

Economics at the FTC: Non-Price Merger Effects and Deceptive Automobile Ads

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Abstract: Economists at the Federal Trade Commission (FTC) analyze a wide range of activities, practices, and policies in support of the agency's consumer protection and competition missions as demonstrated by the two economic analyses discussed in this article. The first section of this article describes the economic analysis of a proposed merger's impact on non-price dimensions of competition in the daily fantasy sports market. The second section builds an economic model to quantify the harm to consumers from deceptive advertising in automobile markets.

Keywords: Antitrust, Consumer Protection, Deception, FTC, Mergers, Non-Price Competition

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I. Introduction

The staff of the Federal Trade Commission's Bureau of Economics (BE) is composed of about 75 Ph.D. economists, a few financial analysts, and about 20 other staff: primarily research analysts. BE supports the FTC's two primary missions: competition (antitrust), and consumer protection. Providing economic analysis that relates to the Commission's law enforcement activities (i.e., investigations and litigation) is BE's primary role; but FTC economists also engage in "competition advocacy" before other government agencies on state and federal laws and regulations that relate to the FTC's primary missions and interact with counterparts at foreign agencies. Finally, BE's staff are actively engaged in policy-oriented economic research.

Review of the competitive effects of proposed mergers is the most common means by which economists contribute to the FTC's competition mission. The FTC brought enforcement actions against 23 mergers in FY2017. Fifteen of those were resolved with consent orders under which the merger could proceed subject to certain conditions; six mergers were abandoned or restructured during the investigation, requiring no additional conditions; and the Commission filed a complaint in federal court to enjoin two of the transactions. The FTC brought actions in nine non-merger antitrust matters in FY2017, three of which were resolved with consent agreements while the Commission filed challenges either in federal court or under its own administrative adjudication process in the remaining six.¹ The Commission also took actions in over 70 consumer protection actions in 2017 that covered a wide assortment of activities, including deceptive advertising and wire fraud (Federal Trade Commission 2018). The economic impact of FTC decisions can be substantial. For example, FTC consumer protection and competition enforcement actions combined resulted in over \$5 billion in redress and disgorgement in 2017. (Federal Trade Commission 2018).

BE economists are also active participants in the larger economics community. Our economists regularly publish original research articles in academic journals, participate in conferences, and maintain an active seminar series. BE continues to organize an annual FTC Microeconomics Conference, which marked its tenth year in November of 2017.² Some of the topics considered in the paper sessions, panel discussions, or keynote addresses included new

¹ A table of these merger and non-merger enforcement statistics dating back to 1996 is available at <https://www.ftc.gov/competition-enforcement-database>.

² The conference website is located at <https://www.ftc.gov/news-events/events-calendar/2017/11/tenth-annual-federal-trade-commission-microeconomics-conference>.

A. The Proposed Transaction

When the merger was proposed in November 2016, DraftKings and FanDuel were the two largest providers of daily fantasy sports (DFS) games with a combined share of more than 95% of DFS revenues (Federal Trade Commission 2017). Although price effects were a primary focus of the investigation, the firms also competed in provision of non-price benefits that significantly affected the value of the product to consumers. In particular, as DFS games gained traction with a large number of consumers only a few years before the proposed merger, DFS firms were still expending significant resources to develop new games and features to attract customers. The Bureau staff found that competition in non-price dimensions was intense and that the provision of these benefits to consumers was likely enhanced, not constrained, by the presence of a meaningful competitor.

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enter hundreds of contests over the course of a professional season.⁷ The size of the contests vary from head-to-head matchups against one other player to tournament contests that allow for thousands of entries. Likewise, the fees to enter contests range from less than \$1 to more than \$10,000.

radio broadcasts. Both DraftKings and FanDuel grew rapidly during this period while their smaller competitors lagged behind.

During this period, the DFS industry received attention from a number of state Attorneys General, who ruled that DFS constituted gambling and was, therefore, illegal. These rulings caused the firms to adjust their growth strategies, which slowed their development of the platforms (Federal Trade Commission 2017 p. 10). A possible benefit from the merger-to-near-monopoly was the ability to increase innovation to grow the DFS market and benefit existing DFS customers.¹⁰ In addition to the standard price effects, the FTC's investigation evaluated a number of non-price benefits that consumers received from using the sites and how the merger would affect these benefits in a but-for world.

The Horizontal Merger Guidelines (US DOJ and FTC, 2010) explicitly consider non-price factors as a way that reduced competition can reduce consumer welfare. Non-price factors are analyzed in a similar way to price effects, although typically these analyses rely more on basic economic intuition of competition and evidence of non-price competition than on

In the DraftKings/FanDuel case, as well as in many recent cases that have been investigated by the Commission, innovation was the central non-price factor that was considered in the analysis. Competition often spurs firms to invest in innovative research and development activities. This R&D activity can be directed towards either the incremental improvement of existing products or the development of entirely new products that would compete with products that are already in the marketplace. Consumers may benefit from these activities through more product variety, higher quality products, and/or lower prices that are due to lower production costs. Successful innovations can increase a firm's profits -- frequently by allowing it to capture the competitor's customers. Therefore, the presence of competitors can encourage firms to invest more in innovation than they might otherwise, leading to increased consumer welfare. The removal of this competitive pressure through a merger could harm consumers if the merged firm curtails its efforts to develop new products or improve existing ones.

role in the DraftKings/FanDuel investigation -- primarily as a consequence of the still-evolving nature of the DFS industry. Both firms devoted substantial resources towards the development of new features and services on their respective platforms.

The details of these innovative processes provide important examples of the primary tradeoff, as outlined by the Guidelines, that the Bureau considered when evaluating the net effect of the merger on consumer welfare: The merger could harm consumers through the loss of competitive pressures that would reduce the incentive of the platform to undertake risky investments to develop new products and features. On the other hand, efficiencies in innovation and changes in appropriability could improve innovation incentives and increase the non-price benefits enjoyed by consumers. The evidence around these arguments shows that the merger would have, at best, a mixed effect on innovation and product variety and, ultimately, consumer welfare. Moreover, these efficiencies were not sufficient to overcome the likely harm from a merger to near-monopoly.

The merging parties both had staffs of engineers and developers that were tasked with maintaining and improving the quality of the customer experience on their platforms. The intent of these efforts was to attract and retain players on their sites. One important area of innovation for the firms was the development of new sports55ni1504 Tw) .817.33-0 (a)6 ..38 0 Th -1.72les03 Tw [()-1 (dduc)4 (t)-2 (

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experiences, but they were required for the sites to continue offering contests to customers in these states. These requirements were an obvious potential source of synergies that would result from the merger. These features were duplicative in that they required two separate teams to implement the same features on each site. In addition to the extra regulatory requirements, the growth difficulties encountered by the firms led to a backlog of innovative projects that the firms intended to develop in order to enhance the quality of their sites.

The FTC investigated the possibility that the merger would allow the combined firm to reduce these duplicative efforts and reallocate some of these resources to work on the backlog of innovative projects. While this is a plausible source of efficiencies, the evidence was not necessarily supportive of the possibility. In particular, both firms had maintained a backlog of project ideas since well before the time of the merger. This is not surprising, as both firms were in a “startup” phase and would likely have a list of “to be implemented” projects regardless of the resources that are available to them. Moreover, the magnitude of the resources that would need to be allocated to the most obvious duplicative projects – regulatory and other legally mandated features – was not clear. Specifically, both sites had already developed variety of features that were required by different states by the time of the merger. While continuing compliance monitoring would be necessary, monitoring would require substantially less resources than the initial development of the features. While the firms earlier would have been able to save considerable duplicative effort during this initial phase, there appear to be much less opportunity for efficiencies in the future. Thus, the clear savings opportunities on duplicative efforts seemed to be limited.

Related to the duplication point: The FTC considered the possibility that the larger scale of the merged platform would increase incentives for investment. The nature of software scalability means that the cost of developing a new feature does not increase with the size of the platform; in this environment, combining platforms essentially doubles the return on the investment with little or no additional cost.

and types of projects that would result

innovation would increase post-merger. Moreover, maintaining competition in the marketplace meant that incentives for product differentiation and the possibility of productive combinations with other, non-DFS entities was preserved.

develop a simple conceptual model of how deceptive auto ads injure consumers and how the model can be used to quantify this injury, even when case-specific data are very limited.

The concept that is explored in this section is rooted in the literature on consumers' value of time, which dates back to Becker (1965) and Orbach (1989), as well as the standard search theory of Stigler (1961) and more stylized sande

that is needed to pursue the best available alternative (which would have been the first choice in the absence of the deceptive claims).

With the limited data that may be available in a particular case on the prevalence of deceptive ads and the number of consumers reached, among other things, this framework can be used to quantify in dollars an estimate -- or a range of estimates -- of the consumer injury from the deception. The framework can similarly be used to estimate the dealer's gains from the deception given data on dealer profits. This approach also has applications in other contexts where deceptive claims cause consumers to spend time and effort pursuing a deal, but the deception is revealed to consumers prior to actually making a purchase.

A. Model of Consumer Injury

Consider a model in which car dealer A runs deceptive ads. All consumers either buy from dealer A or from their next best alternative, B, which can vary by consumer.¹⁹

1. Model Setup

All consumers receive a constant consumption utility, u_A , from dealer A's good. Dealer A deceptively advertises price $L^{\frac{1}{2}}$ for good A, so that before visiting dealer A, a deceived consumer's expected utility from purchasing good A is $E(U_A) = u_A - L^{\frac{1}{2}}$. However, when a consumer visits dealer A, it is revealed that he actually charges price L^1 for it, where $L^1 > L^{\frac{1}{2}}$ holds. Consumers incur cost C for each dealer visit, which represents the time and nuisance that are involved in engaging with the dealer up to the point when the truly available terms are revealed.

There is a continuum of consumers, $[\underline{\theta}, \bar{\theta}]$ who vary by their expected utility of the next best alternative, $E(U_B) = u_B - L_B^1$, where u_B and L_B^1 are the consumption utility and price of consumer θ 's next-best alternative, respectively, and $\partial (U_B(\theta)) / \partial \theta > 0$ holds.²⁰ We interpret this next-best alternative as a second dealer, B, which may differ by consumer, but it

¹⁹ This model implicitly assumes that the consumer has already made the decision to buy a car from somewhere, and that affordable options are available so that she will not opt out or defer the purchase. This assumption seems reasonable to describe the typical car shopper; but the model can also be adapted if a dealer's claims seem particularly attractive to consumers who otherwise would not purchase a vehicle.

²⁰ Assuming that consumers have the same value for A and different values for B is equivalent to a Hotelling model where consumers have different values for both products.

could also be a private-party seller. We assume that dealer B truthfully advertises the price of good B, L_B^1 , and that the consumption utility of each good is known to each consumer ex ante.²¹

2. Consumer Decisions

A deceived consumer chooses to visit dealer A initially if and only if $u_A \geq L_B^{1/2} \geq F_B X \geq L_B^1$ holds; otherwise, she visits dealer B. Let V_D denote the number of consumers who choose to visit dealer A initially given the deception, such that $E(U_B(V_D)) = u_B(V_D) \geq L_B^1(V_D) = u_A \geq L_B^{1/2}$ holds.

(“walk”), thereby incurring additional cost c in order to pay L_B for good B; or buy from dealer A and pay L_A for good A. J3tdj 8.52 0 0 8.52 112.92 685.58.52 .013 Tw u1wQdd 4m [(f)3 (or)3 (tno pa)-13 (to p

total utility from the transaction is $u_B + \lambda \Delta$, while the counterfactual utility with no deception would have been $u_B + \lambda \Delta$. The harm to these consumers is therefore the cost of an additional dealer visit, c , that would not have occurred absent the deception. Let the total harm to walkers be denoted by I_{walk} and defined by $I_{walk} = c(V_D - 4)$.

For consumers who buy from dealer A after the deception is revealed ($u_B + \lambda \Delta > u_A + \lambda \Delta$), utility from the transaction is $u_A + \lambda \Delta + c$. Their counterfactual utility depends on which dealer they would have visited absent the deception. If $u_B + \lambda \Delta > u_A + \lambda \Delta$ holds, then the consumer would have purchased from dealer A absent the deception with counterfactual utility $u_A + \lambda \Delta + c$, so there is no consumer injury. The number of consumers in this group, Q_T , is defined by the equation $E(u_B(Q_T)) = u_B(Q_T) + \lambda \Delta(Q_T) = u_A + \lambda \Delta$.

Figure 3: Consumer Injury



If $u_B + \lambda \Delta < u_A + \lambda \Delta$ holds, then the consumer would have purchased from dealer B absent the deception, with counterfactual utility $u_B + \lambda \Delta + c$.

average consumer injury to this group is $\frac{Q}{6}$.²² Let the total harm to walkers be denoted by I_{buy} . It follows from the above assumptions that $I_{buy} = \frac{Q}{6}(Q_D + 4)$ holds.

Consumer injury from the deception is shown in Figure 3.

To summarize, the model yields the following results: The harm to deceived consumers who visit without purchasing is c ; and the average harm to deceived consumers who purchase from dealer A

Q_D) decreases. As the cost of an additional dealer visit increases, more of the deceived consumers buy from dealer A, and the average injury to both deceived buyers and walkers increases.

In most applications, the dealer's sales and lease totals are either known or possible to approximate.²⁴ The number of consumers who visited the dealer without purchasing is more difficult to measure, though data on this may be available in some cases. For example, some dealers collect consumer contact information at the beginning of the dealer visit, before the consumer has decided whether to purchase. In the absence of such data, industry surveys that report the number of dealers that consumers visit before making a purchase can be used to infer the typical number of non-purchasing visitors that dealers receive for each consumer who makes a purchase.

In practice, non-

be influential than non-deceptive ads. However, these percentages also may overestimate the true proportion of consumers whom deceptive ads caused to visit the dealer, since some of those consumers might have visited the dealer even in the absence of the deceptive claims.

In practice, a dealer may have circulated some ads with legitimate offers, or strictly persuasive ads with no direct information about sale terms, along with deceptive ads about available deals. If this is the case, it is necessary to estimate the proportion of ad-influenced consumers who were influenced to visit the dealer by decehan non-

are deceived. This assumption will lead to an overestimate if some of these consumers would also have been persuaded by a legitimate ad. However, the assumption is a simple way to reflect the likelihood that deceptive ads would be more persuasive than legitimate ones. Additionally, the assumed distribution of ad views is conservative in that half of consumers view only one ad, another quarter see only two ads, etc., so that most consumers are assumed to have few chances to see a deceptive ad. It follows from these assumptions that the proportion of deceived consumers is

$$\text{equal to } \int_0^1 \frac{5}{6} A(1 - F(q)) \, q = 1 - F\left(\frac{5}{6}\right)$$

The final component that is needed to calculate an estimate of consumer injury is the value of the time and nuisance cost, c . This is not a search cost per se, but instead represents the cost of a physical visit to the dealer up to the point of finalizing the purchase; this assumes that consumers have already searched and identified the two dealers where they are most likely to make a purchase (including the deceptive dealer). This is a mild assumption in the auto market, where the average consumer spends 8-12 hours searching online before making a purchase, according to recent

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$$+ J F Q = N(U \hat{U} + 8_{1/2} F 3_{1/2}) + \frac{\ddot{O}}{6} 3_{1/2} \tilde{A} \ddot{U} N_{3/6}^{\ddot{O}} (1 F \frac{5? \ddot{a} \ddot{O}}{5 > \ddot{a} \ddot{O}}) \quad (2)$$

a. Unjust Gains

As an alternative to redress of consumer injury, consumer protection law also sometimes allows disgorgement of “unjust gains”, which are usually interpreted in economic terms as the profits that are earned due to the law violation.²⁸ The framework above can also be used to estimate total unjust gains from deceptive auto ads given data on the dealer’s profits per sale, ~~CE~~ Assuming that the deception increases the dealer’s sales but does not affect its profit per sale, one can estimate unjust gains by multiplying the dealer’s total sales and our estimated proportion of sales made due to the deceptive ads by the dealer’s profit per sale, as follows:

$$) = EQ = \ddot{e} 3_{1/2} \tilde{A} N_{3/6}^{\ddot{O}}$$

harm to non-purchasing consumers and \$118,333 in harm to purchasing consumers. Using Equation (3), we also calculate an estimate of approximately \$946,667 in unjust gains that were caused by the deceptive ads.

Of course, a single point estimate is far too precise a number given all of the assumptions that are involved in this approach, and one can build in as much uncertainty as seems appropriate to the various components to reach instead upper and lower bounds for injury and gains. The above hypothetical calculation simply serves to demonstrate the approach.

C. Discussion

The model that is described in this article provides a way to conceptualize and quantify in dollars the harm to consumers that is caused by deceptive advertising by auto dealers. Even in cases where the available case-specific data are very limited, the model can be used to obtain a reasonable estimate of injury, or a range of estimates, by using industry-wide survey results as proxies for missing data. The advantage of this approach compared to other more sophisticated theoretical or empirical models is that it involves relatively few parameters, and those that it does include can be calibrated using data that are often collected in the normal course of business, or by industry trade publications.

In addition to deceptive auto ads, this approach can also be applied in other contexts where (e)4 (x)-10 (t).

reflect situations where FTC economists had to tailor their analysis in order to address the issues at hand.

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