Economics at the FTC: Data Intensive Mergers and Policy R&D

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Abstract:
Economics at the Federal Trade Commission (FTC) supports both the competition and consumer protection missions of the agency. In this year's essay we discuss a range of activities focusing on data-intensive antitrust cases in the hospital and consumer products industries. We also discuss our most recent work on gasoline pricing. Policy-focused research and competition advocacy takes center stage as we discuss some health care advocacy work in the administration of pharmaceutical insurance benefits and efforts to understand the real estate business more completely. Finally, we describe our efforts to quantify the extent of "identity theft".

Keywords: antitrust, consumer protection, FTC, hospitals, identity theft, mergers, petroleum, pharmaceuticals, real estate.

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I. Introduction

The Federal Trade Commission's (FTC) Bureau of Economics (BE) is composed of 70 PhD-level economists, a small cadre of accountants, and 25 other staff who support the FTC's two missions of promoting competition (antitrust) and protecting consumers. The bulk of the work done by the Bureau is related directly to law enforcement activities, such as case investigation or litigation support. Other activities involve policy analysis and research related to the missions. That research helps support our efforts in promoting competition-based policies at the state and federal levels and in fostering coordination in policy development and law enforcement around the globe.

Last year's contribution to the Antitrust and Regulatory Update program focused heavily on economists' roles in antitrust cases and research in the oil industry. We continue to work diligently on issues related to the oil industry (and we will later mention one significant piece of that work), but this year we will focus more on health care and consumer-industry competition issues along with some consumer protection work on identity theft.

II. Competition Policy Issues

In the March 2006 Commentary on the Horizontal Merger Guidelines, the FTC and Department of Justice (DOJ) Antitrust Division provided guidance regarding how the two agencies implement the Guidelines' analysis and provided examples of actual recent investigations to illustrate the analysis. One of the changes that occurred over the past two decades is the increased reliance on empirical evidence from large data sets to test various propositions related to the analysis of a merger. For example, scanner data are used, when available, to examine the effects of price changes of one good on the quantity sold of another good. The Commentary discusses the importance of data analysis in the definition of markets (pp. 10–14) and discusses several instances in which the agencies simulated the effects of a merger on sales and prices of the merging firms and nearby rivals (pp. 27–31).[1] Below we discuss two recent merger investigations where large-scale empirical work played an important role.

[1] See http://www.ftc.gov/os/2006/03/CommentaryontheHorizontalMergerGuidelinesMarch 2006.pdf

1. HOSPITAL MERGERS: THE EVANSTON ANALYSIS

From 1995 through 1999, the FTC, the DOJ, and the California Attorney General's Office together lost six straight hospital merger challenges.[2] In most of these cases, the courts reasoned that it was unlikely that the merging parties would increase prices anti-competitively because patients and their health insurers would continue to have many hospital choices. This conclusion was based on findings of relatively large geographic markets for hospital services, which in turn were based on the observation that many patients travel long distances for hospital care. In one case (Butterworth), the court also reasoned that the merging parties would not increase price because they were non-profit organizations that presumably would not exercise market power even if obtained, given their focus on community service.

The courts' reasoning in these cases was roundly criticized by many academic industrial organization economists as well as health economists.[3] The courts' findings of relatively large geographic markets were based on the assumption that patients traveling long distances to the hospitals in question would switch to other hospitals in response to a small nontransitory price increase. However, many economists noted that insured patients rarely face a change in their relative out-of-pocket costs when a hospital in their health plan's network increases its price. These patients, seeing no change in the relative price of hospitals in their network, are unlikely to switch hospitals in response to a price increase unless their health plan drops the hospital from its network. These scholars argue that the key to market definition is the first stage of competition: the negotiation between the health plan and the hospitals for inclusion in the health plan's network. When viewed through this prism, these authors argue, hospital geographic markets are typically smaller than implied by the techniques (e.g., the Elzinga-Hogarty test) used by the courts in previous hospital merger challenges.[4] Even economists who assume some effective in-network price elasticity for hospital patients (i.e., health plans can, at least imperfectly, steer patients away from higher priced hospitals) find that hospital geographic markets are much

[2] FTC v. Freeman Hospital (Joplin, MO), 1995; U.S. v. Mercy Health Services (Dubuque, IA), 1995; FTC v. Butterworth Health (Grand Rapids, MI), 1996; U.S. v. Long Island Jewish Medical Center (Long Island, NY), 1997; FTC v. Tenet Healthcare (Poplar Bluff, MO), 1998; State of California v. Sutter Health System (East Bay, CA) 1999.

[3] See, for instance, Capps et al. (2002).

[4] See, for instance, Town and Vistnes (2001) and Capps et al. (2003).

smaller than the Elzinga-Hogarty test would imply.[5] Many health economists also questioned the conclusion that non-profit hospitals would not exercise market power if obtained.[6]

In an attempt to test these opposing viewpoints and better understand hospital competition, the Commission announced in 2002 that it would examine certain consummated hospital mergers. Two of the investigations involved hospitals in the northern suburbs of Chicago in early 2000: the merger of Provena St. Therese Medical Center and Victory Memorial Hospital in Waukegan, and the merger of Evanston Northwestern Health-care (ENH) in Evanston and Highland Park Hospital in Highland Park.[7]

Hospitals and managed care organizations (MCOs) conduct negotiations to determine the price of hospital services. The gains from trade are split between these parties. A merger of competing hospitals can change this negotiated price through efficiencies (e.g., either lower costs from scale or scope gains, or improved quality) or additional market power (e.g., if MCOs have less options to form networks following the merger). If it is possible to observe the post-merger market, then the net effect of merger-induced production efficiencies, quality changes, and reduced competition becomes an empirical issue.

In many industries, even those that are very competitive, prices increase over time (e.g., because of increases in the costs of inputs that cannot be completely offset by increases in productivity). A simple observation of a post-merger price increase does not necessarily imply an increase in market power. To test for an increase in market power, one needs to measure the difference between the post-merger price increase and the price increase that would have occurred absent the merger. Since the latter cannot be observed, proxies for this 'but-for' price increase are needed. There is general agreement that the best proxy for the but-for price increase is the con-temporaneous price increase that occurred at non-merging hospitals that are similar to the

[5] Gaynor and Vogt (2003).
[6] See, for instance, Dranove and Ludwick (1999), Keeler et al. (1999), Vita and Sacher (2001), and Gaynor and Vogt (2003).
[7] This survey is by no means exhaustive of the relevant issues associated with the retrospective study of hospital mergers. In particular, there are many specific issues that have arisen in the ENH administrative trial that we will not discuss. In addition, discussion of the detailed results of the price studies has to await the conclusion of the ENH appeal of the administrative law judge's decision to the full Commission for a final agency decision.

merging hospitals in most other respects.[8] Thus, the key to measuring the relevant difference in price differences is the selection of the appropriate control group of hospitals.

Hospitals are highly differentiated across many dimensions, some observable (e.g., number of beds, size of the teaching program) and others difficult to measure (e.g., illness severity of the patient population, perceived quality). With this multidimensional differentiation, it is difficult to select the group of non-merging hospitals that is "most similar" to a merging hospital. For the retrospective studies of the Evanston and Waukegan mergers, multiple control groups were used.[9]

Despite the differentiation of hospitals that makes the selection of a control group difficult, the 'difference in differences' method of isolating the price effect of the merger has the inherent advantage of 'differencing out' any unexplained, but hospital-specific variation in prices. For instance, two hospitals may be similar with respect to many observable characteristics, but still have vastly different prices because of other factors (perceived quality, ease of access, etc.) that are hard to quantify. To the extent that these other factors do not change over time, the comparison of price changes (as opposed to a purely cross-sectional comparison of price levels) will control for these differences. The retrospective studies of Evanston and Waukegan employed independent variables to control for other factors that are known to vary across hospitals and over time including various measures of patient mix and illness severity, payer mix (e.g., the share of the hospital's patients that are covered by Medicare), and teaching intensity.[10]

[8] For instance, see, Vita and Sacher (2001).

[9] In other studies with multidimensional differentiation, including other hospital merger studies, the preferred method for selecting the control group is propensity scoring: selecting as the control group those hospitals that have a propensity to merge that is similar to that of the merging hospitals, but that did not merge. This propensity is determined by a probit regression over hospital characteristics, for instance. For an example, see Dranove and Lindrooth (2003). This method is justified when analyzing multiple hospital mergers simultaneously, but it does not work well when mergers are analyzed individually. This is because propensity scoring can result in the selection of hospitals that are not similar to the merging hospitals in any dimension, as well as those that are similar in most dimensions. Propensity scoring simply provides a weighting system for hospital characteristics. Thus, it is possible for hospitals that have much 'less' of some characteristics and much 'more' of others (compared to the merging hospital) to have a similar propensity to merge as hospitals that are similar to the merging hospital.

[10] Quality is also an important determinant of price that may change at different rates across hospitals. Since there is no accepted metric of hospital quality that could be included in a difference-in-differences regression, changes in quality must be evaluated separately. See below for a discussion of quality measurement issues in the context of the ENH trial.

The Evanston and Waukegan retrospective studies were completed in early 2004. The Waukegan study found no evidence of a price increase relative to various groups of control hospitals, and in July 2004 the FTC closed its investigation of that transaction.

The analysis of the Evanston/Highland Park merger, however, revealed a price increase larger than that of any control group. Changes in patient mix and severity, payer mix, and teaching intensity could not explain this difference.[11] A difference in differences analysis of many quality measures (e.g., risk-adjusted mortality and complication rates) revealed no evidence of a quality increase at ENH relative to other similar hospitals. On February 10, 2004 the FTC issued a complaint challenging the transaction.

The trial was held before an administrative law judge in the winter and spring of 2005. Both ENH and the FTC litigation team found that the post-merger price increase was larger than the price increases at control hospitals, although ENH's economic expert's estimate of this difference (9–14 percentage points) was slightly smaller than the estimate of the Complaint Counsel's (i.e., FTC staff's) economic expert (12–18 percentage points).[12] Complaint Counsel (CC) argued that this relative price increase was evidence that ENH had gained market power through its merger with Highland Park and exercised this market power in its negotiations with MCOs.

ENH argued that its market power did not increase significantly as a result of the merger. ENH argued that the relative price increase resulted instead from an increase in quality and "learning about demand." ENH's quality argument centered on what are often referred to as structural indicators of quality: capital improvements that have been shown to improve patient outcomes. ENH highlighted the many structural improvements made to Highland Park after the merger as evidence that quality improved after the merger. CC responded that these structural improvements did not improve the outcomes of patient care more than the general trend of hospital quality improvement throughout the Chicago area.

[11] US FTC Docket No. 9315, In the Matter of Evanston Northwestern Healthcare Corporation, Initial Decision by Stephen J. McGuire, October 20, 2005, pp. 76–80.

[12] Professor Deborah Haas-Wilson of Smith College was the Complaint Counsel's primary economic expert during the trial. Professor Jonathan Baker of American University conducted the difference-in-differences analysis of prices for ENH.

ENH also argued that its post-merger price increase reflected its learning about the MCOs' demand for its services and that it had been underpricing its services before the merger. Thus, the observed price increases were simply an effort to bring their prices up to the pre-merger optimal level.

In a decision released in October 2005, the FTC administrative law judge ordered the divestiture of Highland Park Hospital by ENH. At the time of this writing, the decision is under appeal before the full Commission for a final agency determination.

2. PROCTER & GAMBLE'S ACQUISITION OF GILLETTE: TOOTHBRUSHES, DEODORANTS, AND TEETH WHITENERS

In January 2005, the Procter & Gamble Company (P&G) announced its proposal to acquire the Gillette Company for $57 billion. Both companies sell a portfolio of differentiated consumer products including oral care and health and beauty products. After an extensive investigation, the FTC concluded that the acquisition might cause a significant decrease in competition in (a) adult battery-powered toothbrushes, (b) at-home teeth whitening products, (c) men's antiperspirants/deodorants, and (d) rechargeable toothbrushes.[13] Below, we briefly describe some of the key empirical analyses that BE conducted to assess the competitive effects of the merger in the first three of these four markets.[14]

In adult battery-powered toothbrushes, P&G sells a line of products under the Crest SpinBrush brand while Gillette sells under the Oral-B CrossAction Power and Oral-B/Braun brands. The principle product market question was whether battery toothbrushes are in the same antitrust market, as defined in the *Horizontal Merger Guidelines*,[15] as manual and rechargeable toothbrushes.[16] In such a market, a combined P&G and Gillette would have a U.S. market share

[13] In rechargeable toothbrushes, P&G's involvement in the market was indirect through a joint venture with Philips (i.e., the Crest Sonicare IntelliClean System).
[14] Due to issues regarding confidentiality, the discussion will not contain specific results but rather general findings.
[15] U.S. Department of Justice and the Federal Trade Commission, Horizontal Merger Guidelines, issued April 2, 1992, revised, April 8, 1997.
[16] There were other product market issues including whether adult and kids toothbrushes are in the same product market. Ultimately, we concluded that they are not. Kids toothbrushes are primarily differentiated by the design of the toothbrush handle, which often involves a licensed cartoon character (e.g., Spider-Man). Since characters are more important than brands or technical features of the brush head, the barriers to entry are much lower for kids' toothbrushes. The following discussion focuses solely on adult toothbrushes.

of over 85 percent. Despite this high level of concentration, the most relevant exercise was to determine to what degree P&G's SpinBrush and Gillette's CrossAction Power constrained each other's prices. For this assessment, BE used retail scanner data provided by the parties. During the sample period, both companies had a number of significant product introductions and recalls that provide a 'natural experiment' for the effects of competition between the two firms.[17] Specifically, in 2002 and 2003, P&G and Gillette each introduced a line of battery toothbrushes; subsequently, in 2004 and 2005 the product lines were voluntarily recalled due to safety concerns.[18] These events provided an opportunity to assess the impact of entry and exit on existing or remaining battery toothbrushes, respectively. The results indicated that a significant fraction of consumers switched between P&G and Gillette products depending on their availability, which demonstrated significant competitive interaction between the two companies' battery-toothbrush brands.[19]

In men's antiperspirant/deodorants (APDOs), P&G's brand is Old Spice, and Gillette's brands are Right Guard and Gillette Series. Within each brand, there is a line of products that contains different combinations of (i) functionality (i.e., antiperspirant or deodorant)[20] and (ii) form (i.e., stick, soft solid/gel, aerosol, or roll-on).[21] While each combination could potentially represent a separate product market, such an exercise was unnecessary since each brand has essentially the same line of products.[22]

[17] Both ACNielsen and Information Resources Incorporated (IRI) are the leading providers of retail scanner data.
[18] P&G introduced Crest SpinBrush Pro and Crest SpinBrush Pro Whitening; Gillette introduced and, subsequently, recalled Oral-B CrossAction Battery. P&G also recalled SpinBrush Pro and Pro Whitening; however, there were not enough data points after the recall in our sample period to assess adequately the impact of P&G's recall on the market.
[19] Entry/exit case studies readily lend themselves to competitive effects assessment (namely the determination of the closest substitute) but less so to relevant product market delineation (i.e., the small but significant non-transitory price increase test) given that entry/exit can be considered a drop/increase in price by an infinite amount. In some respects, entry/exit studies are similar to studies that use 'second choice' data from surveys to assess cross-price elasticities (see Bordley 1993; Berry et al. 2004), although surveys do not have the benefit of being based on actual consumer behavior. See Section 2.21 of the Horizontal Merger Guidelines for further discussion of the role of first and second choices in unilateral competitive effects analysis.
[20] Antiperspirants are applied to the underarm in order to suppress the production of sweat; deodorants offer a scent to mask odors but do not suppress sweat.
[21] There are other dimensions of differentiation such as package design, perceived efficacy differences, and scent; however, these appear to be less important.
[22] Even if a brand is not available in all the form types, it would not require significant sunk costs to produce a particular form given the availability of contract manufacturers.

In assessing the relevant product market, one issue was whether body sprays (e.g., Unilever's Axe products), which achieved widespread retail distribution in the U.S. in 2002, constrained the price of APDOs. We concluded that they did not. If two product segments are substitutes, such as APDOs and body sprays, then the growth of one segment would likely cause a decline of – i.e., cannibalize – the other segment's shelf-space. Using a measure of retail distribution, we found that from 2002 to 2005, the average retailer went from carrying no body sprays to carrying a little under ten UPCs.[23] During the same time period, however, the average number of APDO UPCs carried remained virtually unchanged. Thus, body sprays went from a non-existing category to one that grew significantly, while not affecting APDO shelf-space. Clearly, the fact that the introduction of the body spray segment did not cannibalize shelf-space for APDO products is not conclusive evidence of separate product markets; however, it corroborated other evidence that also supported this conclusion.

We also examined the product market overlap in the at-home teeth whitening (AHW) market. AHW products include disposable strips, gels, and trays but do not include other non-dedicated 'whitening' oral-care products such as whitening toothpaste and whitening mouthwash. In AHW, P&G sells its products under the Crest Whitestrips and Crest Night Effects brands, while Gillette sold its products under the Oral-B/Rembrandt co-brand. Combined, the two firms would have had a dollar share of 80 percent of the market. This level of concentration raised significant competitive concerns.

P&G entered the at-home teeth whitening market in 2001 when it began selling Crest Whitestrips, which offered consumers an innovative and disposable form to apply peroxide to their teeth. In 2002, Colgate responded with Colgate Simply White. The initial launch of Simply White was extremely successful; however, its market share has declined rapidly. Gillette entered the AHW market when it purchased the Rembrandt business from Den-Mat in April 2004; however, it was not until August 2004 that Gillette co-branded a number of Rembrandt products under the Oral-B/Rembrandt name and also introduced two new products: (i) Oral-B/ Rembrandt Whitening Strips, and (ii) Whitening Pen. Since the co-branding and new product introductions occurred at the same time, we analyzed them jointly as Oral-B's entry. Our empirical analysis

[23] A UPC, or Universal Product Code, represents a unique product – i.e., a particular combination of brand, scent, package size, etc.

using retail scanner data suggested that Oral-B's entry had a significant, negative impact on all of the Crest sub-brands (i.e., Whitestrips Classic, Whitestrips Premium, and Night Effects) but had little impact on Colgate's two products (Simply White, and Simply White Night).

The end result of the investigation was a divestiture agreement between the FTC and the merging parties in which the merging firms divested a large number of brands and trademark rights to various firms that were already active in consumer products lines.[24] The investigation of P&G's acquisition of Gillette illustrates that, while economists still rely a great deal on qualitative information (e.g., marketing documents and testimonial evidence from customers and competitors), empirical analyses continue to grow in importance in our reviews of mergers and acquisitions.[25]

3. OIL INDUSTRY PRICING AFTER HURRICANES KATRINA AND RITA

As recently as January 2002, the average retail price of regular grade conventional gasoline in the United States was about $1.10 per gallon, including taxes. It rose to nearly $2.00 per gallon by May 2004 and to about $2.50 per gallon by August 2005. Congress directed the FTC to investigate whether these developments resulted from market manipulation. Specifically, the FTC addressed whether oil companies were manipulating prices by restricting inventory holdings, by restricting capacity growth, by taking refineries off line, or by any other form of market manipulation.

Then, at the end of the summer of 2005, Hurricanes Katrina and Rita hit the Gulf Coast, causing gasoline prices to rise even further. Congress subsequently mandated that the FTC study whether prices charged after the hurricanes constituted 'gouging,' which it defined as a higher average

[24] The FTC Order required P&G and Gillette to divest the Crest SpinBrush, Rembrandt, and Right Guard brands and assets. P&G divested Crest SpinBrush to the Church & Dwight Co. and also provided them with a transitional license to the "Crest" trademark in order to ensure the viability of the assets while Church & Dwight transitions to another brand. In December 2005, the Commission approved the divestiture of Rembrandt to Johnson & Johnson; in April 2006, the Commission approved the divestiture of Right Guard to the Dial Corporation, a subsidiary of Henkel KGaA. The divestiture also includes the Soft & Dri, Dry Idea, Natrel Plus, and Balance brands and assets. The divestiture, however, does not include Gillette Series deodorants since this would create the potential for brand externalities (given that there would be two independent companies permanently using the "Gillette" brand, one for deodorants and one for razor blades) and the majority of the competitive interaction between P&G and Gillette occurred through the Old Spice and Right Guard brands.

price in September 2005 than in August 2005 that could not be attributed to costs or to national and international market trends.

The price of crude oil, the largest cost component of gasoline, accounted for most of the gasoline price increases prior to the hurricanes. In summer 2005, however, refining margins increased as well. The FTC staff had to assess whether the higher margins reflected illegal output restrictions or the normal workings of a competitive market.[26] If the gasoline producers did manage to restrict output below competitive levels, they would have had to do so either by restricting the use of available capacity or by reducing the growth of capacity. The very high refinery capacity utilization rates in recent years, including the summer of 2005, cast doubt on artificial restrictions on capacity utilization as a general explanation for higher prices. In part, however, the high utilization rates were a natural consequence of relatively slow capacity growth – about 1% per year for the past decade. Some have alleged that oil refiners have artificially restricted capacity growth so that unexpected increases in demand or supply disruptions would push capacity utilization to its practical limits and cause refining margins to rise.

Based on a variety of evidence, the FTC staff concluded that these concerns lacked foundation. The FTC staff's evaluation of capital budgeting documents and interviews with company executives revealed that refiners make investment decisions based on forecasts of market prices. The investigation yielded no evidence that companies turned down otherwise profitable investments in refining capacity out of concern for the effect additional capacity would have on market prices. In addition, the investigation yielded evidence of the cost of adding to refining capacity (on a cost-per-daily-barrel basis). Combining that evidence with information on the prices paid for refining capacity (again stated as a cost/daily barrel), the FTC staff was able to estimate Tobin's q for refining capacity.[27] Throughout the past decade, Tobin's q for refining capacity has been less than 1, and at times, much less. Those estimates provided market evidence that the level of capacity has not been held below competitive levels.

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[25] Also see the U.S. Department of Justice and the Federal Trade Commission, Commentary on the Horizontal Merger Guidelines, March 2006, which illustrates how the relative importance of qualitative and quantitative evidence can vary from case to case in merger analyses.

[26] See Federal Trade Commission (2006).

[27] Tobin's q is market value divided by replacement cost. See Carlton and Perloff (2004, Chapter 8).

Some of the concerns that have been expressed about inventory levels are similar to those about capacity. Over many decades, inventory levels relative to total demand have declined. If inventory levels were higher, supply disruptions and unanticipated demand increases would, all else equal, cause smaller price increases than they do. Whether the system has become more susceptible to shocks than it used to be is less clear. Some have alleged that oil companies have intentionally held inventories low to make the system more susceptible to shocks. The FTC staff found no evidence to support any collusion to keep inventory levels low. The decline in inventory holdings relative to demand reflected manufacturing-wide trends to cut costs by reducing inventories. We did not specifically address whether aggregate inventory holdings are too low from the standpoint of society as a whole. The inventory decision has not played a prominent role in the industrial economics literature, probably because it is generally an operational decision as opposed to a strategic decision. To the extent that proposals for the U.S. Government to hold gasoline stocks (in addition to petroleum inventories that are held in the Strategic Petroleum Reserve) gain momentum, further attention to this issue in the academic literature may prove useful.

Our analysis of the market response to the hurricanes provides unusually detailed evidence about how markets responded to a major shock. In the week after Hurricane Katrina – which caused the immediate loss of 27% of the nation's crude oil production and 13% of national refining capacity – the average retail price of gasoline increased by about 50 cents per gallon in six representative cities. About 35 cents per gallon of the post-Katrina price increase dissipated by the time Hurricane Rita hit. Rita damaged another 8% of crude production, and, even accounting for the refineries affected by Katrina and back online, 14% of domestic refining capacity was lost. Figure 1 shows the price changes and regional price dispersions in four cities across the United States. In the weeks after Katrina and Rita there were sizeable price increases in these cities. Four weeks after Rita, gasoline prices returned to pre-Katrina levels. By the beginning of December 2005, these prices had returned to the levels prevalent at the start of summer 2005. The price increases after the hurricanes varied substantially by region. For example, the average price in Baltimore increased by 65 cents per gallon after Katrina, while the average price in Los Angeles increased by 20 cents per gallon.

<insert figure 1 here>

While virtually everyone agreed that some price increase should have been expected after the hurricanes, we had to ascertain whether the price increases were too large to represent a competitive response. Using a simple supply-and-demand model, we concluded that the average price increase was about what would have been predicted given the assumption of perfect competition. A key input into this analysis is an estimate that the short-run elasticity of demand for gasoline is about −0.2.[28] As for regional differences, the regions of the country that experienced the largest price increases were those that normally receive supply from areas affected by the hurricanes.

<insert figure 2 here>

One particularly interesting phenomenon documented in the report is that the dispersion of both wholesale and retail prices within particular cities immediately after the hurricanes far exceeded typical levels. For example, the typical interquartile range in a given urban area is from three to ten cents per gallon. After Katrina, the interquartile ranges typically increased by a factor of two to three, and the increases in the total ranges were even more dramatic. Figure 2, which shows wholesale price dispersions in Atlanta, illustrates the point. This figure depicts price changes for all firms and for all firms other than the firm that raised prices the most in the area: firm A. In general, the wholesalers and retailers that raised prices the most within particular cities in the weeks following the hurricanes were not firms that experienced increases in market power (stemming, for example, from the closing of rivals). Rather, they were firms that experienced the largest reductions in their own supplies and the greatest increases in their own costs.

There appears to be substantial political momentum for federal price gouging legislation. Currently, 29 states have some form of price gouging legislation, with various definitions of price gouging. The FTC staff did find some instances of 'price gouging' as defined in the statute mandating the study of post-hurricane pricing. The statutory definition only exempted price increases attributable to higher costs or to national and international trends. However, given the dispersion of the impact across markets, some market-induced price increases were attributable to local market conditions. Virtually all the cases that met the statutory definition of price gouging were attributable to local market conditions.

The finding of price gouging as defined for the purposes of the investigation does not, of course, answer the broader public policy question of whether there should be a federal price gouging statute and, if so, how price gouging should be defined. An excessively vague definition of price gouging might cause sellers perversely to shut down rather than risk violating the price gouging statute. Indeed, the FTC study

[28] Kayser (2000).

reports that some retailers in Florida did in fact shut down after hurricane Rita rather than risk violating Florida's price gouging statute.

III. Policy R&D and Competition and Consumer Advocacy

Competition analysis does not end with cases and litigation. Economists have also been involved in competition advocacy and research activity. These two activities often result in synergies as our research results provide the basis for competition advocacy comments that advise governmental or self-regulatory bodies regarding the potential effects on consumers of legislation or regulation. For example, economists completed a second merger retrospective that empirically examined the outcome of an oil merger in the upper-Midwest.[29] Such research helps us formulate better policy prescriptions regarding future merger policy. On the consumer side, economists continued to survey consumers regarding their interpretation of various advertising claims for foods. One key issue is whether advertisers can effectively convey differing levels of scientific support for health claims. Sometimes that scientific support is substantial, but sometimes it is more equivocal, and we are trying to determine whether consumers comprehend the difference in advertising that tries to make such distinctions. We, and the Food and Drug Administration, continue the search for the best system of health claims enforcement for both nutrition supplements and foods. On the regulatory front, empirical work on the effect of Internet-based on-line sales of contact lenses has provided support for our policy suggestions on state regulation of contact lens sales.[30]

In addition to conducting our own research, we have held conferences on certain topics to expand our understanding of particular markets and the likely effects of regulation in them. For example, we held a conference on various competition and consumer protection aspects of Internet auction markets in October 2005. This gathering brought together academic and government economists and industry professionals to discuss competition between auction sites and between sellers, network effects, fraud by sellers, lemons problems, and the use of auction data for demand estimation.[31] As of the late summer of 2006, preparations are underway for a major set of hearings, to be held jointly with the DOJ, on monopolization.[32] Also, we held a conference on real estate markets that will be discussed more fully below.

[29] Simpson and Taylor (2008) provide a difference-in-differences analysis of gasoline pricing in six Michigan cities compared to that in unaffected cities following the Marathon-UDS merger.
[30] Cooper (2006).
[31] See http://www.ftc.gov/be/workshops/internetauction/internetauction.htm.
[32] See http://www.ftc.gov/os/sectiontwohearings/index.htm.

Over the past few years, the FTC staff filed several state-level advocacy comments on topics of current policy interest in the states, two of which will be discussed below: (1) the regulation of pharmacy benefit managers,[33] and (2) the regulation of new forms of real estate service.

1. PHARMACY BENEFIT MANAGERS

Managing the purchase and distribution of drugs to health insurance beneficiaries is a multi-billion dollar endeavor involving many complicated business interactions in which the net incentives of various parties are not obvious. For drug benefits provided by private health insurance, companies called pharmacy benefit managers (PBMs) typically play a central role in these interactions, and they are likely to play a similar role in providing the new Medicare drug benefits. The FTC was asked by Congress to study potential conflicts of interest between PBMs and their customers.[34] To investigate the issues specified by Congress, the agency obtained data and documents from fifteen PBMs and six retail pharmacy chains for the years 2002 and 2003.

PBMs' clients include health maintenance organizations, self-insuring employers, unions, and governments that provide prescription drug benefit plans to groups of customers, employees, or members. In addition to contracting with the sponsors of these plans, PBMs contract with networks of pharmacies. Network pharmacies fill prescriptions for beneficiaries, collect co-payments, and bill the PBMs for the remainder of the drug cost plus a dispensing fee. PBMs negotiate discounted prices with the pharmacies. The data obtained from retail pharmacies showed that, for generic drugs, cash customers on average paid retail pharmacies over 50% more than did PBMs. For branded drugs, cash customers on average paid 15% more than PBMs. These differences did not reflect any payments that the PBM may receive from drug manufacturers; they result only from PBM negotiations with pharmacies.

Manufacturers of branded drugs often provide payments to PBMs to encourage utilization of their drugs. For instance, a manufacturer may offer rebates to a PBM if the plans administered by that PBM require a lower co-payment for that manufacturer's drug than for competing drugs. The extent to which the PBMs' clients explicitly receive shares of manufacturer payments depends on their contracts with the PBMs. Data obtained by the Commission indicate that, on average, the largest PBMs directly pass on to their clients roughly half of the manufacturer payments, though there is considerable variation across clients

[33] We filed comments on PBM regulation in California and North Dakota. We also prepared to file similar comments in other states, but those opportunities faded as the legislation died before reaching the final stages.
[34] See Federal Trade Commission (2005).

and PBMs. Any shares of the manufacturer payments that are not passed through explicitly may be passed on to the PBMs' clients implicitly through other contract terms.

The degree to which manufacturer payments affect how PBMs behave while administering drug plans for their clients is central to many of the potential conflicts of interest. For instance, it has been alleged that the payments create an incentive for PBMs to drive utilization of branded drugs on which they receive rebates in lieu of generic drugs that would be less expensive for their clients. It has also been suggested that the alleged PBM conflicts of interest may be particularly important in influencing the drugs that are dispensed when the PBM owns the pharmacy that is filling the prescription.[35] Most of the concern voiced about vertical integration stems from the fact that the largest PBMs all operate their own mail-order pharmacies, through which they fill prescriptions for their clients' beneficiaries. The relationship between this type of vertical integration and potential moral hazard, such as may be created by manufacturer rebates, is the focus of the Congressionally mandated inquiry.

One way a PBM can influence which drugs are dispensed is for the pharmacist at a PBM-owned mail-order pharmacy to call the prescribing doctor to seek authorization for a switch to another drug. This is sometimes done in order to switch the patient to a therapeutically similar drug with a lower copayment, but could potentially also be done in order to substitute to a drug on which the PBM makes more profit.

The FTC's study considers several measures of PBM performance. The present discussion focuses on one of these measures: generic substitution by PBM-owned mail order pharmacies. Critics of PBMs often allege that when mail order pharmacies owned by the PBM fill prescriptions for PBM clients' beneficiaries, these pharmacies dispense a lower share of generic drugs than do retail pharmacies, to the detriment of the PBMs' clients.[36]

The FTC obtained data from PBMs on transactions between the PBMs and their clients, retail pharmacies, and drug manufacturers. The FTC determined that on average PBMs earned the highest profit on a prescription when the prescription is filled with a generic drug by a mail-order pharmacy owned by the PBM.[37] This way of filling prescriptions was also the least expensive on average per prescription-day for the PBMs' clients.

In light of this evidence about the mutual benefits of mail-order dispensing of generics for PBMs and their clients, it is not surprising that dispensing data suggest that vertically integrated mail-order pharmacies

[35] Ukens (2003).
[36] Langenfeld and Maness (2003).

are very efficient at filling prescriptions with generics when they are available.[38] Aggregate data show that mail-order pharmacies owned by the largest PBMs dispense generics over 92% of the time that a generic is available. This average is typically one or two percentage points higher than the rate for unaffiliated retail pharmacies. These dispensing data are not consistent with a widespread attempt by PBMs to dispense branded drugs instead of less expensive generics.

Given the profitability of generics, it is reasonable to ask why generics are not dispensed 100% of the time when they are available. There are several potential explanations. First, some plan sponsors choose benefit designs that do not encourage their members to have prescriptions filled with generics; for instance, a plan may charge the same co-payment regardless of the drug type or price. Second, even when the plan design encourages the use of generics, some doctors and patients request that prescriptions be filled with branded drugs through the use of 'Dispense as Written' (DAW) orders. Data obtained by the Commission indicate that DAW orders affect from 5% to 15% of all prescriptions filled under plans administered by PBMs. Finally, although the price differential between brands and generics is high on average, for some drugs the cost differential may be small or negligible.

The Commission's empirical analyses of generic dispensing did not uncover any substantial evidence of conflicts of interest between PBMs and their clients. The results of this empirical analysis suggest that contracts between PBMs and their clients tend to align their interests, rather than create conflicts.

2. REAL ESTATE INDUSTRY

The FTC is actively involved in advocacy work that questions the wisdom of minimum-service requirements in state laws or regulations in real estate brokerage. The vast majority of home sellers contract with real estate agents to provide them with assistance on all aspects of their real estate transactions from pricing and listing through closing. New business models have emerged over recent years, however, that offer consumers the option of purchasing only some of the brokerage services associated with selling a home. So-called 'limited-service brokers' (LSBs) provide consumers with a-la-carte pricing for the bundle of traditional brokerage services. For example, a popular option that these brokers offer is the 'Multiple List Service (MLS)-only' listing,[39] where a consumer pays a flat fee (typically around $500) to the broker in exchange for having his or her house listed in the local multiple

[37] This finding is consistent with the common observation that supermarkets and other retailers earn higher margins on 'store brand' products than on comparable nationally branded items.
[38] This same result was also found by independent academic researchers; see Wosinska and Huckman (2004).

listing service and some selling aids (e.g., 'for sale' signs, open house signs, lock box). In addition, the seller's house is displayed on the limited-service broker's Web site and on a variety of national Web sites that take their feed from local MLSs, such as Realtor.com.

In response to competition from LSBs, realtor organizations in several states lobbied for 'minimum-service' laws. These laws typically require a broker to assist the client in developing, communicating, and presenting offers and counteroffers, and answering all of the client's questions relating to the transaction.[40] In 2005, the FTC, in conjunction with the DOJ's Antitrust Division, sent letters to regulators and legislators in Texas, Missouri, Alabama, and Michigan arguing against the adoption of these laws. These letters argued that minimum-service laws will likely lead to higher real estate brokerage prices by preventing some consumers from purchasing their preferred combination of price and service and by reducing competition between full-service and limited-service business models. The letters also pointed out that, despite assertions by proponents that minimum-service laws are needed to protect consumers, there is no evidence that consumers have suffered harm from limited-service brokerage.[41]

In conjunction with our advocacy efforts, in October 2005 the FTC held a workshop to examine competition issues involving the real estate industry. The workshop examined both privately and publicly imposed restraints on competition from various perspectives. After initial presentations on the mechanics of the real estate brokerage industry, panels focused on specific competition issues including: minimum-service laws and private discrimination against for-sale-by-owners; and the effects of competition restrictions on home buyers, specifically examining state and private restraints against Internet brokers known as 'virtual office Web sites' (VOWs).

The final panel of the day presented two very different views of the real estate industry and the equilibrium that seems to be reached in local real estate markets. In one view, the industry is characterized as highly fragmented, with low entry barriers, high variation in actual employment, widely accessible information about comparable home prices, and low average brokerage

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[39] An MLS is a database that allows a real estate agent representing a seller to share information about the property with a wide array of brokers representing potential buyers. Full access to the information in an MLS database is typically limited to members of the MLS and of the National Association of Realtors.

[40] See, e.g., Broker's Responsibility, 30 Tex. Reg. 1400, 1401 (proposed Mar. 11, 2005); Mo. H.B. 174; Ala. H.B. 156. Michigan House Bill 4849 also would have required a broker to provide assistance to the client through closing.

[41] Despite the advocacy efforts, the Texas, Missouri, and Alabama legislatures ultimately passed laws embodying minimum-service requirements.

salaries. These characteristics are taken as indications of the industry's flexibility and inherent competitiveness.[42] In the alternative view,[43] real estate agents are seen to be earning potentially supracompetitive rents on each sale, which are dissipated by non-price competition and by costly entry. Census data from various housing markets show that markets with high house prices have more brokers per capita than lower price markets and those with rapidly rising prices have a growing number of agents. These findings were due to relatively easy entry into an industry where commissions do not seem to be flexible. Brokers dissipate the rents that result from excessive commission rates by competing to obtain listings rather than competing on price. In equilibrium, brokers in hot and cool markets earn similar incomes, but the outcome could be inefficient, because brokers in hot markets are less productive than those in cool markets and consumers end up paying more for real estate brokerage than they would if prices were flexible.

IV. Consumer Protection

In addition to supporting investigations and litigation, the Commission's consumer protection economists are studying a number of issues relevant to policy decisions. One current project examines changes in the extent of mass media food advertising to children in order to understand whether this advertising is contributing to childhood obesity. Another project uses consumer survey evidence regarding consumers' mortgage shopping behavior to learn how improved disclosures might help consumers understand the contracts that they are entering and help them shop more effectively among lenders. In response to Congressional requests, economists are also examining the effects of credit scores on the price of auto insurance and the accuracy and completeness of consumer credit reports. Next year we hope to report on some of that work, but this year we focus on another area of research in consumer protection: identity theft.

1. IDENTITY THEFT

In recent years, consumers and policy makers have become increasingly concerned about the problem of identity (ID) theft. A search of newspaper articles mentioning the phrase "identity

[42] See Lawrence Yun, http://www.ftc.gov/opp/workshops/comprealestate/yun.pdf.
[43] Much of the presentation by Professor Chang-Tai Hsieh was based on Hsieh and Moretti (2003).

theft" yields thirty articles in 1995, but more than 12,000 articles in 2005.[44] A recent survey found that 71% of respondents said they were personally concerned about becoming ID theft victims.[45] This concern may stem in part from the realization that ID theft is more difficult to avoid than are many other frauds. While most frauds can be avoided by simple rules (e.g., deal with reputable firms) and common sense (e.g., if it is too good to believe it's true – it probably isn't), ID theft can occur as a result of actions – or inactions – of someone with whom the victim has had no interaction. Furthermore, technological progress seems to be making this problem worse.

Because there were no hard data on the extent of the problem, the FTC undertook a survey of U.S. adults in spring 2003. That survey found that 4.6 percent of those surveyed said that they had discovered that they were victims of ID theft in the last year. While some of these incidents of ID theft were limited to having charges placed on a lost or stolen credit card, 1.5 percent of those interviewed indicated that they had discovered that their personal information had been used by identity thieves to open new accounts in their names or to commit other types of fraud. ID theft victims reported that their identities had been used to open new credit card accounts, obtain loans, sign up for telephone service, rent an apartment, obtain medical care or employment, and provide false identification when stopped for a crime.[46]

Since the FTC survey, a private group – Javelin Strategy and Research – obtained similar results in 2004 and 2005 surveys using a questionnaire and methodology much like that used by the FTC (Conkey (2006)). Even with slight differences in the way the questions were asked, the results of the surveys are not significantly different.[47]

Using the data from the FTC's survey, Anderson (2006) found that members of some demographic groups are more likely than others to suffer identity theft. One relevant factor is

[44] Based on a search of the Lexis U.S. Newspapers database.
[45] Mayer (2006).
[46] The survey results are reported in FTC (2003). Some of the key findings of the survey are also reported in Anderson K. B. (2006).
[47] In addition to the FTC and Javelin surveys, in the past few years there have been a number of other surveys that have sought to measure the extent of ID theft. These include a November 2004 survey by AARP, May 2003 surveys by Gartner, Inc., and by Privacy and American Business, and a November 2002 survey by STAR Systems. Not surprisingly, the exact estimates of the incidence of ID theft vary from survey to survey depending, at least in part, on the particular way in which the questions were phrased. However, each of these surveys found rates of ID theft that are generally consistent with the results from the FTC survey.

income: Those with incomes in excess of $100,000 are estimated to have a 75 percent greater risk of experiencing ID theft than those with incomes of less than $25,000. At least, in part, this increased risk appears to be consistent with people with higher incomes having more credit cards and using those cards more frequently. On the other hand, older people may face a somewhat reduced risk, with the risk faced by those over 75 being 60 percent lower than that faced by those between 35 and 44. Household composition also seems to matter: One is more likely to be a victim if he or she is the only adult who lives in the household. More children are also associated with an increased likelihood of becoming a victim of identity theft. Finally, women are more likely to be victims than are men.

Identity theft can be quite lucrative for the thief and costly, both in terms of time and money, for the victim. ID theft victims often had over $5,000 of merchandise purchased in their names, and in a small subset of cases (two percent) over $50,000 was obtained by the thief.

The victim of ID theft, however, does not typically wind up paying for the goods or services. For example, where items are purchased using a credit card in the victim's name, the cost is typically borne by the credit card issuer or the merchant who made the sale, depending on the particulars of the transaction. However, victims may ultimately pay some of the direct cost of what was stolen – if for no other reason, just to resolve the matter and protect their credit rating. In addition, the victim may expend both time and money in attempting to resolve the problems that result from the ID theft. In 12 percent of incidents, victims reported that they had incurred resolution expenses of $500 or more, and 10 percent of victims said they spent 80 hours or more resolving problems associated with being a victim of ID theft.

V. Conclusion

Economists at the FTC examine a wide range of issues covering both competition and consumer protection. In this year's article we have focused on a small portion of the work that the Commission's economists have completed: data-intensive merger cases in hospitals and consumer products, gasoline price volatility, and policy R&D and its use in consumer advocacy on the administration of drug benefits and real estate markets. On the consumer protection side,

we discussed the problem of ID theft – a surprisingly common crime that is more difficult to avoid than are many other forms of fraud.

Figures and Tables

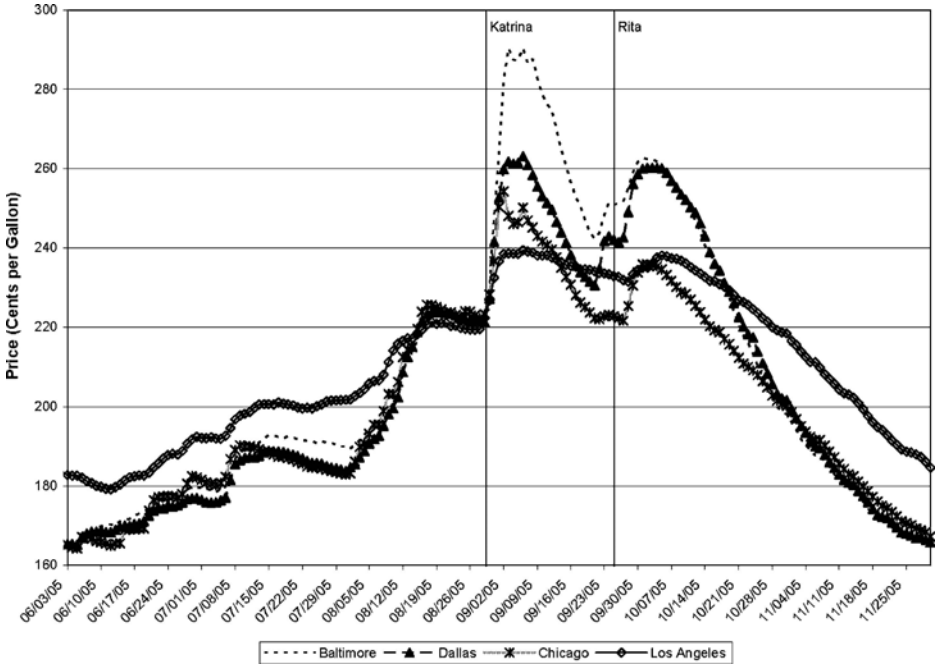

Figure 1: Daily Retail Gasoline Prices Without Taxes 6-3-2005–11-30-2005 Source: Oil Price Information Service, 2005.

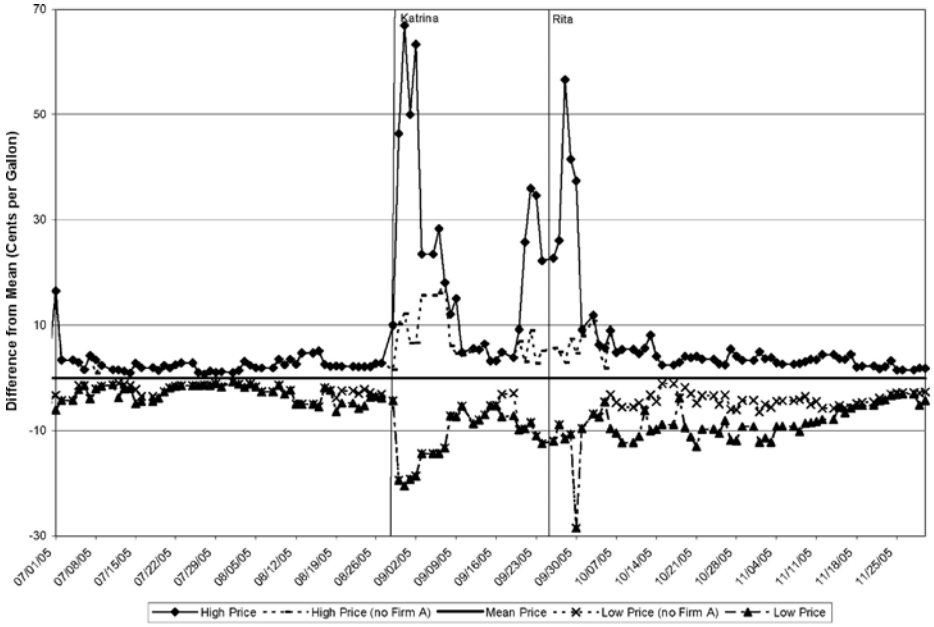

Figure 2: Atlanta Gasoline Rack Prices – Mean Centered 7/1/2005 – 11/30/2005 Source: Oil Price Information Service, 2005.

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