

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS  
COMPETITION COMMITTEE**

**Working Party No. 3 on Co-operation and Enforcement**

**ECONOMIC EVIDENCE IN MERGER ANALYSIS**

-- United States --

**15 February 2011**

*The attached document is submitted to Working Party No. 3 of the Competition Committee FOR DISCUSSION under item III of the agenda at its forthcoming meeting on 15 February 2011.*

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**JT03296224**

1. This paper responds to the Chair’s letter of December 9, 2010, calling for submissions for the roundtable on economic evidence in merger analysis. The paper discusses a large number of mergers reviewed by the Agencies. These case descriptions are used to illustrate the types of evidence analyzed to determine whether a merger may substantially lessen competition, the sources of such evidence, and some of the techniques used to analyze the evidence. The paper concludes with a discussion of the role of economists in developing and analyzing such evidence. In August 2010, the Antitrust Division of the U.S. Department of Justice (“DOJ”) and the Federal Trade Commission (“FTC”) (collectively, “the Agencies”) issued revised Horizontal Merger Guidelines, which “describe the principal analytical techniques and the main types of evidence on which the Agencies usually rely to predict whether a horizontal merger may substantially lessen competition.”<sup>1</sup> The discussion below draws on sections of these guidelines.

## 1. Types of evidence

2. The Agencies consider any reasonably available and reliable evidence to address the central question of whether a merger may substantially lessen competition. This section discusses several categories and sources of evidence that the Agencies, in their experience, have found most informative in predicting the likely competitive effects of mergers. The list provided here is not exhaustive. In any given case, reliable evidence may be available in only some categories or from some sources. For each category of evidence, the Agencies consider evidence indicating that the merger may enhance competition as well as evidence indicating that it may lessen competition.

### 1.1 Actual Effects Observed in Consummated Mergers

3. When evaluating a consummated merger, the ultimate issue is not only whether adverse competitive effects have already resulted from the merger, but also whether such effects are likely to arise in the future or to persist if they have already occurred. The Agencies give substantial weight to evidence of observed post-merger price increases or other changes adverse to customers. The Agencies evaluate whether such changes are anticompetitive effects resulting from the merger, in which case they can be dispositive.

4. In the DOJ’s investigation of Microsemi’s acquisition of Semicoa, for example, the Department found evidence of adverse competitive effects resulting from the transaction, which was consummated in 2008. Prices for the relevant products in high-reliability transistors and diodes had increased, while the reliability of delivery times—an aspect of quality critically important to aerospace customers—had declined. Competition in the relevant products was restored through Microsemi’s divestiture of Semicoa’s assets as part of a settlement negotiated with the DOJ.<sup>2</sup>

5. The DOJ likewise found anticompetitive effects had flowed from a series of transactions consummated in 2004 that extinguished competition between the Charleston Gazette and the Charleston Daily Mail—the only two daily newspapers in Charleston, West Virginia. Almost immediately after the transactions closed, the Gazette Company took a variety of actions that damaged the quantity and quality of content available to Daily Mail readers. These actions contributed to a substantial drop in the Daily Mail’s circulation, most of which was likely recaptured by the Gazette. As part of a settlement negotiated

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<sup>1</sup> DOJ/FTC Horizontal Merger Guidelines (August 19, 2010) at 1, available at <http://www.justice.gov/atr/public/guidelines/hmg-2010.html> and at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

<sup>2</sup> See <http://www.justice.gov/atr/cases/microsemi.htm>.

with the Department, the parties entered into a new contractual relationship that restored their incentives to compete.<sup>3</sup>

6. As part of the FTC's Hospital Mergers Retrospectives Project, FTC economists analyzed the competitive effects of four consummated hospitals mergers. Each of these studies analyzed the effect of the transaction on prices by comparing differences in prices at the merging hospitals pre- and post-merger, controlling for patient and hospital characteristics, to those same differences in a group of control hospitals. The estimated price effects for three of the four mergers were either mixed or statistically insignificant, but large and statistically significant price effects were found for four of the five health insurers included in the analysis of the 2000 acquisition of Highland Park Hospital by Evanston Northwestern Healthcare in Highland Park, Illinois. An administrative law judge ruled the transaction violated Section 7 of the Clayton Act,<sup>4</sup> and that finding was upheld on an appeal to the FTC commissioners.<sup>5</sup>

7. Both previously published work and internal analyses by DOJ economists have found price effects from the loss of a nonstop air carrier in domestic hub routes. In one such analysis, actual price increases of between 7.2 percent and 29.4 percent have been found to follow the loss of nonstop competition in overlap domestic routes resulting from airline mergers.

8. A consummated merger may be anticompetitive even if adverse competitive effects have not yet been observed, perhaps because the merged firm may be aware of the possibility of post-merger antitrust review and is moderating its conduct. Consequently, the Agencies also consider the same types of evidence they consider when evaluating unconsummated mergers.

9. An example of this is the FTC's 2001 challenge of a merger between two manufacturers of large, field-erected industrial and water storage tanks in a challenge of the consummated merger by Chicago Bridge & Iron Company and Pitt-Des Moines, Inc. The firms had recently completed the merger at the time of the challenge, so the case was prepared much like a prospective merger challenge based on market definition, concentration, and evidence of closeness of competition. The FTC ruled in an administrative proceeding that the acquisition violated antitrust laws, and a petition for appeal was denied by the Federal Court of Appeals. The case concluded with the parties' consent to divest the acquired assets.<sup>6</sup>

## ***1.2 Direct comparisons based on experience***

10. The Agencies look for historical events, or "natural experiments," that are informative regarding the competitive effects of the merger. For example, the Agencies may examine the impact of recent mergers, entry, expansion, or exit in the relevant market. Effects of analogous events in similar markets may also be informative.

11. One such natural experiment was important to the analysis of a 2002 acquisition involving Southern Belle and Flav-O-Rich, two suppliers of milk to school districts. For regulatory reasons, the U.S. Department of Agriculture had suspended Southern Belle from bidding on certain school milk contracts from 1998 to 2000. Competition between Southern Belle and Flav-O-Rich was thus eliminated in some districts during the period. For those districts affected by the loss of Southern Belle as a bidder, relative prices for school milk rose and new entry did not occur to return prices to a competitive level. This helped

<sup>3</sup> See <http://www.justice.gov/atr/cases/daily.htm>.

<sup>4</sup> See <http://www.ftc.gov/os/adjpro/d9315/051021idtextversion.pdf>.

<sup>5</sup> See Farrell, J., Paulter, P.A., & Vita, M. (2009) Economics at the FTC: Retrospective Merger Analysis with a Focus on Hospitals *Review of Industrial Organization*, 35, pp. 369-385.

<sup>6</sup> See <http://www.ftc.gov/os/adjpro/d9300/index.shtm>.

inform DOJ's conclusion that the 2002 transaction, by eliminating competition between the parties, would likely result in a significant increase in school milk prices for certain districts.<sup>7</sup>

12. Another such event that helped inform the FTC's evaluation of Nestle Holdings, Inc.'s proposed acquisition of Dreyer's Grand Ice Cream, Inc. in 2003 was the recent entry of Dreyer's into the superpremium ice cream segment. The impact of that entry on sales products in various segments of the market complemented econometric analysis of retail scanner data in both the analysis of market definition and competitive effects.<sup>8</sup>

13. Also relevant to merger analysis is whether the industry has a record of price-fixing conspiracies. DOJ has prosecuted explicit collusion in school milk pricing on multiple occasions, across multiple geographic regions. This history heightens concerns that transactions eliminating a competitor in the bidding for school milk contracts will facilitate anticompetitive coordination, as was the case in DOJ's 2010 decision to challenge the merger of Dean Foods and Foremost, discussed below.

14. Another natural experiment informed DOJ's analysis of the 2006 merger between A.O. Smith and GSW-American, two producers of residential tank-style water heaters. Driven largely by tighter energy regulations and increases in raw materials costs, the prices of tank-style water heaters had risen significantly over several years leading up to the merger. Importantly, the factors driving these price increases did not significantly affect the marginal costs of producing tankless water heaters. The relative rise in marginal costs of tank-style water heaters allowed the cross-price elasticity of demand between tank-style and tankless water heaters to be estimated as an upper bound, under the extreme assumption that all growth in tankless unit sales during the period represented diversion from tank-style unit sales. The apparent diversion was small, indicating that losses in sales to tankless products would not likely defeat the profitability of a small but significant and non-transitory increase in the price (SSNIP) of residential tank-style water heaters by a hypothetical monopolist over these tank-style products.<sup>9</sup>

15. The Agencies also look for reliable evidence based on variations among similar markets. For example, if the merging firms compete in some locales but not others, comparisons of prices charged in regions where they do and do not compete may be informative regarding post-merger prices. In some cases, however, prices are set on such a broad geographic basis that such comparisons are not informative. The Agencies also may examine how prices in similar markets vary with the number of significant competitors in those markets.

16. In the proposed 1997 merger of office supply stores Staples and Office Depot, FTC economists employed a panel data econometric model that estimated the effect of nearby Staples and Office Depot stores on the prices of the other. The analysis indicated that Staples' prices were 6%-8% lower in markets in which it faced competition from Office Depot, holding competition from third-parties constant. These findings corroborated documentary evidence that suggested a price effect of 7%-10%. The FTC authorized its staff to seek a preliminary injunction in federal court to enjoin the merger during the pendency of the administrative proceeding. The FTC's motion was granted, and the parties abandoned the transaction.<sup>10</sup>

17. A similar event-study analysis was employed by FTC economists to analyze potential for reduced competition as a result of the 2007 merger of food retailers Whole Foods and Wild Oats. Again, a panel

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<sup>7</sup> See <http://www.justice.gov/atr/cases/indx122.htm>.

<sup>8</sup> See <http://www.ftc.gov/opa/2003/06/nestle.htm>.

<sup>9</sup> Elizabeth Armington, Eric Emch and Ken Heyer (2006), "The Year in Review: Economics at the Antitrust Division, 2005-2006," *Review of Industrial Organization*, vol. 29, pp. 305-326.

<sup>10</sup> See <http://www.ftc.gov/speeches/other/stspch.shtm>.

data econometric model was employed to estimate the effect of the nearby Whole Foods and Wild Oats stores on the prices and profit margins of the other, controlling for other nearby potential competitors. These included conventional and gourmet food retailers as well as mass merchandisers and club stores. The results indicated that the presence of Whole Foods stores had a significant effect on the prices at Wild Oats stores and that the presence of most other retailers had little or no effect. A federal judge declined to issue a preliminary injunction and the transaction was consummated. However, this ruling was overturned on appeal, and, ultimately, the FTC and Whole Foods reached a consent agreement requiring the divestiture of some of the former Wild Oats stores.<sup>11</sup>

18. The 2008 combination of meat packers JBS, National and Smithfield raised concerns both that the merger might enable the merged firm unilaterally to reduce price for fed cattle in the affected region and that market conditions might facilitate coordinated pricing for fed cattle among the region's few remaining significant packers. DOJ's Economic Analysis Group (EAG) employed a cross-section econometric study of how winning bids for cattle at feedlots varied as a function of the number of independently owned packing facilities located within various distance bands around the feedlot. The Department found that, after controlling for other relevant variables, winning bids tended to be somewhat higher when the number of independent packing facilities located near a feedlot was greater.<sup>12</sup>

19. An issue in the 2007 merger of health insurers United and Sierra was the extent to which the terms of Medicare Advantage (MA) plans the merged firm could profitably offer to seniors were constrained by the Medicare alternative. DOJ economists examined cross-market panel data on enrollment by seniors in the different types of health insurance plans. Consistent with the hypothesis that insurance provided by MA plans constitutes a relevant product market, the econometric analysis found that, after controlling for other relevant variables, an increase in the number of MA plan competitors in a geographic market generated higher enrollment in these products. This indicated that increased MA plan competition resulted in more favorable plan terms, in both price and quality dimensions. EAG staff also looked at the competitive impact of different sized firms in the market. EAG's cross-market empirical work found that a competitor's impact in the marketplace increases substantially with firm size.<sup>13</sup>

### **1.3 Market shares and concentration in a relevant market**

20. The Agencies give weight to the merging parties' market shares in a relevant market, the level of concentration, and the change in concentration caused by the merger. Mergers that cause a significant increase in concentration and result in highly concentrated markets are presumed to be likely to enhance market power, but this presumption can be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power.

21. In the aforementioned Chicago Bridge investigation, the FTC produced evidence that the acquisition substantially increased the concentration in four relevant markets to support a prima facie case that the acquisition violated antitrust laws. The opinion of the Court of Appeals for the Fifth Circuit cites evidence that the acquisition increased the Herfindahl-Hirschman Index (HHI) by between 2,635 and 4,999 in each of the four markets, and that post-merger HHIs would be as high as 10,000, which is a complete monopoly.<sup>14</sup>

<sup>11</sup> See <http://www.ftc.gov/os/adjpro/d9324/index.shtm>.

<sup>12</sup> See <http://www.justice.gov/atr/cases/jbsnat.htm>.

<sup>13</sup> See <http://www.justice.gov/atr/cases/unitedhealth2.htm>.

<sup>14</sup> See <http://www.ftc.gov/os/adjpro/d9300/080125opinion.pdf>.

22. In another matter, very high and increasing concentration in commercial health insurance in the Lansing, Michigan area helped to inform DOJ's decision to challenge Blue Cross Blue Shield of Michigan's (Blue Cross-Michigan) 2010 attempt to purchase Physicians Health Plan of Mid-Michigan (PHP). Blue Cross-Michigan and PHP are the two largest providers of commercial health insurance in the Lansing area. Blue Cross-Michigan has almost a 70 percent market share in Lansing, and PHP is its largest competitor with approximately a 20 percent market share. The parties' high shares suggest that they are each other's closest competitors. The results from empirical work on win-loss data by DOJ economists were consistent with this hypothesis. The parties abandoned the merger shortly after being informed of DOJ's decision to challenge it.<sup>15</sup>

23. High and increasing concentration in tin mill products likewise underlay DOJ's concern that the 2006 merger of Mittal Steel with rival producer Arcelor, eliminating Arcelor as an independent competitive force, would significantly increase the risk of anticompetitive conduct between the market's two largest remaining firms. EAG performed an analysis to determine whether these two largest remaining firms could profitably coordinate on a price increase post-merger, taking into account, among other things, the margins of price over marginal cost that the firms would lose on sales captured by non-coordinating fringe players as a result of the price increase, as well as the extent to which these fringe players could expand by filling unused capacity. The potential for fringe expansion was not sufficient to rebut the finding of likely harm from anticompetitive coordination between the two largest remaining firms post-merger.<sup>16</sup>

24. High and increasing concentration also played a role in the FTC's decision to challenge the proposed 2007 acquisition of Prince William Hospital by the Inova Health System in northern Virginia. In this case, the acquiring system had a very large share (65%-70%, depending on the metric used) while the target hospital had a much more modest market share (5%-7%). This disparity in shares suggests that expected price effects due to reduced competition would be highly asymmetric. Consistent with this, the analysis of likely competitive effects performed by FTC economists suggested that the merger would significantly increase the bargaining power of Prince William Hospital in its negotiations with health insurers while having a significantly lower effect on the bargaining power of the Inova Health System. While the competitive effects analysis used in this matter focused on closeness of substitution between the parties, rather than on concentration per se, Inova's very large share strongly suggests that it is likely to be a close substitute for Prince William. Hence, market concentration indices, which were well above the thresholds for which the transaction would be presumed to be anticompetitive, played an important role in the investigation. The parties abandoned the transaction shortly after the FTC announced its challenge.<sup>17</sup>

25. High market shares are not sufficient evidence for a merger challenge, though. In the 2005 merger between Blackboard and WebCT, on the other hand, the parties' very large shares in installed-base course management software implemented by academic institutions raised initial concerns, but these were allayed by further analysis. DOJ economists analyzed accounts that the merging firms had lost in recent competitions. EAG looked at these win-loss data to get a better sense of the extent to which the switching behavior of educational institutions overall, and of specific types of institutions in particular, revealed whether the merging firms' products were next-best substitutes. No more than a small percentage of the accounts lost by Blackboard were lost to WebCT, and vice versa. Accordingly, the parties' large installed-base shares, though artifacts of past success, overstated their competitive significance in future bidding competitions.<sup>18</sup>

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<sup>15</sup> See [http://www.justice.gov/atr/public/press\\_releases/2010/256259.htm](http://www.justice.gov/atr/public/press_releases/2010/256259.htm).

<sup>16</sup> See <http://www.justice.gov/atr/cases/mittal.htm>.

<sup>17</sup> See <http://www.ftc.gov/os/adjpro/d9326/index.shtm>.

<sup>18</sup> See Elizabeth Armington et al., *supra* note 9, p. 307.

26. The FTC's investigation of the 2010 acquisition of AdMob by Google offers another example of when current shares, or recent trajectories of shares, may be poor predictors of future competitive significance. AdMob was a leading mobile advertising network, and Google was a significant and fast-growing rival. Mobile advertising networks place advertisements in applications on mobile devices such as Apple's iPhone, Android and Blackberry smart-phones, and tablet devices. Initially, there was concern that the merger would reduce competition in the terms that mobile advertising networks offer advertisers and application developers, and that Google would reduce its R&D in mobile advertising once it had AdMob's technology. However, staff learned that Apple itself was about to launch its own mobile advertising network and announced its intention to manage its iPhone platform in a way that would provide advantages to its mobile advertising network that would not be available to competitors. This development made the current shares of AdMob and Google, and Google's recent growth, in this market poor indicators of the likely harm to competition. The FTC closed its investigation and allowed Google to acquire AdMob. *See* <http://www.ftc.gov/opa/2010/05/ggladmob.shtm>.

#### **1.4 Substantial head-to-head competition**

27. The Agencies consider whether the merging firms have been, or likely will become absent the merger, substantial head-to-head competitors. Such evidence can be especially relevant for evaluating adverse unilateral effects, which result directly from the loss of that competition. This evidence can also inform market definition.

28. Documents obtained by DOJ in its investigation of the merger between Dean Foods and Foremost revealed that, for many school districts, the merging parties were the only two bidders for school milk contracts in recent years. For other school districts, one of the parties was the only bidder while the other was the next-lowest-cost supplier due to factors such as distance from the processing plant or the nearby presence of an established distribution network.<sup>19</sup>

29. Evidence of head-to-head competition also played a key role in DOJ's 2010 challenge to the merger between Baker Hughes and BJ Services, two of only four companies that operate specially equipped vessels that provide oil and gas companies with vessel stimulation services in the U.S. Gulf of Mexico. For many customers, Baker Hughes and BJ Services ranked first and second in terms of total expenditures on vessel stimulation services. The parties' services also had many characteristics in common. For example, they operated in the same water depths and at many of the same locations. The Department found substantial diversion between the parties. This, together with the high margins the parties earned, implied a high gross upward pricing pressure index (GUPPI), which informed DOJ's conclusion that, absent the negotiated divestiture of vessels, the merger was likely to result in significant unilateral increases in price.<sup>20</sup>

30. Evidence of substantial head-to-head competition played an important role in the FTC's challenge of the Whole Foods/Wild Oats merger. In addition to the aforementioned econometric evidence, documentary evidence indicated that the elimination of a key competitor was a primary motivation of the transaction. Whole Foods' documents identified Wild Oats as its closest competitor, and that eliminating the competition imposed by Wild Oats would enable it to raise price, increase profitability, and would greatly reduce the likelihood that a third-party food retailer could reposition itself to compete with Whole Foods by acquiring Wild Oats.

31. The FTC's 2003 investigation of General Electric Co.'s proposed acquisition of Agfa NDT Inc. from Agfa-Gevaert N.V. also found evidence of head-to-head competition between the merging parties.

<sup>19</sup> *See* <http://www.justice.gov/atr/cases/deanfoods.htm>.

<sup>20</sup> *See* <http://www.justice.gov/atr/cases/baker.htm>.

The two largest suppliers of ultrasonic non-destructive testing equipment in the United States were subsidiaries of these companies. The combined firm would have had a market share in excess of 70% in each of several relevant markets. The closeness of competition went beyond high concentration ratios, with documentary and testimonial evidence that the parties' products were often the first and second choices of their customers. The Commission obtained a consent order requiring divestiture of GE's NDT business.<sup>21</sup>

### **1.5 Disruptive role of a merging party**

32. The Agencies consider whether a merger may lessen competition by eliminating a "maverick" firm, i.e., a firm that plays a disruptive role in the market to the benefit of customers. For example, if one of the merging firms has a strong incumbency position and the other merging firm threatens to disrupt market conditions with a new technology or business model, their merger can involve the loss of actual or potential competition.

33. Likewise, one of the merging firms may have the incentive to take the lead in price cutting or other competitive conduct or to resist increases in industry prices. A firm that may discipline prices based on its ability and incentive to expand production rapidly using available capacity also can be a maverick, as can a firm that has often resisted otherwise prevailing industry norms to cooperate on price setting or other terms of competition.

34. Dean Foods' acquisition of rival Foremost's milk processing plants, challenged by DOJ in 2010, illustrates how revealing a party's internal documents can be about the nature of competitive interactions. Dean's internal memoranda referred to Foremost in terms suggesting that Foremost was a maverick whose quest for greater plant utilization threatened existing margins in fluid milk. Those same memoranda characterized Dean's other rivals as "good competitors" whose plants were close to full capacity and who therefore lacked Foremost's aggressive pricing incentives.<sup>22</sup>

## **2. Sources of evidence**

35. The Agencies consider many sources of evidence in their merger analysis. The most common sources of reasonably available and reliable evidence are the merging parties, customers, other industry participants, and industry observers.

### **2.1 Merging parties**

36. The Agencies typically obtain substantial information from the merging parties. This information can take the form of documents, testimony, or data, and can consist of descriptions of competitively relevant conditions or reflect actual business conduct and decisions.

37. Documents created in the normal course of business are more probative than documents created as advocacy materials in merger review. Similarly, documents describing industry conditions can be informative regarding the operation of the market and how a firm identifies and assesses its rivals, particularly when business decisions are made in reliance on the accuracy of those descriptions. This is aptly illustrated by the discussions of the Miller-Coors (below), Staples-Office Depot (above), and Dean Foods-Foremost (above) cases.<sup>23</sup>

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<sup>21</sup> See <http://www.ftc.gov/opa/2003/12/geagfa.htm>.

<sup>22</sup> See <http://www.justice.gov/atr/cases/deanfoods.htm>.

<sup>23</sup> See ¶¶ 39, 16, and 28 and 34, *infra*.



38. The business decisions taken by the merging firms also can be informative about industry conditions. For example, if a firm sets price well above incremental cost, that normally indicates either that the firm believes its customers are not highly sensitive to price (which is not in itself of antitrust concern) or that the firm and its rivals are engaged in coordinated interaction. Incremental cost depends on the relevant increment in output as well as on the time period involved, and in the case of large increments and sustained changes in output it may include some costs that would be fixed for smaller increments of output or shorter time periods.

39. To assess the potential for the 2008 venture between beer producers Miller and Coors to result in unilateral price increases, DOJ economists ran merger simulations based on estimates from a mixed logit demand system. The analysis revealed that by far the greatest competition facing both Miller and Coors came not from each other but from Anheuser-Busch.<sup>24</sup>

40. Explicit or implicit evidence that the merging parties intend to raise prices, reduce output or capacity, reduce product quality or variety, withdraw products or delay their introduction, or curtail research and development efforts after the merger, or explicit or implicit evidence that the ability to engage in such conduct motivated the merger, can be highly informative in evaluating the likely effects of a merger. This is aptly illustrated by the foregoing discussion of the transactions involving the Charleston Gazette and the Charleston Daily Mail, and Whole Foods/Wild Oats.

41. Another example is given in the FTC's challenge of the 2008 acquisition of the Center for Advanced Imaging (CAI) and the Center for Surgical Excellence (CSE) by the Carilion Clinic. CAI and CSE were free-standing clinics that competed with Carilion on a variety of outpatient services. CAI offered outpatient imaging services similar to Carilion's, but at a lower price, and offered faster, more flexible scheduling (including weekends), and a shorter turnaround time in reporting results to physicians. Carilion noted that CAI's pricing and quality were a significant competitive threat and had directly affected Carilion's volumes. The acquisition, therefore, would limit Carilion's incentives to compete with CAI in both price and non-price attributes. The parties abandoned the transaction shortly after the FTC announced its challenge. *See* <http://www.ftc.gov/os/adjpro/d9338/index.shtm>.

42. In the FTC's challenge of Dun & Bradstreet Corporation's 2009 acquisition of its nearest rival in the education marketing business, Quality Educational Data, the parties submitted evidence of high profit margins in support of a critical loss argument to support the contention that a post-merger price increase would be unprofitable. In accordance with the 2010 Horizontal Merger Guidelines, the FTC found that absent information to the contrary, high margins should be taken as evidence that the firms face relatively inelastic demand, implying a price increase need not result in a sufficiently large loss in sales to offset the profitability of higher prices. To the contrary, the Commission found that the weight of the evidence suggested that a post-merger price increase would be profitable.<sup>25</sup>

43. The 2008 merger between Abitibi and Bowater, the two largest producers of newsprint in North America, raised concerns that the loss of competition would give the merged firm an incentive to withdraw capacity. The evidence made clear that the level of capacity utilization is a key driver of the price of newsprint. In analyzing the merger, DOJ economists developed an econometric model to analyze a firm's unilateral incentive to close capacity, using data from the merging parties. The model predicted that the merged firm would have an incentive to close capacity above and beyond the capacity the parties would

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<sup>24</sup> *See* [http://www.justice.gov/atr/public/press\\_releases/2008/233845.htm](http://www.justice.gov/atr/public/press_releases/2008/233845.htm).

<sup>25</sup> *See* <http://www.ftc.gov/os/adjpro/d9342/100910dunbradstreetanal.pdf>.

have withdrawn individually absent the merger in the face of declining demand. DOJ resolved this competitive concern through a negotiated divestiture that restored incentives to maintain capacity.<sup>26</sup>

44. Similar issues arose in the merger of Altivity and GPC. Both Altivity and GPC produced coated recycled boxboard (CRB), which is used to make cereal boxes and similar packaging products. GPC, however, also produced roughly half of the North American supply of the closest substitute for CRB. The sole rival producer of that substitute was near capacity. DOJ's EAG developed an econometric model modified to allow for the fact that closing CRB capacity would affect the merged firm's profits on both CRB and the closest substitute. DOJ concluded that the transaction would lead to an anticompetitive withdrawal of CRB capacity and negotiated a divestiture that restored competition.<sup>27</sup>

45. The Agencies likewise look for reliable evidence that the merger is likely to result in efficiencies. The Agencies give careful consideration to the views of individuals whose responsibilities, expertise, and experience relating to the issues in question provide particular indicia of reliability.

46. In the 2008 venture between beer producers Miller and Coors, for example, documents that Miller had produced in the normal course of business provided DOJ with credible evidence on freight efficiencies likely to be realized as a result of the transaction. Miller had, prior to its decision to join with Coors, commissioned a business consulting firm to analyze various potential industry combinations. The consulting firm developed a model of freight efficiencies that could be realized by each such combination, through redistribution of the merged firm's production across its combined production facilities. DOJ examined the consulting firm's modeling approach and found its resulting estimates to be reasonable.<sup>28</sup>

47. In 2004, efficiency claims played a key role in the FTC's decision not to challenge Genzyme Corporation's acquisition of Novazyme Pharmaceuticals, Inc. This merger joined the only two firms developing the enzyme replacement therapy to treat Pompe disease. Genzyme asserted that it had sufficient incentive to bring its Pompe treatment to market as soon as possible, regardless of whether it was in a race with Novazyme. Furthermore, Genzyme claimed that the combination of the skills and knowledge of the two firms would hasten the development of such a treatment. The Commission voted to close the investigation without challenging the transaction due, in part, to the evidence supporting the claim that the merger would accelerate development of the drug.<sup>29</sup>

48. The 2008 merger of airlines Northwest and Delta posed the prospect of realizing consumer benefits by facilitating schedule improvements. DOJ's EAG conducted an analysis using a number of different hypothetical post-merger flight schedules, including one produced by the parties as part of what appeared to be a legitimate business effort to assess post-merger opportunities, as well as the actual "but-for" schedules for October 2008 that the two carriers had published the previous June. EAG compared the forecasted demand for the merged carrier under plausible post-merger schedules with the but-for schedules. Using demand elasticity estimates consistent with the empirical literature on the airline industry, the economists were able to calculate the change in consumer welfare implied by the predicted traffic changes. The best estimates of the likely increases in consumer welfare from improved scheduling, though modest, significantly exceeded the potential harm to consumers in aggregate on all overlap routes served by the merging carriers.<sup>30</sup>

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<sup>26</sup> See <http://www.justice.gov/atr/cases/abitibi.htm>.

<sup>27</sup> See <http://www.justice.gov/atr/cases/alti.htm>.

<sup>28</sup> See [http://www.justice.gov/atr/public/press\\_releases/2008/233845.htm](http://www.justice.gov/atr/public/press_releases/2008/233845.htm).

<sup>29</sup> See <http://www.ftc.gov/opa/2004/01/genzyme.shtm>.

<sup>30</sup> See [http://www.justice.gov/atr/public/press\\_releases/2008/238849.htm](http://www.justice.gov/atr/public/press_releases/2008/238849.htm).

49. The financial terms of a transaction may also be informative regarding its competitive effects. For example, a purchase price in excess of the acquired firm's stand-alone market value may indicate that the acquiring firm is paying a premium because it expects to be able to reduce competition or to achieve efficiencies.

## 2.2 *Customers*

50. Customers can provide a variety of information to the Agencies, ranging from information about their own purchasing behavior and choices to their views about the effects of the merger itself.

51. Information from customers about how they would likely respond to a price increase, and the relative attractiveness of different products or suppliers, may be highly relevant, especially when corroborated by other evidence such as historical purchasing patterns and practices. Customers also can provide valuable information about the impact of historical events such as entry by a new supplier.

52. The conclusions of well-informed and sophisticated customers on the likely impact of the merger itself can also help the Agencies investigate competitive effects, because customers typically feel the consequences of both competitively beneficial and competitively harmful mergers. In evaluating such evidence, the Agencies are mindful that customers may oppose, or favor, a merger for reasons unrelated to the antitrust issues raised by that merger.

53. For example, in DOJ's challenge of Microsemi's acquisition of Semicoa assets (discussed above), sophisticated customers provided critical information regarding the importance of certain product and service features, historical events relevant to the competitive effects analysis, and prospects for entry.

54. Also, FTC staff determined that information from purchasers of ready-mix concrete in Tucson, Arizona suggested that the relevant market in a proposed merger between Cemex and RMC Group included just three independent ready-mix concrete suppliers in the Tucson area. Concern over potential coordinated effects due to the merger in the Tucson area led the Commission to stipulate that Cemex must divest RMC's Tucson-area ready-mix concrete assets as part of a consent agreement.<sup>31</sup>

55. When some customers express concerns about the competitive effects of a merger while others view the merger as beneficial or neutral, the Agencies take account of this divergence in using the information provided by customers and consider the likely reasons for the divergence of views. For example, if for regulatory reasons some customers cannot buy imported products while others can, a merger between domestic suppliers may harm the former customers even if it leaves the more flexible customers unharmed.

56. An example of this is the FTC's concern that the 2009 proposed merger of two nationwide chains of travel centers, Pilot and Flying J, would allow the merged firm to increase the price of diesel fuel charged to long-haul truck fleets. Notably, the complaint did not allege potential harm to other customers of the travel centers, such as owners of short-haul truck fleets who may be able to efficiently negotiate with local travel centers or other sellers of diesel fuel. Consequently, the consent agreement accepted by the Commission focused on ensuring that the revised terms of the transaction would protect the interest of long-haul truck fleets.<sup>32</sup>

57. When direct customers of the merging firms compete against one another in a downstream market, their interests may not be aligned with the interests of final consumers, especially if the direct

<sup>31</sup> See <http://www.ftc.gov/opa/2005/02/cemex.htm>.

<sup>32</sup> See <http://www.ftc.gov/os/caselist/0910125/index.shtm>.

customers expect to pass on any anticompetitive price increase. A customer that is protected from adverse competitive effects by a long-term contract, or otherwise relatively immune from the merger's harmful effects, may even welcome an anticompetitive merger that provides that customer with a competitive advantage over its downstream rivals.

### **2.3 *Other industry participants and observers***

58. Suppliers, indirect customers, distributors, other industry participants, and industry analysts can also provide information helpful to a merger inquiry. The interests of firms selling products complementary to those offered by the merging firms often are well aligned with those of customers, making their informed views valuable.

59. Economic analysis of mergers at the agencies often includes econometric analysis of data collected by third party data vendors including point of sales data. This includes data sources that collect information from grocery store checkout scanners, on subscriptions and advertising insertions from newspapers, gasoline and diesel fuel sales from vehicle fleet sales cards, and pharmaceutical prescription dispensing systems.

60. Information from firms that are rivals to the merging parties can help illuminate how the market operates. The interests of rival firms often diverge from the interests of customers, since customers normally lose, but rival firms gain, if the merged entity raises its prices. For that reason, the Agencies do not routinely rely on the overall views of rival firms regarding the competitive effects of the merger. However, rival firms may provide relevant facts, and even their overall views may be instructive, especially in cases where the Agencies are concerned that the merged entity may engage in exclusionary conduct.

61. Findings in published academic research can also inform the Agencies' merger analyses. In DOJ's investigation of the Mittal-Arcelor merger, discussed above, as well in the 2004 merger between the electric and gas utilities Exelon and PSEG,<sup>33</sup> published estimates of industry demand elasticities informed the Department's review of competitive issues.

62. DOJ economists have used the publicly-available DB1B airline ticket database maintained by the U.S. Department of Transportation to analyze how variation in competitive conditions affects the pricing of tickets on transatlantic flights. The econometric evidence shows that a reduction in the number of competing airlines offering nonstop transatlantic flights can result in large, statistically significant price increases.

## **3. The role of economists**

63. The remainder of this paper explains briefly the use of economists at the Agencies, including how they are organized within each agency and how their skills are employed in the course of investigations.

### **3.1 *The structure of the antitrust division's EAG***

64. The economics arm of the Antitrust Division is its Economic Analysis Group ("EAG"). This is a group of approximately 50 career economists and a small number of financial analysts, supported by research assistants, interns, and computer, administrative, and secretarial support staff. The ratio of economists to attorneys in the Division's has varied over time, but is currently approximately 1:6. The economists work primarily on merger investigations, allegations of monopolization or anticompetitive

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<sup>33</sup> See <http://www.justice.gov/atr/cases/exelon.htm>.

monopoly maintenance, and competition advocacy—which typically involves commenting formally or informally on legislative proposals or regulatory proceedings at other federal agencies. EAG also provides support during litigation and assists in criminal investigations and trials. In addition, it has a very active research program and its economists frequently make presentations at conferences and publish in scholarly journals.

65. There are a total of six EAG managers: a chief and assistant chief for each of three sections. They are supervised by two economists in the Division's Front Office. The first is a career Division economist who serves as Economics Director. The second, and the Division's highest ranking economist, is the Deputy Assistant Attorney General for Economics. The latter is a political appointee with a professional background in industrial organization and antitrust chosen from academia for a term of, typically, two years.

66. Despite its organization into three sections, EAG operates essentially as one integrated section with six managers. The staff operates as a common pool, working for any or all of the managers. We have found this arrangement to be more efficient than assigning individual staff to specific managers, specific industries, or specific legal sections. The approach allows management to take advantage of the staff's availability and expertise when making assignments, and permits each economist to work with multiple legal sections and multiple EAG managers, allowing maximum flexibility either to specialize or to diversify the work he or she handles. In essence, we view the benefits of added flexibility—including the personal and professional satisfaction to economists who value diversity—to exceed those of rigid specialization.

67. The six EAG managers specialize somewhat by industry, with each sharing primary responsibility for a portion of the matters within two (of the Division's six) legal sections. This partial specialization allows the managers to develop industry-specific human capital while at the same time allowing for variety in management assignments and flexibility in dividing up EAG's overall workload across managers.

68. The management structure in EAG is relatively flat, with the managers dividing the work amongst themselves rather than, as is the case in many of the Division's legal sections, having the Chief and Assistant Chief work together on the same investigations. The managers supervise the economists assigned to work on their investigations, and they report regularly to the Economics Director and/or the Deputy for Economics. The Director and Deputy tend to divide primary responsibility amongst themselves for particular investigations, although they frequently work together and interact regularly with the Division's Legal Deputies and with the Assistant Attorney General for Antitrust. They maintain an involvement throughout the progress of all significant investigations, receiving weekly reports and having weekly meetings with management to discuss resource allocation, staffing, and the status and economic analysis of active matters.

### **3.2 *The structure of the FTC's Bureau of Economics***

69. The Federal Trade Commission is organized into three functional bureaus. The Bureau of Consumer Protection and the Bureau of Competition are comprised of attorneys responsible for the FTC's consumer protection and competition missions. The third bureau, the Bureau of Economics (BE), contains the economists responsible for supporting both missions.

70. The approximately 65 non-managerial career staff economists in BE are divided into two antitrust divisions with about 45 economists and one consumer protection division with about 20 economists. The bureau also has a division of about 3 economists that coordinates and supports the applied research undertaken by these other groups of economists. More than two-thirds of the FTC's economists

are doing antitrust work, including analysis of mergers and horizontal restraints as well as conducting research relevant to the FTC's overall mission. The Bureau contains also a number of research analysts, financial analysts, and administrative and secretarial support staff.

71. The head of BE is the Bureau Director, who is appointed by the Chairman of the FTC and serves at the Chairman's pleasure. There are three Deputy Directors with responsibility for the antitrust mission, the consumer protection mission, and the R&D mission.

72. Within the antitrust group there are two line divisions that are dedicated to antitrust work, each managed by an Assistant Director who reports to the Deputy Director for Antitrust (and ultimately the Bureau Director). Each division has two Deputy Assistant Directors who, along with the Assistant Director, manage cases. Each of the two divisions is roughly the same size with about 20 economists. They are also each roughly the same size as one of the legal divisions in the Bureau of Competition, and experience suggests that this is a fairly efficient size from a managerial perspective. The organization of the antitrust economists has alternated over time between having all housed in one division with six managers, and the current system of two separate divisions. While flexibility in assignments is maximized with the one division system, the FTC has found that its current two division system preserves flexibility and diversity of experiences for the staff economists while being more managerially efficient than the one division system.

73. Substantively, both BE antitrust divisions perform the same kinds of economic analysis, but there is some specialization according to industry. This specialization helps to maintain institutional memory and expertise in certain industries which are of repeated focus of Commission concerns (e.g. petroleum, health care services, pharmaceuticals, supermarkets). This specialization mirrors some of the industry specialization of the BC divisions. Economists, however are not segregated by type of competitive practice (e.g. mergers and non-merger competitive practices).

74. Generally, for each case, a staff economist is assigned fairly early. Either an Assistant Director or a Deputy Assistant Director is assigned to manage the case. Throughout the investigation or litigation, the staff economist interacts extensively with the legal staff assigned to the case as well as the manager assigned to the case and with senior BE management. Most cases have only a single staff economist assigned. However, for big cases or cases headed toward litigation, multiple economists may be assigned.

75. EAG and BE managers are in charge of the allocation of economic resources within their agencies. They make staff assignments to cases or tasks and directly manage the work of the economists and all economic projects or analyses. They also control the hiring of economics staff, subject, of course, to overall budget constraints and government hiring regulations. Performance evaluations, promotions, and bonuses for economic staff are determined by EAG and BE management.

### ***3.3 The role of economists and economics in an investigation***

76. Effective and efficient economic analysis begins with identification of a logically consistent candidate theory, or theories, of competitive harm. This is closely followed by the identification of evidence or information necessary to test the various potential theories and help focus the investigation on obtaining this information. Evidence of actual marketplace conduct fitting a carefully delineated candidate theory of harm, particularly any relevant historical empirical evidence, can be far more telling.

77. Shortly after receiving pre-merger notification of proposed acquisitions that seem potentially troublesome, the assigned economist, working with others on the investigation, is tasked with focusing the investigation. At least one economist and typically only one--unless the matter is highly complex and/or involves sophisticated econometric work--is assigned at the outset to all investigations.

78. In the Antitrust Division, economists formally focus investigations early on not merely through discussion, but by preparing a relatively short, albeit formal, “Issues In” memo. These memos, which incorporate input from the attorneys working with EAG on the matter, provide an overview of the basic facts (names of parties, products they produce, where they produce and sell them), a statement of the candidate theory (or theories) of harm, a discussion of the types of evidence that would tend to support or refute these theories, and an indication of projects contemplated to help form a case recommendation. FTC economists compile similar information in their antitrust investigations, most formally in the context of merger-screening memos for merger investigations.

79. With respect to merger investigations specifically, both agencies have a formal process for determining whether a request for additional information (second request) should be issued. At this point, which by law must be no later than thirty days from the filing of a merger notification form, the economist will often write a short memo outlining the known basic facts, identifying the candidate theories, outlining the evidence that needs to be gathered in the investigation to test the theories, and recommending whether to continue the investigation. Together with a recommendation memo from the legal staff, this helps provide a basis for determining next steps.

80. Economists in both agencies are involved in identifying all types of relevant evidence that may help test candidate theories -- particularly, though not exclusively, quantitative evidence. For example, if we are examining a proposed merger between two of several firms selling differentiated products throughout the country to a large number of small consumers, a natural investigative focus would be on possible unilateral effects. Relevant economic evidence would be the extent to which product offerings of the merging firms are the first and second choices for consumers. Contemplated projects might include collecting and analyzing scanner data to determine historic substitution patterns in response to changes in relative prices. Obtaining through compulsory process internal documents, such as surveys conducted by the merging parties (or others in the industry) in their normal course of business, would also be of interest. The agencies may, at times, even propose devising and conducting a survey of their own.

### ***3.4 Working closely throughout with economists hired by the parties***

81. In the course of an investigation the economists regularly update and modify their theories and evidence as more information becomes available. In virtually all investigations of significance the parties under investigation will have retained their own consulting or testifying economists. As a rule, the agencies’ economists try to work closely with these analysts throughout the course of the investigation; sharing candidate theories of harm and the preliminary results of their empirical analyses (consistent with the confidentiality obligations made to obtain data).

82. This is particularly important in matters where data analysis plays an important role. Early interaction helps to minimize the parties’ burdens of complying with the agencies’ data requests and helps agency economists understand what data are available and how suitable they are for the analysis the economists are considering.

83. Agency staff interact closely with the parties’ attorneys and economists to learn about any deficiencies in the agencies’ theories or evidence from those who may be in the best position, and who surely have the strongest incentive, to know. Interaction with outside economists also helps inform agency staff of the type and effectiveness of defenses they will face if and when the matter proceeds to litigation.

### ***3.5 Use of outside economists***

84. Both DOJ and the FTC frequently retain outside economists to prepare and serve as expert witnesses in matters likely to go to trial, although, not infrequently, agency staff is used in this role as well.

The agencies seldom, though occasionally, retain outside experts purely as “consultants.” In circumstances where an outside economist has particular expertise not available in-house and the investigation requires those particular skills, the agencies may depart from their usual custom; in the vast majority of situations, however, the agencies rely on their professional career staff.