results indicate that a 3 to 2 merger needs compelling evidence to convince the FTC not to challenge it. A 5 to 4 merger requires a convincing defense, but it has a much greater likelihood of being allowed to proceed.

Second, the study finds little or no change in general aggressiveness of merger enforcement due to political changes. The change in the chairmanship of the FTC from a Demo-

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Product and Geographic Market Definition in *FTC v. Evanston Northwestern*

By Barry C. Harris and David A. Argue

The Chief FTC Administrative Law Judge recently found that the January 2000 merger of Highland Park Hospital with Evanston Hospital and Glenbrook Hospital to form Evanston Northwestern Healthcare Corporation (ENH) "substantially lessened competition in the product market of general acute inpatient services sold to managed care organizations" in a geographic market of seven hospitals. Despite contrary claims, the Decision neither follows a "traditional Clayton 7 approach" nor is consistent with the standards outlined in the DOJ/FTC Horizontal Merger Guidelines. Moreover, the Decision's findings that EHN unilaterally exercised market power are inconsistent with its findings that the relevant antitrust market includes four non-ENH hospitals that are all closer competitors to individual ENH hospitals than the merging ENH hospitals are to each other.

The relevant product market in the Decision has two limiting characteristics: (1) it includes only inpatient acute care services and (2) it includes only sales to managed care organizations. Rather than conducting a Guidelines analysis of services offered, the Decision bases its product market conclusion on so-called two-stage competition. Two-stage competition theory posits that hospitals first compete on price to be included in a managed care plan's network, and then, in the second stage, hospitals compete with other network hospitals for patients, ostensibly through non-price factors. Hospitals do not receive any payments and thus cannot exercise market power during the first stage. Rather, hospitals can exercise market power only through increased prices paid for specific services they provide to actual patients (i.e., in stage two).

In contrast to a Guidelines approach, the Decision addresses neither the mechanism through which hospitals might attempt to exercise market power nor whether such an attempt to exercise market power would be profitable. Ultimately, the profitability of the hospitals' attempt to exercise market power depends on managed care plans' decisions on whether to retain the hospitals in their networks, and those decisions depend on the likelihood that patients would use alternative hospitals. The Decision finds that under two-stage competition, patients ignore price in choosing a network hospital. A Guidelines analysis of two-stage competition shows, however, that managed care plans still care about hospital prices because higher hospital prices mean higher costs and possibly lower profits for the plan. A managed care plan decides whether to include a high-cost hospital in its network by comparing the profits lost from the enrollees who would change to a different health insurer to continue to access the high-cost hospital to the costs it would save by excluding the high-cost hospital. For example, suppose 20% of the merging hospitals' patients have no close substitutes while the remaining 80% have good substitutes. Whether a managed care plan will keep the merging hospitals in its network to serve the 20% depends on a simple comparison. On the one hand, dropping the hospitals will lead to lost profits from the 20% of its subscribers who switch to an alternative insurer that includes the merging hospitals. On the other hand, dropping the hospitals reduces the plan's hospital costs for the 80% who would switch hospitals rather than switch insurers.

The assessment of patient switching behavior is informed in part by patient flow data. These data have been one of the mainstays of most geographic market analyses for hospital services, but the Decision specifically excludes them. The Decision finds that "patient flow data is relevant to second-stage competition for patients, but provides no useful information about first-stage competition for managed care contracts." If patient flow data are relevant to second-stage competition, however, then they also are informative about managed care plans' decisions during first-stage competition.

The Decision's analysis of unilateral effects also is flawed. It is logically possible that ENH could exercise market power unilaterally if the merging hospitals' patients considered them to be each others' closest competitors. Patient flow data, however, indicate that is not the case. These data show that residents in virtually every zip code of the ENH service area use other hospitals significantly more often than they use the ENH hospitals, which suggests that patients view these other hospitals as closer substitutes. The identities of the substitute hospitals differ across zip codes, but non-merging hospitals need not be perfect substitutes to prevent the merging hospitals from exercising market power. It is only necessary that a sufficient number of patients would switch to alternative hospitals if an attempt were made to exercise market power.

Apart from market definition and unilateral effects, the Decision reached findings on post-merger pricing by ENH. Those findings contain serious factual and conceptual shortcomings. Those shortcomings are in addition to the Decision's failure to consider patient flow data and to conduct a Guidelines analysis, which contributed to inconsistent and faulty reasoning on both market definition and unilateral effects.

Barry C. Harris is EI's Chairman and David A. Argue is a Corporate Vice President. Each testified about market definition in hospital cases before the FTC/DOJ Health Care and Competition Law Hearings.

Dr. Harris testified for defendants in the Dubuque and Poplar Bluff hospital-merger cases and is former Deputy Assistant Attorney General, Antitrust Division, U.S. Department of Justice.

Dr. Argue has worked in health care areas including hospitals, physician practices, ambulatory surgery centers, health insurance and pharmaceuticals.

The Widening Scope of Simulation Analysis

By John M. Gale and Sudip X. Gupta

During the 1990s, economists realized that there are substantial benefits to using simulation models to analyze the effects of a merger. More recently economists have broadened the scope of these models to address some of the criticisms raised at that time. In addition, advances have occurred in applying simulation methods to lost profits analysis in patent infringement and price discrimination cases.

Many different factors may influence the competitive effects of a merger, and specific cases may require simulation models that account for factors not addressable with the earlier models. Merger models are now available that allow for efficiencies, different structural changes (partial ownership changes, product divestiture), dynamic changes (post-merger exit, entry, repositioning), and different forms of competition (auctions, price discrimination, production mergers with downstream retail competition). Simulation models can also be used to determine if new entry is likely at post-merger prices and if current competitors are likely to reposition their existing products.

For example, while analyzing the effects of a recent retailing merger, a simple extension to a standard merger simulation model was developed that accounted for the possible post-merger exit of a retail outlet. The standard analysis of the locations with overlaps determined that the price effects would not be substantial. A question that remained was whether the new owner would close a location, which would reduce the variety available to consumers.

Thus, a simulation was done to determine if outlets would be closed post-merger. Post-merger prices, quantities, and revenues were first estimated assuming that no outlets were closed and then reestimated assuming that one outlet was closed. Comparing the two scenarios indicated the reduction in post-merger revenues due to closing an outlet. Comparing that loss of revenues to the cost savings of closing an outlet indicated the likelihood of a closing. If closing an outlet was profitable, then consumer effects (including price effects at remaining outlets) could be measured. This type of analysis can also be used to model the effects on consumers when a firm ceases offering a particular product post-merger. In a similar way, simulations can be used to model the effects of entry by new competitors.

> "The broadening of simulation methods promises to bring additional rigor and clarity to the analysis of mergers and to damages estimation."

Simulation models also are increasingly being used in lost profits analysis. The requirements for a lost profits claim due to patent infringement are often described as the "Panduit Factors" from a 1978 case. These factors closely parallel factors used in merger analysis: characterization of consumer demand, identification of competing substitutes (market definition), competitor's cost structures, and the profit maximizing reactions of the merged entity and its competitors.

A simulation methodology for calculating damages begins with information about how firms compete in the market and how consumers react to changes in product prices. The model is then calibrated to reflect actual market shares and prices and consumer demand. Once the model is calibrated, likely but-for market equilibriums can be calculated and new market prices, shares, and profits determined.

For example, lost profits due to wholesale price discrimination are sometimes claimed to be simply the difference between the actual wholesale price for the input and the non-discriminatory wholesale price multiplied by the number of units purchased by the plaintiff. This analysis is insufficient, and courts have found

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EI News and Notes

Justice Department Clears NYSE/Archipelago Merger

The Justice Department announced that it would not challenge the New York Stock Exchange's acquisition of Archipelago, the owner of the world's largest electronic stock market. DOJ reported that imminent entry would prevent the acquisitions from reducing competition. EI Principal Philip B. Nelson, assisted by other EI economists, worked with attorneys from Wachtell Lipton and Sullivan & Cromwell LLP in defending the acquisitions.

Study on Intellectual Property Industries Released

"Engines of Growth: The Economic Contributions of the U.S. Intellectual Property Industries," a study by EI Principal Stephen E. Siwek, was recently released by NBC/Universal. The study examines the economic significance of intellectual property industries, such as music, movies and television. These industries accounted for 20% of private industry's contribution to the U.S. Gross National Product and paid wages well above average levels. Moreover, these industries contributed nearly 40% of the growth achieved by all U.S. private industries and nearly 60% of the growth in exportable, high-value-added products and services.

Advocate Health Defeats Antitrust Claims

In November, an arbitration panel ruled for Advocate Healthcare, which had been accused of price-fixing, a group boycott, refusals to deal, tying, and market allocation. The completion of this two-year arbitration provides one of the first litigated decisions involving joint contracting, clinical integration and related issues. Attorneys from Hogan & Hartson and Hogan Marren represented Advocate. EI Principal Barry C. Harris testified on Advocate's lack of market power, flaws in plaintiff's statistical analyses of market power and damages, and the benefits of clinical integration and joint contracting.

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cratic appointee, Robert Pitofsky, to a Republican appointee, Timothy Muris, did not seem to affect the likelihood of a complaint. This result is consistent with the overall impression of some antitrust observers that the level of merger enforcement at the FTC is stable and does not change with the political party in power.

Third, the study finds that the aggressiveness of merger enforcement is not affected by how busy the FTC is. This finding pertains only to the decision to attempt to block a merger after a second request for information has been issued. The study does not examine whether a given merger is less likely to receive a second request if the FTC is very busy, compared to a slack period. But according to the study, once a second request is issued, the number of merger filings does not seem to have an independent effect on the likelihood of a complaint.

A final noteworthy result of the study is that some industries face particularly aggressive enforcement. All else equal, mergers in the chemical, grocery and oil industries were more likely to be challenged than other mergers. For example, in a typical merger involving 4 pre-merger rivals, the chances of enforcement were over 92% in each of these industries, but only 57% in other industries. A typical merger investigation in these industries involved more markets and more pre-merger rivals than in other industries. This is particularly true in grocery and oil investigations, which often involve retail markets.

The FTC's merger data and the associated econometric study provide valuable information to private antitrust practitioners. Nonetheless, caution should be used in interpreting or applying many of the results from the study (e.g., that the existence of hot documents does not create a greater likelihood of enforcement action). Moreover, the econometric model should not be used to try to predict the likelihood of enforcement for a particular merger. Besides the difficulties noted above, the study does not include mergers investigated by the Department of Justice, which released a separate set of merger enforcement data. An informed and experienced judgment remains the best barometer of enforcement probabilities for a particular merger.


Robert A. Kneuper recently joined EI after analyzing antitrust matters for over 10 years at the FTC. While at the FTC, he worked on numerous merger matters in a variety of industries.

Erica E. Greulich specializes in empirical microeconomics, particularly using large databases to conduct econometric analysis. She has analyzed the antitrust implications of planned industry consolidation and damages in civil litigation cases.

Simulation Analysis (Continued from Page 3)

it so. The simplistic analysis does not recognize that if a firm pays a lower wholesale price for an input and that results in a lower marginal cost, the firm will likely reduce its retail price and increase its sales. A simulation analysis can account for such effects when estimating damages.

Simulation brings the same advantages to damages analysis that it brings to merger analysis: quantitative information is drawn from the actual market, assumptions about firm and consumer behavior must be explicitly stated and supported, and a quantified prediction of competitor reactions is produced. Moreover, simulation, unlike traditional analysis, can account for existing firms' strategic responses to changes in market conditions. Some simulation models can also eliminate the need to determine marginal cost from firm accounting data.

Unlike a merger analysis in which a single event is modeled, a damages simulation can require incorporating dynamic effects that can affect market shares and prices over time. A dynamic analysis can be done in multiple ways, such as by modeling each period separately and then imposing changes on consumer demand or prior-period market shares.

The broadening of simulation methods promises to bring additional rigor and clarity to the analysis of mergers and to damages estimation. As with any economic analysis, the assumptions must fit the market and appropriate data must be available. At the very least, however, the process makes the assumptions explicit and the results precise.

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INCORPORATED

Suite 400	Suite 250
1200 New Hampshire Ave.	5980 Horton Street
Washington, DC 20036	Emeryville, CA 94608
Phone: (202) 223-4700	(510) 547-6910
Fax: (202) 296-7138	(510) 547-5162

Website: www.ei.com

President, Jonathan L. Walker; Editor, Henry B. McFarland
Layout, Gregory E. Wurz
In affiliation with The Allen Consulting Group in Australia


John M. Gale and Sudip X. Gupta both have extensive experience in the use of empirical techniques to address economic issues. In particular, they both have worked on a number of matters requiring use of simulation models.