Overview of the Merger Retrospective Program in the Bureau of Economics

Merger retrospectives quantify changes in market outcomes, such as prices, product variety, quality, innovation, consumer welfare, firm efficiency, and profits, after changes in market structure that result from consummated mergers. The FTC’s Bureau of Economics (“BE”) has undertaken retrospectives for a range of consummated mergers for over 35 years. This web page describes some key features of BE’s retrospective program and details changes that BE is making to ensure that retrospective research, both inside and outside the agency, can systematically address the questions that are most relevant for the enforcement choices that the Commission makes.

Retrospective Research at the Bureau of Economics

The purpose of a retrospective merger analysis “is to determine ex post how, if at all, a particular merger affected equilibrium behavior in one or more markets.” (Farrell, Pautler, & Vita, 2009). Beginning with Barton & Sherman’s (1984) study of two consummated mergers in the US microfilm industry, BE has published 30 merger retrospectives.

Existing retrospective research has been conducted with at least two goals in mind. The first goal is to understand whether the agency’s threshold for bringing an enforcement action in a merger case has been too permissive, thus allowing too many potentially harmful mergers to go through. For example, in cases where the agency allows a proposed merger to proceed because it predicts the merger likely would not reduce competition, a study would assess whether a measure of market outcomes (e.g., prices) indicates that there actually has been a reduction in competition. The study ideally would evaluate the changes in outcomes against a set of similar markets that were not affected by the merger.

Retrospective studies can be especially useful in industries, such as healthcare and petroleum, where proposed mergers are common and the FTC has particular enforcement responsibilities. Important examples include a series of retrospective studies conducted by the FTC’s Hospital Merger Litigation Task Force. As described by Ashenfelter, Hosken, Vita, & Weinberg (2011, p. 6):

“The studies . . . are the fruit of an explicit effort by the FTC to generate empirical evidence on the competitive effects of horizontal hospital mergers. This project was initiated in the early 2000s following a period during which both federal antitrust agencies (the Department of Justice and the FTC) essentially abandoned hospital merger enforcement because of a perception that hospital mergers could not be challenged successfully in federal court. Then-FTC Chairman Timothy Muris commenced the hospital merger retrospective project both to assess the impact of this period of enforcement dormancy on competitive performance in hospital markets, and to generate evidence that would help guide and inform renewed enforcement efforts in this economic sector (Muris, 2002).”

According to current FTC Chairman Joseph Simons, “(t)hese retrospective studies were critical in subsequent hospital merger challenges.” While it is not possible to measure the impact of the hospital retrospective program on subsequent enforcement precisely, it is suggestive that the FTC was able to obtain thirteen federal injunctions in hospital cases from 2008 to 2018, compared with only two from 1997 to 2007. BE staff has also conducted multiple retrospectives in non-hospital areas of healthcare, e.g., physician practice mergers, and the oil and gas sectors, where BE frequently assesses...
proposed transactions. On the other hand, staff have also conducted retrospectives more opportunistically in other sectors of the economy, to exploit the availability of data to study a particular transaction.

The second goal of the merger retrospective program has been to assess the performance of tools that agency economists use to predict the effects of proposed mergers prospectively. For example, the retrospective study may assess how accurately a pricing pressure index or a merger simulation model predicted a post-merger price change, or how well demand models, which are typically inputs into these predictions, perform at predicting customer substitution (diversion) when a merger eliminates one of the choices that had been available to buyers in the pre-merger world. The performance of these methods is evaluated by comparing their predictions to observed post-merger outcomes that are estimated using regression-based techniques such as “difference-in-difference” analysis where changes in markets affected by a merger are compared to changes in (similar) markets that were unaffected by the merger (the “control group”).

Examples of this type of retrospective research include Hosken & Weinberg (2013), who examined how accurately merger simulation models using different mathematical models of consumer demand (“Almost Ideal Demand System (AIDS); linear demand; and “logit” demand) predicted the price effects measured by Ashenfelter & Hosken (2010) after mergers in the maple syrup and motor oil industries. Garmon (2017) examined the relative performance of different empirical methods) used by antitrust economists to merger effects. That is, Garmon first estimated actual post-merger price changes (measured relative to controls) of 28 hospital mergers. He then compared these actual price changes to the predicted price changes obtained by using various screening methods (e.g. “upward pricing pressure indices (UPP)”). He found that the new screening tools (in particular, WTP (“willingness to pay”) and UPP) are more accurate than traditional concentration measures at flagging potentially anticompetitive hospital mergers for further review.

These empirical analyses complement theoretical and simulation-based research (e.g., Taragin and Sheu, 2020) that FTC staff conduct to investigate how well different screens for anticompetitive mergers perform in different situations. The importance of empirical and simulation-based evaluations of different tools is growing as the set of available tools for prospectively assessing different types of mergers and different types of possible effects (for example, coordinated effects) expands.

While the retrospective program has provided many insights that have informed the FTC’s enforcement decisions, BE recognizes that there are a number of subjects for which the evidence provided by retrospectives is currently limited. For example, the majority of retrospectives consider horizontal mergers and focus on short-run price changes (Mariuzzo and Ormosi (2019)), rather than changes in non-price attributes, product innovation, firm productivity or changes in output, which may take place more slowly but which can have important effects on welfare. BE also recognizes that because retrospective studies are typically intended for academic publication, the published studies do not contain non-public information and do not focus on trying to explain, in detail, the lessons that can be drawn for enforcement. BE also believes that it is important that the conclusions that it draws about the effects of mergers and the performance of different tools are communicated in an open and transparent way to the broader community of antitrust scholars and practitioners, to encourage debate and raise the quality of merger analysis.

Finally, BE recognizes that academic and public debate about antitrust enforcement is raising questions about merger policy that the FTC’s existing retrospectives do not address. For example, recent academic work by Prager & Schmitt (2019) suggests that mergers in hospital markets may reduce the wages of nurses and pharmacy workers. Papers by Cunningham, Ederer and Ma (2019) and Wollman (2019) suggest that transactions that do not trigger the HSR filing thresholds (and therefore which may never be investigated by the agencies), might often be anti-competitive. Some evidence has also emerged that mergers may affect outcomes even when they do not involve firms that compete in traditionally defined relevant markets (Lewis and Pflum (2017), Dafny, Ho and Lee (2019)). More broadly, commentators have argued that individual retrospectives are ineffective at evaluating claims that failures of antitrust enforcement have contributed to increases in market power in the broader economy (Baker (2019), De Loecker and Eeckhout (2020)).

Giving New Focus to the Retrospective Program
Recognizing these concerns, BE plans to commit additional resources to the retrospective program with the aim of completing more and more ambitious retrospectives, and ensuring that we learn as many policy-relevant lessons as possible from retrospective research conducted at the FTC and elsewhere. Here are some of the Program’s initiatives:

BE management plans to dedicate more time and resources to retrospective projects based on the potential ability for projects to provide new insights that are relevant for policy and address the unanswered questions discussed above. Suitable projects may include ones that consider a sufficiently large number of mergers, possibly combining datasets from earlier retrospectives, to provide better guidance as to when enforcement actions should be brought; projects providing new methods that can improve retrospective design, such as better selection of control groups using modern “matching” and “machine learning” statistical techniques\(^{11}\); or projects that can use data with a sufficiently long time-series to examine the effects of mergers on long-term outcomes such as the rate of innovation.

The BE Director will provide an annual summary report on the lessons from recent retrospective studies. A version of this summary will be made public on this website.

The retrospective program will continue to emphasize the evaluation of analytic tools used by antitrust economists to screen and assess the competitive effects of mergers, such as the “price pressure” measures that have been proposed for evaluating both horizontal and vertical mergers\(^{12}\) and full-fledged merger simulation.\(^{13}\)

BE will develop and maintain a website devoted to research on retrospectives. The aim is to provide a global resource for applied research on retrospectives, for both practitioners and academics, as well as providing information about the FTC’s objectives for the program and relevant events and opportunities for promoting this research.

One feature of the website will be a bibliography of retrospective studies. The bibliography will include summary information on the study (e.g., industry, country, time period), together with a link to the publication or well-established working paper series. The database will not be limited to the United States or industries traditionally covered by the FTC. Authors will be encouraged to provide information to the website when a new study becomes available.

Each year, BE will organize and support sessions at a major Industrial Organization conference that are devoted to merger retrospectives including papers from inside and outside the agency.

Every three years a session at the BE’s Annual Microeconomics Conference will be devoted to recent retrospective research.

BE plans to pursue initiatives that allow cooperation with academic faculty, and researchers at other agencies, on retrospective projects.

### Examples of Current Retrospective Projects

As mentioned above, one avenue for BE to perform retrospective analyses of mergers, sometimes in conjunction with colleagues from the FTC’s legal bureaus, is via our “6(b)” authority.

The FTC is currently using this authority to gather information to perform retrospective studies of two transactions involving health care systems that were allowed to proceed under state regulatory authority despite antitrust concerns, with the intention of publicly reporting the findings.\(^{14}\) This particular granting of state regulatory approval is referred to as “Certificate of Public Advantage” or COPA. One COPA transaction involved the Mountain States Health Alliance and Wellmont Health System, which were the two largest hospital systems in the border area of Northeast Tennessee and Southwest Virginia at the time they merged in 2018. The transaction not only caused higher concentration for the provision of inpatient hospital services, but also outpatient services as well as some specialty physician practices.\(^{15}\) The second transaction that we are studying is Cabell Huntington Hospital’s proposed acquisition of St. Mary’s Medical Center, the only two hospitals in Huntington, West Virginia. The Commission expressed continued concern about the lost competition from this merger in both inpatient hospital services and outpatient surgical services, although it dropped its challenge of the merger in light of the state regulatory action.\(^{16}\) To study these transactions, the FTC has sent special
orders to obtain information from five large health insurers (Aetna, Anthem, BCBS of Tennessee, Cigna and United) in addition to the two merged systems. The orders seek information that will allow assessment of the transactions’ effects on prices, quality, innovation, access to care, and labor markets. It is anticipated that the FTC will continue to gather this data over several years in order to be able to assess post-merger outcomes.

While the ability to gather data directly from merging parties and customers via our 6(b) authority can present some unique opportunities, BE is always looking for ways to use readily available data to study the effects of previous mergers because these studies typically can be completed more quickly and with less burden on merging parties and third parties. A good example of this is an ongoing line of research by BE economists Tom Koch, Brett Wendling, and Nathan Wilson, who have utilized Medicare claims data licensed by BE from CMS. Previous studies published by these authors using this same data analyzed the effects of hospital systems acquiring physician practices on health outcomes (Koch, Wendling, & Wilson, forthcoming) and Medicare expenditures (Koch, Wendling, & Wilson, 2017). Their current ongoing study considers how physician practice mergers impact health outcomes of Medicare patients, and the extent to which that effect depends on the level of market concentration. The analysis is able to differentiate between mergers of similar practices (for example, a merger of two general practitioner groups or two groups of cardiologists) or differentiated practices (a merger of a general practitioner group with a group of cardiologists).

References


Carlton, Dennis, “Why We Need to Measure the Effect of Merger Policy and How To Do It”, working paper, 2009.


Kwoka, John, Mergers, Merger Control, and Remedies, 2015, MIT Press.


Shapiro, Carl, “Competition and Innovation: Did Arrow Hit the Bull's Eye?”, in The Rate and Direction of Inventive Activity Revisited, Josh Lerner & Scott Stern, eds., 2012.


2 Surveys of these studies, as well as many retrospectives conducted outside of the FTC, can be found in Pautler (2003); Weinberg (2007); Hunter, Leonard, & Olley (2008); Farrell, Pautler, & Vita (2009); Ashenfelter, Hosken, & Weinberg (2014); and Kwoka (2015, Appendix I).

3 Carlton (2009) discusses the importance of merger retrospectives for trying to understand where the enforcement margin should be set, as well as some of the methodological challenges that retrospectives face.


5 See list of Federal Injunctions in Hospital and Clinic investigations at https://www.ftc.gov/enforcement/cases-proceedings/advanced-search?combine=&field_case_action_type_value=All&field_federal_court_tid=All&field_matter_number_value=&field_industry_tid=290&field_enforcement_type_tid=4096&field_mission_tid_1=All&field_competition_topics_tid=All&field_consumer_protection_topics_tid=All&field_release_date_value%5Bmin%5D%5Bdate%5D=&field_release_date_value%5Bmax%5D%5Bdate%5D=&items_per_page=20. Of course, we have no counterfactual information about how enforcement would have evolved absent the retrospective studies.

6 To further explain: using price and quantity data, the authors estimate regressions showing how quantities at the brand level respond to brand-level prices, under different assumptions about the particular functional form of the relationship. In the AIDS model, for example, brand market shares are regressed on measures of total (category) sales and brand-level prices. In the linear model, brand-level quantities are regressed on brand prices and total category expenditures. In the logit model, the logarithm of sales volume for each brand (relative to some “outside good”) is regressed on the brand price. The coefficients from these regressions then serve as inputs into an oligopoly model that makes specific assumptions about the nature of competition (e.g., that the firms compete on short run prices); the equilibrium prices of the different brands in this model are then computed under both the pre- and post-merger market structure under these assumptions.

7 See Farrell & Shapiro (2010) for an explanation of how “price pressure indices” can be constructed and used to get a measure of the price-increasing incentives that would be created by a horizontal merger. Economists have proposed similar types of “price pressure” indicators for use in analyses of vertical mergers. See, e.g., Moresi & Salop (2013).

8 Theoretical and simulation-based methods assume that a particular underlying model of behavior is correct and then assess how common measures of anticompetitive effects perform using different parameterizations of the model.


10 See, e.g., Koch, Wendling, & Wilson (forthcoming) (quality) and Sweeting (2010) (horizontal differentiation).

11 Choosing an appropriate control group is essential for identifying the causal impact of the merger; the control group tells us what would have happened in the merger market, had the merger not taken place. Over the past two decades, substantial progress has been made in developing statistical techniques that better enable researchers to choose valid control groups.


13 See, e.g., Weinberg & Hosken (2013).

15 See Federal Trade Commission Staff Submission to the Southwest Virginia Health Authority and Virginia Department of Health Regarding Cooperative Agreement Application of Mountain States Health Alliance and Wellmont Health System, September 30, 2016 at