

Current Economic Issues at the FTC

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I. Overview of the Bureau of Economics of the Federal Trade Commission

The Bureau of Economics (“BE”) of the Federal Trade Commission is probably among the largest “industrial organization economics departments” in the world. BE has approximately 70 Ph.D. economists. The economists work on antitrust and consumer protection investigations and litigation, on FTC submissions to regulatory authorities and state governments that advocate application of sound competition-based and consumer protection principles, and conduct research on antitrust and consumer protection issues. BE has a long distinguished history of publishing research reports, and working papers, and many BE economists have published their research in economics journals and books. From its inception, the FTC has as part of its mandate to conduct investigations and research relevant to its antitrust and consumer protection mission. For example, early FTC studies were important inputs into crafting the Packers and Stockyards Act.

The FTC is a small agency (about 1000 employees), and most of the professionals are lawyers (more than 450). The FTC, and particularly BE, have shrunk since the early 1980s. Until the mid-1980s, BE had a division of economists whose primary task was to conduct research. The shrinking of BE and the demands for economist support for the FTC’s mission, particularly the review of mergers, has substantially reduced the resources devoted to research. Nonetheless, BE is on the cutting edge (along with its economist colleagues at the Department of Justice Antitrust Division) of the theory and application of industrial organization economics to antitrust issues and the economics of consumer protection enforcement and regulation. FTC economists produce working papers³ and staff studies, and regularly publish their research in academic journals.

II. The State of the Industrial Organization Economics

Industrial organization (“I.O.”) theory has developed very substantially over the past approximately 25 years. A discipline that long was very empirically-oriented was transformed into one that was a major

¹ Forthcoming, Review of Industrial Organization

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³ The FTC web site provides links and abstracts to working papers going back to 1996 (<http://www.ftc.gov/be/econwork.htm>).

focus of theoretical economists. Obviously, the discipline has advanced from greater development of theory. However, while empirical research has also burgeoned, empirical research has been a distant follower to theory. In part, this is likely because the publicly available data required to conduct research on, for example, issues relevant to antitrust policy, is generally very limited. For example, data on market shares or prices (actual transactions prices) is not publicly available for most industries. Thus, unlike decades ago when empirical research framed theoretical issues, theory has far outstripped a solid underpinning of empirical research. Beyond the limitations of the body of empirical research, in our view, industrial organization theory has proceeded to some extent without sufficient understanding of institutional and other “real world” factors that are typically critical in the application of theory to specific situations. This has to some extent been responsible for the creation of a body of theory much of which is often not readily applicable by economists (or lawyers) working on antitrust investigations.

In the 1950s and 1960s, “industry studies” were a major strand of I.O. economics research. These studies, which included rich institutional and other real world detail along with whatever data were available, provided I.O. researchers and practitioners with a factual background for the development of theory and more advance empirical research. Industry studies are largely no longer in vogue. However, in antitrust investigations, BE economists regular conduct the equivalent of “modern” industry studies, with the advantage of having access to all sorts of confidential information and data. As part of their job, BE economists have to read and interpret documents, and participate in interviews and depositions. They work to interpret and analyze the rich confidential data that is typically available in antitrust investigations. Unfortunately, most of the work of BE (and DOJ) economists cannot be made public.

In September of 2001 BE hosted a “Roundtable” of some of the leading industrial organization economists in the U.S. This Roundtable was organized by BE and Dennis Carlton.⁴ The focus of the Roundtable was the current state of empirical research relevant to antitrust policy and suggestions of empirical research topics that might advance the state of knowledge and contribute meaningfully to antitrust policy. The transcript of this Roundtable is available on BE’s web page, and is recommended reading for economists interested in the application of economics to antitrust.⁵ The BE web site (<http://www.ftc.gov/ftc/economic.htm>) has a number of postings that are likely to be of interest to economists. For example, a recent BE paper reviews economics aspects of the past 20 years of merger review at the FTC.

III. The Challenge for BE Economists

Although BE has access to information and data that an outside researcher seldom would have, I.O.

⁴ The Empirical Industrial Organization Roundtable was moderated by BE Director David Scheffman and the participants were Dennis Carlton, Jerry Hausman, Ben Klein, Janusz Ordover, Richard Schmalensee, and Michael Whinston.

⁵ <http://www.ftc.gov/be/empiricalioroundtabletranscript.pdf>.

economics does not provide much guidance on useful analyses of real world data in the specific context of an antitrust investigation. Consider, for example, the lion's share of our activities, i.e., analysis of horizontal mergers. What are the empirical analyses relevant to a determination whether a particular merger is likely to be anticompetitive? In some industries (e.g., grocery products sold primarily in supermarkets for which scanner data may be available) considerable advances have been made in recent years in estimating own- and cross-price elasticities, which are clearly relevant to market definition and competitive effects analysis. (We will discuss these analyses in more detail below). A literature has developed focusing on applying one-shot Bertrand models, using the estimated demand parameters from scanner data analysis. This literature is at an early stage and its reliability for assessing the competitive effects of mergers has probably not been sufficiently tested. In most antitrust investigations, however, we usually do not have data that would permit the estimation of demand or competitor strategies (crudely speaking "reaction functions") so that we could estimate and apply an oligopoly model that is sufficiently reliable to be a significant factor in the bottom line real world decision the FTC must make, i.e., should this specific merger be challenged or not?

The challenge of economic analysis in antitrust investigations is to develop empirical analyses that can shed light on market definition, competitive effects, barriers-to-entry, and efficiencies. BE economists must use messy real world data and sufficiently understand the nature and implications of important institutional features. Much of the work does not involve formal modeling. Rather in investigations, we consider what models appear applicable to the industry at issue and then analyze many kinds of evidence (in particular empirical evidence) that provide information on what demand and competitor strategies are likely to be to assess what is the likely outcome of the merger.

IV. Recent Developments and "Hot Issues" in BE

In the past year, BE has begun a systematic analysis of the sorts of empirical analyses that can be usefully employed in antitrust investigations, including as part of this process, as discussed above a "Roundtable" of some of the leading industrial organization economists in the U.S. We hope to put out a working paper during 2003 summarizing the results of our analysis.

In the remainder of this paper, we will discuss eight specific areas where BE has focused in the past year including: (1) unilateral effects; (2) coordinated effects; (3) merger retrospectives; (4) "natural experiments;" (5) price discrimination; (6) intellectual property and antitrust; (7) health care; and (8) energy. For each area, we will discuss the issues that have been considered, the work that has been and is being done to address these issues, and the types of additional research (by the agencies, academia or private consultants) that would be useful.

⁶ 1992 Horizontal Merger Guidelines, [with April 8, 1997 revisions to Section 4 on Efficiencies],

to estimate own and cross elasticities of demand.

While the quantitative estimation of demand relationships can make substantial contributions to merger analysis, it is much like every other area of empirical economics, in that practitioners invariably are forced to confront and resolve a series of difficult econometric and conceptual issues. In a recent BE Working Paper¹⁰, the authors identify a number of econometric and conceptual issues that they believe researchers and practitioners should try to address to improve the reliability of estimates of demand using scanner data and to provide a sounder foundation for the usefulness of such analyses in merger investigations.

The paper identifies five types of issues:

- c What are the potential problems arising from aggregation of transactions data over time and space?
- c What are the theoretical and econometric issues in specifying the functional form for estimation of demand?
- c Is endogeneity of price a significant issue, and if so how should it be addressed?
- c How can standard errors of estimates be reliably estimated from a multi-level non-linear model?
- c What is the relationship between estimates of demand at the retail level and demand at the manufacturer level (the latter is the level of the investigated merger)?

¹⁰ Daniel Hosken, Daniel O'Brien, David Scheffman, and Michael Vita, "Demand System Estimation and its Application to Horizontal Merger Analysis," <http://www.ftc.gov/be/workpapers/wp246.pdf>

¹¹ Pricing at both retail and wholesale for "grocery" products is actually quite complicated. At retail there are coupons and "sales" that may create problems for the reliable estimation of demand elasticities. At wholesale, grocery manufacturers make various payments for shelf space and promotional activities, and there are complex volume and promotional discounts.

2. Empirical Analyses Bearing on Unilateral Effects - Beyond Demand Estimation

BE has long been involved in developing empirical analyses addressing unilateral effects. As noted, in many industries, estimation of demand systems is not feasible. Even where such estimation is feasible, there are many other factors that will also be important to assessing the likely competitive effects of a transaction¹². Additional empirical analyses may be statistical or descriptive in nature. We discuss below some of the empirical analyses that we employ in unilateral effects cases. We believe that additional research and thinking about what types of analyses would be most useful would be very valuable.

a. Customer Level Information

Market research that has been conducted by or for the parties to a proposed merger can provide important evidence bearing on the extent to closeness of competition between the merging parties. If information is available, the extent to which customers' shift all or part of their volume among suppliers

¹² This was a point of consensus of the participants in the Empirical Industrial Organization Roundtable.

¹³ It is of interest to note that Mary Sullivan, a Ph.D. economist who formerly taught marketing at the University of Chicago and who has authored a number of important papers in the area of economics and marketing is an Acting Assistant Chief in the Economic Analysis Group of the Antitrust Division.

¹⁴ Analysis of “collective dominance” has been a major issue for merger enforcement by the EU competition authority, particularly because of the AirTours matter. The Commission decision on this matter is at http://europa.eu.int/comm/competition/mergers/cases/decisions/m1524_en.pdf , and the Judgment of the Court of First Instance is at

to change this outcome. It may be that the merger removes a competitive maverick who has disrupted the ability to reach a coordinated outcome (or likely changes the incentives of the competitive maverick),¹⁷ or that the merger results in such a small number of players (such as three competitors going to two) that reaching a coordinated agreement becomes substantially more feasible.

The paper presents a discussion of examples of the types of empirical analyses that can be performed in a merger investigation to assess the transparency of market outcomes and to find evidence of actual coordination. Transparency of market outcomes is crucial to the ability of firms to coordinate (particularly to tacitly coordinate). Without such transparency, it would be difficult for firms to reach agreement on the levels of price (or capacity) that they wish to achieve or to observe deviations from such pricing. Analyses to address these issues include (1) the degree of non-systematic variation in price levels and changes across customers; (2) the degree of pricing variation across suppliers for the same customers; and (3) the quality of information the suppliers' have regarding competitor sales and pricing.

Additionally, if coordinated behavior is occurring, certain outcomes should be readily observed. For example, in the price leadership model, one would anticipate finding one firm generally leading price changes and others following, not only in their list prices but in actual transaction prices. More generally with price coordination, one would expect to find close parallels in the movement of pricing across firms. Of course, finding such parallel movements in price is also consistent with competition so finding such a result is necessary but not sufficient to show coordination. In a customer allocation model, one would expect to find little shifting of customers (entirely or shares of customer volume) across suppliers and fairly stable output shares.

Beyond our work, there remains a substantial need for the analysis of coordinated interaction to be advanced so that we can more reliably determine whether a specific merger is likely to create or strengthen coordinated interaction. Useful research will identify key factual issues and empirical analyses that would shed light on this question.

¹⁷ See Jonathan B. Baker, "Mavericks, Mergers, and Exclusion: Proving Coordinated Competitive Effects Under the Antitrust Laws," *New York University Law Review*, vol. 77, pp. 135-203, April 2002.

¹⁸ See, for example, Schumann, Larry, Robert Rogers, and James Reitzes (1992). “Case Studies of the Price Effects of Horizontal Mergers,” Federal Trade Commission, Bureau of Economics Staff Report, and Vita, Michael and Seth Sacher (2001) “The Competitive Effects of Not-for-Profit Hospital Mergers: A Case Study,” *Journal of Industrial Economics* (March 2001), 63-84.

¹⁹ See the “MSC Software” matter, <http://www.ftc.gov/os/adjpro/d9299/index.htm>, and the “Chicago Bridge” matter, <http://www.ftc.gov/os/adjpro/d9300/index.htm>. Public versions of economic expert reports will be posted during the trial.

²⁰ The utility of natural experiments in merger analysis was highlighted by Dennis Carlton at the

proposed market), including information on breakdowns by customer size, industry, type of product purchased or other characteristics that might differentiate customers. To the extent detailed transaction level prices at the customer level are available, such data can be analyzed to see if prices appear to vary systematically by any of the customer characteristics outlined above. If prices vary by customer characteristics, this does not necessarily mean that the different groups of customers have different demand elasticities (it may just be that they are purchasing different “products”). Thus, additional analyses need to be conducted to assess if there appear to be differences in the elasticities of demand for the various customer groups. If possible, estimation of demand by customer group could answer this question. However, in most industries, the available data does not permit such analyses. One possible alternative is to look at variation in prices over time for the different customer groups to assess whether there appear to be differences in these patterns that might suggest differing demand elasticities. We continue to work to consider what types of analyses can be used to address these questions and encourage outside researchers to do the same.

In some industries, customer characteristics are not readily identifiable by suppliers. For suppliers to price discriminate, therefore, they must set up a pricing strategy that causes customers with differing valuations for the product to self-select into high and low prices. In such industries, a hypothetical monopolist might try to raise prices to the “inelastic” group of customers by using a pricing strategy that results in such customers self-selecting the higher prices. An analysis of current pricing practices and whether such strategies are likely to work without substantial arbitrage is thus required. For instance, as a general matter in the airline industry, business travelers are generally willing to pay more than leisure travelers and also want more flexibility in their schedules. Airlines thus charge substantially more for last minute tickets or tickets that can be readily changed or cancelled than fares with restrictions. While some business travelers will choose fares with restrictions to get the better rates and risk having to pay for the ticket if the travel is cancelled, many will opt for the full coach fares.

In several cases over the past year, BE economists have conducted detailed analyses of customer data to help explore the market definition, price discrimination, and likely competitive effects in a number of proposed mergers. In a recent non-public investigation, the merging parties appeared to offer very similar services with a very broad geographic scope to a wide range of customer types. Several other competitors existed who offered services targeted to narrower customer groups or geographic areas. An important question when assessing the potential competitive effects of the merger was to consider whether the merging parties actually served similar types of customers and whether the types of customers served by the merging parties differed from those the more narrowly focused competitors. BE economists conducted a detailed analysis of the customer data available from the parties and from other third party sources.

²⁴ Details can be found at <http://www.ftc.gov/opp/intellect/index.htm> and <http://www.usdoj.gov/atr/hearing.htm>.

²⁵ This is the “Rambus” matter. See <http://www.ftc.gov/os/caselist/d9302.htm>.

²⁶ See

economists for companies being investigated that bear on the likely competitive effects of certain sorts of patent settlements in the pharmaceutical industry.²⁸ A key issue in patent settlements that have been investigated up to now is the presence, in some settlements, of so-called “reverse payments,” payment by the patent holder/branded pharmaceutical manufacturer, to the alleged infringing generic. The economic (and legal) issue is whether such payments anticompetitively restrict competition, which raises potential issues in both intellectual property and antitrust.

There has been much consolidation in the hospital industry over the past several years. The FTC and DOJ have lost the last several court challenges to hospital mergers, in significant part due to the finding by the court of a broader geographic (or sometimes product) market than alleged by the government. The finding of a larger geographic market was generally based on patient draw data and critical loss analyses. A growing body of empirical evidence, however, exists that suggests that hospital mergers have lead to higher prices. This and other factors thus question whether the approach to geographic market definition adopted by the courts is appropriate.

BE economists are conducting empirical studies of consummated hospital mergers to determine whether those transactions resulted in anticompetitive price increases.²⁹ These studies have two purposes. First, they may help provide the evidentiary basis for challenging an anticompetitive consummated hospital merger. Second, the analysis of actual price effects of consummated mergers is likely to lead to new, more reliable approaches to the delineation of hospital markets.

²⁸ See, for example, expert economist testimony in the Schering Plough matter, <http://www.ftc.gov/os/2001/04/scheringpart3cmp.pdf>.

²⁹ BE economists have published studies of hospital mergers in the past. See, for example, Vita and Sacher (2001), Sacher and Silvia (1998), Pautler and Vita (1994), and Vita and Schumann (1991).

assessment of the factors that have been important in affecting the level and volatility of gasoline prices. A number of energy and industrial organization economists have participated in these³⁰ hearings. FTC staff report based on these hearings is anticipated to be released by the end of the year. In addition, BE is working on a report summarizing and assessing merger activity in the oil industry since 1985. This is a major update of a 1982 FTC staff study of oil industry mergers. The new report is also expected to be released by the end of year. Certainly, empirical analyses of the effects of past oil industry consolidations, and of industry practices such as “zone pricing” and “redlining” would be an interested and important areas of research.

BE has also been working on a number of analyses of gasoline pricing. BE economists have acquired data and have developed econometric models to identify on an almost real time basis unusual movements in gasoline prices (particularly, “spikes”). This analysis is being conducted to better understand unusual movements in gasoline pricing and assess their impact on inflation.

³⁰ See <http://www.ftc.gov/bc/gasconf/index.htm> for information about the hearings.

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